Social anxiety disorder with comorbid major depression – why fearful attachment style is relevant

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Abstract

Individuals with social anxiety disorder (SAD) often suffer from comorbid major depressive disorder (MDD), which goes along with increased clinical and functional impairment. There has been little research on underlying differences regarding childhood adversities and attachment styles between individuals with SAD with and without comorbid MDD. In the present study, the consecutive sample comprised 612 SCID-diagnosed participants. Of these, n = 472 (62.3% women, 40.7 ± 13.8 years) showed SAD and comorbid MDD (SAD-MDD group) and n = 140 (47.9% women, 43.7 ± 14.7 years) showed just SAD (SAD group). The two groups were compared regarding SAD symptom severity (Social Phobia Inventory; SPIN), childhood adversities (Adverse Childhood Experience Questionnaire; ACE) and attachment styles (Attachment Style Questionnaire, ASQ). The SAD-MDD group reported significantly more severe SAD symptoms (p = .002, d = 0.30), more childhood adversities (p < .001, d = 0.35) and a higher level of fearful attachment style (p < .001, d = 0.30). Group significantly moderated the association between fearful attachment style and SAD symptom severity (β = .292, p < .05) but not between preoccupied attachment style and SAD symptom severity (β = -.184, p = .124; R^2_{adj} = .168, p < .05). Fearful attachment style mediated the association between childhood adversities and SAD symptom severity in the SAD-MDD group. Our study could identify a specific significance of fearful attachment style for the association between negative childhood experiences and social anxiety symptoms in SAD-MDD. Findings have specific implications for the therapeutic relationship.

Keywords: social anxiety disorder; major depression disorder; childhood adversities; fearful attachment style; attachment anxiety; attachment avoidance

1. Introduction

There is evidence that the onset of social anxiety disorder (SAD) often lies in adolescence and goes ahead of major depressive disorder (MDD; Schatzberg et al., 1998; Stein et al., 2001; Chavira et al., 2004; Beesdo et al., 2007). SAD predicts the development of MDD and a high comorbidity with this disorder was demonstrated (Kessler et al., 1999; Stein et al., 2001; Bittner et al., 2004; Chavira et al., 2004; Beesdo et al., 2007; Ohayon and Schatzberg, 2010). According to Chavira et al. (2004), 28% of children with SAD also reported a lifetime MDD. The comorbidity rate even increases up to 38% when only investigating the generalized subtype of SAD diagnosed in DSM-IV. The SAD-MDD comorbidity is associated with a higher clinical severity, a lower level of recovery, more psychiatric and psychopharmacological treatments, more severe functional impairment, lower well-being, more comorbid anxiety disorders and a lower probability to be married than SAD or MDD alone (Merikangas and Angst, 1995; Safren et al., 1996; Hart et al., 1999; Bruce et al., 2005; Ohayon and Schatzberg, 2010; Aderka et al., 2012; Wersebe et al., 2018). Furthermore, SAD with comorbid major depressive disorder and/or dysthymia was linked to a lower educational level (Wittchen et al., 2000) and SAD as well as MDD are risk factors for substance misuse (Buckner et al., 2008a; Buckner at al., 2008b; Conner et al., 2009). The SAD-MDD comorbidity, in particular, was linked to a more severe MDD with longer episodes and a higher suicidality compared to MDD without comorbid SAD (Stein et al., 2001; Dalrymple and Zimmerman, 2007). Even though childhood adversities (Simon et al., 2009; Kuo et al., 2011; Brühl et al., 2019; Vibhakar et al., 2019) and attachment style (Manning et al., 2017; Yacaman-Mendez et al., 2019; Conrad et al., 2021) play an important role in SAD as well as MDD, to our best knowledge, these risk factors have not been investigated in a greater sample with SAD-MDD comorbidity. Referring to the attachment theory of Bowlby (1973) early-life experiences are important for developing

different attachment styles between the child and the caregiver. The child internalizes a working model of attachment depending on the responsiveness of the caregiver (Bowlby, 1973). According to Bartholomew and Horowitz (1991), these early life experiences lead to secure or insecure attachment styles in adults underlying specific internal models of the self and others. The *secure attachment style* is characterized by a positive model of the self and a positive model of others. Among the insecure attachment patterns, the *fearful attachment style* is characterized by a negative model of the self and a negative model of others, the *preoccupied attachment style* by a negative model of the self and a positive model of others and the *dismissing attachment style* by a positive model of the self and a negative model of others (Bartholomew, 1990).

