BRIEF ARTICLE

Contribution of attachment insecurity to health-related quality of life in depressed patients

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Abstract

AIM: To examine the individual contributions of insecure attachment styles and depression symptom severity to health-related quality of life (HRQoL) in patients diagnosed with adjustment disorder (AJD) with depressed mood.

METHODS: Participants were 67 patients diagnosed with International Classification of Diseases, Tenth edition AJD with depressed mood, who completed standardised self-report questionnaires measuring study variables. Mean scores and SDs were computed for the outcome and predictor measures. Pearson correlations among the measures were computed. The study hypotheses were tested using analysis of variance (ANOVA) and multiple regression analyses. All analyses were performed using the SPSS-17 software package (SPSS Inc., Chicago, IL, United States).

RESULTS: ANOVA showed a significant main effect of the insecure attachment styles on depression symptom severity and life satisfaction scores. The results suggest that depressive symptoms were more severe ($F = 4.13$, $df = 2.67$, $P < 0.05$) and life satisfaction was poorer ($F = 5.69$, $df = 2.67$, $P < 0.01$) in both anxious-ambivalently and avoidantly attached patients compared with their securely attached counterparts, whereas the two insecure groups did not significantly differ by these variables. The anxious/ambivalent attachment style and depression symptom severity significantly contributed to HRQoL, accounting for 21.4% and 29.7% of the total variance, respectively [$R^2 = 0.79$; Adjusted $R^2 = 0.77$; $F (5, 67) = 33.68$, $P < 0.0001$], even after controlling for gender, marital and employment status confounders.

CONCLUSION: The results show that the anxious/ambivalent attachment style together with depression symptom severity substantially and independently predict the HRQoL outcome in AJD with depressed mood.

Core tip: Adult attachment insecurity is a factor predisposing to relational stress and, as a result, to depressive reactions. Depression is a well-known factor reducing health-related quality of life (HRQoL). The study hypothesises that both variables will significantly predict poor HRQoL outcome, even after controlling for confounding sociodemographic variables. The results show that the anxious/ambivalent attachment style together with depression symptom severity substantially and independently predict the HRQoL outcome in adjustment disorder (AJD) with depressed mood. The findings also suggest that therapeutic techniques, alleviating emotional distress and promoting well-being, could accelerate recovery and improve HRQoL in the anxious/ambivalently attached patients with protracted AJD.

INTRODUCTION

Although a large body of research has thoroughly investigated the association between health-related quality of life (HRQoL) and depression, as well as the relationship between depression and adult attachment insecurity, little is known about the individual contribution of attachment insecurity to the HRQoL outcomes in depression. In this paper, we will explore the independent contribution of attachment insecurity and depression symptom severity to the HRQoL among patients diagnosed with adjustment disorder (AJD) with depressed mood. We use this diagnosis as a model of stress-induced depression, because in psychiatric practice AJD is very often subsumed under the label of "reactive" or "situational" depression.

Conceptual foundation

AJDs: AJDs are prevalent mental-health disturbances that affect approximately 10% of the general population[1]. AJD is a debilitating reaction to a stressful life event or adversity that usually begins within 3 mo of the event or adversity and ends within 6 mo after the stressor stops[2]. Clinical subtypes of the disorders include AJD with depression, anxiety, conduct disturbances, or a mixture of these symptoms. To be diagnosed as a true AJD, the emotional distress in response to the stressor must be more intense than would normally be expected[3,4], and must significantly interfere with a person's social life, job, school functioning, or interpersonal relationships[5-7]. The severity of the patient's symptoms, however, should not reach the criterion of a specific mental disorder. Among others, younger age and increased suicidal behaviour have been found to be factors more associated with a diagnosis of AJD than other mental disorders[8]. Although diagnosis of AJD is quite common in clinical practice, and there is an estimated incidence of 5%-21% among psychiatric consultation services for adults[3,7], AJD is very rarely researched.

