Published in final edited form as:

Depress Anxiety. 2009 ; 26(11): 1027–1032. doi:10.1002/da.20604.

CHILDHOOD MALTREATMENT LINKED TO GREATER SYMPTOM SEVERITY AND POORER QUALITY OF LIFE AND FUNCTION IN SOCIAL ANXIETY DISORDER

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Abstract

Background—There is a paucity of data examining the prevalence and impact of childhood maltreatment in patients presenting with a primary diagnosis of social anxiety disorder (SAD). We thus examined the presence of a broad spectrum of childhood maltreatment, including physical, sexual, and emotional abuse and neglect, in treatment-seeking individuals with the generalized subtype of SAD (GSAD). We hypothesized that a history of childhood maltreatment would be associated with greater SAD symptom severity and poorer associated function.

Methods—One hundred and three participants with a primary diagnosis of GSAD (mean age 37±14; 70% male) completed the well-validated, self-rated Childhood Trauma Questionnaire (CTQ), as well as measures of SAD symptom severity and quality of life.

Results—Fully 70% (n = 72) of the GSAD sample met severity criteria for at least one type of childhood abuse or neglect as measured by the CTQ subscales using previously established thresholds. CTQ total score adjusted for age and gender was associated with greater SAD severity, and poorer quality of life, function, and resilience. Further, the number of types of maltreatment present had an additive effect, with specific associations for emotional abuse and neglect with SAD severity.

Conclusions—Despite the use of validated assessments, our findings are limited by the retrospective and subjective nature of self-report measures used to assess childhood maltreatment. Nonetheless, these data suggest a high rate of childhood maltreatment in individuals seeking treatment for GSAD, and the association of maltreatment with greater disorder severity suggests that screening is clinically prudent.

Keywords

social anxiety disorder; social phobia; anxiety; child abuse; abuse

INTRODUCTION

Social anxiety disorder (SAD) is a common anxiety disorder, with a lifetime prevalence recently reported as 12.1% of the United States population.[1] Although often not diagnosed until many years after symptom onset,[2] SAD onsets early in life, typically by early adolescence, and is thus commonly characterized by chronic associated distress and dysfunction.[3] In part because of the relatively early onset of SAD and anxiety disorders in general there has been an interest in the potential presence of childhood maltreatment in individuals with SAD and other anxiety disorders.

In prior studies of anxiety disorders, childhood maltreatment has most often been defined as physical or sexual abuse, although it has been well documented that multiple types of maltreatment can negatively impact health outcomes.[4] Further, the majority of available studies have focused on epidemiologic data and childhood maltreatment as a risk factor for SAD diagnosis,[5] rather than the prevalence and impact of childhood maltreatment in a clinical population of individuals with the generalized subtype of SAD (GSAD) who are of sufficient severity to seek intervention for the disorder. Two prior studies examining self-reported childhood physical and sexual abuse in clinical anxiety disorders populations with a variety of diagnoses including a subsample with SAD reported varying levels of abuse, with a rate of 8.7% in the 47 individuals with SAD examined by Safren et al.[6] and an overall rate of 51% in the full sample that included 56 participants with SAD by Mancini et al.[7] These studies did not assess emotional abuse or neglect, and suggested that additional research was needed to better understand the prevalence and impact of childhood maltreatment specifically in individuals with SAD. We thus examined a broad spectrum of abuse including physical, sexual, and emotional abuse and neglect as measured by a well-validated questionnaire, the Childhood Trauma Questionnaire (CTQ), in a sample of treatment-seeking individuals with GSAD. We hypothesized that a history of childhood maltreatment in individuals with GSAD would be associated with greater SAD symptom severity and poorer associated function.