It is assumed that mainly the preoccupied attachment style, which goes along with attachment anxiety, is associated with SAD in general (Manning et al., 2017). The individual´s anxiety is based on a negative self-image, which is fueled by the comparison with positively evaluated others (Griffin and Bartholomew, 1994). However, when taking the specific importance of comorbidity into account another additional aspect of attachment, namely attachment avoidance, is of high relevance (Bifulco et al., 2006, Weisman et al., 2011; Adams et al., 2018b). Attachment avoidance includes that individuals avoid intimacy with others either because of their fear or because of their lack of interest in others. While a lack of interest in others is associated with a dismissing attachment style, the fear of others is linked to a fearful attachment style (Bartholomew, 1990). It is most likely that in SAD with comorbid MDD the fearful attachment style, which is associated with attachment anxiety as well as attachment avoidance, is highly prevalent (Bifulco et al., 2006; Adams et al., 2018b). This attachment style incorporates a negative view of the self and others as stated above (Bartholomew, 1990) and shows a close link to MDD (Carnelley et al., 1994;

Whiffen et al., 2001; Özer et al., 2015). Furthermore, SAD-MDD comorbidity is associated with more severe childhood adversities compared to SAD only (Brühl et al., 2019). Based on Bartholomew´s working model of attachment (1990), children who have experienced childhood adversities are likely to develop a negative model of others as rejecting and uncaring. It is hypothesized that individuals who have such a negative working model of others are likely to avoid others because of their fear of being harmed or rejected (Manning et al., 2017). This inner belief may intensify the anxiety in social interactions. Particularly, the combination of attachment anxiety and attachment avoidance as in the fearful attachment style may be linked to SAD symptom severity in the comorbid SAD-MDD group.

Against this background, we assume that individuals with SAD-MDD comorbidity as compared to individuals with just SAD are more likely to hold a fearful attachment style and more often suffer from childhood adversities. Furthermore, we assume that a fearful attachment style will be closely linked to SAD symptom severity in the SAD-MDD group whereas there is no difference regarding the preoccupied attachment style in both groups. Within this framework we propose that fearful attachment style mediates the relationship between childhood adversities and SAD symptom severity in the SAD-MDD group.

To be concrete, we hypothesize that the SAD-MDD group versus the SAD group reports significantly (1) increased functional impairment in terms of a lower number of partnerships and lower level of education (2a) more comorbid anxiety disorders and more suicidal ideation (2b) more alcohol abuse/dependence and substance-related disorders (except alcohol) (3) more psychotherapeutic/psychiatric treatment and more psychopharmacotherapy (4) increased SAD symptom severity that is a higher SPIN score (5) more childhood adversities and (6) a higher score on fearful attachment style. Furthermore, (7) group (SAD-MDD vs. SAD group) moderates the relationship

between fearful attachment style and SAD symptom severity but not between preoccupied attachment style and SAD symptom severity. Regarding mediation analysis, we hypothesize that (8) in the SAD-MDD group fearful attachment style is a mediator of the association between childhood adversities and SAD symptom severity.

2. Methods

2.1. Participants

Since 2012, participants were recruited as part of the research project “Social Phobia research - Research on SAD” which represents a common project between the Clinic for Psychosomatic Medicine and Psychotherapy and the Institute of Genetics at the University of Bonn in Germany (Forstner et al., 2017; Rambau et al., 2018; Ernstmann et al., 2020; Conrad et al., 2021). The recruitment took place through own clinical services (outpatients and inpatients) and advertisements (newspapers, internet, TV/radio channel, self-help groups). Inclusion criteria were: (1) a diagnosed lifetime SAD assessed with the German version of the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; German version, Wittchen et al., 1997) and (2) at least an age of 18 years or older. An additional inclusion criterion for participants in the SAD-MDD group was a diagnosed lifetime MDD assessed with the German version of the SCID-I (Wittchen et al., 1997). Exclusion criteria were: (1) inappropriate German language skills and (2) somatic and/or mental issues to complete study questionnaires. The investigation was carried out in accordance with the latest version of the Declaration of Helsinki. The ethics committee of the University of Bonn approved the present study and informed consent was obtained by all participants before the interview. 775 individuals wanted to take part in the study. Of these, 163 were not included because they did not show up for the appointment or did not fill out the questionnaires. The consecutive sample comprised 612 participants. Of these, 472

were in SAD-MDD and 140 were in SAD group. Sociodemographic and clinical characteristics are presented in Table 1.

2.2. Recruitment process

The recruitment process of participants in the SAD and SAD-MDD group took place between January 2013 and June 2019. German version of SCID-I interview based on DSM-IV was assessed by trained interviewers, all of them were psychologists (Wittchen et al., 1997). It was used instead of German version of SCID-I interview based on DSM-V because the German version of SCID-I interview based on DSM-V was only published in 2019 (Beesdo-Baum et al., 2019).

