

Rejected, Excluded, Ignored: The Perception of Social Rejection and Mental Disorders – A Review

Charlotte Rosenbach · Babette Renneberg

Freie Universität Berlin, Germany

Keywords

Rejection sensitivity ·
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Summary

This article presents an overview of the impact of rejection sensitivity on subclinical syndromes and mental disorders. Rejection sensitivity is the tendency to anxiously expect, readily perceive and overreact to rejection. From 1075 articles, we selected those 21 studies that investigate rejection sensitivity using the rejection sensitivity questionnaire (RSQ) in clinical and non-clinical samples, showing different aspects of the relationship between rejection sensitivity and various subclinical syndromes and mental disorders. The results suggest an overall role of rejection sensitivity for the etiology as well as the maintenance of mental problems. Positive associations have been found between rejection sensitivity and borderline symptoms, depressive symptoms, social anxiety and aggressive behavior, whereas the attention deficit hyperactivity disorder (ADHD) and psychotic symptoms did not show any relationship with rejection sensitivity. Recommendations for research and practice are discussed.

Schlüsselwörter

Zurückweisungsempfindlichkeit ·
Rejection Sensitivity Questionnaire (RSQ) ·
Psychische Störungen

Summary

Dieser Artikel gibt eine Übersicht über die Bedeutung von Zurückweisungsempfindlichkeit für subklinische Syndrome und psychische Störungen. Mit Zurückweisungsempfindlichkeit wird die Disposition bezeichnet, in sozialen Situationen davon auszugehen zurückgewiesen zu werden, potenzielle soziale Zurückweisungen vor-schnell wahrzunehmen und extrem darauf zu reagieren. Aus 1075 Artikeln wurden 21 extrahiert, die Zurückweisungsempfindlichkeit mit dem Rejection Sensitivity Questionnaire (RSQ) an klinischen und nichtklinischen Stichproben untersuchen und Zusammenhänge zu psychopathologischen Symptomen und psychischen Störungen herstellen. Die Ergebnisse der Forschungsbe-funde geben erste Hinweise auf eine störungsübergrei-fende Bedeutung der Zurückweisungsempfindlichkeit sowohl für die Ätiologie als auch für die Aufrechterhal-tung psychischer Probleme. Borderline-Symptome, de-pressive Symptomatik, soziale Ängste und aggressive Verhaltensweisen gehen mit hohen Werten der Zurück-weisungsempfindlichkeit einher, während die Aufmerk-samkeitsdefizit-/Hyperaktivitätsstörung (ADHS) und psy-chorische Symptome nicht mit Zurückweisungsempfind-lichkeit korrelieren. Empfehlungen für Forschung und Praxis werden diskutiert.

Introduction

People strive in what they do to achieve approval and acceptance by others. The goal is to satisfy one of the basic human needs: belonging to a group [Baumeister and Leary, 1995]. But what happens if a person is permanently denied this satisfaction? And what causes some people to perceive rejection by others very quickly, while others are calmer in their interpersonal interactions?

Everyone has experienced rejection in life: a school classmate doesn't want to sit next to you; a fellow student at university looks for a different study group; your partner leaves you; a potential new partner rejects an invitation. Expressions like 'a broken heart' after a person has been abandoned, or 'a slap in the face' after an invitation has been rejected, testify to the pain of rejection by others.

In their multimotive model of reactions to interpersonal rejection experiences, Smart Richman and Leary [2009] divide the reactions and consequences of social exclusion into short-term and long-term consequences. They assume that exclusion from a social group (ostracism [Williams, 2007]) leads directly to physiological arousal (e.g., increased heart rate, perspiration) and emotional distress. The long-term reaction, according to Smart Richman and Leary [2009], is determined by how one evaluates the rejection (e.g., the value placed on a relationship, possible alternatives, duration and severity of rejection, perceived costs) as well as current mood and self-esteem. These long-term reactions can be divided into 3 broad categories: prosocial behavior, social withdrawal and antisocial behavior. Depending on whether the basic human need for acceptance and approval can be restored by the particular behavior, positive or negative psychological consequences result [Smart Richman and Leary, 2009].

One factor that influences how one perceives rejection and responds to it is whether one even notices signals of rejection. Downey and Feldman [1996] show that while some people register social rejection quite seldom and tend to react to it calmly and indifferently, others are quick to perceive a personal rejection in even minor occurrences. The sensitivity to social rejection stimuli was defined as *rejection sensitivity* [Downey and Feldman, 1996].

