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## ORIGINAL ARTICLE

**Do patients trust their physician? The role of attachment style in the patient-physician relationship within one year after a cancer diagnosis**

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**Abstract**

**Background.** The degree of trust in and satisfaction with the physician has been shown to have important implications for treatment outcomes. This study aims to examine individual differences in patients' trust, satisfaction and general distress from an attachment theoretical perspective. **Material and methods.** One hundred and thirty recently diagnosed cancer patients of three medical hospitals were extensively interviewed by trained psychologists to assess attachment style. Patients completed standardized questionnaires three and nine months after diagnosis to assess trust, satisfaction and distress. t-tests and repeated measures ANOVAs were used to examine differences between securely and insecurely attached patients and changes over time. A mediation model based on a bootstrapping method was used to examine whether trust mediated between attachment and satisfaction, and attachment and distress. **Results.** Insecurely attached patients (N = 45, 35%) reported less trust in and satisfaction with their physician, and reported more general distress than securely attached patients three and nine months after diagnosis ( $p < 0.05$ ). Trust and distress levels did not change over time. Trust mediated between attachment and satisfaction, but not between attachment and distress. **Conclusion.** Insecurely attached patients trusted their physician less than securely attached patients, and in turn were less satisfied with their physician. Their higher levels of general distress were not related to their lower levels of trust. Attachment theory provides a framework to interpret differences in patients' trust, satisfaction and distress, and may help physicians respond in such a way that their patients feel secure, which in turn is expected to result in better health outcomes.

Given the bodily threat and uncertainties associated with the diagnosis of cancer and the accompanying dependency on physicians, patients may feel the need to trust their physician in making decisions in their best interest and doing everything possible to obtain good treatment outcomes [1]. A multitude of studies, among patients in the primary care setting or with an illness such as diabetes, has shown the various positive effects of patients' actual trust in their physician. Trust has been found to be positively related to,

e.g., adherence to medical advice, satisfaction with the caregiver, and participation in treatment decision making [2]. However, studies of patients' trust in their physician when confronted with cancer are relatively scarce. A better understanding is needed of why some patients trust their physician more easily than others [1,3].

In the present study, we examine individual differences in trust among patients with cancer from an attachment theoretical perspective. According to

attachment theory [4], childhood experiences with caregivers influence individuals' beliefs about how worthy they are to receive love and care, and what behavior may be expected from important others. These beliefs in turn influence their attachment style, i.e., how individuals perceive, feel and act within social relationships when they are confronted with a stressor. Within attachment theory, a distinction can be made between securely and insecurely attached individuals. Securely attached individuals feel worthy of care and tend to trust others being responsive when needed. Insecurely attached individuals on the other hand, feel unworthy of care, have difficulties trusting others, and see the other as unavailable or threatening. They show higher negative appraisal of stressors, and have difficulties regulating negative emotions and creating and making use of a social support network. Attachment studies within oncology research have found that insecurely attached individuals diagnosed with cancer report more distress than securely attached individuals [5–8].

Because attachment styles are fundamental to how individuals perceive and respond to others when they are vulnerable, they are also likely to influence how individuals perceive and respond to their physician when confronted with cancer [9–11]. Within the context of medical relationships, an insecure attachment style has been found to be related to poorer ability to feel fully supported by medical staff [12], weaker alliance with one's surgeon [13], and poorer treatment adherence, especially when patient-physician communication is poor [14]. It has not yet been examined empirically whether insecurely attached individuals' general tendency to trust others less, also applies to their specific relationship with their treating physician. Moreover, it is not clear whether individuals' attachment-based level of trust in their physician, is related to their level of satisfaction with their physician and general distress.

We formulated two objectives. First, to examine whether insecurely attached patients report less trust in and satisfaction with their physician and more general distress than securely attached patients within three and nine months following their cancer diagnosis. It may be especially relevant to assess trust in early phases of the professional relationship, when patients have contact with their physician most frequently, and patients' trust is likely to influence the relationship as well as therapeutic outcomes. Second, to examine whether cancer patients' trust in their physician, mediates the association between their adult attachment style and satisfaction and between their adult attachment style and distress.

