The Relevance of Attachment Theory in Medical Care

4

Bernhard Strauss and Katja Brenk-Franz

4.1 The History of Attachment Theory in Medicine

Attachment theory provides a biopsychosocial model to explain how individual differences in experience and behavior are related to interpersonal proximity and distance as well as to the regulation of affect and stress (Bowlby 1977). Whereas Bowlby's original intention was to develop a theory for the assessment and treatment of emotional disorders, he was clearly disappointed that his work – for a long time – did not take root in the clinical realm of adult psychoanalysis and psychotherapy (Sandler 2011). Instead, his ideas were assimilated into developmental psychology, leading to numerous studies that validated concepts from attachment theory such as Mary Ainsworth's investigations of infant attachment patterns using the Strange Situation (Ainsworth et al. 1978). These studies provide a solid basis for the extension of our knowledge of human development as well as its influence on personality and psychopathology (Bowlby 1988).

Although attachment theory was initially resisted by the psychoanalytic community, later psychoanalytically oriented authors in the United Kingdom (e.g., Holmes 1994) and Germany (e.g., Köhler 1991) reintegrated attachment theory and the results of developmental psychology research into clinical applications. Since the early 1990s, many psychotherapy research studies based upon attachment theory have been conducted which show, for example, that attachment characteristics and attachment-related interpersonal expectations predict both the quality of the

B. Strauss, PhD (✉)
Institute of Psychosocial Medicine and Psychotherapy, University Hospital Jena, Jena, Germany
e-mail: Bernhard.Strauss@med.uni-jena.de

K. Brenk-Franz, PhD
Institute of General Practice and Family Medicine, University Hospital Jena, Jena, Germany

J. Hunter, R. Maunder (eds.), *Improving Patient Treatment with Attachment Theory: A Guide for Primary Care Practitioners and Specialists*,
DOI 10.1007/978-3-319-23300-0_4

Table 4.1 Examples of how attachment theory helps health-care practitioners

Relevance of attachment theory in primary care	Examples of importance to the health-care practitioner
Explains individual differences in coping strategies and behaviors of patients (such as hypervigilance or trivialization of symptoms)	Attachment styles give practitioners information about possible reactions or needs of their patients, which may improve their communication, for instance, when disclosing a new and serious diagnosis
	Practitioners can enact specific strategies to address people who tend to deny or trivialize symptoms and improve regulation of patients who catastrophize their disease
Predicts patients' adherence to treatment and advice	Depending on the attachment style of the patient, the clinician can predict likely adherence with medical treatment and act accordingly
Guides treatment and communication optimization for individual patients in primary care	As dismissing patients are more autonomous, have less self-disclosure, and avoid medical visits, they should receive special attention to adherence to medical appointments and implementation of self-care behavior. For instance, they may prefer patient education via a technological interface, such as the Internet, as the absence of a personal relationship may diminish the drive for distancing
Encourages the development of tools for use in a medical context to quickly and effectively understanding a person's relationship style	A screening instrument to assess attachment styles of patients could help the practitioner to optimize the doctor-patient relationship

therapeutic alliance (Diener and Monroe 2011) and the outcome of psychotherapy (Levy et al. 2011). There is also evidence that attachment security increases during psychotherapy (Taylor et al. 2015) and that the attachment patterns of therapists might play an important role in establishing therapeutic rapport (e.g., Schauenburg et al. 2010).

Since the attachment system plays an important role in the regulation of both the emotions and the interpersonal patterns activated in stressful situations, the concept has consequently been applied to the fields of psychosomatic medicine (Maunder and Hunter 2001) and health psychology (Pietromonaco et al. 2013), reflecting a "return" of the theory into the medical field.

Over the past years, the importance of attachment theory has grown immensely in many fields of medical care. Table 4.1 lists a selection of issues related to medical illness where attachment is believed to be important.

Attachment theory has increasingly been applied to understand the development of disease and chronic illness, the behavior of patients in medical care (Maunder and Hunter 2001), and the doctor-patient relationship. Attachment theory has been used to understand the behavior of patients with chronic illness (e.g., Sirois and Gick 2014), pain (Meredith et al. 2008; Meredith 2013; Costa-Martins et al. 2014), and cancer (Hunter et al. 2006; Rodin et al. 2007; Lo et al. 2010; Henselmans et al. 2010; Nicholls et al. 2014) and patients who depend heavily on medical providers, such as in intensive or palliative care (Petersen and Koehler 2006).

Researchers found evidence in diabetic patients that insecure attachment was associated with poorer diabetes self-management (e.g., lower adherence to recommendations related to oral hypoglycemic medications, diet, exercise, foot care, and smoking) and negative outcomes (elevated glycosylated hemoglobin levels, Ciechanowski et al. 2004a, b). In our own studies, we also found a connection between insecure attachment and low self-management skills and behavior in patients with diabetes. Attachment anxiety was significantly linked to impaired coping and lower self-efficacy, hope, dietary control, and physical activity. Attachment avoidance, on the other hand, was associated with lower levels of social support and health-care use (Brenk-Franz et al. 2015).

