



# Recalled parental behavior of women and men with social anxiety disorder – The importance of the father-child relationship

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## ABSTRACT

There is limited clarity in the research regarding sex-specific differences in Social Anxiety Disorder (SAD). To address this gap, the current study focuses on examining sex-specific differences in sociodemographic factors and clinical impairment, as well as parenting behavior. The sample consisted of 425 women ( $39.0 \pm 14.3$  years) and 283 men ( $43.0 \pm 14.0$  years), all SCID-diagnosed with SAD. Both groups were compared regarding SAD symptom severity (Social Phobia Inventory; SPIN), comorbidities, current partnership, level of education and clinical impairment (suicidal thoughts, psychotherapeutic/psychiatric treatment, psychopharmacology). Women with SAD reported significantly higher SAD symptom severity. The two groups also differed regarding comorbidities: Women reported significantly more comorbid depressive disorders whereas men reported significantly more comorbid alcohol abuse or dependence and substance-related disorders. No sex-specific differences were found in partnership status, educational attainment or clinical impairment. Regarding the prediction of SAD symptom severity by parenting styles, high paternal affectionless control was a significant predictor in women. In men, high paternal affectionless control as well as high paternal affectionate constraint emerged as significant predictors. The findings of our study highlight the importance of the paternal affectionless control style as a consistent predictor of SAD symptom severity across both women and men. These results have clinical implications for the therapeutic treatment of SAD and societal implications in challenging outdated, traditional gender roles.

## 1. Introduction

Social Phobia, or Social Anxiety Disorder (SAD), is one of the most prevalent mental health disorders (Kessler et al., 2005), severely impacting quality of life (Alsamghan, 2021; Patel et al., 2024). Individuals with SAD face significant functional limitations in areas such as work or education and social life (Aderka et al., 2012) and clinical impairment, including high rates of comorbid mental health disorders (Lydiard, 2001; Koyuncu et al., 2019; Patel et al., 2024) and suicidality

(Bentley et al., 2016; Ballard et al., 2019). The lifetime prevalence of SAD is estimated at 17 % in youth (Salari et al., 2024) and 12.1 % in adults (Harvard Medical School, 2017), with women experiencing higher prevalence and symptom severity than men (Harvard Medical School, 2017; Asher and Aderka, 2018).

Sex- and gender-specific differences<sup>1</sup> play a crucial role in understanding SAD. Women are more prone to comorbid major depressive disorders, while men are more likely to report comorbid alcohol abuse and dependence or other substance-related disorders (Yonkers et al.,

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<sup>1</sup> For this study, the term ‘sex’ refers to the binary biological classification of participants as male or female (Johnson et al., 2009), as recorded in the dataset. Gender identity was not assessed; therefore, all analyses are based on sex. In the discussion, the term ‘gender’ describes socially constructed roles and norms linked to being male or female (e.g., parental roles). This distinction helps interpret sex-based findings within broader gendered socialization. Due to inconsistent use in the cited literature, we use the term ‘sex and gender differences’ to account for both dimensions. While this study focuses on binary categories due to data limitations, we acknowledge sex and gender as multidimensional and do not intend to exclude non-binary or gender-diverse experiences.

2001; Xu et al., 2012; MacKenzie and Fowler, 2013; Asher and Aderka, 2018). The literature on relationship status, educational attainment and clinical impairments presents mixed findings. For instance, MacKenzie and Fowler (2013) found that significantly more men with SAD had a higher level of education (bachelor's degree) than women. Regarding partnership status, significantly more SAD-men were single or lived alone (MacKenzie and Fowler, 2013). However, other studies do not report any significant sex and gender differences in marital status, partnerships or educational attainment (Turk et al., 1998; Sparrevohn and Rapee, 2009).

The research regarding sex and gender differences in clinical impairments also vary: Cougle et al. (2009) found that SAD predicted suicidal ideation and suicide attempts after controlling for depression in women but not in men. In contrast, other studies found no sex and gender differences (Bjerkset et al., 2008; Leigh et al., 2023). Similarly, the studies looking at treatment-seeking behaviors differ: Some studies found that SAD-men were more likely to seek psychotherapeutic or psychiatric treatment (Amies et al., 1983; Lépine and Lellouch, 1995), whereas SAD-women were more commonly treated with psychopharmacology (Xu et al., 2012), but others reported no significant differences (Turk et al., 1998; Marom et al., 2009; Aderka et al., 2011). All in all, the research on sex- and gender-specific differences in SAD remains inconsistent, emphasizing the need for studies with larger sample sizes to gain more definitive insights.

