Effects of Rejection Sensitivity on the Development of Anxious-Depressive Attack in Patients with Social Anxiety Disorder

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Abstract

Anxious-depressive attack (ADA) is a recently proposed symptom cluster consisting of sudden intense feelings of distressing emotions with no direct psychological cause. It is characterized by intrusive rumination of mainly regretful memories accompanied by a violent emotional storm, resulting in countermeasures including acting out behaviors. ADA seems to manifest in various anxiety and affective disorders as well as some personality disorders, but may have been overlooked. A previous study showed that patients with ADA were more socially anxious and more depressive than those without ADA, regardless of their diagnoses. Social anxiety disorder (SAD) is one of such disorders with a high prevalence of ADA (44.4%). According to clinical reports, patients with SAD appear hypersensitive to rejection or criticism. The present study examined the relationships among ADA, social anxiety, depression and rejection sensitivity (RS) in patients diagnosed with SAD using structural equation modeling (SEM). Findings showed that RS directly significantly affects ADA, as well as indirectly via depression and social anxiety. Depression had a direct, positive effect on ADA, whereas social anxiety had an indirect effect on ADA via depression. The present study suggests that RS may contribute to the development of ADA in patients with SAD.

Key words: anxious-depressive attack, rejection sensitivity, social anxiety disorder, depression, structural equation modeling

[Introduction]

Anxious-depressive attack (ADA) is a poorly studied symptom cluster associated with anxiety and mood disorders (Kaiya, 2016, 2017). In ADA, the following symptoms appear sequentially over time: (1) sudden intense distressing emotions without a direct psychological cause; (2) obstinate, intrusive ruminative thinking of various events with a mostly unhappy nature,
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often accompanied by flashbacks; (3) intense worry, unrest, and forlornness against the negative details of the situations; and (4) in most cases, various coping behaviors, including acting out. ADA is not considered a panic attack given the lack of intense physical symptoms (Kaiya, 2016, 2017). ADA has been observed in various mental disorders, mainly in internalizing disorders, but has been ignored for a long time because most patients do not voluntarily report ADA symptoms. The closest description of ADA in Western literature will probably be “repeated episodes of abruptly depressed mood” in hysteroid dysphoria (Liebowitz & Klein, 1981). However, a more detailed description of the symptom complex was not provided.

According to a previous study of outpatients at our clinics with symptoms of anxiety and depression, patients with ADA showed higher scores on the Liebowitz Social Anxiety Scale (LSAS) than those without ADA irrespective of the diagnosis (Kaiya, 2017). Liebowitz (1987) stated that patients with social anxiety disorder (SAD) appear hypersensitive to rejection or criticism, suggesting an overlap with atypical depression or hysteroid dysphoria, where rejection sensitivity (RS) is a noticeable feature. The study by Kaiya (2017) further showed that the occurrence rate of ADA was highest in depression with atypical features (DAF). Parker and Thase (2007) pointed out that RS was a better diagnosing factor than mood reactivity in DAF. RS (Downey & Feldman, 1996) or interpersonal sensitivity (Boyce & Parker, 1989) is a predisposition to a feeling of not being liked, accepted, or respected. Thus, it seems that there are mutual relationships among ADA, social anxiety, DAF and RS. Then, the present study examines these relationships in details in patients with SAD, aiming to explore a basic mechanism of ADA.

Subjects and Methods

1. Subjects

One hundred ninety-five patients with SAD who first visited the authors’ outpatient clinics in Tokyo and Nagoya were invited to participate in the present study (April 2012 to August 2014). Among them, 57 patients (41 females, mean age = 32.1 years [SD = 11.4], 16 males, mean age = 32.00 years [SD = 8.0]) agreed to participate. The effective response rate was 29.23%. All participants gave written informed consent after receiving a detailed description of the study. None of the patients showed intense suicidal ideation, severe aggression toward others, or major physical diseases requiring medical treatment.