Similarly, in the context of chronic pain, insecure adult attachment was clearly connected to disability levels (McWilliams et al. 2000) and depressive symptoms (Ciechanowski et al. 2003; Meredith et al. 2007). In the National Comorbidity Replication Survey, McWilliams and Bailey (2010) found that a wide range of health conditions, including several cardiovascular disorders (i.e., stroke, heart attack, high blood pressure), were associated with anxious attachment, whereas secure attachment was unrelated to the health conditions (McWilliams and Bailey 2010). These examples indicate how promising an attachment perspective might be to improve medical treatment.

Two major approaches to adult attachment have guided research in attachment in medicine (Bartholomew and Shaver 1998). The developmental approach has mainly used the Adult Attachment Interview and derived measures to infer states of mind regarding childhood experiences with relevant caregivers (Main et al. 1985). This approach usually leads to a categorical classification of attachment. A second approach was mainly developed within social psychology and personality research and commonly relies on self-report measures of attachment and related thoughts and feelings in adult relationships measuring the degree of attachment anxiety and avoidance (Brennan et al. 1998). Most health-related research regarding attachment relied on self-report measures of adult attachment, involving ratings of particular attachment styles (Hazan and Shaver 1987) or scales assessing the attachment dimensions (Bartholomew and Horowitz 1991) that are thought to underlie attachment styles.

4.2 Activation of the Attachment System with Illness and Disease

Based upon attachment theory, one can assume that a person's disease and the activation of the attachment system influence each other. On the one hand, suffering from a disease can be perceived as threat by the patient and causes him or her to activate the attachment behavior system (Shaver and Mikulincer 2004; Bowlby 1977, 1988). On the other hand, individually formed inner working models of attachment should have both direct and indirect influences on the health conditions, including the way health care is used (Box 4.1).

Strategies of affect regulation and their association with the attachment system in patients with disease can be analyzed according to the model of Shaver and Mikulincer (2004). According to the model, being confronted with a disease can be interpreted as

Box 4.1: The Relevance of Attachment for Medical Illness

Activation of the attachment system with illness and medical treatment
Illness and physical/psychological impairment as a consequence of insecure attachment
Attachment as a determinant of coping and illness behavior
Attachment as a determinant of self-management
Attachment as a predictor of adherence
Attachment as an important factor forming the doctor-patient relationship

Box 4.2: Examples of Patient Characteristics as a Function of Secure Attachment Style

Patients with secure attachment…

- Develop higher self-esteem and self-acceptance (Bartholomew and Horowitz 1991)
- Have a higher level of self-disclosure (Mikulincer and Nachshon 1991)
- Feel more comfortable and flexible in interpersonal relationships (Ciechanowski and Katon 2006; Mikulincer and Nachshon 1991)
- Assess personal resources and needs more realistically (Ciechanowski and Katon 2006)
- Use social support systems and benefit from these and seek actively help (Florian et al. 1995; Li et al. 2008; Mikulincer and Florian 1997; Ognibene and Collins 1998)
- Use more flexible coping strategies (i.e., active problem solving, accepting the situation, acquiring emotional support) (Schmidt et al. 2002; Mikulincer and Florian 1998)
- Are more cooperative, optimistic, confident, reliable, and understanding (Klohnen and John 1998)
- Are positively perceived in groups and perceive other persons to be more differentiated, benefit more from therapies, and develop closer working relationships (Strauß and Schwark 2007)
- Have a higher treatment acceptance in the doctor-patient relationship (Dozier 1990)

a threat, which activates the attachment system and, in turn, may lead to seeking proximity to an attachment figure. A person with secure attachment may find it sufficiently soothing to activate internal resources ("proximity to an internalized attachment figure"), whereas a person with dismissing attachment may disavow his or her need for contact with others. If the internal or external attachment figure is available and responsive, then access to either the caregiver's attention and/or security-based self-representations can lead to deactivation of the attachment system. If this is not the case, the attachment system remains activated, and, depending on the internal working model, deactivating or hyperactivating strategies will be employed (Boxes 4.3 and 4.4).

Box 4.3: Examples of Patient Characteristics as a Function of Dismissing Attachment Style
Patients with dismissing attachment…

- Are characterized by the pursuit of autonomy and independence, more interpersonal distance, and control (Allen et al. 2005)
- Distrust others; expect them to be hostile, exploitative, and insensitive (Ciechanowski and Katon 2006; Dozier et al. 1994)
- Report lower self-disclosure (Mikulincer and Nachshon 1991)
- Develop uncooperative working relationships and rarely seek social support (Hesse 2008; Mikulincer and Shaver 2007; Ognibene and Collins 1998)
- Use more rigid coping mechanisms, prefer cognitive distancing of emotions (Feeney 1995; Lopez et al. 2001)
- Respond to anger, irritation, or frustration with interpersonal distance (Jellema 2002; Rholes et al. 1998)
- Are more rational, autonomous, emotionally independent, and sarcastic (Klohnen and John 1998)
- Tend to trivialize their problems, emotions, and symptoms (Jellema 2002; Strauß and Schwark 2007)