For a successful treatment of SAD and proactive prevention of suicidality, it is essential to also understand the sex- and gender-specific course and risk factors. The onset and development of SAD result from a multifactorial interplay between genetic predispositions (Hettema et al., 2005) and environmental factors such as attachment behavior or parental behavior (Lieb et al., 2000; Knappe et al., 2012; Scaini et al., 2014). Early relational experiences shape the development of SAD through insecure attachment patterns, internalized negative self-other representations and maladaptive social beliefs and behaviors (Clark and Wells, 1995; Rapee and Spence, 2004; Manning et al., 2017), as explained by attachment theory (Bowlby, 1973), object relations theory (Kernberg, 1995) and cognitive-behavioral theory (Beck, 1967).

These theoretical approaches highlight the importance of parenting behaviors in shaping the child's emotional development and later vulnerability to social anxiety. Negative parenting styles, such as rejection and control, have been linked to child social anxiety in prior research (Castelli et al., 2015) and have been further confirmed in a recent meta-analysis (Lei et al., 2023). For example, young women who perceived their mothers as neglectful or affectionless controlling showed a significantly higher prevalence of SAD compared to those reporting adequate maternal care (Castelli et al., 2015). Consistent with these findings, intensified parental control and reduced emotional warmth have also been associated to SAD (Moore, 1999; Knappe et al., 2012; Lei et al., 2023).

In the present study, parental *care* and parental *control* are conceptualized according to the dimensions defined by the Parental Bonding Instrument (PBI; Parker et al., 1979). Originating from the attachment theory the PBI consists of two subscales – care and control. The subscale care reflects parental warmth, affection, and empathy, whereas the subscale control captures intrusive, controlling, and autonomy-inhibiting parenting behavior (Parker et al., 1979). Recent studies have examined inconsistent sex-specific patterns in reported maternal and paternal care and control, which may be relevant for understanding the sex-specific role of parenting in the development of anxiety disorders such as SAD. Kuhlberg et al. (2020) found that men with lifetime depression and anxiety disorders reported higher levels of maternal control and lower levels of paternal care, while women reported lower levels of maternal care. Carollo et al. (2024) also identified sex-specific predictors of anxiety symptoms, with lower parental care being more strongly associated with anxiety in men, and higher levels of control showing a stronger association in women. Although the study of Chang et al. (2022) did not focus on anxiety symptoms, it revealed

significantly higher levels of paternal control in boys than in girls. Given these inconsistent findings, it is important to investigate maternal/paternal care and control as distinct predictors of SAD symptom severity in a large sample, analyzed separately for women and men.

The *affectionless control* parenting style, characterized by high control and low care (Parker, 1989), is associated with SAD (Anhalt, 2000; Anhalt and Morris, 2008; Workman, 2009; Castelli et al., 2015). However, there is limited research on the *affectionate constraint* style, involving high control and high care (Parker, 1989). Existing studies suggest that the correlation between affectionate constraint and SAD may be specifically relevant in the context of paternal relationships (Anhalt, 2000; Anhalt and Morris, 2008). This is why we assume that affectionate constraint is likely to show a significant correlation with SAD symptom severity exclusively in the paternal relationship.

