



Differential effect of childhood emotional abuse on present social support in borderline disorder and depression: a cross-sectional study

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ABSTRACT

Background: Perceived social support (PSS) is a crucial factor in physical and mental health. Previous studies found a negative association between childhood maltreatment (CM) and current PSS.

Objective: In this paper, we investigate whether psychopathology moderates this association in a sample of patients with Depressive Disorder (DD) and Borderline Personality Disorder (BPD).

Method: Sixty-nine patients with DD and 110 patients with BPD were recruited to inpatient/day clinic treatment programmes for either DD or BPD. All participants completed the Childhood Trauma Questionnaire (CTQ) and the Social Support Questionnaire (F-SozU). Our hypothesis was tested with a moderator analysis in a multiple linear regression model.

Results: We found a significant interaction between diagnosis and CM for the CTQ total score and the emotional abuse subscale. Post hoc analyses revealed a significant negative correlation between CM and PSS only for patients suffering from BPD and not for patients with DD.

Conclusion: Our results suggest that the negative association between CM and PSS might be more pronounced in certain patient groups, particularly patients with BPD.

Efecto diferencial del abuso emocional infantil en el apoyo social actual en el trastorno límite y la depresión: un estudio transversal

Antecedentes: El apoyo social percibido (PSS en su sigla en inglés) es un factor crucial en la salud física y mental. Estudios previos encontraron una asociación negativa entre el maltrato infantil (MI) y el PSS actual.

Objetivo: En este trabajo investigamos si la psicopatología modera esta asociación en una muestra de pacientes con trastorno depresivo (DD en su sigla en inglés) y trastorno límite de la personalidad (TLP).

Método: Sesenta y nueve pacientes con DD y 110 pacientes con TLP fueron reclutados en programas de tratamiento clínico para pacientes de hospital diurno para DD o TLP. Todos los participantes completaron el cuestionario de trauma infantil (CTQ en su sigla en inglés) y el Cuestionario de apoyo social (F-SozU). Nuestra hipótesis fue probada con un análisis de moderador en un modelo de regresión lineal múltiple.

Resultados: Encontramos una interacción significativa entre el diagnóstico y el MI para la puntuación total del CTQ y la subescala de abuso emocional. Los análisis post hoc revelaron una correlación negativa significativa entre MI y PSS solo para pacientes que padecían TLP y no para pacientes con DD.

Conclusión: Nuestros resultados sugieren que la asociación negativa entre MI y PSS podría ser más pronunciada en ciertos grupos de pacientes, particularmente en pacientes con TLP.

童年期情感虐待对边缘性障碍和抑郁当下社会支持的不同影响:一项横断面研究

背景: 感知社会支持 (PSS) 是身心健康的关键因素。先前研究发现童年期虐待 (CM) 与当下 PSS 之间存在负相关。

目的: 在本文中, 我们正在考查精神病是否在抑郁症障碍(DD) 和边缘型人格障碍 (BPD) 患者样本中调节这种关联。

ARTICLE HISTORY

Received 8 January 2021

Revised 2 June 2021

Accepted 30 July 2021

KEYWORDS

Perceived social support; childhood maltreatment; emotional abuse; borderline personality disorder; depressive disorder

PALABRAS CLAVE

Apoyo social percibido; maltrato infantil; abuso emocional; trastorno límite de la personalidad; trastorno depresivo

关键词

关键词; 感知社会支持; 童年期虐待; 情感虐待; 边缘型人格障碍; 抑郁障碍

HIGHLIGHTS

- The negative association between childhood maltreatment and perceived social support is more pronounced in patients with Borderline Personality Disorder than in patients with Depressive Disorder.

方法: 在住院/日间门诊DD或BPD治疗计划中招募了69名DD患者和110名BPD患者。所有参与者都完成了童年创伤问卷(CTQ)和社会支持问卷(F-SozU)。在多元线性回归模型中通过调节分析对我们的假设进行了检验。

结果: 我们发现诊断和CTQ总分和情感虐待分量表的CM之间存在显著相互作用。事后分析显示CM和PSS之间的显著负相关仅存在于BPD患者,而不适用于DD患者。

结论: 我们的结果表明,CM和PSS之间的负相关可能在某些患者群体中更为明显,尤其是BPD患者。

1. Background

Since the 1970s, social support has been the focus of psychological and medical research due to its positive effects on mental and physical health (Holt-Lunstad, Smith, & Layton, 2010; Lakey & Orehek, 2011; Uchino, Cacioppo, & Kiecolt-Glaser, 1996).