Box 4.4: Examples of Patient Characteristics as a Function of Preoccupied Attachment Style
Patients with preoccupied attachment …

- Show their stress or anger excessively and vigorously seek social support (Mikulincer and Shaver 2007)
- Have more unbalanced relationships, because the need for support outweighs the possibility of giving social support (George and West 2001)
- Do not feel resilient and resistant (Meredith et al. 2005)
- Are more demanding, unstable, dependent, moody, and frustrated (Klohnen and John 1998)
- Tend to catastrophize the description of symptoms (Ciechanowski et al. 2003)
- Develop strong dependent bonds to the doctor/therapist (Strauss and Schwark 2007)
- Report their situation with ambivalent and diffuse language (Hesse 2008)
- Want more intense and frequent contact with the therapist, test boundaries, and keep their therapists involved (Strauss and Schwark 2007)

Deactivating strategies are commonly associated with the denial of attachment needs, downplaying of risks in terms of trivializing symptoms of diseases, repression of negative emotions and cognitions, as well as the avoidance of contact with

an attachment figure. In contrast, hyperactivating strategies probably increase sensitivity to threatening situations. A chronically activated attachment system might lead a patient to continuously perceive danger in his or her environment, so symptoms might be dramatized and exaggerated. As a consequence, there is a strong demand for a sense of protection and security from potential attachment figures, which may include not only partners but also family members and health-care providers such as physicians and nurses. It is assumed that these processes happen automatically, i.e., a patient is not fully aware of them and cannot really reflect upon their actions.

4.3 Illness and Physical/Psychological Impairment as a Consequence of Insecure Attachment

Within medical care, deactivating and hyperactivating strategies of patients with insecure attachment are of paramount interest for understanding health behavior. It is also of interest to understand *how* insecure attachment correlates with the formation and maintenance of disease. Based on empirical evidence, Maunder and Hunter (2001) (see Fig. 1.2) developed a model of the association between insecure attachment and heightened risk for disease, based on three different paths. The first path describes the relationship between insecure attachment and various impaired mechanisms of stress regulation, which can have a direct influence on the formation and maintenance of disease caused by an increase in physiological stress response. A second path shows the association between insecure attachment and increased externalization of emotional regulation related to problematic health behavior and the role of specific risk factors such as substance abuse (nicotine, alcohol), disturbed eating behavior, or risky sexual behavior. The third path, indicates that insecure attachment is associated with an inadequate use of protective factors such as social support, adherence, and self-care of patients. This has a direct effect on the disease as well as an indirect effect through suboptimal use of the medical care system and an inadequate description of disease-related symptoms.

Insecure attachment has clearly been shown to be a risk factor for the development of mental and physical disorders, whereas secure attachment works as a protective factor associated with greater life satisfaction (Maunder and Hunter 2001; Thompson 1999; Wensauer and Grossmann 1998). Insecure attachment is also seen as an important risk factor for the development of chronic diseases, such as chronic pain, stroke, heart attack, high blood pressure, and ulcer disease (McWilliams and Bailey 2010). While it is estimated that the percentage of securely attached individuals in representative samples might fluctuate between 50 and 60 %, the percentage in clinical samples, especially those of patients with psychological disorders, is approximately 20 % (Bakermans-Kranenburg and Van Ijzendoorn 1993, 2009), underlining the risk potential of attachment insecurity.

4.4 Attachment as a Determinant of Coping

Theories of coping refer to both treatment-related and intrapsychic efforts to tolerate or minimize stressful situations (Lazarus and Launier 1978). Several studies have demonstrated that patients' management of diseases depends on their attachment characteristics (Mikulincer and Florian 1998; Schmidt et al. 2002; Turan et al. 2003). In particular, attachment-based patterns of affect regulation influence patients' coping behavior. Patients with secure attachment assess stressful situations more flexibly, solve problems more actively, and use their social network (Seiffge-Krenke 2004).

Patients with avoidant attachment tend to suppress emotions, such as fear or anger, have a need to exert control, tend not to seek social support (e.g., Kotler et al. 1994), tend to show avoidance and passive resignation (Turan et al. 2003), and generally employ threat-reducing, repressive, and deactivating coping strategies (Schmidt et al. 2002). In keeping with these strategies, avoidant patients seek less medical help and avoid contact with their physicians (Brenk-Franz et al. 2015, Mikail et al. 1994).

In contrast, patients with preoccupied attachment focus more on the threatening aspects of their disease. They report more negative emotions and disease-related symptoms and tend to catastrophize (Ciechanowski et al. 2003). They also employ more diverting strategies and more negative emotional coping (Schmidt et al. 2002). In self-report, preoccupied patients also revealed hyperactivating tendencies in their coping behavior (Box 4.4).