There is still limited understanding of the specific relationship between different parenting styles as well as parental care and control and SAD symptom severity, especially in larger clinical samples. From a societal perspective, it is also essential to broaden the focus beyond the mother-child relationship, as most studies have done, to also include the father-child relationship. Understanding how both maternal and paternal parenting behaviors relate to the SAD symptom severity in women and men is crucial for improving treatment options and tailoring them to individual needs. In light of these considerations, the present study investigates the following hypotheses:

SAD-women, compared to SAD-men, will report significantly:

- (1) higher levels of SAD symptoms (as measured by the Social Phobia Inventory, SPIN) as well as (2) more lifetime comorbid depressive disorders and fewer comorbid alcohol abuse/dependence and substance-related disorders (excluding alcohol). We will explore maternal and paternal care/control as potential predictors of SAD symptom severity within each gender group. Furthermore, SAD symptom severity will be significantly predicted by (3) maternal/paternal affectionless control (+) in the SAD-women group and (4) maternal/paternal affectionless control (+) and paternal affectionate constraint (+) in the SAD-men group. In addition, we will examine differences between SAD-women and SAD-men in terms of partnership status and education attainment as well as clinical impairment, such as psychotherapeutic/psychiatric treatment, psychopharmacotherapy and suicidal ideation.

## 2. Methods

### 2.1. Participants

Since 2012, participants have been recruited as part of the research project "Social Phobia Research - Research on SAD," which is a joint project between the Departments for Psychosomatic Medicine and Psychotherapy at University Hospitals Bonn and Muenster and the Institute of Genetics at the University of Bonn in Germany. Recruitment took place at the Department of Psychosomatic Medicine and Psychotherapy in Bonn and was conducted through the clinic's own clinical services (outpatients and inpatients) and advertisements (newspapers, internet, TV/radio, self-help groups). The 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) an age of at least 18 years or older. Exclusion criteria were: (1) inadequate German language skills and (2) somatic and/or mental issues that would prevent the completion of study questionnaires. The study was conducted in compliance 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 from all participants prior to the interview. 835 subjects took part in the study. Out of these, 127 were excluded due to either failing to complete the questionnaires or not fulfilling the diagnosis of SAD. The final sample consisted of 708 participants, 425 women

and 283 men. Sociodemographic and clinical characteristics are detailed in Table 1.

2.2. Recruitment process

The recruitment process for participants occurred between January 2013 and February 2022. Trained interviewers, all psychologists, conducted assessments using the German version of the SCID-I interview based on DSM-IV (Wittchen et al., 1997). This version was used instead

**Table 1**  
Demographic and clinical characteristics of study cohort.

|                                                | SAD-<br>women<br>n = 425 | SAD-men<br>n = 283 | Test statistic (p-value)            |
|------------------------------------------------|--------------------------|--------------------|-------------------------------------|
| Characteristics:                               | n (%)                    | n (%)              |                                     |
| Age (in years)                                 | n = 397                  | n = 274            |                                     |
| M                                              | 39.04                    | 42.95              | t = 3.52 (<.001)***                 |
| (SD)                                           | (14.26)                  | (14.0)             |                                     |
| Current partnership                            | n = 358                  | n = 246            |                                     |
| Yes                                            | 198<br>(55.3)            | 122<br>(49.6)      | Wald $\chi^2 = 3.24$<br>(.072)      |
| No                                             | 160<br>(44.7)            | 124<br>(50.4)      |                                     |
| Level of education                             | n = 384                  | n = 264            |                                     |
| Below high school                              | 117<br>(30.5)            | 93<br>(35.2)       | Wald $\chi^2 = 1.02$<br>(.600)      |
| High school                                    | 150<br>(39.1)            | 81<br>(30.7)       |                                     |
| College level or above                         | 117<br>(30.5)            | 90<br>(34.1)       |                                     |
| Suicidal thoughts (Item I, sum<br>score)       | n = 394                  | n = 273            |                                     |
| M                                              | 0.59                     | 0.59               | F = 0.05 (.823)                     |
| (SD)                                           | (0.67)                   | (0.69)             |                                     |
| Psychotherapeutic/Psychiatric<br>treatment     | n = 389                  | n = 267            |                                     |
| None                                           | 210<br>(54.0)            | 126<br>(47.2)      |                                     |
| Outpatient                                     | 84 (21.6)                | 64<br>(24.0)       | Wald $\chi^2 = 1.89$<br>(.388)      |
| Inpatient                                      | 95 (24.4)                | 77<br>(28.8)       |                                     |
| Psychopharmacotherapy                          | n = 397                  | n = 274            |                                     |
| Yes                                            | 83 (20.9)                | 66<br>(24.1)       | Wald $\chi^2 = 1.20$<br>(.274)      |
| No                                             | 314<br>(79.1)            | 208<br>(75.9)      |                                     |
| Social Anxiety (SPIN)                          | n = 397                  | n = 274            |                                     |
| M                                              | 42.49                    | 39.93              | F = 8.65 (.003)**                   |
| (SD)                                           | (10.18)                  | (11.19)            |                                     |
| Comorbidities                                  |                          |                    |                                     |
| Depressive disorders                           | n = 394                  | n = 273            | Wald $\chi^2 = 7.49$<br>(.006) **   |
|                                                | 321<br>(81.5)            | 195<br>(71.4)      |                                     |
| Alcohol abuse or dependence                    | n = 394                  | n = 273            | Wald $\chi^2 = 16.08$<br>(<.001)*** |
|                                                | 65 (16.5)                | 86<br>(31.5)       |                                     |
| Substance-related Disorder<br>(except alcohol) | n = 394                  | n = 273            | Wald $\chi^2 = 5.75$<br>(.016)*     |
|                                                | 7 (1.8)                  | 12 (4.4)           |                                     |

