The relationships among separation anxiety disorder, adult attachment style and agoraphobia in patients with panic disorder

Stefano Pini a,⇑, Marianna Abelli a, Alfonso Troisi c, Alberto Siracusano c, Giovanni B. Cassano a, Katherine M. Shear b, David Baldwin d

a Department of Clinical and Experimental Medicine, Section of Psychiatry, University of Pisa, via Roma 65, I-56100 Pisa, Italy
b Columbia University, Department of Social Work, School of Social Work, Columbia University, New York, NY, USA
c Department of Neurosciences, University of Rome Tor Vergata, Via Montpellier 1, 00133 Rome, Italy
d Department of Psychiatry, University of Southampton, Faculty of Medicine, Academic Centre, College Keep, 4-12 Terminus Terrace, Southampton SO14 3DT, United Kingdom

Article history:
Received 19 May 2012
Received in revised form 20 June 2014
Accepted 30 June 2014
Available online 11 July 2014

Keywords:
Panic disorder
Separation anxiety disorder
Adult attachment style
Agoraphobia

ABSTRACT

Epidemiological studies indicate that separation anxiety disorder occurs more frequently in adults than children. It is unclear whether the presence of adult separation anxiety disorder (ASAD) is a manifestation of anxious attachment, or a form of agoraphobia, or a specific condition with clinically significant consequences. We conducted a study to examine these questions. A sample of 141 adult outpatients with panic disorder participated in the study. Participants completed standardized measures of separation anxiety, attachment style, agoraphobia, panic disorder severity and quality of life. Patients with ASAD (49.5% of our sample) had greater panic symptom severity and more impairment in quality of life than those without separation anxiety. We found a greater rate of symptoms suggestive of anxious attachment among panic patients with ASAD compared to those without ASAD. However, the relationship between ASAD and attachment style is not strong, and adult ASAD occurs in some patients who report secure attachment style. Similarly, there is little evidence for the idea that separation anxiety disorder is a form of agoraphobia. Factor analysis shows clear differentiation of agoraphobic and separation anxiety symptoms. Our data corroborate the notion that ASAD is a distinct condition associated with impairment in quality of life and needs to be better recognized and treated in patients with panic disorder.

1. Introduction

Separation anxiety disorder is a well-established diagnostic category in the psychiatric nomenclature (Shear, Jin, Ruscio, Walters, & Kessler, 2006). However, most studies of this condition pertain to childhood. By contrast, little attention has been paid to the occurrence of adult separation anxiety disorder (ASAD). Although in DSM-IV, separation anxiety disorder was classified in the section “Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence,” criteria for the disorder are now described in the DSM-5 section on anxiety disorders (APA, 2013). The core features remain mostly unchanged, although the wording of the criteria has been modified to more adequately represent the expression of separation anxiety symptoms in adulthood. For example, attachment figures may include the children of adults with separation anxiety disorder, and avoidance behaviors may occur in the workplace as well as at school. Also, in contrast to DSM-IV, the diagnostic criteria no longer specify that age at onset must be before 18 years, because a substantial number of adults report onset of separation anxiety after age 18 (Marnane & Silove, 2013). The disturbance must cause clinically significant distress or impairment in social, academic, or other important areas of functioning. Adults with a diagnosis of ASAD report extreme anxiety about separations from major attachment figures (partner, children, or parents), fear that harm would befall those close to them and need to maintain proximity to them. These symptoms may affect the individual’s behavior and lead to severe impairment in social relationships. It is important to distinguish between symptoms of ASAD and dependent personality traits. Dependency is a pervasive and indiscriminate tendency to rely excessively on others, whereas ASAD refers to a limited array of concern about the proximity and safety of key attachment figures.

Initial, Manicavasagar, Silove, and Curtis (1997) highlighted the clinical significance of ASAD as a distinct diagnosis. This group raised the possibility that the most common pathological outcome for children with separation anxiety may be adult separation...
anxiety disorder (Manicavasagar, Silove, Curtis, & Wagner, 2000; Manicavasagar, Silove, & Hadzi-Pavlovic, 1998) and documented the occurrence of ASAD in adults (Wijeratne & Manicavasagar, 2003). Our group (Cyranoowski et al., 2002; Fagioli, Shear, Cassano, & Frank, 1998; Pini, Abelli, et al., 2005; Pini et al., 2010) also found ASAD to be surprisingly common in a large clinical population of outpatients with anxiety and mood disorders. The high prevalence of ASAD in the general population (6.8%) was also confirmed in the NCS-R data (Shear et al., 2006).