Rejection Sensitivity

Rejection sensitivity means expectation of rejection, hypervigilance for potential signals of rejection and excessive reaction to rejection [Downey and Feldman, 1996]. Individuals with high rejection sensitivity thus basically expect to be rejected by others, perceive rejection even in harmless social interactions and tend toward exaggerated response patterns (e.g., excessive attempts to gain attention, social withdrawal, or hostile, aggressive behavior). Rejection sensitivity thus refers to 3 processes: the *expectation* and *perception of* social rejection as well as the *response to it*.

In their model of rejection sensitivity, Downey and colleagues [2004] (see also modified model in figure 1) assume that the dispositional expectancy of rejection is associated with hypervigilance for stimuli that could signify rejection, which in turn leads to negative cognitive reactions (e.g., self-blame) and affective reactions (injury, anger). As a result, maladaptive behavior (aggression, social withdrawal) consequently provokes rejection by others as a self-fulfilling prophecy, whereby one's basic expectation of being rejected is reinforced. High rejection sensitivity is thus also a factor that threatens the integration into a group. Insecurity in social situations, social withdrawal and aggressive behavior are common behavioral correlates of high rejection sensitivity [Purdie and Downey, 2000].

Etiology of Rejection Sensitivity

When it comes to the causes of high rejection sensitivity, there are many assumptions and a few empirical findings. Especially early-onset and persistent experiences of rejection by parents, teachers, friends or other close, significant caregivers are believed to be responsible for the formation of high rejection sensitivity. Thus Brendgen and colleagues [2002] assume that frequent hostile behavior and rejection by parents and peers leads people to expect hostility and rejection in social interactions. According to Downey and Feldman [1996], high rejection sensitivity is the internalized result of early and persistent open rejection (e.g., physical and verbal violence) and hidden rejection (e.g., emotional neglect). In retrospective interviews, people with high rejection sensitivity tended to report family problems and parental stress (e.g., parental mental illness) [Chang et al., 2000] and aggressive behavior in the family [Brendgen et al., 2002]. Teasing in childhood and rejection by peers were identified as social causes of high rejection sensitivity [Butler et al., 2007; London et al., 2007].

A recent study examined the retrospective assessment of students with regard to their experiences of rejection by parents and peers [Rosenbach et al., in preparation, a]. A negative parenting style and being ignored by one's peers were particularly correlated with high rejection sensitivity.

Rejection sensitivity is thus understood as a characteristic that is developed through repeated and prolonged experience of rejection, and influenced the perception and behavior in situations where one is threatened with rejection. Despite the assumed stability of this characteristic, it is much more strongly activated in 'threatening' situations and is therefore also state dependent.

Consequences of Rejection Sensitivity

Empirical research on the effects of high rejection sensitivity has hitherto focused mainly on social-psychological issues. Particularly with regard to problems in family and couple

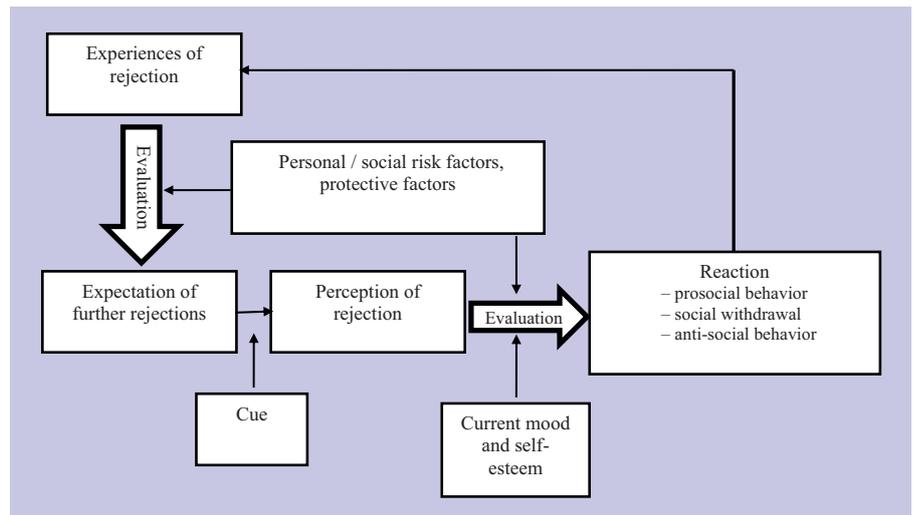


Fig. 1. Modified model of the formation and perpetuation of rejection sensitivity (extending the model of Downey et al., 2004).

relationships, high rejection sensitivity was correlated with inappropriate behaviors [e.g., Levy et al., 2001; Smart Richman and Leary, 2009].