Note: Missing data for age, current partnership, level of education, suicidal thoughts, psychotherapeutic/psychiatric treatment, depressive disorders, alcohol abuse/dependence, substance-related disorder due to incomplete survey; \* ≤ .05, \*\*p ≤ .01, \*\*\*p ≤ .001.

of the German version of the SCID-I interview based on DSM-5, as the latter was only published in 2019 and the study started in 2013 (Beesdo-Baum et al., 2019).

2.3. Measures

2.3.1. Demographic variables

A standardized demographic questionnaire was used to assess sex, age, marital status, education, ethnic origin, psychotherapeutic/psychiatric treatment and psychopharmacological treatment.

2.3.2. Diagnoses

Trained interviewers used the German version of the SCID-I to diagnose SAD and potentially relevant SAD comorbidities (First et al., 1997; Wittchen et al., 1997). Comorbidities assessed as lifetime diagnoses included depressive disorders, alcohol abuse/dependence, and substance-related disorders (excluding alcohol). According to the literature, the SCID-I is a highly reliable and valid instrument (Lobbestael et al., 2011).

2.3.3. Social Phobia Inventory (SPIN)

The study utilized the German version of the Social Phobia Inventory (Connor et al., 2000; Sosic et al., 2008) to assess the degree of social anxiety. This instrument quantifies behavioral, physiological, and cognitive symptoms associated with SAD. Recognized for its efficiency, the SPIN is a robust self-report questionnaire with strong psychometric properties (Sosic et al., 2008). Comprising 17 items rated on a five-point Likert scale from 0 (not at all) to 4 (extremely), it yields a total score ranging from 0 to 68. Internal consistency in this study was notably high ( $\alpha = .87$ ).

2.3.4. Parental bonding instrument (PBI)

The German version of the Parental Bonding Instrument (Parker et al., 1979; Richter-Appelt et al., 2004) was employed to retrospectively assess participants' perceptions of maternal and paternal behavior during their childhood until age sixteen. This instrument evaluates two fundamental aspects of parent-child relationships: 'care' and 'control'. The instrument comprises 25 items in total, with 12 focusing on 'care' and 13 on 'control'. Responses range from 3 (extremely true) to 0 (not true at all), with some items scored in the reverse direction. Based on the sum scores, parents can be categorized into one of four parenting styles. Optimal parenting is defined by high care and low control. Affectionate constraint involves high care and high control. Neglectful parenting is characterized by low care and low control, while affectionless control corresponds to low care and high control. The distinction between high and low categories is determined using the following cut-off scores: care scores of 27 (mother) and 24 (father) and control scores of 14.5 (mother) and 12.5 (father; Parker et al., 1979). The PBI's reliability and validity was consistently demonstrated in previous studies (Parker, 1989). In this study, all four subscales of the PBI exhibited good to excellent internal consistency, with Cronbach's alpha of .89 (paternal control), .90 (maternal control), .94 (paternal care) and .94 (maternal care).