METHODS

SUBJECTS

Participants were treatment-seeking individuals aged 18 and older recruited by advertisement and referral who signed consent, met criteria to participate in a 3 center pharmacotherapy trial of generalized social anxiety disorder (GSAD), and completed the CTQ. Eligible study participants were those who met DSM-IV criteria for GSAD, had a Liebowitz Social Anxiety Scale (LSAS) score of 60 or greater, and for whom social anxiety was the primary mental health problem. Exclusion criteria included lifetime diagnoses of psychotic disorders, bipolar disorder, and organic mental disorders. Also excluded were individuals with Obsessive–Compulsive Disorder and a Y-BOCS score ≥ 25 , eating disorders or suicidal behaviors in the past 6 months, current significant suicidality, alcohol or substance abuse in the past 3 months or dependence in the past 6 months, significant personality disorders or medical problems likely to interfere with study participation, and seizure disorders. All assessments were completed at baseline before initiation of the treatment study. Study procedures were approved by the Institutional Review Boards at each of the three study centers (Massachusetts General Hospital, University of California San Diego, and McMaster University Medical Centre).

ASSESSMENTS

All subjects received DSM-IV diagnostic assessments by semi-structured interview with a trained study psychiatrist using the Mini-International Neuropsychiatric Interview.[8] The

CTQ is a well-validated 28-item self-rated scale[9,10] with five trauma subscales (sexual abuse, physical abuse, emotional abuse, emotional neglect, physical neglect). CTQ items are rated from 1 (“never true”) to 5 (“very often true”) with some items reverse scored, and a possible range of subscale scores of 5–25. Thresholds for the presence of abuse or neglect as measured by the CTQ have been established in prior research.[11] The Liebowitz Social Anxiety Disorder Scale[12] is a 24-item clinician rated scale (range 0–144 points) with excellent psychometric properties,[13,14] which assesses the level of fear and avoidance in a broad range of social and performance situations, and has become a standard assessment of SAD severity. The Clinical Global Impressions of Severity (CGI-S) is a single-item clinician-rated instrument used to assess global severity of symptoms, with scores ranging from 1 (normal, not at all ill) to 7 (among the most severely ill patients).[15] The Quality of Life Enjoyment and Satisfaction Questionnaire (QLESQ) is a self-rated scale that rates 16 aspects of quality of life, including physical health, mood, activities of daily living, and overall life satisfaction.[16] The Connor–Davidson Resilience Scale (CD-RISC) is a 25-item, patient administered scale that assesses resilience and reactions to stress,[17] and the Sheehan Disability Scale (SDS)[18] is a 3-item self-rated scale that assessed disability in three domains: work, social life, and family life/home responsibilities.

STATISTICAL ANALYSES

We utilized a linear regression modeling approach to examine the association of the CTQ scale with SAD severity (LSAS and CGIS), and quality of life and function measures (QLESQ, SDS, CD-RISC). In order to examine the presence and impact of threshold levels of abuse and neglect, we also utilized cut points previously established by Walker for CTQ subscales with the following scores marking the threshold for the presence of abuse or dependence: physical abuse ≥ 8 , physical neglect ≥ 8 , sexual abuse ≥ 8 , emotional neglect ≥ 15 , emotional abuse ≥ 10 . [11]

RESULTS

Subjects were 103 individuals, predominantly men ($n = 72$, 69.9%) with GSAD. Table 1 presents participant characteristics. Participants were significantly ill, with a mean LSAS of 91 and CGI-S of “markedly ill.” GSAD onset was during childhood (mean of 10.7 years), and was generally chronic with a mean duration of 26 years. The majority of the sample (79%) was not currently depressed. Fully 70% ($n = 72$) of the GSAD sample met Walker’s threshold severity criteria for at least one type of childhood abuse or neglect as measured by the CTQ subscales. Specifically, threshold levels were met for sexual abuse for 17% ($n = 18$), physical abuse for 30% ($n = 29$), physical neglect for 35% ($n = 36$), emotional abuse for 56% ($n = 58$), and emotional neglect for 39% ($n = 40$). Further, 16% ($n = 17$) met threshold levels for two abuse subtypes, 16% ($n = 17$) for three subtypes, 9% ($n = 9$) for four subtypes, and 8% ($n = 8$) for all five subtypes.