## Material and methods

### Patients

Patients were recruited from the University Medical Center Groningen and Martini Hospital in Groningen, and the Academic Medical Center in Amsterdam, the Netherlands. Patients were informed briefly about the study by the medical consultants of the collaborating departments. We invited patients aged 30 to 75 years who had received a first diagnosis of breast cancer, gastrointestinal cancer, cervical cancer or prostatic cancer within the past three months, had an expected survival of at least one year and were able to speak and understand Dutch. Eligible patients were informed by their physician that they were requested to give an extensive interview within three months and a shorter one after one year, and to fill out questionnaires five times within that year. Patients who were interested in participating, received an information letter and were informed that their answers would be treated confidentially and that they could withdraw at any time. We contacted patients who returned the informed consent to make an appointment for the first interview. Inclusion took place from March 2007 to December 2008. Before the study start, we considered a sample size of 122 as needed to be able to detect a small to medium effect ( $p < 0.01$ , two-tailed) with 80% power. The study was approved by the Medical Ethical Committee.

### Measures and procedure

This study is part of a longitudinal multi-center study on the influence of attachment style on adjustment to cancer. We assessed attachment style at the first measurement (within three months after diagnosis) and trust, satisfaction and psychological distress at the first and third measurement (nine months after diagnosis).

**Attachment.** We used the Attachment Style Interview [15], a well-validated semi-structured, investigator-based interview assessing adult attachment styles based on the ability to make and maintain supportive relationships, together with attitudes regarding several areas: mistrust, constraints on closeness, fear of rejection, self-reliance, desire for company, fear of separation and anger. An example of a question for mistrust is: 'Do you easily feel you can trust someone?'. The ASI allows for assessing the quality of relationships and type of attachment style: secure, or insecure: preoccupied, avoidant (dismissing/angry) or fearful. The distinct types of insecure attachment generally have in common doubts about the extent to which others can be trusted in providing safety and care when needed. We distinguished between

having a secure and insecure attachment style, as differences are most typically found between insecurely and securely attached persons, e.g. with respect to the processing of attachment-relevant social information [16] or levels of psychological problems [17]. The average interviewing time was 90 minutes. The interviewers received an extensive training by one of the developers of the ASI.

*Trust.* Patients' trust in their physician was measured by a short version of the Wake Forest Physician Trust Scale [18,19], assessing trust in the physician who was most involved in the treatment during the past months. We used a shortened version, because we did not want to burden patients with more items than necessary to obtain an adequate indication of patients' trust in their physician. The five items administered in the present study were: 'My physician sometimes puts his/her own interests first', 'My physician is extremely thorough and careful', 'I completely trust my physician's decisions about which treatments are the best for me', 'My physician is totally honest in telling me about all of the different treatment options available for my condition', and 'All in all, I have complete trust in my physician'. The items were answered on a scale from 1 (totally agree) to 5 (totally disagree). After rescaling the positive items, higher scores indicate more trust. We calculated mean scores with a possible range of 1 (no trust) to 5 (full trust) for each patient. Cronbach's alpha was 0.86 at first assessment and 0.90 at follow-up.

*Satisfaction.* Satisfaction with the physician who was most involved during the treatment of the past months, was measured with an adapted and shortened version of the Patient Satisfaction Questionnaire [20]. We used a shortened version, because we did not want to burden patients with more items than necessary to obtain an adequate indication of patients' satisfaction in their physician. The five items were scored on a Likert scale ranging from 1 (not at all satisfied) to 7 (very much satisfied). The items are: 'To what extent does your physician meet your needs?', 'How satisfied are you with the information you receive from your physician?', 'How satisfied are you with the extent to which you are involved in the decision making process?', 'How satisfied are you with the (emotional) support you receive from your physician', and 'How satisfied are you with your physician in general?'. We calculated mean scores with a possible range of 1 (no satisfaction) to 7 (full satisfaction) for each patient. Cronbach's alpha was 0.95 at first assessment as well as follow-up.