2.3.5. Statistical analyses

Demographic and clinical characteristics were summarized using descriptive statistics and analyzed with Welch's t-test, logistic and multinomial regression and ANCOVA, controlling for age. To examine the potential association of different parental styles with SAD symptom severity, hierarchical regression analyses were conducted separately by sex, with age included as a covariate. A p-value of less than .05 was considered statistically significant. Effect sizes were assessed using  $\eta^2$ , categorized as small ( $\geq .01$ ), moderate ( $\geq .06$ ) or large ( $\geq .14$ ; Cohen, 1988). All analyses were carried out using the Statistical Package for the Social Sciences (SPSS), Version 29.0 (IBM Corp, 2021).

3. Results

3.1. Sociodemographic and clinical characteristics

The SAD-women group was significantly younger than the SAD-men group (see Table 1). As anticipated in Hypothesis 1, participants in the SAD-women group showed a significantly higher SPIN score, after controlling for age ( $F(1, 669) = 8.65, p = .003, \eta^2 = .013$ ). Additionally, participants in the SAD-women group had significantly more comorbid depressive disorders, less comorbid alcohol abuse or dependence and less substance related disorders (except alcohol), after adjusting for age. These findings support our Hypothesis 2. Exploratory analysis, including age as a covariate, revealed no significant differences between SAD-women and SAD-men in current partnership status, level of education, psychotherapeutic/psychiatric treatment, psychopharmacotherapy or suicidal ideation (see Table 1).

3.2. Separate hierarchical regression analyses for women and men

We conducted separate hierarchical regression analyses for women and men, with age included as a covariate. In the SAD-women group, only maternal care (–) emerged as a significant predictor of SAD symptom severity, whereas maternal control (+) did not. Additionally, paternal control (+) also significantly influenced SAD symptom severity in this group. The overall model was significant, accounting for 8.9 % of the variance (see Table 2).

Paternal care (–) and paternal control (+) emerged as significant predictors of SAD symptom severity in men. Additionally maternal care (–) was also a significant predictor in this group. The overall model was significant, accounting for 11.3 % of the variance (see Table 3).

To test our Hypotheses 3 and 4, we conducted separate hierarchical regression analyses for women and men, including age as a covariate. We aimed to investigate whether maternal and paternal affectionless control style (+) significantly predicts SAD symptom severity in women and whether maternal and paternal affectionless control style (+) and paternal affectionate constraint style (+) significantly predict SAD symptom severity in men. Contrary to Hypothesis 3, maternal affectionless control style (+) did not significantly predict SAD symptom severity in women, only paternal affectionless control style (+) was a significant predictor. The overall model for women was significant, accounting for 4.4 % of the variance (see Table 4).

Contrary to Hypothesis 4, maternal affectionless control (+) did not significantly predict SAD symptom severity in men, whereas both paternal affectionless control (+) and paternal affectionate constraint style (+) did. The overall model was significant, explaining 6.0 % of the variance (see Table 5).

4. Discussion

The present study is, to our knowledge, the first to explore sex-specific parenting styles in both women and men with SAD using a large sample. When examining partnership status, educational

**Table 2**  
Hierarchical regression analysis in SAD-women.

|        |                  | Social Anxiety |             |
|--------|------------------|----------------|-------------|
|        | Predictors       | $\beta$        | $R^2_{adj}$ |
| Step 1 | Age              | –.092          | .006        |
| Step 2 | Paternal Care    | –.012          |             |
|        | Paternal Control | .228***        |             |
|        | Maternal Care    | –.196**        |             |
|        | Maternal Control | –.058          |             |
|        |                  |                | .089***     |

Note: N = 369; dependent variable SPIN, predictors age (step 1), PBI subscales (step 2); \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p \leq .001$ .

**Table 3**  
Hierarchical regression analysis in SAD-men.

|        |                  | Social Anxiety |             |
|--------|------------------|----------------|-------------|
|        | Predictors       | $\beta$        | $R^2_{adj}$ |
| Step 1 | Age              | .049           | –.002       |
| Step 2 | Paternal Care    | –.159*         |             |
|        | Paternal Control | .174*          |             |
|        | Maternal Care    | –.150*         |             |
|        | Maternal Control | –.014          |             |
|        |                  |                | .113***     |

Note: N = 256; dependent variable SPIN, predictors age (step 1), PBI subscales (step 2); \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p \leq .001$ .