To select potential confounders we first examined three variables of specific potential concern to these analyses, gender, age and age of GSAD onset, and whether they were associated in univariate linear regressions with the continuous CTQ score. GSAD age of onset was not associated with CTQ ($P > .57$), but greater current age was associated with higher-reported CTQ scores ($\beta(\text{SE}) = 0.26(0.11)$, $P = .016$). Further, sex was associated with significantly higher CTQ scores (mean(SD) = 60.1(20.2)) for women compared to men (mean(SD) = 51.3(12.2): $t(df) = 2.98(101)$, $P < .004$), and women were more likely to have at least one CTQ maltreatment subtype at the threshold level (84%) compared to men (64%) at the level of a statistical trend (FET $P = .06$). We thus included age and gender as covariates in all regression analyses. As presented in Table 2, CTQ total score adjusted for age and gender was associated with greater LSAS and CGI-S severity scores (both $P < .001$), and

poorer quality of life (Q-LES-Q: $P = .005$), function (SDS: $P = .001$), and resilience (CD-RISC: $P = .022$).

Because of prior reports suggesting abuse may best be examined using thresholds, we also examined CTQ subscale scores as binary variables using the Walker thresholds. These binary CTQ subscale thresholds were examined in age- and gender-adjusted regression analyses for associations with the symptom scales (LSAS, CGI-S, CD-RISC, SDS, Q-LES-Q), utilizing Bonferroni corrections for multiple testing to determine significance (five CTQ subscales: $P = .05/5 = \alpha$ of .01). The emotional neglect subscale was significantly associated with the LSAS ($P < .002$), CGI-S ($P < .003$), and CD-RISC ($P < .006$). The emotional abuse subscale was significantly associated with the LSAS ($P < .002$) and the CGI-S ($P < .002$). The sexual abuse subscale was associated only with the SDS ($P < .000$), whereas all other tests including all for the physical neglect and abuse subscales did not achieve significance (see Table 3). Further, in those with at least one threshold abuse category, the number of types of abuse present had an additive effect, with age and gender-adjusted regression analyses demonstrating greater number of abuse subtypes associated with higher severity (LSAS: $\beta(\text{SE}) = 4.32 (1.70)$, $P < .02$), poorer quality of life (Q-LES-Q: $\beta(\text{SE}) = -1.78 (0.81)$, $P < .04$), and disability (SDS: $\beta(\text{SE}) = 1.13 (0.49)$, $P < .03$), and lower resilience (CD-RISC: $\beta(\text{SE}) = -2.94 (1.47)$, $P = .05$).

CONCLUSIONS

In a sample of treatment-seeking adults with a primary diagnosis of SAD, generalized type, we found that self-reported childhood maltreatment, and specifically emotional abuse and neglect, are associated with greater severity and poorer function, resilience, and quality of life. Using previously established thresholds to determine clinically significant levels of specific types of abuse, we found that emotional neglect and abuse were associated with symptom severity, and that there was an additive effect for those with multiple types of childhood maltreatment. Further, we found high overall rates of childhood maltreatment reported in this population, with fully 70% of the sample meeting threshold criteria for at least one type of childhood maltreatment, with the most common being emotional abuse (56%).

These data are consistent with previous reports examining childhood maltreatment in general in clinical samples with anxiety disorders, specifically including SAD. For example, using the Child Maltreatment History Self-Report in a mixed anxiety disorders clinic population ($n = 205$) including 56 participants with Social Phobia, Mancini et al. found that 45% reported a history of childhood physical abuse and 23% sexual abuse, with 51% reporting at least one type; abuse was associated with greater disability, poorer function, and greater depression.[7] In contrast, in a mixed clinical population ($n = 75$) of panic, GAD and SAD ($n = 46$), Safren et al. found 23% with childhood physical or sexual abuse reported on interview query, with significantly lower rates in SAD (8.7%), although emotional abuse and neglect were not assessed.[6] Potential reasons for the variability in reported prevalence of childhood abuse across studies include differences in the CTQs, the types of trauma ascertained, and differences in thresholds applied. We selected the CTQ for this study because it is a well-validated scale with previously established thresholds.