In the present study, we define social support as a perceived and/or anticipated support from the social network (Fydrich, Geyer, Hessel, Sommer, & Brähler, 1999). Cobb (1976) already described this definition to be more relevant for clinical and epidemic research than concepts that aim to assess formal and structural characteristics of the social network. It covers the cognitive evaluation of the network, the potential or perceived behaviour of the members of the network (Fydrich et al., 1999) and is supported by more recent research as well (Eagle, Hybels, & Proeschold-Bell, 2019).

In the research field of childhood maltreatment (CM), previous research found that social support acts as a buffer between CM and depression (Feldman, Conger, & Burzette, 2004; Powers, Ressler, & Bradley, 2009), but not between CM and substance abuse or anxiety disorders (Feldman et al., 2004). However, there are also studies that could not find a moderating effect of social support between CM and depression (Schumm, Briggs-Phillips, & Hobfoll, 2006) or substance abuse in adulthood (Schuck & Widom, 2003).

Only a few studies have focussed on the question whether CM is followed by lower levels of social support in adulthood, and whether these lower levels have a significant impact on mental health. Some studies found lower levels of social support, while others did not find any difference (Bradley, Schwartz, & Kaslow, 2005; McLewin & Muller, 2006; Pepin & Banyard, 2006; Schumm et al., 2006; Vranceanu, Hobfoll, & Johnson, 2007).

To our knowledge, no study has yet examined whether CM differentially affects perceived social support (PSS) depending on the psychopathology, e.g. Depressive Disorder (DD) and Borderline Personality Disorder (BPD).

Previous research has shown that DD (Nelson, Klumpp, Doebler, & Ehring, 2017) and BPD (Ibrahim, Cosgrave, & Woolgar, 2018) are highly associated with the history of CM. BPD shows higher rates of emotional abuse in comparison to DD (Carvalho Fernando et al., 2014) as well as higher levels of all

kinds of CM (Brakemeier et al., 2018). Furthermore, previous studies have shown that a lack of social support is associated with BPD (Beeney, Hallquist, Clifton, Lazarus, & Pilkonis, 2018) and DD (Grav, Hellzèn, Romild, & Stordal, 2012).

When looking at the interplay between CM, social support, and BPD, Elzy (2011) could not find a moderating effect of social support on the development of BPD features. Sperry and Widom (2013) found in a sample of abused or neglected individuals that higher levels of social support are related to lower levels of depression in adulthood.

With the present study, we aim to close the above mentioned gap by testing the hypothesis that the association between CM and PSS is moderated by the diagnosis of the patient (DD vs. BPD). We hypothesize a stronger negative association between the two variables in BPD because previous research on BPD-interactive characteristics such as rejection sensitivity (Liebke et al., 2018) and emotional dysregulation (Euler et al., 2019) suggests that BPD suffers from dysfunctional perception of interpersonal relationships and/or interpersonal problems. These BPD-interactive characteristics might either prevent BPD patients from perceiving social support that is available to them or from reaching out for social support, or lead to social turbulence that causes potential supporters to withdraw from the social network of the patient.

2. Methods

2.1. Procedure

The present study uses data from the ICARE-Study (Investigating Care Dependency And its Relation to outcome) designed to investigate the German version of the Care Dependency Questionnaire (Geurtzen, Keijsers, Karremans, & Hutschemaekers, 2018). Participants were recruited at the inpatient and day clinic treatment programmes for either DD or BPD at the Department of Psychiatry and Psychotherapy, University of Lübeck, Germany. The ICARE-study was conducted in accordance with the Declaration of Helsinki and was approved by the ethics committee of the University of Lübeck (ref. 17-049 and ref. 12-271). Participants did not receive financial compensation. All patients entering the DD programme between

May 2017 and April 2018 and all patients entering the BPD programme between October 2017 and March 2019 meeting in- and exclusion criteria were contacted and informed about the study within the first week of treatment by trained students of a Psychology Bachelor's or Master's programme. If the patients were eligible for the study, the goals and procedure of the study were explained to the patients in detail, and they were asked to provide informed consent to participate. Data collection was conducted by the authors KB and SG using paper questionnaires which were handed out to the patients, who were asked to fill them in at home. For detailed information on participant recruitment, please refer to the study flowchart (Figure 1).