**Table 4**  
Hierarchical regression analysis in SAD-women.

|        |                                  | Social Anxiety |             |
|--------|----------------------------------|----------------|-------------|
|        | Predictors                       | $\beta$        | $R^2_{adj}$ |
| Step 1 | Age                              | –.092          | .006        |
| Step 2 | Paternal Affectionless Control   | .229***        |             |
|        | Paternal Affectionate Constraint | .012           |             |
|        | Maternal Affectionless Control   | –.023          |             |
|        | Maternal Affectionate Constraint | –.065          |             |
|        |                                  |                | .044***     |

Note: N = 369; dependent variable SPIN, predictors age (step 1), PBI parenting styles (step 2); \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p \leq .001$ .

**Table 5**  
Hierarchical regression analysis in SAD-men.

|        |                                  | Social Anxiety |             |
|--------|----------------------------------|----------------|-------------|
|        | Predictors                       | $\beta$        | $R^2_{adj}$ |
| Step 1 | Age                              | .049           | .006        |
| Step 2 | Paternal Affectionless Control   | .238***        |             |
|        | Paternal Affectionate Constraint | .150*          |             |
|        | Maternal Affectionless Control   | .021           |             |
|        | Maternal Affectionate Constraint | –.128          |             |
|        |                                  |                | .060***     |

Note: N = 256; dependent variable SPIN, predictors age (step 1), PBI parenting styles (step 2); \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p \leq .001$ .

attainment and clinical aspects no significant sex differences are found. However, the study’s findings highlight that SAD-women report more severe SAD symptoms and exhibit different comorbidities compared to SAD-men.

Interestingly, the study reveals that in SAD-women reduced maternal care and increased paternal control are significant predictors of SAD symptom severity, while in SAD-men reduced paternal care, increased paternal control and reduced maternal care significantly predict SAD symptom severity. Regarding parenting styles, our hypothesis for the male SAD-sample is not confirmed: both paternal affectionless control and paternal affectionate constraint show a significant impact on SAD symptom severity, whereas maternal affectionless control does not. For SAD-women, only paternal affectionless control emerges as a significant predictor. It is important to bear in mind when interpreting the results that the adjusted  $R^2$  value is very small.

These results highlight the significance of the paternal parenting style in the context of SAD and suggest its relevance for treatment, in both women and men with SAD.

#### 4.1. Partnership status, educational attainment and clinical impairment in SAD-women and SAD-men

Our study shows no significant differences between SAD-women and SAD-men regarding partnership status, education level, psychotherapeutic or psychiatric treatment, pharmacological treatment, or suicidal ideation. This emphasizes that SAD-women and SAD-men may show similar sociodemographic factors and clinical impairments. The results of our study, which show that SAD-women report higher SPIN scores and other comorbidities than SAD-men, is consistent with findings from other studies (Yonkers et al., 2001; Xu et al., 2012; MacKenzie and Fowler, 2013; Martel, 2013; Asher and Aderka, 2018). When it comes to comorbidities, there are several explanations for why women experience different comorbid disorders compared to men.

Biological differences, such as hormonal fluctuations (e.g. estrogen and progesterone), can increase the risk for specific disorders in women (Payne, 2003; Noble, 2005; Sundström-Poromaa et al., 2020). Additionally, genetic factors may also play a role (Kendler et al., 2001). Beyond biology, women and men tend to use different coping strategies to manage stress. Men are more likely to engage in avoidance strategies, such as substance or alcohol abuse, which might explain their higher prevalence of dependency disorders (Tamres et al., 2002; Kieffer et al., 2006; Kuhn, 2015). On the other hand, women are more prone to internalizing disorders like depression, potentially due to their tendency to seek emotional support or ruminate on stressors (Tamres et al., 2002; Martel, 2013).

#### 4.2. Paternal and maternal care and control – sex-specific findings and gender-related associations with SAD

According to attachment theory, it is crucial for children's development that caregivers respond to their needs with care and sensitivity. This fosters the formation of a secure attachment style, enabling the child to feel safe enough to explore their environment. Secure attachment involves addressing a child's needs with empathy and understanding (Bowlby, 1973; Ainsworth et al., 1978). Conversely, insecure attachment arises when caregivers fail to respond appropriately to the child's needs (Bowlby, 1973), increasing the child's risk developing anxiety disorders later in life (Guo and Ash, 2020). A secure attachment style in adult women has been linked to low scores on the PBI control scale and high scores on the PBI care scale (Wilhelm et al., 2016).