2.3. Measures

2.3.1. Demographic variables.

A standardized demographic questionnaire assessed sex, age, marital status, education, ethnic origin, psychotherapeutic/psychiatric treatment and psychopathology of parents.

2.3.2. Diagnoses

German version of SCID-I was used by trained interviewers to obtain SAD, MDD and potentially interesting SAD comorbidities (First et al., 1995; Wittchen et al., 1997). As SAD comorbidities panic disorder, agoraphobia, generalized anxiety disorder, specific phobia, alcohol abuse/dependence and substance-related disorders (except alcohol) were assessed as lifetime diagnoses. According to literature, the SCID-I shows high reliability and is a valid instrument (Lobbestael et al., 2011).

Table 1
Demographic and clinical characteristics of study cohort.

	SAD-MDD group *n* = 472	SAD group *n* = 140	Test statistic (*p*-value)
Characteristics:	*n* (%)	*n* (%)	
Sex			
Female	294 (62.3)	67 (47.9)	χ^2 = 9.30 (.002) **
Male	178 (37.7)	73 (52.1)	
Age (in years)			
M	40.68	43.66	*t* = 2.18 (.031) *
(*SD*)	(13.84)	(14.74)	
Current partnership			
Yes	206 (43.6)	79 (56.4)	χ^2 = 7.09 (.008) **
No	266 (56.4)	61 (43.6)	
Level of education	*n* = 456	*n* = 136	
Below high school	166 (35.2)	36 (25.7)	
High school	157 (33.3)	45 (32.1)	χ^2 = 7.28 (.026) *
College level or above	133 (28.2)	55 (39.9)	
Suicidal thoughts (Item I, sum score)	*n* = 471	*n* = 139	
M	0.65	0.35	*t* = -5.79 (<.001) ***
(*SD*)	(0.71)	(0.49)	
Psychotherapeutic/ Psychiatric treatment	*n* = 459	*n* = 138	
None	222 (47.0)	92 (65.7)	
Outpatient	93 (19.7)	34 (24.3)	χ^2 = 28.59 (<.001) ***
Inpatient	144 (30.5)	12 (8.6)	
Psychopharmacotherapy			
Yes	125 (26.5)	19 (13.6)	χ^2 = 10.00 (.002) **
No	347 (73.5)	121 (86.4)	
Social Anxiety (SPIN)			
M	42.26	39.05	*t* = -3.20 (.002) **
(*SD*)	(10.62)	(10.36)	
Comorbidities			
Panic disorder	137 (29.0)	23 (16.4)	*Fisher's exact test* = 9.45 (.007) **
Agoraphobia	172 (36.4)	32 (22.9)	*Fisher's exact test* = 9.35 (.008) **
Generalized anxiety disorder	80 (16.9)	10 (7.1)	*Fisher's exact test* = 9.78 (.006) **
Specific phobia	157 (33.3)	28 (20.0)	*Fisher's exact test* = 10.18 (.004) **
Alcohol abuse or dependence	115 (24.4)	26 (18,6)	χ^2 = 2.04 (.171)
Substance-related Disorder (except alcohol)	6 (1.27)	3 (2.14)	*Fisher's exact test* = 0.57 (.434)

Note: Missing data for level of education, suicidality and treatment due to incomplete sociodemographic survey; covariates sex, age; * ≤ .05,** *p* ≤ .01,*** *p* ≤ .001.

2.3.3. Social Phobia Inventory (SPIN)

The level of social anxiety was assessed using the German version of the Social Phobia Inventory (SPIN; Connor et al., 2000; Sosic et al., 2008). The SPIN quantifies the behavioral, physiological and cognitive symptoms of social phobia. It is a highly economic self-report questionnaire and shows good psychometric properties (Sosic et al., 2008). The SPIN consists of 17 items which are answered on a five-point Likert scale from 0 (*not at all*) to 4 (*extremely*). The total sum score ranges from 0 to 68. In the present study, the SPIN proved high internal consistency (α = .87).

2.3.4. Beck Depression Inventory (BDI)

The German version of the Beck Depression Inventory (BDI) was used for assessment of suicidal ideation measured as the sum score of item I (Beck et al., 1994; Hautzinger et al., 1994). The BDI is a self-report questionnaire and obtains the participants´ agreement on past week´s symptoms of depression. It consists of 21 items on a scale from 0 (*symptom absent*) to 3 (*severe symptoms*). The sum score ranges from 0 to 63. The BDI has good psychometric properties (Richter et al., 1998) and demonstrated good internal consistency in our study, with a Cronbach´s Alpha of 0.89.