*General distress.* The Hospital Anxiety and Depression Scale [21] is a standardized and validated

self-report questionnaire [22] that assesses anxiety (7 items) and depression (7 items). We have combined the subscales into one total HADS-score. The anxiety and depression subscale are strongly correlated and are often combined into one distress scale, and the psychometric properties of the total scale are found to be comparable or even superior to the subscales [22]. Response options vary per item, but are all scored on a 4-point Likert scale ranging from 0 to 3. An example item is 'Lately, I feel tense'. The sum score of the 14 items ranges from 0 to 42 with higher scores indicating more psychological distress. Cronbach's alpha was 0.92 at first assessment as well as follow-up.

*Patient characteristics and disease-specific variables.* Cancer type was extracted from the patients' medical files. Gender, age, educational level, treatment type and presence of metastases at the first assessment (yes or no) were self-reported by the patients. Presence of comorbidity was assessed by asking patients whether they had other diseases than cancer by presenting them a list with possible options (such as diabetes, kidney failure, high blood pressure) and the possibility to name a disease that was not listed. Physical status was assessed by an interviewer-based Karnofsky Performance Status [23], scores ranging from 0 (dead) to 100 (normal, no signs of disease) with standard intervals of 10.

#### *Statistical procedure*

Independent samples t-tests and  $\chi^2$  tests were used to compare respondents and non-respondents with respect to age, gender and cancer type, respectively. These tests were also used to compare patient characteristics (Table I) of insecurely and securely attached patients. We considered an alpha of 0.05 (two-tailed) to be significant. We used independent samples t-tests to compare levels of trust, satisfaction and general distress between patients with secure and insecure attachment, and repeated measures ANOVA to examine changes from three to nine months after diagnosis. As we expected insecurely attached patients to report less trust and satisfaction, and more distress, we considered an alpha of 0.05 (one-tailed) to be significant. Effect sizes were examined by calculating Cohen's D [24]. Effect sizes of 0.19 or lower indicate negligible effects; between 0.20 and 0.49 small effects; between 0.50 and 0.79 medium effects; 0.80 or higher large effects. We also performed the analyses taking into account covariates that were related to either attachment style or trust. To test whether trust mediated the relationship between attachment and satisfaction, and between

Table I. Sample characteristics (N = 130).

	N	%
Gender <i>Female/male</i>	91/39	70/30
Age <i>Mean (SD)</i>	58.8 (9.4)	
Educational level	26	20.0
Lower level vocational school		
Secondary education/advanced level vocational school	61	46.9
Higher or post-secondary/University education	42	32.3
Missing	1	0.8
Cancer type		
Prostate cancer	37	28.5
Breast cancer	76	58.5
Intestinal cancer	8	6.2
Cervical cancer	9	6.9
Metastasis present	20	15.4
Missing	9	6.9
Comorbidity present	86	66.2
Missing	3	2.3
Physical status <sup>1</sup> (mean, SD)	89.29 (10.8)	
Treatment type at first assessment		
Chemotherapy	11	8.5
Radiotherapy	50	38.5
Hormonal therapy	22	16.9
Other therapy	3	2.3
No therapy	38	29.2
Missing	6	4.6
Treatment type at follow-up		
Chemotherapy	7	5.4
Radiotherapy	0	0
Hormonal therapy	30	23.0
Other therapy	14	10.8
No therapy	69	53.0
Missing	10	7.7

<sup>1</sup>As measured with the Karnofsky Performance Status [23].

attachment and general distress, we used a macro developed by Preacher and Hayes [25] that relies on a bootstrapping technique. A test of a mediation model provides a point estimate of the indirect or mediation effect. To examine whether this point estimate is significant, a confidence interval around this point estimate can be obtained. Bootstrapping is a non-parametric procedure that provides this confidence interval. As recommended by Preacher & Hayes [26], we performed N = 5000 bootstraps, which means that N = 5000 samples have been taken from the original data by random sampling with replacement. Point estimates are calculated in each re-sample. The confidence interval for the effect in the population is based on the distribution of these point estimates. The indirect effect is considered significant (i.e., there is a mediation effect) when zero is not contained within the confidence interval.