Attachment system: The attachment system is a biosocial homeostatic-regulatory system, the aim of which is the provision of the experience of security[9,10]. Attachment is the base upon which emotional health, social relationships and one's worldview are built. The ability to trust and form reciprocal relationships with the primary caregiver will affect the emotional health, security and safety of the child, as well as the child's development and future interpersonal relationships[11]. Although different ways of conceptualising adult attachment exist[12], three major patterns (styles) of attachment behaviour described in infancy provide prototypes (internal working models) for later significant relationships across a person's lifespan[9,13-16]. One of them is referred to as a secure type of attachment, and the other types, anxious/ambivalent and avoidant, are termed insecure. The secure style characterises people who are comfortable with intimacy, dependency and reciprocity in relationships, and who experience low levels of anxiety with loss. The avoidant style includes people who lack trust and are uncomfortable with intimacy and dependency. People with an anxious/ambivalent style desire to be close, but feel anxiety about rejection. The stability of attachment orientations from childhood to adolescence to adulthood, hypothesised by attachment theory, has been empirically confirmed by long-term longitudinal studies[17].

An important aspect of attachment theory, relevant to the psychosocial models of psychopathology, is the inability of people with insecure attachment styles to regulate affective responses appropriately to stressful interpersonal situations. According to a model of activation and dynamics of the attachment system[12], there are two affect-regulation strategies: "hyperactivating" and "deactivating"[18]. Using the hyperactivating strategy, anxious/ambivalently attached individuals under-regulate their affect, enhancing their expression of distress to elicit the expectable response of the partner. Conversely, using the deactivating strategy, avoidantly attached people over-regulate their affect and avoid situations that are likely to be distressing.

Attachment and depression: Attachment theory provides a framework for explaining how an insecure interpersonal style, arising in early childhood, perpetuates to create a vulnerability to mood/affective disorders in adulthood[19,20]. Depression is one of the most common forms of psychological disorders examined in the context of attachment theory[21]. Empirical research has demonstrated the association between insecure attachment styles and both clinical depression[22,23] and depressive symptoms[24]. This association has been observed for different types of the disorder, such as: major depressive disorder[25], bipolar affective disorder I[26] and bipolar affective disorder II[27], perinatal mood disturbances[28], prolonged depressive reactions[29], recurrent depression[30] and atypical depression[31]. The general conclusion drawn from these studies is that attachment insecurity, by itself or in combination with other risk factors involving close relationships, self-esteem and childhood adversity[32], predisposes individuals to the development of a vulnerability to depression, and predicts an unfavourable course of illness and treatment outcome.

The proposed models suggest that individuals with insecure attachment to primary caregivers are more likely than securely attached individuals to display vulnerability factors (*e.g.*, negative representations of the self and others) that result in increased risk for developing depression in adulthood[33,34]. Similarly, the cognitive theory of depression[35,36] proposes that people are vulnerable to depression because they tend to generate interpretations

of stressful life events that have negative implications for their future and for their self-worth.

Studies also point out that there are additional risk factors, such as gender, age, marital status or their interactions, which exert a significant effect on the relationship between diverse types of attachment insecurity and morbid, mainly, depressive symptomatology[25,34,37]. Hence, in research on attachment-psychopathology relations, gender and marital status must be controlled for their potentially confounding effects.

Quality of life and attachment: In contrast to a rapidly developing area of research on attachment-psychopathology relations, there are no studies exploring the impact of attachment insecurity on HRQoL among psychiatric patients. Moreover, data on HRQoL are useful to assess the effects of different illnesses on general well-being and functioning, or to compare outcomes between different treatment modalities. Importantly, life satisfaction has been shown to be associated with suicidal behaviour in both population-based[38] and clinical[39,40] studies.

Quality of life has been defined in a number of ways, and many measures exist for assessing the construct[41]. While there is no universal operational definition of HRQoL, most researchers agree that patients' statements, on satisfaction with major life domains of daily functioning, are relevant indicators of subjective quality of life[42,43]. These include perceptions of social relationships; physical health; mood; functioning in daily activities and work; leisure time activities, economic status; and an overall sense of well-being[44]. Impairment in HRQoL has been well documented in individuals diagnosed with serious mental disorders[45,46], anxiety disorders[47,48], and affective disorders[27,49], although the degree of dysfunction varied. Diagnostic-specific symptom measures only explain a small proportion of the variance in quality of life, suggesting that there are additional factors that should be (but have not became) part of a complete assessment[48].