A strength of our study was use of the CTQ, a well-validated questionnaire with previously established thresholds that assesses a broad range of types of childhood maltreatment including emotional abuse and neglect. Prior research has employed the CTQ to examine the broad range of types of abuse and found a similar additive association as seen in our data, between a greater number of types of abuse and health risk behaviors such as substance use.[4] Further, childhood maltreatment, as measured by the CTQ, has been shown to be an

environmental risk factor that appears to moderate genetic risk for anxiety; specifically, childhood maltreatment has been shown to moderate the association of a serotonin transporter gene polymorphism (SLC6A4) and anxiety sensitivity, with greater anxiety sensitivity in those with the s/s allele and greater maltreatment.[19] This finding is consistent with the hypothesis that early exposure to stressful life experiences such as childhood maltreatment may interact with previously existing genetic risk factors for anxiety to amplify anxiety phenomena such as anxiety sensitivity, a well-established risk factor for panic and other anxiety psychopathology. It is worth noting, however, that age of SAD onset was not associated with CTQ score in our sample.

Although data examining the impact of childhood maltreatment on disorder severity and quality of life are relatively limited, sexual and physical abuse in childhood have been examined in greater detail than emotional abuse or neglect as a risk factor for future psychiatric illness onset in epidemiologic studies. In a well-designed study, Nelson et al. examined twins with and without exposure to childhood sexual abuse (CSA) and reported that CSA was associated with increased risk for numerous subsequent adverse outcomes such as depression, substance abuse, conduct disorder, suicide attempts, and also social anxiety; specifically, they reported a doubling of the odds (Odds Ratio = 2.3) for social anxiety in twins with prior CSA, although the overall increased risk for social anxiety was significant only for women in gender stratified risk analyses.[5] This finding of a significant association of CSA and social phobia specifically for women has been previously reported in a large Australian twin study examining self-reported CSA and psychopathology,[20] as well as in data from the National Comorbidity Survey.[21] In our study of a clinical sample with GSAD, threshold levels of CSA were reported by 17% and associated with greater disability in age-and gender-adjusted analyses. Although power was very limited for stratified follow-up analyses in this sample that was 70% men, we did perform a post hoc examination of rates of CSA by gender and did find a trend toward higher rates in women with GSAD (9/31: 29%) compared to men with GSAD (9/70: 12.5%, FET $P = .052$). However, overall the association of CTQ continuous score with LSAS severity adjusted for age in stratified analyses suggested the association of greater childhood maltreatment overall with greater SAD severity is similarly present for both men and women (both $P < .005$). It is worth noting that Kessler et al. examined a very broad range of childhood adversities such as loss, parental psychopathology and traumas, and found an association with onset of a broad range of mood, anxiety and addictive disorders; they noted that this association appears broad, and caution should be applied in making conclusions specific to one type of adversities and specific disorders as unique effects.[22]

Related to our finding regarding emotional neglect, a recent large population-based prospective study examining SAD incidence at 1-year followup reported that childhood trauma and specifically childhood emotional neglect were significant predictors of SAD onset in multivariate analyses.[23] These data are consistent with a 10-year prospective follow-up study of adolescents age 14 to 17 that examined risk factors for the development of pathology and found that even parental rearing styles, including overprotection, rejection, and lack of emotional warmth, which may be subthreshold for emotional abuse or neglect were independently associated with social phobia onset, and had an even greater effect in interaction with parental psychopathology.[24] In our study we found that those individuals reporting threshold levels of emotional abuse and neglect experienced greater SAD severity. This finding is consistent with work by Bandelow et al., who found that patients with SAD compared to controls reported more unfavorable parental rearing styles such as providing insufficient love and care; they hypothesized that this may in part reflect the patients' inherently higher sensitivity to rejection and criticism.[25] A relatively large literature has examined a wide variety of familial environmental factors such as the presence of family conflict and harsh parenting on SAD onset with some evidence for gender differences.[26]