Interestingly, our study finds that among men with SAD, both low paternal care and high paternal control influence their SAD symptom level, while low maternal care also plays a significant role. In contrast, for women with SAD, only low maternal care and high paternal control are significant predictors.

These findings align not only with attachment theory but also with object relations theory (Kernberg, 1995), which emphasizes the lasting impact of early caregiver relationships on internalized representations of self and others. From a cognitive-behavioral perspective (Beck, 1967), maladaptive beliefs rooted in early relational experiences may also explain the severity of anxiety symptoms in the context of perceived parental control and lack of care.

In society, traditional gender roles for parents remain prevalent: the nurturing mother, who engages highly in care, and the explorative father, who encourages his child to try new things and take on challenges. The results in our study confirm traditional assumptions on the relevance of maternal care and paternal control insofar as the lack of maternal care or the existence of excessive paternal control has a negative impact on SAD symptom severity. The fact that paternal care also plays a significant role in the group of men with SAD indicates that it may be important for young boys to have a father who is not only a role model for strength but also one who is nurturing and empathetic. This questions traditional societal expectations regarding the male role model being affectionlessly in control of a situation.

Overall, the results of our study confirm the continued presence of

traditional gender roles, as both maternal care and paternal control are significant predictors of SAD symptom severity in women and men. Nevertheless, in men with SAD, the role of paternal care highlights the potential importance of emotional availability of fathers, which underscores the need to consider paternal influences more explicitly in clinical work with SAD-men.

#### 4.3. Paternal and maternal affectionless control and affectionate constraint parenting style – sex-specific findings and gender-related associations with SAD

The findings regarding maternal and paternal affectionless control and affectionate constraint style do not confirm our hypotheses. Among SAD-men, only the paternal affectionless control and affectionate constraint style play a significant role in the relationship to SAD symptom severity. In the group of SAD-women, the results reveal that paternal affectionless control is the only significant predictor for SAD symptom severity. These findings highlight the importance of considering paternal parenting styles in the treatment of SAD and of acknowledging the father's significant role as a caregiver – not only in fostering the child's exploratory behavior but also in providing care and empathy. To the best of our knowledge, our study is the first to demonstrate this in a large sample of women and men with SAD, even identifying the paternal affectionless control style as the only predictor of SAD symptom severity in the female sample highlighting fathers' critical role in child-rearing.

Parenting styles represent combinations of care and control and reflect broader behavioral patterns rather than isolated dimensions. While this approach captures the overall parenting profile, it may overshadow the distinct influences of care and control observed in separate analyses. For example, when maternal care is integrated within parenting styles, its effect may be reduced depending on the presence of control. Furthermore, the particularly strong effect of paternal affectionless control appears to overshadow maternal parenting styles when combined. This suggests that paternal control may have a dominant role in SAD development, reducing the clear impact of maternal care in the context of combined styles. Therefore, fathers should be prompted to approach their children's needs with care and empathy, rather than solely focusing on exploratory attachment behaviors. Conversely, mothers should be encouraged not only to display nurturing behavior but also to engage in exploratory behavior with their children. In the psychiatric and psychotherapeutic treatment of children and adolescents, parents of very shy and socially anxious patients could be advised accordingly. By empowering parents to gradually dismantle their traditional roles, children stand a greater chance of benefiting from the combined strengths of both parenting styles, compensating for any deficits from one parent with the strengths of the other.

This shift may also be important regarding alternative parenting models, such as same-sex parents or single-parent households. Therefore, greater attention should be paid to the specific dimensions of care and control, as well as parenting styles as a whole, beyond conventional gender stereotypes. Recognizing that certain parenting behaviors – such as high paternal control – may have a strong influence does not contradict the need to move beyond traditional gender roles, but rather highlights the importance of assessing parenting dynamics in a nuanced and context-sensitive way.