4.5 Attachment as a Determinant of Self-Management

Self-care and self-management are increasingly important in medical care as patients become more involved in the treatment of their diseases. Health-promoting behaviors are taught to patients, on the assumption that by supporting empowerment and shared decision-making, patients will be more active and autonomous within the medical care system (Kanfer et al. 2006). Self-management as a behavioral and cognitive strategy helps people to structure their behavior and to achieve their goals (König and Kleinmann 2006). It can therefore be regarded as an expression of the self as a representational agent, which is closely related to secure attachment (Fonagy et al. 2004). Self-efficacy is a key component of cognitive self-management (Bandura 1977). It describes the expectation that one will be able to successfully perform a specific behavior (Schwarzer 2002). Self-management strategies are essential elements of evidence-based medical treatment of patients with chronic diseases in primary care (Wagner et al. 2001). Self-management programs have shown clear benefit for patients with diabetes mellitus (Cochran and Conn 2008; Duke et al. 2009), coronary heart disease (Barth et al. 2006), arterial hypertension (Glynn et al. 2010), and depression (Gensichen et al. 2011; Khan et al. 2007).

Some recent studies from primary care have explored the relationship between attachment and self-management. For example, diabetic patients with avoidant attachment showed less behavioral self-care (such as regular foot care, adherence to diet, avoiding smoking, adherence to medical health-care use) than patients who are securely attached (Brenk-Franz et al. 2015; Ciechanowski et al. 2004a).

4.6 Attachment as a Predictor of Treatment Adherence

Treatment adherence and nonadherence are another important focus. Only half of patients with chronic disease take their medication as prescribed (WHO 2003) even though strong adherence leads to better treatment outcomes (Simpson et al. 2006). However, adherence and nonadherence are subject to different influences. Factors which promote adherence include self-efficacy and the presence of symptoms (Dunbar-Jacob and Mortimer-Stephens 2001). Some of the factors known to influence nonadherence are poor education, unwanted adverse reactions, polypharmacy, and the presence of chronic diseases (Claxton et al. 2001; Hernandez-Ronquillo et al. 2003).

Concepts of developmental psychology have only recently been used to explain treatment nonadherence. Secure attachment is associated with more health-promoting behavior (Scheidt and Waller 2002) and various foci of self-efficacy and so is expected to promote treatment adherence. With respect to nonadherence, in diabetes, dismissing attachment is associated with low overall adherence and leads to poorer glucose control, especially if the communication with the physician is subjectively perceived as unsatisfactory (Ciechanowski et al. 2001). In lupus patients, a study tested if patients' attachment styles could predict patients' adherence and health-related quality of life. Attachment avoidance was again seen to have a negative effect on a patient's adherence, whereas attachment anxiety was seen to have a negative impact on health-related quality of life (Bennett et al. 2011). Attachment avoidance has also been associated with not using seat belts when driving (Ahrens et al. 2012). Thus, the avoidant dimension of attachment insecurity is consistently associated with nonadherence.

4.7 Attachment as an Important Influence on the Doctor-Patient Relationship

Evidence shows that psychotherapists have the potential to act as an attachment figure by providing a patient a "secure base" and "safe haven" (Borelli and David 2004). Dozier and Bates (2004) indicated that "The client finds in the therapist someone who seems stronger and wiser than him- or herself. Thus, the client may interact with the clinician in ways that reflect expectations from other relationships," a notion that could easily be extended to the field of medical treatment. Accordingly, attachment theory may provide a model for explaining why some patients have an

intense need for their doctor. This would occur when a fundamental need for security, initiated by the threat posed by an illness, drives the patient to regard the physician as an attachment figure, with whom proximity needs to be maintained in order to feel safe.

Supporting this hypothesis is the fact that patients prefer continuous care by a single primary care physician (e.g., Pandhi and Saultz 2006) and continue to prefer continuity of care even when the severity of illness is increasing (Baker et al. 2007; Frederiksen et al. 2010; Guthrie and Wyke 2006). Patients commonly report problems when they have to change their primary care physician, even if the relationship was difficult (Frederiksen et al. 2010). Thus, the evidence suggests that continuity is desirable, and discontinuity problematic, for most patients. A continuous care provider may be well situated to act as a safe haven and a secure base with respect to threats related to health.

Studies in health-care research show correlations between patients' attachment characteristics and the way they present themselves in the health-care system. Early attachment relationships influence behavior in all important relationships throughout life. Therefore, the doctor-patient relationship is likely to be affected by the deficits in social competencies and skills and deficits in perceived social support, which are common among patients with insecure attachment styles (Mallinckrodt 2000). Dysfunctional illness behavior can be understood as a result of such problems (Ciechanowski et al. 2002). Patients with preoccupied attachment, for example, express more attention-seeking behavior, report more symptoms, and overuse health services (Ciechanowski et al. 2002), whereas those with avoidant attachment are more likely to reject a practitioner, self-disclose less, underuse care services, and avoid regular contact with their physicians (Dozier 1990; Feeney and Ryan 1994; Brenk-Franz et al. 2015).