Combining the model of rejection sensitivity [Downey et al., 2004] with the model of Smart Richman and Leary [2009], we see that people with high rejection sensitivity react to perceived rejection with either social withdrawal and anxiety – that is, the future avoidance of social situations; with offensive and aggressive (antisocial) behavior; or with extreme efforts in social situations. In any case, there are unavoidable consequences such as difficulties in social interaction, actual rejection by others, and increased psychological distress. As already mentioned, fulfillment of the need for belonging and acceptance makes a significant contribution to well-being and mental health. When a person is deprived of this satisfaction for a long time, it can lead to serious emotional disorders that can also reach the extent of clinically relevant adverse effects. The hypothesis could therefore be formulated, that high rejection sensitivity is one of the relevant risk factors for the etiology of mental disorders and contributes to the perpetuation of such disorders. From this point of view, research has increasingly focused on (sub-) clinical phenomena in relation to rejection sensitivity; the key findings are summarized here.

Assessment of Rejection Sensitivity and Differentiation from Similar Constructs

An important differentiation of the construct of rejection sensitivity pertains to social anxiety. Social anxiety describes a general insecurity in social situations, dominated by feelings of anxiety and personal inadequacy. Even if there is an overlap with rejection sensitivity, the latter refers to the basic assumption that one will be rejected in social interactions, and not to one's self-assessment. Rejection sensitivity is associated not only with anxiety, but may also be accompanied by feelings of anger or contempt.

Another important distinction is the concept of *interpersonal sensitivity*. Interpersonal sensitivity is defined as the accuracy and suitability of one's perception of emotions, intentions and actions of others [Hall and Bernieri, 2001], and is understood primarily in the sense of *empathy*. Nevertheless, in the English-language literature, the term *interpersonal sensitivity* is often used to describe both this construct and rejection sensitivity. Rejection sensitivity, however, means the *specific* assumption that one will be rejected in social situations, and this is perceived extremely frequently and quickly.

Downey and Feldman [1996] developed a questionnaire (Rejection Sensitivity Questionnaire, RSQ), with 18 fictitious social situations, that are potentially relevant to rejection, in order to detect the degree of rejection sensitivity. The subject is supposed to assess how anxious or nervous he/she is in these situations, as well as the likelihood of refusal or rejection. The questionnaire is available in versions for both children and adults, and was further modified for specific patient samples (e.g., gender-specific rejection sensitivity). There is a validated German form of the questionnaire for adults [Staebler et al., 2010], and a German version of the children's questionnaire is currently being validated [Rosenbach et al., in preparation, b].

In addition to this instrument, there are 2 other scales that are associated with rejection sensitivity, but are actually intended to assess other constructs. On the one hand, the *Interpersonal Sensitivity Measure* (IPSM) [Boyce and Parker, 1989], detects 'undue and excessive awareness of and sensitivity to the behavior and feelings of others' [Boyce and Parker, 1989]). The IPSM uses scales such as 'interpersonal awareness', 'need for recognition', 'separation anxiety', 'shyness' and 'fragile inner self' [Boyce and Parker, 1989], thus a much broader spectrum of interpersonal perceptions, whereas the RSQ deals only with the expectation and perception of being rejected. On the other hand, the 'interpersonal sensitivity' subscale of the Symptom Check List (SCL-90 [Derogatis et al., 1976]) should be mentioned; it assesses a wide range from

slight social insecurity to the feeling of complete personal inadequacy [Hessel et al., 2001]. This scale asks the subject for a self-assessment and self-evaluation in social interactions, whereas the RSQ records the specific expectation of being rejected by others. This expectation of being rejected may, theoretically, be high independent of the person's self-esteem.

The aim of this review is to provide an overview of the main empirical findings regarding the relationship of mental disorders and rejection sensitivity. Since neither the IPSM nor the SCL 'interpersonal sensitivity' subscale records rejection sensitivity in the sense defined above, and the construct of interpersonal sensitivity relates to empathy, this review is based solely on studies that have used the Rejection Sensitivity Questionnaire (RSQ).

Methodological Approach

The PsycINFO, MEDLINE and PubMed databases were searched using the keywords 'rejection sensitivity', 'sensitivity to rejection' and 'interpersonal sensitivity'. Key articles were also reviewed for additional relevant research articles. A total of 1,075 articles was examined using the above-mentioned methodological and definitional criteria.

The exclusion criteria were as follows:

- studies that investigated 'interpersonal sensitivity' in the sense of empathy
- studies that pertained to the 'interpersonal sensitivity' subscale of the SCL-90
- studies that used the IPSM
- individual case studies
- purely theoretical work
- studies that pertained exclusively to issues of social psychology
- studies of the effectiveness of pharmacological treatments

This left 21 scientific articles that pertain to mental problems and rejection sensitivity, as assessed with the RSQ (table 1).