#### 4.4. Implications for future research

Across both groups, we can conclude that paternal parenting behavior – specifically, the combination of low care and high control – has a significant association to SAD symptom severity. Given the limited number of studies on this specific parental parenting style, it is essential to prioritize this topic in future research. Emphasizing the father-child relationship will be particularly important for advancing our understanding in this area.

For instance, research could focus on how to engage fathers through psychoeducation about their important role in child development or implementing societal changes to make paternity leave more normalized and accessible.

Additionally, it is essential for future studies to examine alternative parenting models, such as those involving same-sex couples or single parents, to ensure a more inclusive understanding of diverse family structures.

#### 4.5. Clinical implications

Regarding clinical implications, it is especially important to assess the parenting styles by using the PBI at the beginning of a psychotherapeutic treatment. During psychotherapy, the father-child relationship should be addressed in both groups, regardless of sex, as the paternal affectionless control style emerged as a significant predictor in both women and men. Schema-focused or emotion-focused interventions can help reframe and address these attachment experiences, providing a more comprehensive approach to treatment.

When examining sex differences in individuals with SAD, it is essential to address the various comorbidities and explore sex-specific coping styles. In this context, it would be valuable to discuss traditional gender roles within psychotherapy and support both men and women in deconstructing these norms. For example, a man with SAD could experience in therapy that expressing emotions and discussing feelings is not only acceptable but met with empathy and understanding. Such an approach could help reduce avoidant coping strategies, such as alcohol abuse or dependence, while enabling men to embody a role model of an empathetic and caring man. In contrast, a woman with SAD might experience in therapy that she becomes more confident, develops higher self-esteem and engages more actively with her environment. This could also contribute to her potential future children being raised with less control and high care, reducing their risk of developing SAD. Such changes would not only benefit the individual but also contribute to establishing healthier parental behaviors and relationship dynamics for future generations.

#### 4.6. Limitations

Several limitations must be considered when interpreting these results. First, the reliance on retrospective self-report instruments to assess parenting styles presents the potential for biases, including inaccuracies in recall and tendencies towards socially desirable answers. Second, the cross-sectional design of the study prevents causal interpretations. Third, recruitment at one tertiary care center in Germany might limit heterogeneity of the sample. Fourth, although the results were statistically significant, the adjusted  $R^2$  values were low, suggesting that other factors probably play an important role in the development of SAD and should be considered in future research.

### 5. Conclusions

In conclusion, SAD-women and SAD-men show no sex-specific differences in partnership status, educational attainment and clinical impairment except in comorbidities. Low paternal care, high paternal control and low maternal care predict SAD symptom severity in SAD-men whereas low maternal care and high paternal control predict SAD symptom severity in SAD-women. High paternal affectionless control and high paternal affectionate constraint style are significant predictors for SAD symptom severity in SAD-men. Only high paternal affectionless control style is a significant predictor for SAD symptom severity in SAD-women.

The aim of this study is to explore the sex-specific effects of socio-demographic factors and clinical impairment as well as paternal and maternal parenting styles on SAD symptom severity. We seek to examine how various parenting styles, such as affectionless control and

affectionate constraint, correlate with the severity of SAD in both women and men, with a particular focus on father-child and mother-child relationships. This investigation aims to enhance our understanding of how aspects of parenting can contribute to the development of targeted interventions and treatment strategies for SAD, emphasizing the importance to incorporate the father-child-relationship into therapeutic approaches.

#### CRedit authorship contribution statement

**Christina Elling-Lueder:** Writing – review & editing, Writing – original draft, Validation, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Andreas J. Forstner:** Writing – review & editing, Validation, Project administration, Funding acquisition, Formal analysis, Conceptualization. **Markus Ramm:** Writing – review & editing, Validation, Software, Formal analysis, Data curation. **Jutta Stahl:** Writing – review & editing, Validation, Supervision, Software, Methodology, Formal analysis, Conceptualization. **Johannes Schumacher:** Writing – review & editing, Validation, Software, Formal analysis. **Rupert Conrad:** Writing – review & editing, Validation, Supervision, Software, Project administration, Methodology, Funding acquisition, Formal analysis, Conceptualization.

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#### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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