So far, we have concentrated on the attachment of the patient, but in any relationship there is a mutual influence between the individuals – what can we say about the attachment of the health-care worker? Unfortunately, studies to determine the attachment behavior of the treating physicians and their influence on the doctor-patient relationship are still rare. First results indicate that physicians who focus on a holistic treatment of patients often have characteristics of secure attachment and that medical students with more secure attachment often opt for primary care medicine and medical disciplines allowing more stable and long-lasting doctor-patient relationships (Ciechanowski et al. 2004b, 2006). There are also indications that securely attached case managers have a better understanding of the "hidden needs" of their patients, while case managers with insecure attachment primarily respond to the visible needs of their patients (Dozier et al. 1994). Physicians with a positive mental model of the self are more willing to go against their patients' opinions and wishes for certain treatment (Salmon et al. 2007, 2008). Overall, it is clear that the attachment styles of physician and patient influence each other. Prospectively, there should be a stronger focus on the issue of doctor-patient fit and on the question how the doctor-patient relationship might change for the better over time (Salmon and Young 2009).

4.8 Conclusions: Benefits and Tasks of Attachment Classification in Medical Care

As shown in this introductory chapter, attachment theory – after its return into the medical world – has gained considerable interest in medical and psychosomatic research.

Attachment theory provides an explanatory model for different strategies of emotion regulation, coping, and the use of the health-care system. It is still not clear how the mechanisms related to different attachment styles influence health-related long-term outcomes. There is strong evidence that dismissing patients tend to suppress emotions, whereas hypervigilance and rumination are common characteristics of preoccupied patients. Both strategies result (mostly indirectly) in chronic health problems (e.g., Maunder and Hunter 2001; Mikulincer and Shaver 2007). There is clearly a need for long-term studies exploring in which ways attachment characteristics act as predictors of specific medical outcomes. Moreover, their underlying biological pathways should be further clarified (Miller et al. 2009).

For the future, it is also important to consider which interventions might strengthen secure attachment and improve basic mechanisms of affect regulation, enhancing pro-social behavior and improving long-term health-related factors (Simpson and Rholes 2010). So far, there is some evidence showing that crucial aspects of patients' illness behavior, coping, and adherence as well as their self-management in face of (chronic) diseases relate to their attachment history. These results clearly have the potential to guide the development of strategies for improving patient treatment in primary care.

References

Ahrens KR, Ciechanowski P, Katon W (2012) Associations between adult attachment style and health risk behaviors in an adult female primary care population. J Psychosom Res 72(5):364–370

Ainsworth MDS, Blehar MC, Waters E, Wall S (1978) Patterns of Attachment: A Psychological Study of the Strange Situation. Erlbaum, Hillsdale, NJ

Allen JG, Stein H, Fonagy P, Fultz J, Target M (2005) Rethinking adult attachment: a study of expert consensus. Bull Menninger Clin 69(1):59–80

Baker R, Boulton M, Windridge K, Tarrant C, Bankart J, Freeman GK (2007) Interpersonal continuity of care: a cross-sectional survey of primary care patients' preferences and their experiences. Br J Gen Pract 57(537):283–289

Bakermans-Kranenburg MJ, Van Ijzendoorn MH (1993) A psychometric study of the adult attachment interview: reliability and discriminant validity. Dev Psychol 29(5):870–879

Bakermanns-Kranenburg MJ, Van Ijzendoorn MH (2009) The first 10000 Adult Attachment Interviews. Attach Hum Dev 11:223–263

Bandura A (1977) Self-efficacy: toward a unifying theory of behavioural change. Psychol Rev 84(2):191–215

Barth J, Critchley J, Bengel J (2006) Efficacy of psychosocial interventions for smoking cessation in patients with coronary heart disease: a systematic review and meta-analysis. Ann Behav Med 32(1):10–20

Bartholomew K, Horowitz LM (1991) Attachment styles among young adults: a test of a four-category model. J Pers Soc Psychol 61(2):226–244

Bartholomew K, Shaver PR (1998) Methods of assessing adult attachment: Do they converge? In: Simpson JA & Rholes WS (eds) Attachment theory and close relationships. Guilford Press, New York, pp 25–45

Bennett JK, Fuertes JN, Keitel M, Phillips R (2011) The role of patient attachment and working alliance on patient adherence, satisfaction, and health-related quality of life in lupus treatment. Patient Educ Couns 85(1):53–59

Borelli JL, David DH (2004) Attachment Theory and Research as a Guide to Psychotherapy Practice. Journal of Imagination, Cognition, and Personality, 23, 257–287

Bowlby J (1977) The making and breaking of affectional bonds. Br J Psychiatry 130(3):201–210

Bowlby J (1988) A secure base. Clinical applications of attachment theory. Routledge, London

Brenk-Franz K, Strauß B, Tiesler F et al (2015) The influence of adult attachment on self-management in elderly primary care patients with multi-morbidity. PLoS One (in press)

Brennan KA, Clark CL, Shaver PR (1998) Self-report measurement of adult romantic attachment: An integrative overview. In: Simpson JA & W. S. Rholes WS (eds) Attachment theory and close relationships. Guilford Press, New York, pp 46–76

Ciechanowski PS, Katon WJ (2006) The interpersonal experience of health care through the eyes of patients with diabetes. Soc Sci Med 63(12):3067–3079