Results

Only 4 of the 21 studies examined rejection sensitivity in clinical samples; all the others dealt with subclinical syndromes. 3 of the studies are based on longitudinal data; all the other results are from correlative cross-sectional studies (table 1).

Disorder-specific or symptom-specific features and their significance for rejection sensitivity are explained and discussed below.

Rejection Sensitivity and Borderline Symptoms

One of the diagnostic criteria of borderline personality disorder (BPD) is the 'desperate attempt to avoid real or imagined abandonment' [Diagnostic and Statistical Manual of Mental Disorders, DSM-IV; Saß et al., 2003]. Abandonment can be

seen as a form of rejection. People with BPD also have 'unstable, but intense interpersonal relationships, characterized by alternating between extremes of idealization and devaluation' [Saß et al., 2003]. Typical interaction patterns in BPD aim to maintain relationships, but at the same time are characterized by social withdrawal and aggressive, dismissive conduct. Concerning the model of rejection sensitivity, people with BPD thus present not only a form of dysfunctional behavior in response to perceived social rejection, but also a variety of different, possibly new rejection-provoking behaviors (harassing and threatening behavior, self-harm, withdrawal). This might partially explain the extremely high scores of rejection sensitivity in BPD [Stäbler et al., submitted].

In a recent study, borderline patients playing a virtual ball game (Cyberball) felt rejected and excluded even if that was not the case [Stäbler et al., submitted]. One possible explanation for this extreme perception could be the high degree of rejection sensitivity in borderline patients.

Rejection sensitivity is only correlated with borderline symptoms in a nonclinical sample, if the subjects also present low executive control functions [Ayduk et al., 2008b]. That means, especially when people find it difficult to suppress automatic reaction patterns in favor of more appropriate conduct, high rejection sensitivity is associated with increased borderline symptoms. Although these findings are based on cross-sectional, non-clinical data, one could conjecture that, in addition to rejection sensitivity, other personal variables (such as executive control functions) play a significant role in the etiology and maintenance of the BPD. Interestingly in this respect, Boldero et al. [2009] show that both avoidant and anxious attachment styles as well as rejection sensitivity correlate with the number of borderline symptoms, while the highly significant relationship between avoidant and anxious attachment styles and the number of borderline symptoms is partially mediated by rejection sensitivity.

Rejection Sensitivity and Depressive Symptoms

People with depressive symptoms often report low self-esteem or a sense of worthlessness, and feel easily dismissed and rejected. In the diagnostic criteria for atypical depression, 'long-lasting hypersensitivity to subjectively perceived personal rejections' is mentioned explicitly [Diagnostic and Statistical Manual of Mental Disorders, DSM-IV; Saß et al., 2003]. Correlations between rejection sensitivity and depressive symptoms, as well as a possibly mutually reinforcing reciprocal influence between rejection sensitivity and depressive symptoms, could therefore be assumed.

In a sample of depressed outpatients and inpatients, a positive correlation was identified between depressive symptoms and rejection sensitivity [Gilbert et al., 2006]. Rejection sensitivity predicts depressive symptoms for women after a stressful event, especially after being left by the partner [Ayduk et al., 2001]. On the other hand, when the woman herself ends a relationship or has an academic failure, highly re-

Table 1 Empirical findings on mental health problems/disorders and rejection sensitivity (monitored by the RSQ)