2.1.1. Inclusion and exclusion criteria

Inclusion and exclusion criteria for the study were based on the two treatment programme's admission criteria. For the DD group we included patients treated in a specialized treatment programme who had been diagnosed with a primary diagnosis of depressive disorder according to DSM-5 (American Psychiatric Association, 2013), either with persistent depressive disorder or with recurrent major depressive disorder. Patients with a primary diagnosis of BPD according to DSM-5 were recruited to the BPD group from a separate treatment programme. The additional inclusion criteria for the present study in both groups were 1) a minimum age of 18 years, 2) an adequate understanding of the German language, 3) an informed written consent, and 4) the ability to participate in the respective treatment programmes. To ensure a clean separation of the two groups of patients, we only included patients in the DD group who did not suffer from a comorbid BPD. However, to guarantee feasibility of recruitment in the BPD group, patients could suffer from a comorbid depressive disorder. Exclusion criteria in both groups included acute suicidality, a history of

schizophrenia, delusional disorder, dementia, intellectual disability, diagnosis of substance use disorder or bipolar disorder, and a known diagnosis of an acute somatic illness that required treatment.

2.1.2. Diagnostic process

In the DD group, the presence of a depressive disorder was confirmed with a structured interview according to 'Diagnostic and statistical manual of mental disorders – DSM-5' (American Psychiatric Association, 2013) by trained psychology students, and symptom severity was assessed with the German version (Roniger, Späth, Schweiger, & Klein, 2015) of the 'Quick Inventory of Depressive Symptomatology – self report' (Rush et al., 2003). Comorbidities were assessed based on the clinical routine. In the BPD group, the severity of the BPD symptomatology was assessed with the Borderline Personality Disorder Checklist (Bloo, Arntz, & Schouten, 2017).

2.2. Measures

A demographic questionnaire collected data on age, gender, family status, education and working status. The main variables were examined with the two following questionnaires.

2.2.1. Social support questionnaire

The short form of the Social Support Questionnaire 'F-SozU' (Fydrich, Sommer, Tydecks, & Brähler, 2009) is a self-report instrument. The questionnaire contains 14 items assessing social support as a perceived or anticipated support. Answers are rated on a 5-point Likert scale (1 = totally inapplicable to 5 = totally applicable). By summing up all 14 items, a 'support score' is calculated that assesses general PSS. This instrument shows a good internal consistency (Cronbach's alpha = .94) (Fydrich et al., 2009). In the