Ciechanowski PS, Katon WJ, Russo JE, Walker EA (2001) The patient-provider relationship: attachment theory and adherence to treatment in diabetes. Am J Psychiatry 158(1):29–35

Ciechanowski PS, Walker EA, Katon WJ, Russo JE (2002) Attachment theory: a model for health care utilization and somatization. Psychosom Med 64(4):660–667

Ciechanowski PS, Sullivan M, Jensen M, Romano J, Summers H (2003) The relationship of attachment style to depression, catastrophizing and health care utilization in patients with chronic pain. Pain 104(3):627–637

Ciechanowski PS, Russo JE, Katon WJ et al (2004a) Influence of patient attachment style on self-care and outcomes in diabetes. Psychosom Med 66(5):720–728

Ciechanowski PS, Russo JE, Katon WJ, Walker EA (2004b) Attachment theory in health care: the influence of relationship style on medical students' specialty choice. Med Educ 38(3): 262–270

Ciechanowski PS, Worley LL, Russo JE, Katon WJ (2006) Using relationship styles based on attachment theory to improve understanding of specialty choice in medicine. BMC Med Educ 6:3

Claxton AJ, Cramer J, Pierce C (2001) A systematic review of the associations between dose regimens and medication adherence. Clin Ther 23(8):1296–1310

Cochran J, Conn VS (2008) Meta-analysis of quality of life outcomes following diabetes self-management training. Diabetes Educ 34(5):815–823

Costa-Martins JM, Pereira M, Martins H, Moura-Ramos M, Coelho R, Tavares J (2014) Attachment styles, pain, and the consumption of analgesics during labor: a prospective observational study. J Pain 15(3):304–311

Diener MJ, Monroe JM (2011) The relationship between adult attachment style and therapeutic alliance in individual psychotherapy. Psychotherapy 48(3):237–248

Dozier M (1990) Attachment organisation and treatment use for adults with serious psychopathological disorders. Dev Psychopathol 2(1):47–60

Dozier M, Bates B (2004) Attachment state of mind and the treatment relationship. In: Attkinson L, Goldberg S (eds) Attachment issues in psychopathology and intervention. Lawrence Erlbaum Associates Publishers, Mahwah, NJ pp 167–180

Dozier M, Cue KL, Barnett L (1994) Clinicians as caregivers: role of attachment organization in treatment. J Consult Clin Psychol 62(4):793–800

Duke SAS, Colagiuri S and Colagiuri R (2009) Individual patient education for people with type 2 diabetes mellitus. Cochrane Database Syst Rev (1):CD005268. doi:10.1002/14651858.CD005268.pub2

Dunbar-Jacob J, Mortimer-Stephens M (2001) Treatment adherence in chronic disease. J Clin Epidemiol 54(12):S57–S60

Feeney JA (1995) Adult attachment, coping style and health locus of control as predictors of health behaviour. Aust J Psychol 47(3):171–177

Feeney JA, Ryan SM (1994) Attachment style and affect regulation: relationships with health behaviour and family experiences of illness in a student sample. Health Psychol 13(4):334–345

Florian V, Mikulincer M, Bucholtz I (1995) Effects of adult attachment style on the perception and search for social support. J Psychol 129(6):665–676

Fonagy P, Gergely G, Jurist E, Target M (eds) (2004) Affect regulation, mentalization, and the development of the self, 2nd edn. Other Press, New York

Frederiksen HB, Kragstrup J, Dehlholm-Lambertsen B (2010) Attachment in the doctor-patient relationship in general practice: a qualitative study. Scand J Prim Health Care 28(3):185–190

Gensichen J, Petersen JJ, Karroum T et al (2011) Positive impact of a family practice-based depression case management on patient's self-management. Gen Hosp Psychiatry 33(1):23–28

George C, West M (2001) The development and preliminary validation of a new measure of adult attachment: the adult attachment projective. Attach Hum Dev 3(1):30–61

Glynn LG, Murphy AW, Smith SM, Schroeder K, Fahey T (2010) Interventions used to improve control of blood pressure in patients with hypertension. Cochrane Database Syst Rev 3, CD005182. doi:10.1002/14651858.CD005182.pub4

Guthrie B, Wyke S (2006) Personal continuity and access in UK general practice: a qualitative study of general practitioners' and patients' perceptions of when and how they matter. BMC Fam Pract 7:11

Hazan C, Shaver P (1987) Romantic love conceptualized as an attachment process. J Pers Soc Psychol 52(3):511–524

Henselmans I, Helgeson VS, Seltman H, de Vries J, Sanderman R, Ranchor AV (2010) Identification and prediction of distress trajectories in the first year after a breast cancer diagnosis. Health Psychol 29(2):160–168

Hernandez-Ronquillo L, Tellez-Zenteno JF, Garduno-Espinosa J, Gonzalez-Acevez E (2003) Factors associated with therapy nonadherence in type-2 diabetes patients. Salud Publica Mex 45(3):191–197