Krause et al. have hypothesized that chronic emotional inhibition (with inhibited experience and expression of emotions) in general may be a learned strategy that mediates the association of childhood emotional maltreatment and a range of adult psychopathology.[27] Although we did not specifically assess emotional inhibition in our study, and additional research is needed to examine the question, it is possible that higher levels of emotional inhibition in response to childhood maltreatment may be a contributing factor to the greater SAD severity seen in our sample amongst patients with a history of childhood emotional abuse and neglect.

Our findings are limited by the retrospective and subjective nature of self-report measures used to assess childhood maltreatment, and our lack of measurement of age of maltreatment. A recent review of the reliability of retrospective report of childhood maltreatment found, however, that under-reporting was more likely than over-reporting, and that despite the possibility of some bias, retrospective assessment is nonetheless worthwhile in research.[28] Further, it is possible that individuals with more severe social anxiety have a greater recall bias, specifically for emotional abuse and neglect in childhood, or that those with social anxiety traits in childhood experienced interactions with adults in a more fearful and anxious manner. It is also worth noting that although the level of overall severity of social anxiety in this sample was high (mean LSAS 90, CGI-S 6), subjects were outpatients and we excluded patients with active suicidality or severity requiring inpatient hospitalization; thus we were not able to assess associations at the very highest end of symptom severity. Further, participants were those recruited for participation in a medication study and with a relatively low rate of comorbid depression and anxiety disorders, which might limit generalizability of the findings. Similarly, these data examine trauma in adults who present with GSAD as their primary diagnosis, and for the vast majority of whom childhood trauma has not resulted in current comorbid posttraumatic stress disorder. It is also possible that unmeasured confounding factors explain the associations we found. For example, we did not adjust for adult trauma exposure or other types of stressors such as financial stress, loss, or divorce. Finally, we did not correct for multiple testing in our examination of the CTQ subscales due to relatively limited power, although our finding for emotional abuse and neglect with SAD severity appears robust.

Despite the limitations of our study, these data do suggest a relatively high rate of childhood maltreatment in individuals seeking treatment for GSAD, and suggest that screening is clinically prudent to facilitate consideration of addressing these experiences in treatment. This may be of particular relevance for those who do not respond to first line interventions for GSAD, although additional research is needed to address this question and optimal targeted intervention for those with GSAD and a history of childhood maltreatment with and without comorbid PTSD. Future studies would benefit from larger samples and more detailed exploration of the nature of the relationship between childhood maltreatment, symptom severity, and function in order to fully understand the nature of this link and its clinical implications.

Acknowledgments

Contract grant sponsor: NIMH; Contract grant number: 5R01MH070919.

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TABLE 1Subject characteristics and current psychiatric comorbidity ($N = 103$)

Age (years), mean (<i>SD</i>)	36.69 (14.1)
Gender, % male (<i>N</i>)	69.9 (72)
Race, % Caucasian (<i>N</i>)	80.6 (83)
Age of SAD onset (years), mean (<i>SD</i>) ^a	10.69 (7.58)
LSAS score, mean (<i>SD</i>)	91.01 (19.62)
CGI-S score, mean (<i>SD</i>)	5.31 (0.88)
Q-LES-Q score, mean (<i>SD</i>)	48.81 (8.86)
CD-RISC score, mean (<i>SD</i>)	48.62 (15.62)
SDS score, mean (<i>SD</i>)	16.72 (5.71)
Generalized anxiety disorder, % (<i>N</i>)	26.21 (27)
Panic disorder, % (<i>N</i>)	7.77 (8)
Posttraumatic stress disorder, % (<i>N</i>)	1.94 (2)
Major depressive disorder, % (<i>N</i>)	20.39 (21)

SAD, Social Anxiety Disorder; LSAS, Liebowitz Social Anxiety Scale; CGI-S, Clinical Global Impression-Severity of Illness Scale; Q-LES-Q, Quality of Life Enjoyment and Satisfaction Questionnaire; CD-RISC, Connor-Davidson Resilience Scale; SDS, Sheehan Disability Scale.