2.3.4. Adverse Childhood Experiences Questionnaire (ACE)

The German version of the Adverse Childhood Experiences Questionnaire (ACE; Felitti et al., 1998; Wingenfeld et al., 2011) was used to obtain traumatic history in childhood and adolescence. The self-report questionnaire includes ten yes/no items regarding adverse childhood experiences (emotional abuse; physical abuse; sexual abuse, emotional neglect; physical neglect; separation from a parent; violence against the mother; substance abuse by/substance dependence of a household member; mental illness/suicidality of a household member and imprisonment of a household

member). The ACE has good psychometric properties and is highly economic (Wingenfeld et al., 2011). The total sum score ranges from 0 to 10. The ACE sum score of the present study demonstrated acceptable internal consistency (α = .71).

2.3.5. Attachment Style Questionnaire (ASQ)

The German version of the Attachment Style Questionnaire (ASQ; van Oudenhoven et al., 2003) was used to assess adult attachment styles. It is a 22-item self-report questionnaire with four subscales measuring not only relationship-specific but general attachment styles. The four attachment styles are secure, preoccupied, fearful and dismissing attachment style and the items are answered on a five-point scale ranging from 1 (*not at all applicable)* to 5 (*entirely applicable)*. The ASQ shows good psychometric properties (Hofstra et al., 2005). The ASQ demonstrated acceptable to good reliability in the present study with Cronbachs´s alpha of .67 (secure), .82 (fearful), .73 (preoccupied) and .70 (dismissing).

2.3.6 Statistical analyses

Demographic and clinical characteristics were presented as descriptive statistics and were analyzed using *chi*-square-tests, Welch´s *t*-tests or *Fisher´s exact* test with sex and age as covariates. To calculate the group difference for attachment styles and childhood adversities a multivariate analysis of covariance (MANCOVA) with sex and age as covariates was applied. To test if group (SAD-MDD vs. SAD group) moderates the relationship between fearful attachment style and SAD symptom severity but not between preoccupied attachment style and SAD symptom severity a moderated hierarchical regression analysis with sex and age as covariates was used.

A statistically significant *p*-value was set for $p < .05$. Furthermore, Cohen´s *d* served as a measure of effect size and was interpreted as a small (0.2 to < 0.5), moderate

(0.5 to < 0.8) or large (≥ 0.8) effect (Cohen, 1988). Analyses were performed with the Statistical Package for the Social Sciences (SPSS), Version 27.0 (IBM Corp, 2020). A mediator analysis in order to test the significance of fearful attachment style as a mediator between the association of childhood adversities and SAD symptom severity was performed using PROCESS macro for SPSS (Hayes, 2018). Preoccupied attachment style as a parallel mediator was included in order to control for a potential effect on SAD symptom severity through this attachment style. Bootstrap confidence intervals based on 10,000 bootstrap samples indicated statistical significance when they were entirely above zero.

3. Results

3.1. Sociodemographic and clinical characteristics

The included SAD-individuals (n = 612) were significantly older (M = 40.90) than the not-included individuals (n = 163, M = 33.56, p < .01). Both groups did not show a significant difference regarding sex (χ^2 = 78.45, p = 0.05). In the SAD-MDD group were significantly more women than in the SAD group and participants in the SAD-MDD group were significantly younger (see Table 1). As expected (Hypothesis 1) participants in the SAD-MDD group had significantly less partnerships and showed a significantly lower level of education. Furthermore, participants in the SAD-MDD group showed significantly more comorbid anxiety disorders, that is panic disorder, agoraphobia, generalized anxiety disorder and specific phobia as well as more suicidal ideation as hypothesized (Hypothesis 2a). However, there were no between-group differences regarding alcohol abuse/dependence or substance-related disorders (except alcohol). These results do not confirm our Hypothesis 2b. The SAD-MDD group also reported significantly more psychotherapeutic/psychiatric treatment and more psychopharmacotherapy, which confirms our Hypothesis 3. Participants in this

subgroup also showed a significant higher SPIN score ($t(232) = -3.20$, $p = .002$, $d = 0.30$). This finding supports our Hypothesis 4.

3.2. Childhood adversities and attachment style

The MANCOVA with sex and age as covariates revealed significantly more childhood adversities in participants in the SAD-MDD group ($F(1,608) = 18.39$, $p < .001$, $d = 0.35$; see Figure 1a). Regarding attachment styles, participants in the comorbid SAD-MDD group scored significantly higher on fearful ($F(1,608) = 13.53$, $p < .001$, $d = 0.30$) and significantly lower on secure ($F(1,608) = 10.96$, $p = .001$, $d = 0.27$) attachment style (see Figure 1b). There were no differences observed for dismissing and preoccupied attachment style. These findings are consistent with our Hypotheses 5 and 6.