In this study, we propose that attachment insecurity is a factor that seriously affects HRQoL outcome among depressed patients for two reasons. First, insecure attachment impairs both interpersonal and intrapersonal relationships, which are aspects of human existence that individuals negotiate continuously throughout their lifespan. Second, a quality of intra- and inter-personal relationships is an essential component of global life satisfaction, and dissatisfaction with relationships, especially marital and family relationships and friendships, as well as dissatisfaction with self-relations (poor self-esteem), could substantially reduce the overall quality of life assessment. To our knowledge, however, the relative contribution of adult attachment insecurity, disorder-specific factors (*e.g.*, severity of symptoms) and demographic factors (gender, marital and employment status) to HRQoL among depressed patients has not yet been investigated.

In the present study, AJD was used as a model of stress-induced depression, to examine individual contributions of insecure attachment styles and depression

symptom severity to HRQoL outcome. Theoretically, three models of relationships among the parameters of interest could be assumed: (1) attachment insecurity leads to pool HRQoL over and above symptoms of depression; (2) attachment insecurity leads to depression which then leads to impaired HRQoL; and (3) attachment insecurity and depression both independently and directly lead to poorer HRQoL. Because a causal model cannot be completely tested with cross-sectional design of our study, we tested the following hypotheses: (1) attachment insecurity will be associated with both depression symptoms and HRQoL; (2) attachment insecurity, along with depressive symptoms, will significantly predict the HRQoL outcome, even after controlling for sociodemographic confounders. In addition, based on the role that distinct attachment insecurities play in affect regulation, we hypothesised that; and (3) the anxious/ambivalent attachment style (hyperactivating strategy that intensifies expressed distress) would better predict HRQoL outcome than the avoidant attachment style (deactivating strategy reducing expressed distress).

MATERIALS AND METHODS

Data collection
During a 6-mo period, between October 1, 2010 and March 31, 2011, 67 patients, who consecutively attended a community outpatient clinic at the Talbieh Mental Health Centre, Jerusalem, Israel, were recruited, if they met the following inclusion criteria: (1) they had an International Classification of Diseases, Tenth edition (ICD-10) diagnosis of AJD with depressed mood (F43.21)[50]; and (2) were aged 18-50 years. All participants gave their written informed consent. The Institutional Review Board for human studies approved the study protocol.

Clinical assessment
In an extended clinical interview, patients were diagnosed as fulfilling the ICD-10 criteria for AJD by the experienced psychiatrist (AD). Given the problematic validity and reliability of AJD diagnoses, competing diagnoses of other stress-related and mood disorders, such as posttraumatic stress disorder (F43.1), generalised anxiety disorder (F41.1), dysthymia (F34.1) and mild depressive episode (F32.0) were evaluated and ruled out. All unclear cases requiring differential diagnosis were considered by a senior consultant psychiatrist. Depending on case complexity, the interview took 1 to 1.5 h.

At the end of the interview, depressive symptoms severity was assessed by the Beck Depression Inventory-abridged (BDI-13)[51]. It is an extensively validated self-reporting measure of 13 depressive symptoms (sadness, pessimism, past failure, loss of pleasure, guilt feelings, self-dislike, suicidal thoughts or wishes, loss of interest, indecisiveness, change in appearance, loss of energy, fatigue and changes in appetite). Each symptom scored from 0 (absence) to 3 (extreme severity). Total scores range from 0-4 (none or minimal), to 5-7 (mild), 8-15 (moderate) and

16 and over (severe depressive symptoms). For the present sample, Cronbach's α coefficient was 0.86.

Attachment assessment

Attachment styles were assessed by a single-item, self-selection measure of psychological or emotional closeness in relationships[14]. These included secure, avoidant and anxious/ambivalent styles of attachment relationships. The secure style characterises people who are comfortable with intimacy, dependency and reciprocity in relationships, and experience low levels of anxiety with loss. The avoidant style includes people who lack trust, and are uncomfortable with intimacy and dependency. People with an anxious/ambivalent style desire to be close, but feel anxiety about rejection. Participants had to indicate which of three short descriptions of the attachment styles best described their feelings. In addition to the categorical approach, we also used a dimensional one, asking participants to indicate how each description corresponded to their general relationship style. Responses were rated on a 5-point Likert-type scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Quality of life assessment

The Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q)[44] is a self-reporting form composed of 16 items, each rated on a 5-point scale that indicates the degree of enjoyment or satisfaction experienced over the past week. A total score of 1 to 14 items is computed. The items evaluated each subject's satisfaction with: their physical health; social relations; ability to function in daily life; ability to get around physically; mood; family relations; sexual drive and interest; ability to work on hobbies, work, leisure time activities; economic status; household activities; living/housing situation; and overall sense of well-being. Two global items were not included in the Q-LES-Q's total score: item 15, "satisfaction with medication" as irrelevant, and item 16, "life satisfaction and contentment over the last week", to avoid augmenting scores. For the present sample, Cronbach's α was 0.91.

Statistical analysis

All analyses were performed using the SPSS-17 software package (SPSS Inc., Chicago, IL, United States). Mean scores and standard deviations were computed for the outcome and predictor measures. To test our hypotheses: (1) univariate analyses comparing intergroup measures were performed using analysis of variance (ANOVA) with *post-hoc* Tukey single comparisons, and Pearson correlation among the measures were computed; and (2) multiple regression analysis was performed on a linear model to predict Q-LES-Q scores as the outcome variable from insecure attachment categories scores and depression severity scores as the predictor variables, controlling for gender, marital status (married *vs* never married) and employment status (employed *vs* unemployed) as the potential confounders. Thus, only five variables were included in the model to keep the variable-

Table 1 Basic characteristics of the sample *n* (%)	
Characteristic	***n* = 67**
Gender	
Male	29 (43.3)
Female	38 (56.7)
Marital status	
Single	25 (37.3)
Married	32 (47.8)
Divorced/widowed	10 (14.9)
Employment status	
Employed	38 (58.2)
Unemployed	28 (41.8)
Age (yr), mean ± SD	44.5 ± 15.3
Education (yr), mean ± SD	13.9 ± 2.5
BDI, mean ± SD	11.9 ± 6.2
Q-LES-Q, mean ± SD	44.2 ± 8.0

BDI: Beck Depression Inventory; Q-LES-Q: Quality of Life Enjoyment and Satisfaction Questionnaire.

to-patient ratio large enough to prevent multicollinearity. For all analyses, the level of statistical significance was established at $P < 0.05$.

RESULTS

Table 1 presents the selected sociodemographic characteristics and measurements for 67 participants. The sample consisted of 56.7% female, 47.8% married and 58.2% employed subjects. Mean age at onset of the disorder was 44.5 ± 15.3 years (range: 18-59 years). The severity of depressive symptoms, as measured by BDI means score (11.9, SD = 6.2), was assessed as moderate (BDI score > 8 but < 15). Q-LES-Q total mean score was 44.2 (SD = 8).

Table 2 presents and compares depression symptom severity and life satisfaction scores, across the three attachment categories: secure ($n = 32$), anxious-ambivalent ($n = 12$) and avoidant ($n = 23$). ANOVA showed a significant main effect of the insecure attachment styles on these measures. Results of Tukey post-hoc single comparison tests suggest that depressive symptoms were more severe ($F = 4.13$, $df = 2.67$, $P < 0.05$) and life satisfaction was poorer ($F = 5.69$, $df = 2.67$, $P < 0.01$) in both anxious-ambivalently and avoidantly attached patients compared with their securely attached counterparts, whereas the two insecure groups did not significantly differ by these variables.

Prior to testing our hypotheses, that attachment styles and depression symptom severity will predict HRQoL by using multiple regression analysis, we calculated intercorrelations between the three variables. Table 3 shows that depression symptom severity and the anxious/ambivalent attachment style scores correlated significantly with Q-LES-Q scores ($P < 0.01$ and $P < 0.001$, respectively), while the secure and avoidant attachment styles scores did not. Therefore, of the three attachment patterns, only the anxious/ambivalent attachment style was included in regression analysis, along with depression and the demographic variables.