Another unresolved question is the nature of the relationship linking separation anxiety disorder to insecure attachment in general and to anxious attachment in particular (Troisi & D’Argenio, 2004). Theoretically, it is possible that not all individuals with anxious attachment meet criteria for separation anxiety disorder. It is also possible that separation anxiety disorder occurs even in the context of secure attachment. In other words, it is not known whether all individuals with separation anxiety disorder also engage in other anxious attachment behaviors. To our knowledge, no empirical study has been undertaken to answer this question.

Manicavasagar, Silove, Marnane, and Wagner (2009) tried to clarify the link between attachment styles and panic disorder/agoraphobia (PD-Ag). They studied 83 patients with PD-Ag and ASAD, highlighting that the style of anxious attachment, using the Attachment Style Questionnaire (ASQ) (Feeney, Noller, & Hannahan, 1994), was more prevalent in patients with separation anxiety and panic disorder than in patients with only panic attacks.

Similarly, the relationship between adult separation anxiety disorder, panic disorder (PD) and agoraphobia has not been well clarified (Mian, Godoy, Briggs-Gowan, & Carter, 2012; Wittchen et al., 2008; Wittchen, Gloster, Beesdo-Baum, Fava, & Craske, 2010). A prominent theme in the literature pertains to the relationship between childhood separation anxiety and adult PD (Bruckl et al., 2007). Some investigators found evidence that childhood separation anxiety disorder is associated with an increased risk of PD, with or without agoraphobia, in adulthood (De Ruijer & Van Ijzendoorn, 1992; Klein, 1964, 1980). However, other studies have not supported this association (Aschenbrand, Kendall, Webb, Safford, & Flannery-Schroeder, 2003; Warner, Mufson, & Weissman, 1995). Lipsitz et al. (1994) found a high rate of childhood separation anxiety among adults with different anxiety disorders and questioned whether childhood separation anxiety disorder is selectively linked to adult PD or, alternatively, constitutes a risk factor for adult anxiety disorders more generally. Findings from the NCS-R supported the latter hypothesis. In the NCS-R, ASAD was highly comorbid with PD, but such a comorbidity rate was not different from the rates with other anxiety or mood disorders. Thus, neither childhood nor adult ASAD was preferentially associated with PD.

This hypothesis has been further corroborated by findings arguing against the notion that separation anxiety and anxious attachment are relevant to panic disorder with agoraphobia in general, suggesting instead that this constellation is confined to a separate group, namely that of adult separation anxiety disorder.

Preter and Klein (2008) proposed a model that amplified the original suffocation false alarm theory (Klein, 1993). The observation of respiratory abnormalities in patients with PD was in line with the hypothesis that panic may be provoked by indicators of potential suffocation, such as fluctuations in pCO2 and brain lactate, as well as environmental circumstances. However, the fact that sudden loss, bereavement and childhood separation anxiety are also antecedents of “spontaneous” panic required an integrative explanation. Within this framework, the authors reappraised a developmental pathophysiological link between separation anxiety and PD and subsequent agoraphobia, coupled with attachment theory and ethological views of anxiety. Central opioid system dysfunction has been claimed to play a key role in both disordered breathing and separation distress in decreasing the suffocation alarm threshold.

Given the dearth of research concerning ASAD, we have undertaken a series of investigations to better understand this condition among help-seeking individuals diagnosed with other DSM IV diagnoses (Costa et al., 2009; Pini, Abelli, et al., 2005; Pini, Martini, et al. 2005; Pini et al., 2010). In the current paper, we report the results of a clinical study aimed at ascertaining whether adult separation anxiety can be distinguished from agoraphobia and from anxious attachment style. In addition, we aimed at clarifying whether the occurrence of ASAD is associated with distinctive features of the PD clinical picture. These data may contribute to the current debate whether ASAD is a distinct clinical entity or merely a variant/subtype of PD. In addition, differential assessment of ASAD, agoraphobia or anxious attachment style may have important therapeutic implications for patients with panic disorder (Milrod et al., 2014).

2. Methods

The study sample included 141 consecutive adult psychiatric outpatients with a diagnosis of panic disorder with or without agoraphobia as a primary diagnosis. Participants were recruited from the adult psychiatric outpatient clinics of the Department of Psychiatry, University of Pisa. Patients with psychotic disorders or substance use disorder prior to the index assessment were excluded. This investigation was carried out in accordance with the Declaration of Helsinki. The University of Pisa Ethical Committee reviewed the study design and all subjects were informed of the nature of study procedures and provided written informed consent prior to participation. Experienced residents in psychiatry performed interviews. Subjects completed self-report questionnaires and structured clinical interviews over 2 days.