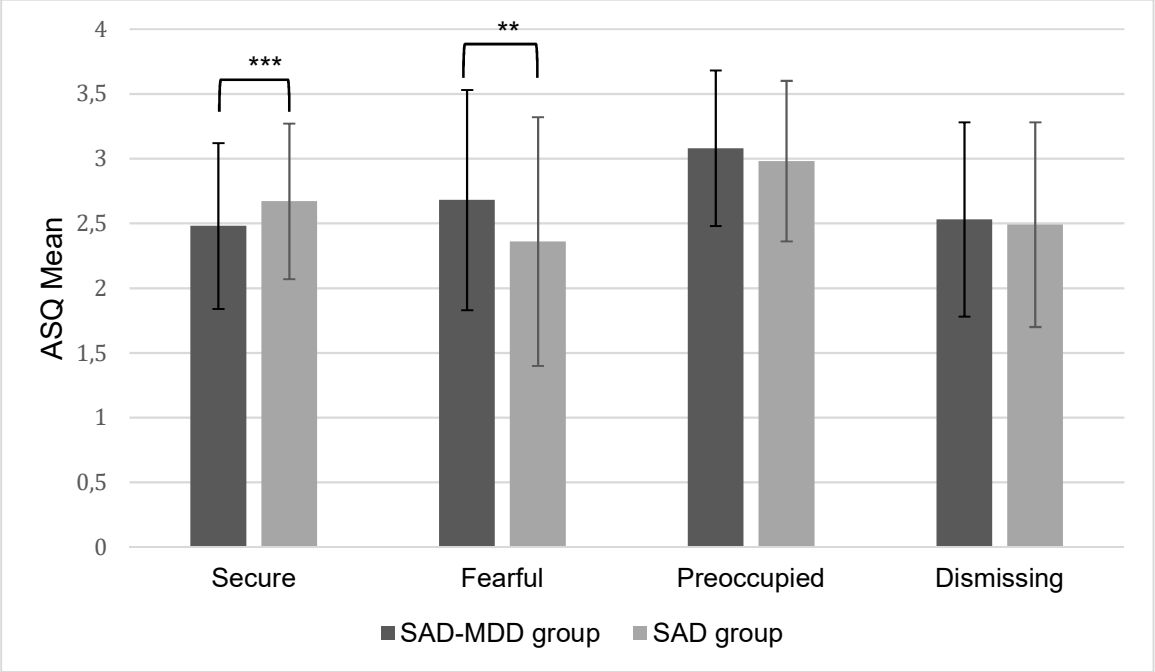

Figure 1a. *Results of MANCOVA for attachment style*
Note: Attachment style (ASQ), covariates sex, age; **p<.01 ***p<.001.

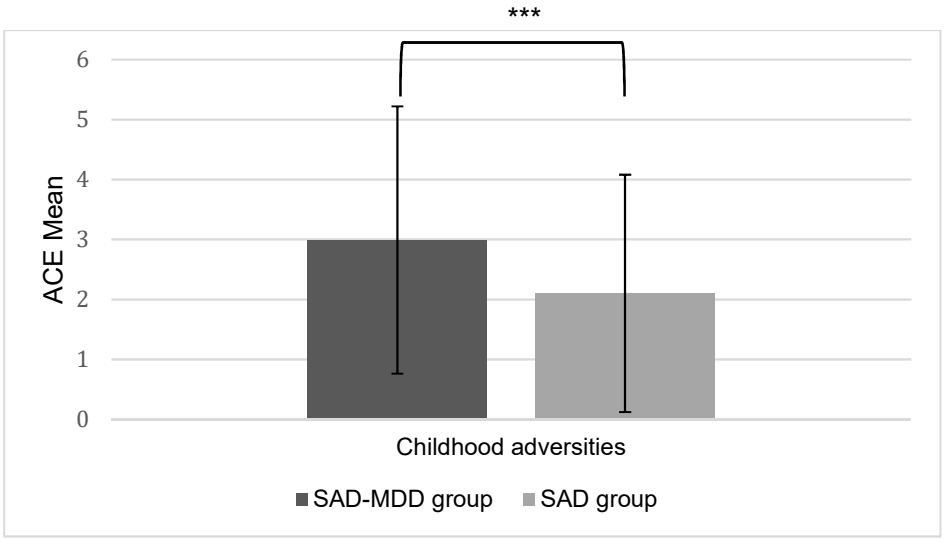

Figure 1b. *Results of MANCOVA for childhood adversities*
Note: Childhood adversities (ACE), covariates sex, age; **p<.01 ***p<.001.