Table 2 Beck Depression Inventory and Quality of Life Enjoyment and Satisfaction Questionnaire scores across the attachment styles (mean ± SD)

Variable	Attachment style[1]			ANOVA *F*-value	Tukey post-hoc single comparisons
	Secure (*n* = 32)	Anxious/ambivalent (*n* = 12)	Avoidant (*n* = 23)		
BDI	9.7 ± 5.4	14.0 ± 6.1	13.8 ± 6.5	4.13[a]	A/A > S, A > S, A/A = A
Q-LES-Q	48.5 ± 6.9	42.2 ± 8.4	41.9 ± 8.7	5.69[b]	A/A < S, A < S, A/A = A

[1]Hazan and Shaver classification of adult attachment styles. S: Secure; A/A: Anxious/ambivalent; A: Avoidant; BDI: Beck Depression Inventory; Q-LES-Q: Quality of Life Enjoyment and Satisfaction Questionnaire. [a]$P < 0.05$, [b]$P < 0.01$.

Table 3 Pearson correlations between attachment styles and Beck Depression Inventory and Quality of Life Enjoyment and Satisfaction Questionnaire scores

Variable	Quality of life	Depression
Secure[1]	0.197	-0.202
Anxious/ambivalent[1]	-0.387[b]	0.401[d]
Avoidant[1]	-0.211	0.191
Depression	-0.427[b]	1.000

[1]Hazan and Shaver classification of adult attachment styles. [b]$P < 0.01$, [d]$P < 0.001$.

Table 4 Regression model for predicting health-related quality of life from attachment styles and depression severity

Independent variables	β	*t*-value (β = 0)	*P* value	Total % variance accounting for
Predictors				
Anxious/ambivalent attachment	-0.25	3.56	< 0.001	21.4
BDI	-0.63	7.51	< 0.0001	29.7
Excluded variables				
Gender	0.01	0.02	0.99	--
Marital status	0.07	0.93	0.35	--
Employment	0.02	0.91	0.31	--

Model properties: $R^2 = 0.79$; adjusted $R^2 = 0.77$, $F (5, 67) = 33.68$, $P < 0.0001$. BDI: Beck Depression Inventory.

Table 4 summarises the results of multiple regression analysis. In a reduced version of the initial model, only two variables, the anxious/ambivalent attachment and depression symptom severity scores, predicted poorer quality of life enjoyment and satisfaction [$R^2 = 0.79$; adjusted $R^2 = 0.77$; $F (5, 67) = 33.68$, $P < 0.0001$]. Altogether these variables accounted for 51.1% of the total variance in the individual Q-LES-Q scores (21.4% and 29.7%, respectively), whereas gender, marital status and employment were removed from the model as statistically insignificant.

DISCUSSION

The obtained results are consistent with the hypothesised associations, showing that both depression severity and attachment insecurity were negatively associated with HRQoL (hypothesis 1), and that both variables contributed significantly to the HRQoL prediction, after controlling for the confounding sociodemographic variables (hypothesis 2). As expected (hypothesis 3), of two insecure attachment types, the anxious/ambivalent style strongly predicted the patients' HRQoL, whereas attachment avoidance was not connected to the outcome. The findings can have useful implications for the assessment and treatment of AJD patients with depressed mood.

Insofar as satisfaction with mood or subjective feelings is the key component of HRQoL measures[44], the severity of depressive disorder in our patients was closely associated with substantial reduction in HRQoL. Although this association was well-documented for bipolar and chronic depression in both cross-sectional[27,49] and prospective studies[52,53], our finding demonstrates the robust contribution (near 30% of explained variance) of mild to moderate depressed mood to HRQoL outcome.

To our knowledge, this is the first study assessing the effects of attachment insecurity on HRQoL outcome in patients diagnosed with AJD with depressed mood. The importance of the investigation comes from awareness of both the high prevalence of AJD and its association with increased suicidal behaviour, particularly, among young people[8]. The robust regression model suggests that the anxious/ambivalent attachment style contributes uniquely to the negative association with HRQoL (21% of explained variance). In contrast, avoidant attachment was not connected to HRQoL. A possible explanation for this finding is that attachment anxiety underlies the most dysfunctional and unstable interpersonal relationships, and satisfaction/dissatisfaction, which constitute the core determinants of HRQoL. Another explanation is based on the differences in affect-regulation strategies underpinning diverse insecure attachment styles. Recall here that anxious/ambivalently attached people use the hyperactivating strategy of affect-regulation in order to intensify their expressed distress, whereas avoidant attached people use the deactivating strategy to reduce their expressed distress. Emotional or psychological distress, as a major determinant of quality of life, is included in many existing models of HRQoL[45]. Hence, more intensive emotional distress among anxiously attached patients, compared with their avoidant attached counterparts, could account for the discrepancy in the HRQoL outcomes. Apart from the model of interpersonal relation-