Authors	Year	Clinical sample (yes/no)	Sample	Design	Measuring instruments	Key findings
Atlas	2004	no	84 U.S.-college students, age M = 18.7 years	questionnaire, cross-sectional	Eating Disorders Inventory [Garner et al., 1983]	RS as a significant predictor of 'drive for thinness', not for bulimic eating behavior.
Ayduk et al.	2001	no	223 U.S.-college students, age M = 18.5 years	questionnaire, longitudinal (6 months)	Beck Depression Inventory [Beck et al., 1961]	RS predicts depression in women who have been abandoned by partners, but not in women who initiated a separation themselves.
Ayduk et al.	2008a	no	129 U.S.-college students, age M = 21.9 years	questionnaire, experiment	aggression measured by the weight of the hot sauce that a potential interaction partners is served	subjects with high RS respond to rejection with more aggression than subjects with low RS.
Ayduk et al.	2008b	no	379 U.S.-college students, age M = 21.2 years	questionnaire, cross-sectional	Personality Assessment Inventory - Borderline Features Scale [Morey, 1991]	borderline traits are associated with RS, especially in subjects with low executive control functions.
Boldero et al.	2009	no	101 Australian students, age M = 20.6 years; 131 students, age M = 20.1 years	questionnaire, cross-sectional	Borderline Personality Questionnaire [Poreh et al., 2006]; Experiences in Close Relationships Questionnaire [Brennan et al., 1998]	higher RS is associated with greater BPD symptoms; RS partially mediates the relationship between anxious / avoidant attachment styles and BPD symptoms.
Canu and Carlson	2007	yes	77 U.S.-college students, age 18-24 years	questionnaire, cross-sectional	Conners Adult ADHD Rating Scale-Self Report: screening version [Conners et al., 1999]; Wender Utah Rating Scale [Ward et al., 1993]	no differences in RS between subjects with ADHD and healthy subjects.
Cassidy and Stevenson	2005	subclinical	179 male participants in an anti-aggression program, age M = 14.68 years	questionnaire, cross-sectional	Multiscale Depression Index [Bermdt et al., 1980]	RS correlates significantly positively with depression and angry behavioral responses to exclusion.
Gilbert et al.	2006	yes	104 patients with depression, age M = 39 years	questionnaire, cross-sectional	Mood and Anxiety Symptoms Questionnaire [Watson und Clark, 1991]	RS correlates positively with mental illness and depressive symptoms.
Gupta	2008	no	427 U.S.-college students, age M = 19.7 years	questionnaire, cross-sectional	Revised Conflict Tactics Scale [Straus et al., 1996]; Aggression Toward Animals Scale [Gupta and Beach, 2001]	RS predicts interpersonal violence and violence directed against animals by women, but not by men.
Harrison	2006	<i>not available, insufficient information</i>				
Harper et al.	2006	no	211 U.S.-college students, age 14-21 years	questionnaire, cross-sectional	Center for Epidemiologic Studies Depression Scale [Radloff, 1977]	RS correlates positively with depressive symptoms; 'self-silencing' as a partial mediator.
Hartley	2007	no	<i>not available, insufficient information</i>			RS significantly higher in pedophile and hebephile sex offenders compared to healthy control group.

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Table 1 continuation

Authors	Year	Clinical sample (yes/no)	Sample	Design	Measuring instruments	Key findings
London et al.	2007	no	150 U.S.-college students (6th grade)	questionnaire, longitudinal (4 months)	various items from social anxiety scales; Loneliness and Social Dissatisfaction Questionnaire [Asher and Wheeler, 1985]	RS predicts social anxiety at t1 and social withdrawal at t2.
McCarty et al.	2007	no	331 U.S.-college students, age M = 12 years	questionnaire, cross-sectional and longitudinal (1 year)	Mood and Feelings Questionnaire [Costello and Angold, 1988]; Child Behavior Checklist [Achenbach, 1991]; Multidimensional Anxiety Scale for Children [Morey, 1997]	RS correlates with depressive symptoms at t1; RS predicts increased anxiety at t2. Depression at t1 predicts RS at t2.
McDonald et al.	2010	no	277 U.S.-college students, age M = 14.3 years	questionnaire, cross-sectional	Multidimensional Anxiety Scale for Children [March et al., 1999]; Children's Depression Inventory [Kovacs, 1992, unpublished manuscript]	RS correlates significantly with depressive and anxiety symptoms.
Mellin	2008	no	314 U.S.-college students, age 18-22 years	questionnaire, cross-sectional	Center for Epidemiologic Studies Depression Scale [Radloff, 1977]	RS accounts for 11% of the variance in depression.
Meyer et al.	2005	no	156 students and university employees, age M = 30.2 years	questionnaire, cross-sectional	SCID-II-Questionnaire [First et al., 1997]; Mood Rating Scale [Meyer et al., 2005]	RS correlates positively with the degree of borderline and dependent PD symptoms; positive correlation between RS and current emotions 'anger', 'depression', 'anxiety'.
Ruesch et al.	2009	yes	85 U.S. patients with schizophrenia, bipolar I/II, schizoaffective disorder or depression, age M = 45 years	questionnaire, cross-sectional	clinical diagnosis	patients with schizophrenia have significantly lower values for RS compared to patients with bipolar disorder and depression.
Sandstrom et al.	2003	no	95 U.S. children, age M = 9.7 years	questionnaire, cross-sectional	Child Behavior Checklist [Achenbach and Edelbrock, 1978]; Social Anxiety Scale for Children-Revised [la Greca and Stone, 1993]	increased RS is associated with a high level of internalizing and externalizing problems.
Staabler et al.	2010	yes	145 German patients (borderline, depression, anxiety disorders), age M = 36 years; 76 control subjects, age M = 29 years	questionnaire, cross-sectional	SKID I [Wittchen et al., 1997]; SKID II [Fydrich et al., 1997]	patients with BPD show significantly higher RS than all other groups; followed by social anxiety disorders, depression, other anxiety disorders.
Tragesser et al.	2008	no	121 U.S.-college students, age M = 19.2 years	questionnaire, cross-sectional	Personality Assessment Inventory-Borderline Features Scale [Morey, 1991]	no information about correlations between RS and BPD traits.