## Results

### Sample characteristics

Of the 553 eligible patients, 165 patients (30%) agreed to participate and provided informed consent.

Patients who declined participation did not differ from participants with respect to age and cancer type, but were more often male [ $\chi^2(1) = 5.270, p = 0.022$ ]. Unfortunately, medical ethical regulations prohibited inquiring about reasons for non-response. Of the 165 participants, 157 patients agreed to complete the attachment style interview as well as the questionnaires. Ten participants dropped-out before the nine months follow-up. Of the remaining 147 participants, 130 completed all items of the questionnaires. Participants were mainly female (70%) and on average 58.78 years (SD 9.35). For further sample characteristics (Table I). Insecurely attached patients did not differ from securely attached patients with respect to gender ( $p = 0.55$ ), age ( $p = 0.14$ ), educational level ( $p = 0.48$ ), cancer type ( $p = 0.08$ ), presence of metastasis ( $p = 0.42$ ), and whether or not patients received treatment at the time of the first assessment ( $p = 0.64$ ). Insecurely attached patients reported comorbidity more often ( $\chi^2(1) = 4.31, p = 0.038$ ) and had a poorer physical status ( $t = 3.54, df = 74.33, p = 0.001$ ) than securely attached patients. Trust was correlated with comorbidity ( $r = 0.21, p = 0.018$ ) but not with other patient characteristics.

*Relationship between attachment style and trust, satisfaction and distress*

Forty-five (35%) patients were insecurely attached and 85 patients (65%) were securely attached. In line with expectations, insecurely attached patients reported significantly less trust in and satisfaction with their physician than securely attached patients (Table II). Furthermore, insecurely attached patients reported significantly more general distress. Two effect sizes were small (0.35–0.39), four were medium (0.51–0.64; Table II). On average, levels of trust, satisfaction and distress did not change significantly over time, and patterns of change were the same for securely and insecurely attached patients (Table II). Differences in trust, satisfaction and distress between insecurely and securely attached patients remained significant when covariates (i.e., physical status and comorbidity) were included in the analyses.

*Mediation model*

Results of the mediation model examining the relationship between attachment and satisfaction showed that at both assessment points, the 95% confidence interval did not contain zero, indicating a significant indirect effect of trust (Table III). However, trust was not found to mediate the relationship between attachment and general distress (Table III).

**Discussion**

In line with our expectations, three months after diagnosis, insecurely attached patients reported less trust in and satisfaction with their physician, and reported more general distress than securely attached patients. These lower levels of trust and satisfaction and higher levels of distress remained relatively stable over a period of six months.

Furthermore, we found support for the proposed mediating role of trust in the relationship between attachment and satisfaction. This indicates that insecurely attached patients are less satisfied with their physician than securely attached patients, because they trust their physician less. Contrary to our expectation, trust did not mediate between attachment and general distress. Thus, insecurely attached patients reported more general distress than securely attached patients, regardless of their level of trust in their physician.

The significant differences between securely and insecurely attached patients in mean levels of trust in and satisfaction with their physicians, should not obscure the fact that these levels were generally high, a finding which is in line with previous studies [1,27]. It is somewhat surprising though, to find that insecurely attached patients also showed considerable trust in their physician, as a lack of trust in others is an inherent characteristic of the insecure attachment style. This suggests that when confronted with a serious illness such as cancer, patients develop an attachment relationship with their treating physician, resembling the primary attachment bond between child and caregiver. Under these circumstances in which the patient is very vulnerable, the patient may feel a high need to trust the physician, reflecting the inevitability of interpersonal trust within treatment relationships [1]. However, our results show that insecurely attached patients were more reluctant to give full trust, not only recently after diagnosis, but also six months later. The effect sizes were small to medium. In general, medium effect sizes are clinically significant. It should be noted that even small effect sizes may have significant clinical implications [28]. Even having somewhat less trust in one's physician might have important negative effects on, e.g., adherence to treatment or life style advices [14].