3.3. Group moderates the relationship between fearful attachment style and SAD symptom severity but not between preoccupied attachment style and SAD symptom severity

To test our hypothesis that the interaction between group (SAD vs. SAD-MDD group) and fearful attachment style significantly predicts SAD symptom severity and the interaction between group and preoccupied attachment style does not predict SAD symptom severity a moderated hierarchical regression analysis with sex and age as covariates was performed. Consistent with Hypothesis 7, group significantly moderated the association between fearful attachment style and SAD symptom severity but not between preoccupied attachment style and SAD symptom severity (see Table 2). The overall model was significant, predicting 16.8% of the variance.

Table 2
Moderated hierarchical regression analysis in whole sample.

		Social Anxiety	
	Predictors	β	R^2_{adj}
Step 1	Sex	.123**	
	Age[a]	-.023	
			.013**
Step 2	Fearful[a]	.310***	
	Preoccupied[a]	.161***	
			.162***
Step 4	Group x fearful[a]	.292*	
	Group x preoccupied[a]	- .184	
			.168*

Note: N=612; dependent variable SPIN, predictors sex, age (step 1), ASQ (step 2), Group x ASQ_fearful Group x ASQ_preoccupied (step 3); [a] centered variables; * p<.05, ** p<.01,*** p≤.001.

3.4. Parallel mediation analysis regarding childhood adversities, attachment style and SAD symptom severity in the SAD-MDD group

A mediation analysis was performed to examine Hypothesis 8 that fearful attachment style is a mediator of the association between childhood adversities and SAD symptom severity (see Figure 2). As a parallel mediator preoccupied attachment style was included in the mediator analysis. In accordance with our hypothesis, in the SAD-MDD group the association between childhood adversities and SAD symptom severity was mediated by fearful (indirect effect ab_1 = 0.362, 95% CI 0.188 - 0.569) and preoccupied (indirect effect ab_2 = 0.093, 95% CI 0.019 - 0.191) attachment style. There was evidence for a significant difference of both specific indirect effects (95% CI -0.482 - -0.087). Furthermore, a significant total effect of childhood adversities on SAD symptom severity (c_1 = 1.043, p < .0001) was observed.

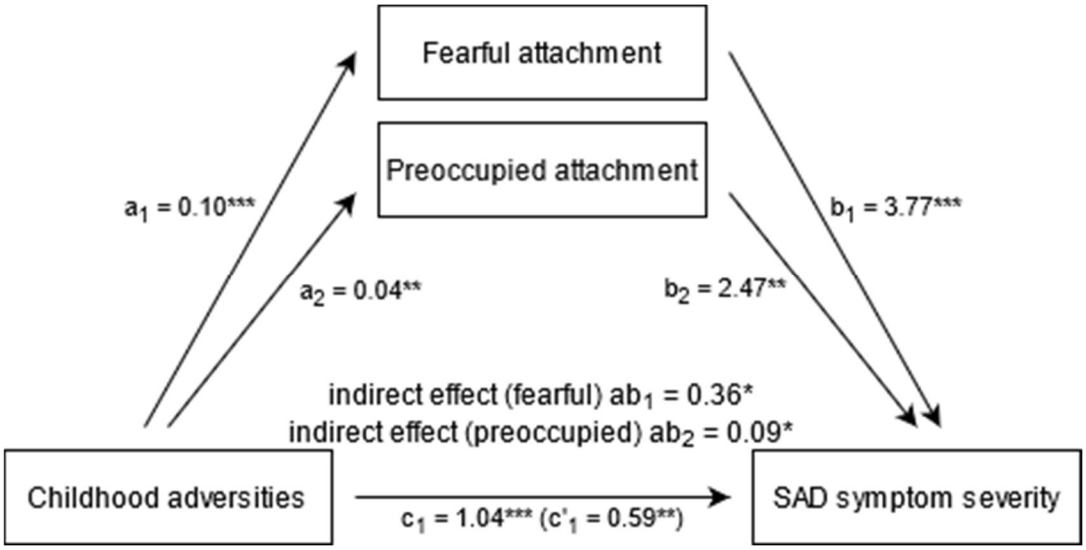

Figure 2. *Mediation analysis in SAD-MDD group*
Note: Unstandardized regression coefficients for childhood adversities (ACE) and SAD symptom severity (SPIN) with fearful attachment (ASQ) and preoccupied attachment (ASQ) as parallel mediators; *p<.05 **p<.01 ***p<.001.