M = mean, RS = rejection sensitivity, BPD = Borderline Personality Disorder, PS = personality disorder.

jection-sensitive women do not show with elevated depression scores [Ayduk et al., 2001]. High rejection sensitivity seems to be a risk factor for depressive reactions by women particularly when what happens is exactly what is feared would happen, namely that she was rejected by another person.

Interestingly, McCarty and colleagues [2007] report in a longitudinal study that there is no predictive effect of rejection sensitivity for subsequent depression, but probably a reverse causal relationship: persons with depressive symptoms subsequently show increased scores for rejection sensitivity. This leads one to suspect, on the one hand, that the typical withdrawal behavior of depressed people can lead to repeated experiences of rejection and thus to greater rejection sensitivity. On the other hand, feelings of shame and guilt because of mental problems could be factors that lead depressive persons to develop strong fears of being rejected or stigmatized. Thus, rejection sensitivity can either be identified as an event-specific risk factor for depressive symptoms; or depressive behavior in personal interactions can trigger or reinforce rejection sensitivity.

Harper et al. [2006] suggest that the relationship between rejection sensitivity and depression is partially mediated by the person's suppression of his or her own emotions and needs, with the goal of avoiding conflict in social relations ('self-silencing'). Accordingly, people who are highly sensitive to rejection and put aside their own needs for fear of conflict are especially likely to suffer from depressive symptoms. If we connect these results to the model of rejection sensitivity, such behaviors are interpreted as dysfunctional reactions, which can lead to actual rejection, that in turn increases the level of rejection sensitivity.

The number of positive social bonds also influences the correlation between rejection sensitivity and depression [McDonald et al., 2010]. Thus highly rejection-sensitive adolescents who report at least 1 positive relationship (with parents or peers), are less depressed than those who have no positive relationships. Social bonds can therefore represent a protective factor within the model of rejection sensitivity.

Rejection Sensitivity and Anxiety Symptoms

One of the criteria for social anxieties is the avoidance of social situations, due to the fear of acting in an embarrassing way. Fear of being negatively valued or excluded therefore assumes great importance. London et al. [2007] show in a longitudinal study, that rejection sensitivity (t1) is associated with social anxiety and social withdrawal (t2, 4 months later). The authors also point out that rejection only leads to higher rejection sensitivity in male, but not in female study participants, whereas social inclusion by peers reduces the rejection sensitivity in both sexes. These results are consistent with the findings of McDonald and colleagues [2010], who likewise showed, for the case of social anxiety, that the number of positive social bonds reduces the extent of anxiety symptoms in rejection-sensitive adolescents.

Rejection Sensitivity and Aggressive Behavior

Some findings point to the direct correlation of rejection sensitivity and aggressive behaviors. In a study of adolescents who had already been subject to a disciplinary action because of violent behavior, rejection sensitivity accounted for a significant amount of the variance in aggressive behavior. The authors suggest that aggressive behavior can be seen as a dysfunctional coping strategy, to distract from one's own hypersensitivity [Cassidy and Stevenson, 2005].

These assumptions were confirmed in a study in which social exclusion was experimentally induced [Ayduk et al., 2008a]. In a fictional chat situation, after conveying some information about themselves, the test subjects were rejected by a potential chat partner. The subjects were later given the opportunity to apply hot sauce to the food of the person who had excluded them, which is interpreted by the authors as an indicator of interpersonal aggression. Highly rejection-sensitive people (who had previously been excluded) used more hot sauce than those who were less rejection-sensitive.

Interestingly, Gupta [2008] showed that rejection sensitivity is a significant predictor of violence by women in intimate relationships, but not by men. Rejection sensitivity may also here be a mediating factor between certain personality traits and deviant behavior.

Also the findings of significantly higher levels of rejection sensitivity for pedophile and hebephile sex offenders compared to a healthy control group, provide an indication of the relationship between aggression and rejection sensitivity [Hartley, 2007]. Sandstrom et al. [2003] point out that rejection sensitivity moderates the relationship between the experience of rejection and externalizing problems in children, which confirms the model's assumptions about rejection sensitivity.

Rejection Sensitivity and Other Mental Health Problems

Some findings point to further connections between rejection sensitivity and psychological stress. Atlas [2004] identifies rejection sensitivity as a significant predictor of the 'drive for thinness', but there are no correlations between rejection sensitivity and bulimic eating behavior. The correlation of the drive for thinness with rejection sensitivity is explained by the idea that reduced eating behavior and the desire to be thin might be a compensatory measure against intense fear of rejection [Atlas, 2004]. Here too, there is an interaction of various cognitive and affective components that explain the correlation between rejection sensitivity and mental disorders.