Hesse E (2008) The adult attachment interview: protocol, method of analysis, and empirical studies. In: Cassidy J, Shaver PR (eds) Handbook of attachment: theory, research and clinical applications. Guilford Press, New York, pp 552–598

Holmes J (1994) The clinical implications of attachment theory. Br J Psychother 11(1):62–76

Hunter MJ, Davis PJ, Tunstall JR (2006) The influence of attachment and emotional support in end-stage cancer. Psychooncology 15(5):431–444

Jellema A (2002) Dismissing and preoccupied insecure attachment in CAT: some implications for CAT practice. Clin Psychol Psychother 9(4):225–241

Kanfer FH, Reinecker H, Schmelzer D (2006) Selbstmanagement-Therapie: Ein Lehrbuch für die Klinische Praxis. Springer Medizin Verlag, Heidelberg

Khan N, Bower P, Rogers A (2007) Guided self-help in primary care mental health: meta-synthesis of qualitative studies of patient experience. Br J Psychiatry 191(3):206–211

Klohnen EC, John OP (1998) Working models of attachment: a theory-based prototype approach. In: Simpson JA, Rholes WS (eds) Attachment theory and close relationships. Guilford Press, New York, pp 115–140

König CJ, Kleinmann M (2006) Selbstmanagement. In: Schuler H (ed) Lehrbuch der Personalpsychologie. 2nd revised and expanded ed. Hogrefe, Göttingen, pp 331–348

Köhler L (1991) Neuere Ergebnisse der Kleinkindforschung. Ihre Bedeutung für die Psychoanalyse Erwachsener. Forum der Psychoanalyse, 6, 32–51

Kotler T, Buzwell S, Romeo Y, Bowland J (1994) Avoidant attachment as a risk factor for health. Br J Med Psychol 67(3):237–245

Lazarus RS, Launier R (1978) Stress-related transactions between person and environment. In: Pervin LA, Lewis M (eds) Perspectives in interactional psychology. Plenum Press, New York, pp 287–327

Levy KN, Ellison WD, Scott LN et al (2011) Attachment style. J Clin Psychol Session 67(2):193–203

Li T, Li J, Dai Q (2008) Adult attachment, social support, and depression level of post stroke patients. J Soc Behav Pers 36(10):1341–1352

Lo C, Lin J, Gagliese L, Zimmermann C, Mikulincer M, Rodin G (2010) Age and depression in patients with metastatic cancer: the protective effects of attachment security and spiritual wellbeing. Ageing Soc 30(2):325–336

Lopez FG, Mauricio AM, Gormley B, Simko T, Berger E (2001) Adult attachment orientations and college student distress: the mediating role of problem coping styles. J Couns Dev 79(4): 459–464

Main M, Kaplan N, Cassidy J (1985) Security in infancy, childhood, and adulthood: a move to the level of representation. In: Bretherton I, Waters E (eds) Growing points in attachment theory and research (Serial No. 209): monographs of the Society for Research in Child Development, vol 50(1–2). University of Chicago Press, Chicago, pp 66–104

Mallinckrodt B (2000) Attachment, social competencies, social support, and interpersonal process in psychotherapy. Psychother Res 10(3):239–266

Maunder RG, Hunter JJ (2001) Attachment and psychosomatic medicine: developmental contributions to stress and disease. Psychosom Med 63(4):556–567

McWilliams LA, Bailey SJ (2010) Associations between adult attachment ratings and health conditions: evidence from the National Comorbidity Survey Replication. Health Psychol 29(4):446–453

McWilliams LA, Cox BJ, Enns MW (2000) Impact of adult attachment styles on pain and disability associated with arthritis in a nationally representative sample. Clin J Pain 16(4):360–364

Meredith PJ (2013) A review of the evidence regarding associations between attachment theory and experimentally-induced pain. Curr Pain Headache Rep 17(4):326. doi:10.1007/s11916-013-0326-y

Meredith PJ, Strong J, Feeney JA (2005) Evidence of a relationship between adult attachment variables and appraisals of chronic pain. Pain Res Manag 10(4):191–200

Meredith PJ, Strong J, Feeney JA (2007) Adult attachment variables predict depression before and after treatment for chronic pain. Eur J Pain 11(2):164–170

Meredith PJ, Ownsworth T, Strong J (2008) A review of the evidence linking adult attachment theory and chronic pain: presenting a conceptual model. Clin Psychol Rev 28(3):407–429

Mikail SF, Henderson PR, Tasca GA (1994) An interpersonally based model of chronic pain: an application of attachment theory. Clin Psychol Rev 14(1):1–16

Mikulincer M, Florian V (1997) Are emotional and instrumental supportive interventions beneficial in times of stress? The impact of attachment style. Anxiety Stress Coping 10:109–127

Mikulincer M, Florian V (1998) The relationship between adult attachment styles and emotional and cognitive reactions to stressful events. In: Simpson JA, Rholes WS (eds) Attachment theory and close relationships. Guilford Press, New York, pp 143–165

Mikulincer M, Nachshon O (1991) Attachment styles and patterns of self-disclosure. J Pers Soc Psychol 61(2):321–331