Table II. Differences between level of trust, satisfaction and distress by attachment style.

	SECURE (N = 85) Mean (SD)	INSECURE (N = 45) Mean (SD)	Difference between secure and insecure attachment	Cohen's D	CHANGE FROM 3 TO 9 MONTHS AFTER DIAGNOSIS <sup>1</sup>	
					General change from 3 to 9 months	Interaction attachment*time
<b>TRUST</b>					F(1) = 2.90, p = 0.091	F(1) = 0.74, p = 0.390
<i>First assessment</i>	4.36 (0.63)	4.00 (0.91)	t(67.19) = 2.34, p = 0.02	0.39		
<i>Follow-up</i>	4.30 (0.55)	3.84 (0.90)	t(61.95) = 3.16, p = 0.001	0.51		
<b>SATISFACTION</b>					F(1) = 0.000, p = 0.989	F(1) = 2.83, p = 0.095
<i>First assessment</i>	5.99 (0.93)	5.20 (1.42)	t(64.86) = 3.39, p < 0.001	0.55		
<i>Follow-up</i>	5.84 (0.91)	5.36 (1.38)	t(65.01) = 2.06, p = 0.01	0.35		
<b>DISTRESS</b>					F(1) = 0.45, p = 0.502	F(1) = 0.84, p = 0.360
<i>First assessment</i>	4.80 (4.82)	10.27 (8.60)	t(57.79) = -3.92, p < 0.001	0.64		
<i>Follow-up</i>	4.85 (5.44)	9.91 (8.70)	t(62.72) = -3.55, p < 0.001	0.58		

Table III. Summary of mediation results for trust.

Model	Independent variable (IV)	Mediating variable (M)	Dependent Variable (DV)	Effect of IV on M	Effect of M on DV	Total effects	95% Confidence interval		
							Indirect effect	lower	upper
1	Attachment	Trust FA	Satis FA	-0.35 (se = 0.14)**	0.93 (se = 0.10)**	-0.80 (se = 0.21)**	-0.33 (se = 0.16)***	-0.73	-0.07
2	Attachment	Trust FU	Satis FU	-0.47, (se = 0.13)**	0.94 (se = 0.11)**	-0.46 (se = 0.20)*	-0.44 (se = 0.15)***	-0.79	-0.19
3	Attachment	Trust FA	Distress FA	-3.44, (se = 0.13)*	-0.89 (se = 0.76)	5.48 (se = 1.19)**	0.30 (se = 0.33)	-0.15	1.22
4	Attachment	Trust FU	Distress FU	-0.47 (se = 0.13)**	-0.18 (se = 0.86)	5.06 (se = 1.24)**	0.08 (se = 0.43)	-0.92	0.86

\*Significant at  $p < 0.05$ , \*\*Significant at  $p < 0.01$ , \*\*\*Significant mediation effect. Distress, psychological distress; FA, first assessment; FU, follow-up; Satis, satisfaction with physician; Trust, trust in physician.

For the interpretation of our findings, it is important to keep in mind a number of limitations as well as strengths. One limitation is the relatively low response rate. We thoroughly informed eligible patients about the time and effort participation would take in order to retain patients in the study during follow-up. Indeed we achieved a high percentage of compliance with respect to completion of follow-up (94%). A drawback may have been that a considerable number of patients expected to be burdened too much by the requirements of the study, and therefore did not give informed consent. Furthermore, patients were invited to participate by their physician, who may have influenced their patients to accept or decline participation. Patients who trusted their physician more, may have been more inclined to participate. This may have resulted in a selection bias of patients who expected not to be burdened too much by participation, and reported relatively high trust in their physician. Patients may also have reported higher levels of trust in their physician due to factors such as social desirability. However, the variance in the trust scores was large enough to detect significant differences in the expected direction.