ships, there is another important difference in insecure attachment behaviours, which could explain differences in the obtained HRQoL outcomes, but was not explored in this study. That is, a person's internal model of self is negative in anxiously attached individuals, and positive in those who are avoidantly attached. People with anxiety attachment insecurity regard themselves as unlovable, and have poor self-esteem that serves the ongoing source of internal distress and discomfort. They assess things as more difficult than they really are, which can lower motivation and may result in feelings of hopelessness and depression[54]. By contrast, "avoiders" regard themselves as self-sufficient and invulnerable to abandonment by others; having high self-esteem, they tend to evaluate risk situation differently, attributing reasons to the situations they experience, and thus do not engender negative and depressing self-perceptions[35]. In other words, a positive relation to one's self enhances human accomplishment and personal well-being, whereas a negative self-relation reduces quality of life appraisal. Though indirect, this explanation receives support from previous research[24,29] showing that individuals having attachment styles, with a negative model of self, demonstrated higher distress levels (as measured by BDI) than those having attachment styles with a positive model of self.

In respect of positive self-model, avoidantly attached individuals are similar to those who are securely attached comprising almost half of our patients. We could hypothesise that the self-reported secure style could be viewed as a resilient factor or maybe a marker for good prognosis, and that their AJD as a reaction to life stressors/negative life events could require whether more number or severity of stresses than in individuals with the anxious/ambivalent attachment styles. However, these assumptions need to be tested in further investigations.

Clinical implications

Although most people recover completely from AJD, especially people with no history of mental problems and who enjoy strong social support[55], the necessity for effective short-term intervention is evident, as 25% of patients with this diagnosis seek help from consultation-liaison services[56], and at least 20% do not return to work within a year[57]. In this regard, our findings, that both predisposing (attachment anxiety) and disorder-related factors (depression symptoms) contributed powerfully and independently to HRQoL appraisal, altogether accounting for more than 50% of explained variance, have important clinical implications. They suggest that improvement in depression symptoms, as well as a psychotherapeutic work through attachment style, may have a distinctive and independent effect on HRQoL outcome, in particular among patients with protracted AJD. The latter assumption may be justified by several practice implications, derived from meta-analyses that examined the association among attachment anxiety, avoidance and security and psychotherapy outcome[58]. Practice and research suggest that assessment of the patient's attach-

ment style has practical value for several reasons: (1) understanding of the responses to psychotherapy interventions; (2) regulating the extent of engagement of both patient and therapist in the psychotherapy process; (3) anticipation of the types of alliance ruptures; and (4) individual prognosis of the ultimate outcome of treatment. Cognitive-behavioural techniques, alleviating emotional distress and promoting well-being could be beneficial, in particular, for patients with the anxious/ambivalent attachment pattern, which showed most emotional distress and impaired quality of life.

Limitations

First, the diagnosis of AJD as a subthreshold diagnosis is unspecific and unreliable, and, therefore, our findings may be compromised by the fact that they emerge from an AJD cohort. However, this is a shortcoming of the current classifications of mental disorders, common to all studies using the AJD diagnosis. It is important to stress that our goal was to examine the possible underpinnings of subthreshold depression caused by psychosocial stress: whatever diagnostic label is attached to it.

Second, the questionnaire we used to measure attachment status is a very simple three-category classification of adult attachment styles in the field[14]. Although more novel dimensional (e.g., the relational questionnaire[59]) and multi-item interview-based measures of adult attachment styles have been developed (e.g., the vulnerable attachment style questionnaire[60]), the questionnaire we selected is known for its wide use in the field, as well as being easy to carry out[61]. Regarding the report bias of self-reporting measures in depressed patients, there is recently obtained evidence that such tools might provide a reliable assessment of both attachment style and quality of life, in patients with severe psychopathology, except for the most severely impaired patients[62,63].