2. Methods

The diagnosis of SAD was assessed according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association, 2000). The presence or absence of ADA was confirmed according to criteria for ADA diagnosis (Table 1), as used previously (Kaiya, 2017). The confirmation was conducted by a psychiatrist during a clinical evaluation. Medical charts were reviewed to obtain information about living situation, marital status, job, and physical illnesses. The participants were asked during the first visit to complete the following self-report questionnaires: the Japanese version of the Interpersonal Sensitivity Measure (J-IPSM; Suyama et al., 2014) to measure RS; the Japanese version of the Liebowitz Social Anxiety Scale (J-LSAS; Asakura et al., 2002); and the Beck Depression Inventory-II (BDI-II; Kojima et al., 2002). Participants also
completed the following semi-structured interviews: the Japanese version of the Mini-International Neuropsychiatric Interview (M.I.N.I.; Sheehan et al., 2003); and the Japanese version of the Atypical Depression Diagnostic Scale (J-ADDS; Stewart et al., 1993).

The research procedure was reviewed and authorized by the ethics committee of the Warakukai Medical Corporation.

3. **Statistical Analysis**

Chi-square tests were applied to compare the demographic data of patients with and without ADA, using SPSS version 23 (IBM Corp., Armonk, NY, USA). Structural equation modeling (SEM) was applied to examine hypothesized relationships among rejection sensitivity, social anxiety symptoms, depression, and ADA, by Mplus 8 (Muthén & Muthén, 1998–2017) using robust maximum likelihood. The level of significance was set at 0.05.

### Results

1. **Demographics of Patients**

The presence and absence of ADA was confirmed in 29 (29.9±7.1 years old) and 28 patients (34.4±14.4 years old), respectively in 57 patients with SAD (16 males, 41 females) participating in the present study. The proportion of the concordance of confirmation for ADA between the psychiatrist and the clinical psychologist was 100%.

Table 2 shows the characteristics of patients with and without ADA. The proportion of females was higher in patients with ADA than those without ADA (86.2% vs 57.1%, \( p=0.02 \)). No other statistically significant difference was observed between patients with ADA and those without ADA in terms of age, living situation, marital status, and employment status.

In the M.I.N.I., patients with ADA had more comorbidities diagnosed as major depressive episode current (54.2% vs 12.0%, \( p<0.002 \),

| Table 1 Diagnostic criteria of anxious-depressive attack (Kaiya, 2017: Revised by the author for Anxiety Disorder Research) |
|-----------------------------------|
| A. Anxious-depressive attack occurs suddenly and recurrently regardless of one’s situation in various mental disorders. |
| B. The following symptoms proceed in descending order, but symptom no. 4 is elective. |
| 1. Abrupt surge of intense discomfort consisting of mixed emotions of anxious and depressive nature with or without being moved to tears. A peak comes within several seconds or less than a minute. |
| 2. Intrusive rumination including mostly negative memories, consisting of mainly recent or past adverse events (flashbacks) or rarely worry, which continues for several tens of minutes to several hours. |
| 3. Prominent agitation, unrest, or loneliness that occurs during rumination and was very violent and inappropriate to ruminative contents. |
| 4. Various coping behaviors to manage intense discomfort occasionally appear. |
| C. Physical symptoms, e.g., shortness of breath and palpitations, are extremely modest. |
| D. The disturbance is not attributable to the direct psychological effects of any stress, physiological effects of a substance, or a neurological or other medical condition. |
| E. The disturbance is not better explained by another neuropsychiatric disorder (e.g., panic disorder, post-traumatic stress disorder, non-epileptic seizure, frontal epilepsy, intermittent explosive disorder, anxious distress specifier for Depression, sudden emotional excitement of schizophrenia, or Ataque de nervios). |
major depressive episode recurrent (37.5% vs 8.0%, \( p = 0.018 \)), suicide risk (62.5% vs 13.0%, \( p = 0.01 \)) than those without ADA. The proportion of patients with DAF was significantly higher in patients with ADA than those without ADA (88.9% vs 33.3%, \( p < 0.021 \)).
2. **Relationship among Psychological factors**

The results of the SEM analysis are presented in Figure 1. RS had a significantly positive effect on ADA (J-IPSM score, $\beta=0.48$, $p<0.01$, odds ratio=$1.57$, 95% confidence interval [CI] = 1.03–2.39), depression (BDI-II score, $\beta=0.39$, $p<0.01$), and social anxiety (J-LSAS score, $\beta=0.60$, $p<0.01$). Depression also had a significantly positive impact on ADA ($\beta=0.49$, $p<0.01$, odds ratio=$1.10$, 95% CI = 1.03–1.18), whereas social anxiety had a significantly positive impact on depression ($\beta=0.37$, $p<0.01$). On the other hand, the effect of social anxiety on ADA was not statistically significant (odds ratio=$0.99$, 95% CI = 0.96–1.01).