^a $N = 96$.

TABLE 2

Impact of childhood trauma (CTQ total score) on SAD symptom severity (LSAS and CGI-S), quality of life (QLESQ), functioning (SDS), and resilience (CDRISC), adjusted for age and gender

Variable	β	SE	P
Liebowitz Social Anxiety Scale (LSAS)			
<i>Full model: $F(3, 99) = 9.61$; adjusted $R^2 = .202$; $P = .000$</i>			
Age	-0.51	0.13	.000
Gender	-2.35	4.0	.559
LSAS	0.539	0.12	.000
Clinical Global Impression-Severity of Illness Scale			
<i>Full model: $F(3, 97) = 9.63$; adjusted $R^2 = .21$; $P = .000$</i>			
Age	-0.026	0.006	.000
Gender	-0.203	0.18	.270
CGI-S	0.023	0.005	.000
Quality of Life Enjoyment and Satisfaction Questionnaire			
<i>Full model: $F(3, 97) = 4.49$; adjusted $R^2 = .095$; $P = .005$</i>			
Age	0.188	0.064	.004
Gender	3.540	1.94	.071
QLESQ	-0.169	0.059	.005
Sheehan Disability Scale			
<i>Full model: $F(3, 99) = 5.76$; adjusted $R^2 = .123$; $P = .001$</i>			
Age	-0.114	0.04	.005
Gender	-3.2	1.22	.010
SDS	0.123	0.037	.001
Connor-Davidson Resilience Scale			
<i>Full model: $F(3, 99) = 3.16$; adjusted $R^2 = .06$; $P = .023$</i>			
Age	0.281	0.112	.014
Gender	5.1	3.46	.143
CDRISC	-0.242	0.104	.022

LSAS, Liebowitz Social Anxiety Scale; CGI-S, Clinical Global Impression-Severity of Illness Scale; Q-LES-Q, Quality of Life Enjoyment and Satisfaction Questionnaire; CD-RISC, Connor-Davidson Resilience Scale; SDS, Sheehan Disability Scale.

The association of threshold levels of childhood trauma with social anxiety disorder severity and quality of life

TABLE 3

CTQ subscales	LSAS		CGI-S		CD-RISC		SDS		QLESQ	
	β (SE)	P	β (SE)	P	β (SE)	P	β (SE)	P	β (SE)	P
Sexual abuse	10.28 (5.28)	.054	.59 (.234)	.013	-7.65 (4.28)	.077	5.59 (1.48)	.000	-6.06 (2.39)	.013
Physical abuse	8.36 (4.15)	.046	.32 (.19)	.089	-2.78 (3.41)	.418	2.27 (1.22)	.066	-.58 (1.94)	.764
Physical neglect	9.57 (3.90)	.016	.35 (.18)	.049	-6.78 (3.18)	.036	2.16 (1.16)	.066	-3.52 (1.83)	.058
Emotional neglect	12.04 (3.74)	.002	.52 (.17)	.003	-8.52 (3.06)	.006	2.63 (1.12)	.021	-4.48 (1.77)	.013
Emotional abuse	11.91 (3.76)	.002	.53 (.17)	.002	-2.75 (3.18)	.390	2.88 (1.12)	.012	-3.16 (1.80)	.082

All regression models are adjusted for age and gender. Boldfaced values represent statistical significance after Bonferroni correction for multiple testing: $P < .05/5 = \alpha$ of 0.01. CTQ, Childhood Trauma Questionnaire; LSAS, Liebowitz Social Anxiety Scale; CGI-S, Clinical Global Impression-Severity of Illness Scale; Q-LES-Q, Quality of Life Enjoyment and Satisfaction Questionnaire; CD-RISC, Connor-Davidson Resilience Scale; SDS, Sheehan Disability Scale.