2.1. Panic disorder diagnosis

All subjects were assessed with the Structured Clinical Interview for the DSM-IV (SCID-I) (First, Spitzer, Gibbon, & Williams, 2002) to establish DSM IV axis I primary diagnosis and comorbidity. We used the Panic Disorder Severity Scale (PDSS) to assess current severity of PD (Shear et al., 1997; Shear, Rucci, et al., 2001). We also examined current severity of depression using the Hamilton Depression Rating Scale (Hamilton, 1960). Quality of life was assessed by the Medical Outcomes Study Short Form (SF-36) (Ware & Gandek, 1998).

2.2. Separation anxiety

We conducted clinical interviews for adult and childhood history of separation anxiety disorder. To do this, we used the Structured Clinical Interview for Separation Anxiety Symptoms (SCI-SAS) (Cyranoowski et al., 2002). This semi-structured interview evaluates each of the 8 DSM IV criterion symptoms of separation anxiety, separately for childhood and adult symptoms. Each question was scored as 0 (not at all), 1 (sometimes), 2 (often) or 7 (don’t recall). In keeping with the DSM-IV guidelines, endorsement of three or more of the eight criterion symptoms (symptoms rated as “2 (often)”) was used as a threshold to determine categorical (yes/no) diagnosis of separation anxiety disorder in childhood and adulthood. In addition, criterion B (i.e., duration of at least 4 weeks) and C (i.e., the disturbance causes clinically significant distress or impairment in social, academic, occupational), or other important areas of functioning were required. Scores on the 8 items of each subscale were also summed to produce a continuous measure of separation anxiety symptoms (range for each subscale = 0–16).
We further assessed separation anxiety using the Adult Separation Anxiety Questionnaire (ASA-27), a 27-item inventory, which rates symptoms of ASAD. This scale has been shown to display good internal reliability as well as concurrent validity with clinical assessments of ASAD (Manicavasagar et al., 1997; Manicavasagar, Silove, Wagner, & Droby, 2003).

### 2.3. Attachment style

Attachment style was assessed using two different self-report instruments. The Relationship Questionnaire (RQ) (Bartholomew & Horowitz, 1991) is a single-item measure made up of four short paragraphs, each describing a prototypical attachment pattern as it applies in close adult peer relationships. Participants are asked to rate degree of fit for each prototype on a 7-point scale. The RQ was designed to obtain continuous ratings of each of the four attachment patterns, and can also be used to categorize individuals into their best fitting attachment pattern. The highest of the four attachment prototype ratings can be used to classify participants into an attachment category designated A (secure), B (fearful-avoidant attachment), C (preoccupied) and D (dismissing-avoidant) (Griffin & Bartholomew, 1994). The instrument has shown good psycho-metric properties (Picardi et al., 2002). In this study, the RQ data were used to assign each participant to an attachment style category. Attachment style was determined by assigning each subject to the category with the maximum score among the four items described by the RQ (data available for 107 subjects).

In addition, we used the Attachment Style Questionnaire (ASQ) (Feeney et al., 1994) as a dimensional measure of attachment style (data available for 104 subjects). The ASQ is a 40-item self-report questionnaire in which items are rated on a 6-point scale from 1 (totally disagree) to 6 (totally agree). Based on both theoretical expectations and principal components analysis, the 40 items can be assigned to five scales: Confidence, Discomfort with Closeness, Need for Approval, Preoccupation with Relationships, and Relationships as Secondary. Discomfort with Closeness maps onto conceptualizations of avoidant attachment (Hazan & Shaver, 1987). Need for Approval reflects respondents' need for acceptance and confirmation from others that characterizes fearful avoidant and anxious preoccupied groups. Preoccupation with Relationships also maps to anxious attachment (sometimes also called anxious/ambivalent attachment). The Relationships as Secondary scale identifies dismissing attachment (Bartholomew, 1990). Confidence (in Self and Others) reflects a secure attachment orientation. When the ASQ was administered to a large sample of university students, the five scales showed good internal consistency, with Cronbach's alpha coefficients ranging from .76 to .84; further, the 10-week retest reliability coefficients of the scales ranged from .67 to .78 (Feeney et al., 1994).