In a sample of schoolchildren, a positive correlation was found between rejection sensitivity and internalizing (anxiety, depression) as well as externalizing behavior problems (hyperactivity, aggression) [Sandstrom et al., 2003]. It should also be noted that there are findings which identified *no* correlation between rejection sensitivity and psychological symptoms. This pertains to 2 previously published studies: Canu and Carlson [2007] detected no differences in the degree of rejection sensitivity of students with or without attention defi-

cit hyperactivity disorder (ADHD). The authors suggest the idea of a self-protecting 'positive' illusory bias and the overestimation of one's own social performance. Both phenomena are frequently observed in children with ADHD and could also affect them in adulthood, such that actually experienced rejection is not perceived as such and does therefore not lead to high rejection sensitivity. In the only study of schizophrenic patients up to now, no increase in rejection sensitivity has been detected [Ruesch et al., 2009].

Summary

Empirical findings regarding correlations between rejection sensitivity and mental health problems and disorders are still at an early stage. Nevertheless, some preliminary research findings can be summarized.

From the results of clinical samples, it becomes apparent that rejection sensitivity seems to play a role in different mental disorders to varying degrees. Thus increased rejection sensitivity is reported for depressive disorders, anxiety disorders and BPD, with BPD patients reporting particularly high levels of rejection [Staebler et al., 2010].

These initial findings from clinical populations are confirmed by studies in non-clinical samples. Several studies report a positive correlation between the extent of rejection sensitivity and borderline personality traits [Ayduk et al., 2008b; Boldero et al., 2009; Meyer et al., 2005]. Also, the amount of depressive symptoms [Ayduk et al., 2001; Cassidy and Stevenson, 2005; Harper et al., 2006; McCarty et al., 2007; McDonald et al., 2010; Mellin, 2008] and the degree of anxiety [London et al., 2007; McCarty et al., 2007; McDonald et al., 2010] correlated positively with rejection sensitivity.

In addition, some studies report a positive correlation between rejection sensitivity and aspects of aggressive behavior (anger, violence, aggression [Ayduk et al., 2008a; Cassidy and Stevenson, 2005; Gupta, 2008]) or eating disorders [Atlas, 2004].

Initial results concerning rejection sensitivity in ADHD [Canu and Carlson, 2007] and schizophrenia [Ruesch et al., 2009] show no significant correlations. Additional factors have been identified that influence the relationship between rejection sensitivity and mental health problems in different ways. Therefore a low executive control function strengthens the correlation between borderline symptoms and rejection sensitivity [Ayduk et al., 2008b]; holding back one's own emotions and needs ('self-silencing'), however, mediates the relationship between depression and rejection sensitivity [Harper et al., 2006]. Positive social relationships reduce the extent of rejection sensitivity accompanying depressive symptoms and social anxiety [McDonald et al., 2010].

Discussion

A preliminary interpretation of these initial findings suggests a cross-disorder relevance of rejection sensitivity. Both depres-

sive and anxiety symptoms are associated with increased rejection sensitivity, as are borderline symptoms and aggressive behavioral tendencies. Depending on the study, this has been observed in both clinical and nonclinical samples, as well as in children, adolescents, and adults. Although most of the studies used cross-sectional data, we can formulate as the first summary proposition that high rejection sensitivity is a risk factor for the etiology and maintenance of various forms of dysfunctional conduct. Conversely, however, psychological problems may themselves lead to increased rejection sensitivity.

Factors that are discussed in the etiology of rejection sensitivity are also considered important risk factors for the etiology of various mental disorders. These include parental neglect, psychological abuse and physical violence, as well as negative attachment styles [Downey and Feldman, 1996; Feldman and Downey, 1994]. In negative attachment styles, insecure attachment is associated with the etiology of mental disorders; 90% of a sample of patients with various mental disorders had an insecure attachment style [Grawe, 2004]. Long-lasting and severe adverse experiences especially lead to greater distress [Egle and Cierpka, 2006]. A possible first hypothesis is that negative and persistent experiences of refusal and rejection result in a defensive expectation of further rejections (rejection sensitivity), and this in turn acts as a risk factor for various mental health problems or disorders. Depending on additional etiologically relevant risk factors (such as low executive control function or 'self-silencing'), but also taking into account protective factors (social support), this can then reach the point of a mental disorder (e.g., depression, BPD, social phobia). Longitudinal studies should test this assumption empirically.