![Figure 1](image-url) Structural equation modeling was conducted to examine the relationships among rejection sensitivity, social anxiety symptoms, depression, and anxious-depressive attack. **$p < 0.01$; *$p < 0.05$; BDI-II, Beck Depression Inventory-II; J-IPSM, Japanese version of Interpersonal Sensitivity Measure; LSAS, Liebowitz Social Anxiety Scale (Japanese version).**

**Discussion**

SEM indicated that RS may induce ADA through three routes in SAD patients; 1) RS directly affects ADA; 2) RS affects depression, which influences ADA; and 3) RS impacts social anxiety symptoms, which affects ADA via depression (Fig. 1). The second route might be related to a previous finding that patients with ADA may be more depressive than those without ADA regardless of the diagnoses (Kaiya, 2017). The main symptom of ADA is compelling rumination of mainly regretful memories or worries as mentioned previously. In reference to this view, an interesting study by Pearson et al. (2011) reported that baseline RS prospectively predicted increased rumination six months later, but baseline rumination did not predict RS. Therefore, RS might be dispositional for rumination, the main symptom of ADA. These findings suggest that RS is an essential precondition for ADA. Although RS affected social anxiety symptoms, the symptoms did not directly affect ADA (Fig. 1). This is consistent with the author’s experiences that ADA is seen not only in socially anxious patients but also in patients with narcissistic personality disorder, especially with the hypervigilant narcissist, who is very sensitive to
others’ responses (Gabbard, 2005). Thus, ADA is impacted purely by RS.

RS has been reported to cause clinically troublesome pathological states or conditions, as having suicide ideation (Brown et al., 2019), aggression and victimization (Gao et al., 2019), social-emotional maladjustment (Godleski et al., 2019), and low self-esteem and loneliness (Zhou et al., 2018). Furthermore, RS has been associated with depression, anxiety, loneliness, borderline personality disorder, and body dysmorphic disorder (Gao et al., 2017). In another report, RS was prospected from family conflict and maternal harshness in both childhood and adulthood (Godleski et al., 2019). These lines of evidence, with the present study which suggests a major role of RS in the development of ADA, might support our previous finding that patients with ADA could suffer such conditions regardless of the diagnosis (Kaiya, 2016).

A line of studies have reported that RS is related to non-melancholic depression (Boyce & Parker, 1989; Boyce et al., 1990, 1993; Sato et al., 2001) or DAF (Luty et al., 2002; Davidson et al., 1989). The frequency of DAF was 45.0% in the patients with ADA in the present study. This may be compatible with Koyuncu et al. (2015), who found DAF in 58.7% of patients with SAD. Some authors (Alpert et al., 1997; Levitan et al., 1997; Posternak & Zimmerman 2002; Matza et al. 2003) showed that the comorbidity rate of SAD was higher in DAF than in other depressions. Liebowitz (1987) stated that many social phobic patients appear hypersensitive to rejection or criticism, suggesting an overlap with DAF. While the present study suggests that depressive symptoms may mediate the effects of RS on ADA, the role of DAF was not specifically examined and remains to be studied in future.

[Limitations and Future Directions]

This study has limitations that need to be acknowledged. First, further studies will be needed to ascertain the results, because the numbers of the subjects in this study is not large. Second, psychological data were obtained through self-reported questionnaires. Third, several potentially major confounders might not have been considered in the present study. Fourth, given that rumination is closely related to RS, as shown by Pearson et al. (2011), the role of rumination should be evaluated in the development of ADA in future investigations. The conclusion of this study should be confirmed not only in SAD but also in other anxious and depressive disorders with ADA.

[Conclusion]

RS is a vital symptom for the occurrence of ADA in patients with SAD. Depression with ADA in SAD tends to have atypical features and manifest several psychologically adverse conditions.

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