We used shortened versions of the questionnaires measuring trust and satisfaction. We did not want to burden patients with more items than necessary to obtain an adequate indication of patients' trust in and satisfaction with their physician. Although the shortened versions of the questionnaires cover less dimensions of trust and satisfaction, patients' trust (and likely satisfaction) is found to behave as a holistic construct, and different dimensions correlate strongly with patients' overall degree of trust [1]. Therefore, we do not think that the use of shortened versions has influenced our outcomes.

A clear strength is that we are among the first to empirically examine the relationship between recently diagnosed cancer patients' attachment style, and their trust in and satisfaction with their treating physician and psychological distress. Furthermore, we have employed a heterogeneous sample of cancer patients and a longitudinal design, which increase the generalizability of our results. A particular strength is the use of an adult attachment style interview instead of a self-report instrument, as interviews may be less vulnerable to temporal instability, assess broader aspects of the attachment system, and are more likely to increase the activation of attachment patterns than self-report questionnaires [29].

Our findings have interesting implications for clinical practice, as they can help physicians understanding and coping with different patient behaviors [10]. Securely attached patients may initially be stressed by their cancer diagnosis and may need and request support. However, their emotions are

proportionate to the stressor, and they have a strong sense of alliance with their treating physician. Physicians will experience these patients as relatively easy and the encounter as rewarding [30]. Conversely, insecurely attached patients may show a range of dysfunctional types of behaviors and are challenging for physicians. Some patients feel uncertain about the availability of their physician. They are clingy, seeking high levels of intimacy and showing dependency, to ensure their physician is available when needed. They are experienced as 'compulsive care-seekers', showing behavior that leads to high primary care costs [31]. Other patients tend to have a high opinion of themselves but are distrustful of others. They are experienced as 'compulsively self-reliant', characterized by non-compliance and defensiveness against building alliance with their physician, which leads to negative health outcomes especially when provider-patient communication is poor [14]. Patients who physicians experience as particularly difficult [32] are those who crave intimacy but are afraid of getting hurt. Their conflicting feelings make them report frequent symptoms but make them pay infrequent medical visits [33]. Amongst others, Maunder and Hunter [11] and Thompson and Ciechanowski [10] have provided elaborate descriptions of adult attachment patterns relevant for health care professionals.

Patients' dependency on their physician means a large responsibility for physicians; not only in a medical, but also in a relational sense. Because patients are assumed to develop an attachment relationship with their treating physician, violation of a patient's trust can have significant consequences, e.g. patient behavior and treatment outcomes. It is therefore important to be aware that attachment style reflects a tendency of patients to respond in a certain way, and that the interaction within a specific relationship influences feelings and behavior. Thus the role of the physician is highly important in shaping the relationship and enhancing and maintaining feelings of trust and satisfaction in insecurely attached patients [10,34–36]. For example, explicitly voicing one's accessibility to an insecurely attached patient may be highly effective [9]. That is, telling the patient that he or she is not alone and you, as the physician, are available and approachable in times of need. The perception of availability may induce a sense of security and will help patients trusting their physician. Additionally, providing the patient information about his or her condition and the medical care provided, may increase feelings of control and autonomy and will thus also help patients developing feelings of safety and comfort [3,34,37]. A secure physician-patient relationship may in turn not only improve patients' quality of life but will also have therapeutic benefits,

as it will likely result in open communication about needs, more compliance and fewer unnecessary calls to physicians [9,10].

Our findings confirm that attachment theory is a useful framework to study cancer patients' views about their physician. The current study afforded an opportunity to advance this line of research by investigating the role of attachment style in relation to cancer patients' trust in their treating physician, satisfaction and general distress. An important next step is to make this knowledge available and practically useful for physicians. Helping physicians respond to all their patients in such a way that they feel safe and cared for is critical as it is expected to have a beneficial effect on a range of patient behaviors and health outcomes.

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