Mikulincer M, Shaver PR (2007) Attachment in adulthood: structure, dynamics, and change. Guilford Press, New York

Miller G, Chen E, Cole SW (2009) Health psychology: developing biologically plausible models linking the social world and physical health. Annu Rev Psychol 60:501–524

Nicholls W, Hubert-Williams N, Bramwell R (2014) The role of relationship attachment in psychological adjustment to cancer in patients and caregivers: a systematic review of the literature. Psychooncology 23:1083–1095

Ognibene TC, Collins NL (1998) Adult attachment styles, perceived social support and coping strategies. J Soc Pers Relationships 15(3):323–345

Pandhi N, Saultz JW (2006) Patients' perceptions of interpersonal continuity of care. J Am Board Fam Med 19(4):390–397

Petersen Y, Koehler L (2006) Application of attachment theory for psychological support in palliative medicine during the terminal phase. Gerontology 52(2):111–123

Pietromonaco PR, Uchino B, Dunkel Schetter C (2013) Close relationship processes and health: implications of attachment theory for health and disease. Health Psychol 32(5):499–513

Rholes WS, Simpson JA, Stevens JG (1998) Attachment orientations, social support, and conflict resolution in close relationships. In: Simpson JA, Rholes WS (eds) Attachment theory and close relationships. Guilford Press, New York, pp 166–188

Rodin G, Walsh A, Zimmermann C et al (2007) The contribution of attachment security and social support to depressive symptoms in patients with metastatic cancer. Psychooncology 16(12):1080–1091

Salmon P, Young B (2009) Dependence and caring in clinical communication: the relevance of attachment and other theories. Patient Educ Couns 74(3):331–338

Salmon P, Wissow L, Carroll J et al (2007) Doctors' responses to patients with medically unexplained symptoms who seek emotional support: criticism or confrontation? Gen Hosp Psychiatry 29(5):454–460

Salmon P, Wissow L, Carroll J et al (2008) Doctors' attachment style and their inclination to propose somatic interventions for medically unexplained symptoms. Gen Hosp Psychiatry 30(2):104–111

Sandler S (2011) Remembering with emotion in dynamic psychotherapy. Jason Aronson, New York

Schauenburg H, Buchheim A, Beckh K et al (2010) The influence of psychodynamically oriented therapists' attachment representations on outcome and alliance in inpatient psychotherapy. Psychother Res 20(2):193–202

Scheidt CE, Waller E (2002) Bindungsforschung und Psychosomatik. In: Strauß B, Buchheim A, Kächele H (eds) Klinische Bindungsforschung. Theorien, Methoden, Ergebnisse. Schattauer, Stuttgart, pp 242–254

Schmidt S, Nachtigall C, Wuethrich-Martone O, Strauß B (2002) Attachment and coping with chronic disease. J Psychosom Res 53(3):763–773

Schwarzer R (2002) Selbstwirksamkeitserwartung. In: Schwarzer R, Jerusalem M, Weber H (eds) Gesundheitspsychologie von A bis Z. Hogrefe, Göttingen, pp 521–524

Seiffge-Krenke I (2004) Adaptive and maladaptive coping styles: does intervention change anything? Eur J Dev Psychol 1(4):367–382

Shaver PR, Mikulincer M (2004) What do self-report attachment measures assess? In: Rholes WS, Simpson JA (eds) Adult attachment: theory, research, and clinical implications. Guilford Press, New York, pp 17–54

Simpson JA, Rholes WS (2010) Attachment and relationships: milestones and future directions. J Soc Pers Relationships 27(2):173–180

Simpson SH, Eurich DT, Majumdar SR et al (2006) A meta-analysis of the association between adherence to drug therapy and mortality. BMJ 333(7557):15

Sirois FM, Gick ML (2014) An appraisal-based coping model of attachment and adjustment to arthritis. J Health Psychol. doi:10.1177/1359105314539231

Strauß B, Schwark B (2007) Die Bindungstheorie und ihre Relevanz für die Psychotherapie: 10 years later. Psychotherapeut 52:405–425

Taylor P, Rietzschel J, Damquah A et al (2015) Changes in attachment representations during psychological therapy. Psychother Res 25(2):222–238

Thompson RA (1999) Early attachment and later development. In: Cassidy J, Shaver PR (eds) Handbook of attachment: theory, research and clinical applications. The Guilford Press, New York, pp 265–286

Turan B, Osar Z, Turan J, Damci T, Ilkova H (2003) Dismissing attachment and outcome in diabetes: the mediating role of coping. J Soc Clin Psychol 22(6):607–626

Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A (2001) Improving chronic illness care: translating evidence into action. Health Aff 20(6):64–78

Wensauer M, Grossmann KE (1998) Bindungstheoretische Grundlagen subjektiver Lebenszufriedenheit und individueller Zukunftsorientierung im höheren Erwachsenenalter. Z Gerontol Geriatr 31(5):362–370

WHO (ed) (2003) Adherence to long-term therapies: evidence for action. WHO, Geneva