4. Discussion

The present study is, to the best of our knowledge, the first who investigates the significance of childhood adversities and fearful attachment style for SAD symptom severity in individuals with SAD and comorbid MDD in a large clinical sample. Our findings confirm a higher score on fearful attachment style and more childhood adversities in this subgroup. Furthermore, fearful attachment style significantly predicts SAD symptom severity and mediates the relationship between childhood adversities and SAD symptom severity in this group. Individuals with SAD and comorbid MDD reported significantly more psychotherapeutic/psychiatric treatments, more psychopharmacotherapy, more comorbidities with regard to anxiety disorders, more suicidal ideation, less partnerships, a lower level of education and more severe SAD symptoms.

4.1 Clinical and functional impairment in SAD-MDD group

To some extent, the significance of the inner beliefs underlying the fearful attachment style may help to understand specific impairments in individuals with SAD and comorbid MDD. Individuals with a predominantly fearful attachment style as in the SAD-MDD group are likely to distance themselves from others because they have a negative working model of others and distrust them (Bartholomew, 1990). This may explain why this subgroup reports fewer partnerships. The lower level of education may be related to difficulties in social integration and the avoidance of social contact in school because of the fear of being rejected and devaluated. The clinical variables as more psychotherapeutic/psychiatric treatment, more psychopharmacotherapy, more suicidal ideation and more comorbidities with regard to anxiety disorders show the high level of suffering within this subgroup which is confirmed by a higher SAD symptom severity. Counter to our expectations, we did not find more alcohol abuse/dependence or substance-related disorders (except alcohol) in the SAD-MDD comorbidity group. This may be explained by the tendency of individuals with high SAD symptom severity, especially fearful-attached individuals in our comorbid subgroup, to avoid a lot of social encounters. This social avoidance may reduce the probability to drink alcohol as the avoidant behavior itself will already reduce SAD symptom severity and will be more effective than drinking (Eggleston et al., 2004). Additionally, individuals with high SAD symptom severity who fear negative evaluation of others may avoid drinking excessively to prevent devaluation (Bruch et al., 1992; Bruch et al., 1997; Eggleston et al., 2004).

4.2 Childhood adversities and fearful attachment style in SAD-MDD group

Our analysis confirmed the hypotheses that participants in the SAD-MDD group report significantly more childhood adversities and a higher score on fearful attachment style

than in the SAD group. No significant difference in preoccupied attachment style was observed. Moderated regression analysis revealed that group significantly moderated the association between fearful attachment style and SAD symptom severity but not between preoccupied attachment style and SAD symptom severity. This indicated a high impact of fearful attachment style for SAD symptom severity only in SAD-MDD group but not in SAD group whereas both groups did not differ in the preoccupied attachment style for SAD symptom severity. Furthermore, fearful attachment style mediated the association between childhood adversities and SAD symptom severity in SAD-MDD group. Preoccupied attachment style also mediated the relationship between childhood adversities and social anxiety in SAD-MDD group. However, comparing the size of the indirect effects of both mediators in SAD-MDD group (fearful attachment style $ab_1 = 0.36^*$ and preoccupied attachment style $ab_2 = 0.09^*$) fearful attachment style appears to be the more important mediator in this subgroup. This is supported by the significant difference of the indirect effects of both mediators indicating that fearful attachment style is the significant stronger mediator. The observed specific relevance of a fearful attachment style in SAD-MDD individuals emphasizes the predominant relevance of attachment avoidance additionally to attachment anxiety in SAD-MDD individuals, whereas to date most studies on SAD tend to highlight the impact of mainly attachment anxiety (Eng, et al., 2001; Manning et al., 2017). This could be particularly important in the therapeutic relationship, as it may become more difficult to establish a trusting therapeutic relationship. Psychotherapists should know this in order to be more patient with fearful-attached individuals.

4.3 Approach-avoidance conflict in individuals with SAD and comorbid MDD

In the present study, we assessed the adult and not the infant attachment styles. However, according to previous studies the internal working model consisting of representations of the self and others in general shows continuity over a lifetime (Hazan and Shaver, 1987; Shaver et al., 1996, Pietromonaco and Barrett, 2000; Zimmermann et al., 2000). The specific attachment styles are associated with various underlying goals which are related to attachment. For example, attachment styles consisting of negative models of the self are linked to an extraordinary desire for intimacy. Attachment styles consisting of negative models of others are linked to avoidance of social situations as well as an extraordinary desire for independence. Strategies to achieve these goals can expand over a lifetime but the goals remain unchanged (Baldwin et al., 1996; Shaver et al., 1996; Vertue, 2003). Based on this, we can refer to early childhood experiences and assume that these are linked to different adult attachment styles. In particular, children who have faced childhood adversities made the experience that their caregivers responded inadequately or inappropriately towards the child´s attachment behavior and that they cannot feel secure. As a result, they develop a negative model of others as rejecting and uncaring (Bowlby, 1973). This may explain the significant association between childhood adversities and fearful attachment style observed in our study. Hence, fearful attached individuals not only distrust themselves but also distrust others. Because of the experienced childhood adversities and their parents´ hostile behaviour they may fear being rejected and therefore avoid intimacy. At the same time, as stated above, individuals with a negative model of the self are longing for intimacy. Additionally, from an evolutionary point of view, it is adaptive that individuals try to seek attachment. Thus individuals with a fearful attachment style are in a conflict: They are still longing for intimacy, while the negative model of others lets them aspire for independence and avoidance of intimate