### 2.4. Agoraphobia

Agoraphobia was assessed using the Panic-Agoraphobic Spectrum Self-Report (PAS-SR) (Cassano et al. 1999). This 114-item questionnaire was developed to assess lifetime panic-agoraphobic spectrum symptoms and displays good psychometric properties (Frank et al., 2002; Shear, Frank, et al., 2001). Items are organized into eight panic-agoraphobic symptom domains including a domain comprising 25 items for assessing agoraphobia. Items are rated dichotomously (yes/no). Domain scores are obtained by counting the number of positive responses.

### 3. Statistical analyses

The mean values of continuous variables such as age and scale scores were compared between subjects with and without ASAD using the t-test for independent samples. Comparisons of categorical variables between groups were conducted using the chi-square test. In particular, rates of Axis I psychiatric comorbidity were compared between the two groups with or without ASAD, before proceeding to factor analysis and attachment comparisons. The p-value was set at .05. The association of demographic and clinical variables with ASAD was estimated using crude odds ratios (ORS) with 95% confidence intervals (CIs). The factor structure of the adult SCI-SAS scale and PAS-SR ‘agoraphobia’ subscale was evaluated by using a generalized least square factor analysis. For this analysis the SCI-SAS items were dichotomized (0, 1 = absent, 2 = present) to have the same measurement level as PAS-SR items.

### 4. Results

#### 4.1. Characteristics of sub-groups with and without adult separation anxiety disorder (ASAD)

Overall, ASAD was diagnosed in 70/141 (49.5%) of our sample, and was more likely to occur in females (52/91; 57.1%) compared with males (18/50; 36%) (OR = 2.37, 95% CI: 1.17–4.83). Age, educational level and marital status were similar between subjects with or without ASAD (age: 39.45±12.60 with ASAD and 41.65±13.07 without ASAD; t-test = 1.013, p = .313; educational level: 10.76±3.71 with ASAD and 11.20±4.36 without ASAD; t-test = −.652, p = .516; married: 31 (45.6%) and 33 (46.5%), in each group respectively, chi-square = 11, p = .916). Subjects with ASAD were less likely to be employed (58.8% vs. 72.5%) although this difference did not reach statistical significance (chi-square = 3.03, p = .082). Thirty-eight (54.3%) of the 70 participants with ASAD also reported a history of childhood separation anxiety disorder, while only 13/71 (18.3%) of those without ASAD recalled these symptoms in childhood (OR = 5.30, CI 2.47–11.37 for those with ASAD compared with those without). Overall, 58/141 (41%) of the sample did not meet criteria for child or adult separation anxiety disorder.

#### 4.2. Clinical correlates of adult separation anxiety disorder (ASAD)

As shown in Table 1, ASAD was associated with higher frequency of agoraphobia (p = .046), more panic attacks during last month (p = .008), greater severity of panic disorder symptoms (p = .028), and earlier age of onset of agoraphobia (p = .018). Patients with ASAD endorsed lower scores on quality of life as assessed by SF-36 in terms of ‘physical functioning’ (p = .007), ‘role emotional’ (p = .048), ‘mental health’ (p = .003) and ‘general health’ (p = .008).

#### 4.3. Adult separation anxiety and agoraphobia

ASA-27 total score significantly correlated with SCI-PAS agoraphobia subscale score (r = .31). Factor analysis including items from both scales revealed that a two-factor model fits the data well (chi-square = 163.6, df = 151, p = .228). The factor loadings are shown in Table 2. Two items from the agoraphobia scale load on the ‘separation anxiety’ factor. These items rate feeling nervous or uncomfortable when alone outside home or somewhere far from home or when home alone.

#### 4.4. Adult separation anxiety disorder and attachment style

The relationship between ASAD and attachment style has been investigated by the RQ and the ASQ. About 20% of the sample was not willing to complete the attachment evaluation. However, these
individuals did not differ from those who completed the assessment on socio-demographic or clinical characteristics.

There were no significant differences in the distribution of the four RQ-rated attachment styles among panic disorder patients with vs without ASD: ‘Anxious’, 35.8% vs 26.8%; ‘Avoidant’ 26.4% vs 22.2%; ‘Dismissing’ 26.4% vs 25.9%; ‘Secure’ 11.3% vs 24.1%.

The dimensional measure ASQ revealed that the group with ASD scored significantly higher on preoccupation with relationships (32.22 ± 8.43 vs 28.56 ± 7.40; t = −2.308, p = .023) and showed a trend toward greater need for approval (25.00 ± 7.89 vs 22.40 ± 7.44, t = −1.702, p = .092), i.e. on both the scales indicative of anxious attachment.