Third, stressful life events were not studied, although stressors are an important component of the dynamic stress vulnerability model[64,65] and the AJD diagnosis as well. We believe, however, that in the context of our study, vulnerability factors (i.e., the coaction of risk and protective factors) influence the risk of the onset of AJD by generating a perception that a particular life event is stressful. The small size of the study group limited the number of factors we could enter simultaneously into the regression equation without risking multiple comparisons generating spurious findings.

Fourth, we have not a satisfactory explanation for the absence of effects of sociodemographic variables on HRQoL. It is possible, however, that potential effects of these variables were fully suppressed by the robust effects of attachment insecurity and depression severity. This issue requires further investigation with extended samples.

Finally, we are aware that the correlational design of our study did not allow interpretations as to the causal direction of the effects studied; cross-sectional analyses cannot distinguish cause from effect. Although attachment style is a trait factor that develops and consolidates

early in life, long before a disorder manifests itself, exposure to a traumatic event may cause changes in interpersonal relationships, and hence, insecure attachment. Likewise, the causative effect might be bidirectional, as part of a continuous and dynamic process.

In conclusion, the results confirm our hypotheses and suggest that in patients diagnosed with AJD, the anxious/ambivalent attachment style together with depression symptom severity contributes substantially to the HRQoL outcome. These findings can have useful implications for treatment.

ACKNOWLEDGMENTS

COMMENTS

Background
Adjustment disorders (AJDs) are prevalent mental-health disturbances that affect approximately 10% of the general population. In psychiatric practice AJD with depressed mood is very often subsumed under the label of "reactive" or "situational" depression. AJD is very rarely researched. The attachment system is a biosocial homeostatic-regulatory system, the aim of which is the provision of the experience of security. Attachment theory provides a framework for explaining how an insecure interpersonal style, arising in early childhood, perpetuates to create a vulnerability to mood/affective disorders in adulthood. Health-related quality of life (HRQoL) now is considered as an important outcome indicator in treatment of mental-health disorders. Depression is known to severely impair HRQoL.

Research frontiers
Research frontiers: (1) adult attachment insecurity and psychopathology; (2) adult attachment insecurity and emotion regulation; (3) psychopathology and HRQoL; and (4) adult attachment insecurity and life satisfaction.

Innovations and breakthroughs
This is the first study that evaluated the effects of attachment insecurity on HRQoL outcome in patients diagnosed with AJD with depressed mood. The results showed that depression severity and the anxious/ambivalent style strongly predicted the patients' HRQoL, whereas attachment avoidance was not connected to the outcome.

Applications
The findings, that both predisposing (attachment anxiety) and disorder-related factors (depression symptoms) contributed powerfully and independently to HRQoL appraisal, altogether accounting for more than 50% of explained variance, have important clinical implications. They suggest that improvement in depression symptoms, as well as a psychotherapeutic work through attachment style, may have a distinctive and independent effect on HRQoL outcome, in particular among patients with protracted AJD. Cognitive-behavioural techniques, alleviating emotional distress and promoting well-being could be beneficial, in particular, for patients with the anxious/ambivalent attachment pattern, which showed most emotional distress and impaired quality of life.

Terminology
AJD is a debilitating reaction to a stressful life event or adversity that usually begins within 3 mo of the event or adversity and ends within 6 mo after the stressor stops. The attachment system is a biosocial homeostatic-regulatory system, the aim of which is the provision of the experience of security. Using the hyperactivating strategy of emotion regulation, anxious/ambivalently attached individuals under-regulate their affect, enhancing their expression of distress to elicit the expectable response of the partner. Conversely, using the deactivating strategy, avoidant attached people over-regulate their affect and avoid situations that are likely to be distressing. No universal operational definition of HRQoL exists. Most researchers agree that patients' statements, on satisfaction with major life domains of daily functioning, are relevant indicators of subjective quality of life. These include perceptions of social relationships; physical health; mood; functioning in daily activities and work; leisure time activities, economic status; and an overall sense of well-being.

Peer review
The major finding is that anxious/ambivalent attachment style and depression symptom severity contribute significantly to HRQoL, even after controlling for gender, marital and employment status confounders.

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