contacts (Vertue, 2003; Locke, 2008; Mikulincer et al., 2010). This approach-avoidance conflict can explain why fearful-attached individuals want to be liked by others even though they do not trust them. In everyday life, fearful-attached individuals develop expectations about social encounters being negative, resulting in devaluation and rejection (Vertue, 2003; Ishaq and Haque, 2015). This expectation reinforces SAD symptom severity. Furthermore, former experiences of social rejection, hostility or negative emotions in a social context such as shame contribute to the maintenance of fearful internal working models, again reinforcing social anxiety and avoidance (Vertue, 2003). As a result, new corrective social experiences are rare consolidating the internal working model of a negative self and negative others more and more.

4.4 Implications for future research

It would be interesting to take other comorbidities like generalized anxiety disorder (GAD) and alcohol use disorder (AUD) into account when assessing social anxiety and attachment styles in future studies since there is evidence that GAD as well as AUD alone are associated with a dismissing attachment style (Bifulco et al., 2006; Vungkhanching et al., 2004). Furthermore, different therapy approaches could be compared in terms of their efficacy establishing a trustful therapeutic relationship in fearful-attached individuals and thus reducing social anxiety symptoms. Longterm studies would be necessary for this investigation.

4.5 Clinical implications

Looking at practical clinical implications, it is highly important to focus on early childhood adversities and attachment styles in psychotherapeutic treatment of individuals with SAD and comorbid MDD. One major issue is the difficulty of getting fearful-attached individuals into psychotherapy since they tend to miss more

appointments (Ilardi and Kaslow, 2009), delay treatment or do not seek treatment at all (Adams et al., 2018a). First of all, a specific assessment of the degree of fearful attachment style at the beginning of therapy would be helpful which could be done using the ASQ. Moreover, attending more appointments is associated with the perceived support of the practitioner (Adams et al., 2018a). Therefore, psychotherapists should place particular emphasis on building up and maintain a supportive relationship with fearful-attached patients. The therapeutic relationship can function as a model that helps individuals to learn to trust in themselves, regain self-confidence and build up trust in others. A safe and trusting relationship can be established through the therapist´s ability to be empathetic and to validate any feelings of the patient that arise (Geller & Greenberg, 2012). To be fully present as a therapist and through unconditional acceptance of the patient as in emotion-focused therapy trust and openness in the therapeutic relationship can be achieved (Greenberg, 2014). Approaches like the polyvagal theory can explain the perceived security of patients within the therapeutic relationship even on a biobehavioral level (Geller & Porges, 2014). Furthermore, the childhood adversities and associated feelings of being rejected should be addressed. Making experiences that differ from the inner working model can effectively change the working model even in adulthood (Vertue, 2003). For this reason, exposure-centered therapy provides a promising approach but possibly only at a later point in therapy when there is a stable therapeutic relationship. Thereby, patients experience an alternative model of attachment based on mutual trust and understanding, which strengthens their self-efficacy and self-image.

4.6 Limitations

When interpreting the present results some limitations need to be taken into account. First, our results cannot be interpreted as causal since the study was conducted on

cross-sectional data. Furthermore, childhood adversities and attachment styles were assessed via retrospective self-rating instruments which may lead to reporting biases and socially desirable answering.

5. Conclusions

In conclusion, SAD-MDD group significantly shows more clinical and functional impairment as well as more childhood adversities, a higher fearful attachment style and more severe SAD symptoms than SAD group. Fearful attachment style predicts SAD symptom severity in individuals with SAD and comorbid MDD but not in SAD group without comorbid MDD. Fearful attachment style mediates the association between childhood adversities and SAD symptom severity in SAD-MDD. The present study underlines the importance of attachment avoidance additionally to attachment anxiety in individuals with SAD and comorbid MDD which may lead to distrust in the therapeutic relationship. This distrust can be overcome by the empathetic and fully present therapist, who validates the patient`s feelings.

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