5. Discussion

Our study of panic disorder patients examined questions related to the distinctiveness of the syndrome of adult separation anxiety disorder. Results of our study support the idea that adult separation anxiety disorder is different from anxious attachment or agoraphobia. We found a greater rate of symptoms suggestive of anxious attachment among panic patients with ASD compared to those without ASD. However, the relationship between ASD and attachment style is not strong, and ASD occurs in some patients who report secure attachment style. Similarly, there is little evidence for the idea that separation anxiety disorder is a form of agoraphobia. Factor analysis shows clear differentiation of agoraphobic and separation anxiety symptoms.

Previous studies reported that ASD is an impairing condition that leads to long-term difficulties in different areas of functioning (Milrod et al., 2014; Pini et al., 2010; Shear et al., 2006). We found that panic disorder patients with ASD had greater severity of panic
disorder and more impairment in quality of life than those without. These findings corroborate the notion that it is important for clinicians and researchers to focus on ASAD, when co-occurring with other psychiatric disorders, as an independent source of disability.

We highlight the importance of distinguishing between separation anxiety as a symptom and separation anxiety as a disorder. Both ASAD and anxious attachment share separation anxiety symptoms (Shear, 1996; Dozie, Chase Stovall, & Albus, 1999). However, our results suggest that separation anxiety, as a symptom, is not necessarily indicative of separation anxiety disorder. The latter is a specific constellation of symptoms in adults, resembling the well-described childhood condition, to which it is often related. In this case, patients have profound sensitivity to transitions and losses, including those experienced in therapeutic relationships (Milrod et al., 2014). Patients and clinicians may not recognize its presence or potency given that it tends to normalize, so that separation anxiety fuels chronic anxiety and a global sense of inadequacy and incompetence that can undermine either psychological or pharmacological treatments. In particular, separation anxiety disorder has been found to predict medication nonresponse to SSRIs and tricyclic antidepressants in subjects with panic disorder with agoraphobia (Minciati et al., 2012).

Fear of being alone and unable to get help is a form of separation anxiety and also a criterion symptom for agoraphobia (Bandelow et al., 2001; Beesdo-Baum et al., 2009; Pollack et al., 1996). However, agoraphobic fear is usually related to the possibility of having a panic attack, whereas the core fear in separation anxiety disorder is that of harm pending on a close attachment figure. The resulting pattern of avoidance associated with agoraphobia differs from that found with adult separation anxiety disorder. The distinctiveness of ASAD and agoraphobia is supported by our factor analysis findings. However, agoraphobic fear of being alone did load with ASAD. This suggests that some individuals diagnosed with agoraphobia based on such fear may have co-occurring ASAD and/or may be better characterized as ASAD.

5.1. Limitations

The limitations of this study need to be acknowledged. We used only self-report instruments to evaluate attachment style. However, these scales have been well validated and used by many other investigators. Our sample included PD patients recruited from a psychiatric outpatient clinic with a reputation for the treatment of anxiety and mood disorders. Thus, although panic disorder was the primary diagnosis in our sample, the high prevalence of comorbid mood disorders could have affected the relationship between separation anxiety and attachment styles. The frequency of ASAD may be elevated in this tertiary care setting (Pini, Abelli, et al., 2005). However, there is no reason to expect that the lack of correspondence between ASAD and attachment style or between ASAD and agoraphobia was specific to this sample. Our study is also limited by the cross-sectional nature of our data. We found some potentially important associations between separation anxiety disorder, panic disorder severity, impairment in quality of life and anxious-preoccupied attachment style. However, we cannot determine the direction of causality nor whether impact of quality of life was, at least in part, mediated by severity of PD.

5.2. Conclusions

In summary, we found a high frequency of adult separation anxiety disorder in a group of psychiatric outpatients who met DSM-IV criteria for panic disorder. We found more differences than similarities between anxious attachment, agoraphobia and ASAD. We further corroborate indications of clinical significance of this condition (Silove & Marnane, 2013). We urge clinicians and researchers to be aware of separation anxiety disorder in adults and consider the possibility that specific treatment strategies may be needed.

Acknowledgements

This work was supported by grants from the Italian Ministry of University and Scientific Research (prot. 2005069159) and Fondazione IDEA (Institute for Research and Prevention of Depression and Anxiety).

References


IBM SPSS Inc. (2011). SPSS Statistics. Rel. 20.0. USA: IBM.