Negative attachment experiences with primary caregivers can still be 'corrected' by later positive relationship experiences [Grawe, 2004]. It would therefore be interesting to examine whether people with negative attachment experiences, with or without subsequent positive relationship experiences, report higher or lower levels of rejection sensitivity, and thus show higher or lower psychological distress. Some of the studies presented above have already indicated that positive ties reduce the extent of psychological distress in highly rejection-sensitive people [e.g., McDonald et al., 2010]. Basically it would be important to check whether certain risk factors, but also protective factors, affect the assumed causal relationships between rejection sensitivity and mental problems.

If one tries to assign the symptoms of the various maladaptive response patterns of the rejection model of Smart Richman and Leary [2009], depressive disorders as well as anxiety disorders (especially social anxiety) could be associated with avoidance of social contact, while aggressive behavior could represent more an offensive anti-social reaction to repeatedly experienced exclusion. Patients with BPD show both reaction patterns: they strive for close relationships, while fearing and avoiding them at the same time. Persons with BPD may also show aggressive behavior.

Differences in the etiology of mental disorders and the importance of rejection sensitivity for these patients should be studied further. The first indications of the different mechanisms and associations are shown by Sandström and colleagues [2003]. Thus the correlation between rejection sensitivity and externalizing behavioral problems is significant only in children who have experienced actual rejection. However, the correlation between internalizing behavioral problems and rejection sensitivity exists whether a person has experienced rejection or not.

In addition to the role of rejection sensitivity in the etiology of mental disorders, there should also be discussion of whether rejection sensitivity can occur as a result of the symptoms of mental illness. McCarty and colleagues [2007] have shown that depression predicts rejection sensitivity. Depressive symptoms such as the feeling of worthlessness, drive inhibition and loss of interest, change both perception of and behavior in social interactions, which can in turn be associated with actual experiences of rejection. Suffering from a mental disorder is often associated with shame, fear of stigma and can result in social withdrawal. Such conceptions as 'to feel strange', 'to be different', 'to deviate from the norm' play an important role here. The possibility that rejection sensitivity occurs as a result of a change in experience and behavior that is associated with a mental disorder, should therefore be considered and further studied.

We should likewise discuss the potentially perpetuating function of rejection sensitivity in this context. The fear of being rejected in social interactions also promotes, in some circumstances, such symptoms as drive inhibition and the feeling of worthlessness, social withdrawal or extremely ambivalent interaction behavior, such as occurs in people with BPD. This then results in actual experiences of rejection, and if corrective experiences are prevented, the symptoms will be reinforced.

If these assumptions and findings are integrated into the model of rejection sensitivity, some of the relations formulated there could be confirmed. Thus the experience of rejection can result in increased rejection sensitivity. To what extent rejection sensitivity acts as a risk factor for mental illness seems to depend on other personal characteristics, as other variables also play a role in response to perceived rejection (e.g., executive control functions). It is therefore important that the model of rejection sensitivity is expanded to in-

clude possible additional variables that strengthen the correlation ('self-silencing') or reduce it (social relationships) (see modified model of the formation and perpetuation of rejection sensitivity, figure 1). Disorder-specific mechanisms of change should therefore be considered, and a longitudinal study undertaken to verify causal relationships.

Some of the assumptions of the rejection model of Smart Richman and Leary [2009] suggest by which variables the model of rejection sensitivity should be modified or expanded. Thus a more differentiated cognitive evaluation of 'the experienced rejection' should be considered, because the experience of rejection alone does not presuppose any other negative experience. Smart Richman and Leary [2009] incorporate into their model the perception and evaluation of rejection (e.g., personal value of a relationship, possible alternatives, duration and severity of rejection, perceived costs) and assign a significant role to one's reaction to rejection. These aspects have been integrated into the modified model (figure 1).

As regards the significance of the findings presented for therapeutic practice, we should mention the need to modify dysfunctional behaviors by methods of behavior therapy and to modify dysfunctional cognitions in cognitive therapy. Thus strategies of self-control and self-regulation (especially in patients with BPD [Ayduk et al., 2000; Ayduk et al., 2008b]) can lead to reduction in negative behaviors that are based on the perception of social exclusion. Care should also be taken to give patients feedback about their distorted perception of rejection by others (or also by the therapist) and to work with them on alternative explanatory models. In group therapy settings, the therapist should be aware of paying equal attention to all the patients, so as not to provoke the possible perception of rejection.

In summary, the first findings suggest that rejection sensitivity constitutes a relevant factor for the etiology and maintenance of psychological problems and disorders. The constellation of other personal and situational characteristics seems to play a relevant role in this. High rejection sensitivity, as an aspect that is especially relevant for interaction, should be taken into account in the psychotherapeutic setting.

Disclosure Statement

The authors declare that they have no conflicts of interest.

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