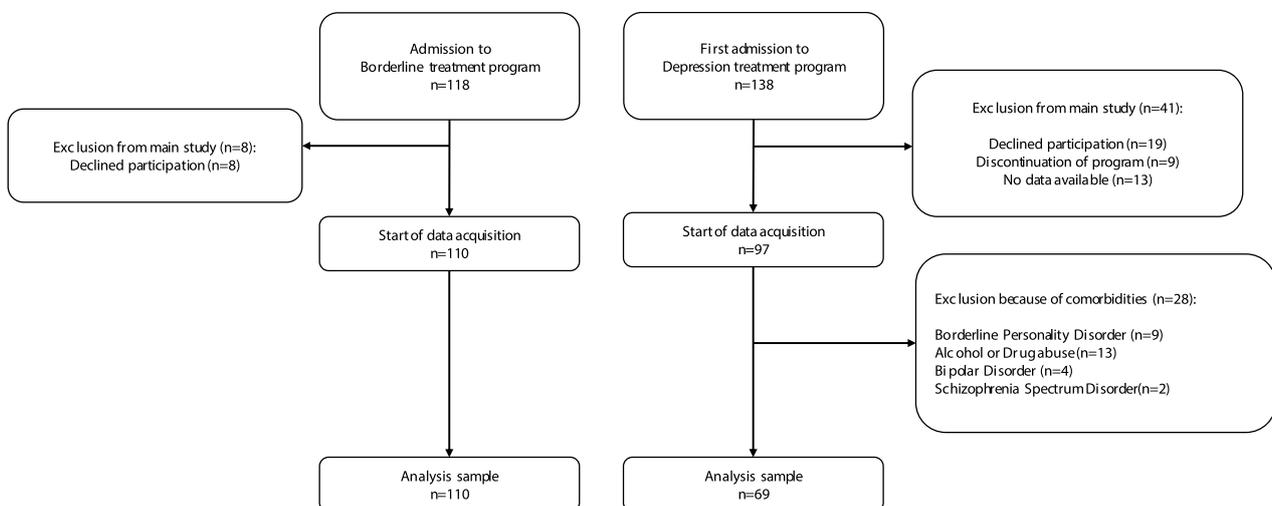


Figure 1. Study Flowchart.

current sample, the internal consistency was high as well (Cronbach's alpha = .94).

2.2.2. Childhood trauma questionnaire

The German version (Klinitzke, Romppel, Häuser, Brähler, & Glaesmer, 2012) of the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 2003) is a self-report questionnaire which retrospectively assesses the subjectively experienced amount of childhood trauma. The items can be assigned to the subscales 'sexual abuse', 'emotional abuse', 'physical abuse', 'physical neglect', and 'emotional neglect' each consisting of five items. The answers are rated on a 5-point Likert scale ranging from 1 = 'never' to 5 = 'very often'. A total score is calculated over all 25 items, with higher scores reflecting a greater exposure to traumatic experiences. The internal consistencies varied between Cronbach's alpha ($\alpha = .80$) for the subscale 'physical abuse' and ($\alpha = .89$) for the subscale 'sexual abuse', excepting the subscale 'physical neglect' ($\alpha = .55$) (Klinitzke et al., 2012). The internal consistency of the questionnaire in the current sample is acceptable, with Cronbach's alpha = .73. The CTQ demonstrates good criterion-related validity in the analysis of a sample of whom corroborative data were available (therapist's rating of childhood trauma) (Bernstein et al., 2003).

2.3. Characteristics of the sample

The analysis sample includes 179 individuals, 110 (61.45%) patients suffer from BPD and 69 (38.55%) patients suffer from DD. Table 1 shows the demographic and clinical characteristics of the sample. The BPD group included significantly more female patients ($\chi^2(1) = 51.53, p < .001, \phi < .001$). The DD group was significantly older ($t(175) = 5.07, p < .001, d = -.79$) and showed significantly less CM on the CTQ total score ($t(151) = 4.92, p < .001, d = .81$) and on the subscales emotional abuse ($t(197) = 5.66, p < .001, d = .93$), physical abuse ($t(194) = 2.01, p < .05, d = .41$), sexual abuse ($t(193) = 5.32, p < .001, d = .78$), emotional neglect ($t(195) = 2.42, p < .05, d = .44$), and physical neglect ($t(196) = 2.75, p < .01, d = .59$). DD patients showed a significantly higher level of PSS ($t(167) = -2.95, p < .01, d = .47$).

2.4. Statistical analysis

Statistical analyses were conducted using SPSS (IBM Corp. Released 2017. IBM SPSS Statistics for Windows, Version 25.0. Armonk, N.Y.: IBM Corp.) All statistical tests were two-sided tests with significance levels set at $p \leq .05$. Standard errors (SE) and 95%-confidence intervals (CI) are provided in

Table 1. Demographic and clinical characteristics of the sample.

	BPD, <i>n</i> = 110	DD, <i>n</i> = 69
Female	104 (94.5%)	33 (47.8%)
Age (in years), <i>M</i> (<i>SD</i>)	31.40 (11.32)	40.93 (13.36)
Education level		
Lower secondary school (9 school years)	24 (21.8%)	13 (18.8%)
Lower secondary school (10 school years)	48 (43.6%)	25 (36.2%)
University of applied science entrance qualification	3 (2.7%)	5 (7.2%)
Higher secondary school, qualifying for university	31 (28.2%)	21 (30.4%)
left school without degree	2 (1.8%)	2 (2.9%)
no degree yet	1 (0.9%)	1 (1.4%)
other degree	1 (0.9%)	1 (1.4%)
missing	0	1 (1.4%)
Highest professional degree		
still in professional qualification	15 (13.6%)	8 (11.6%)
no professional qualification degree	41 (37.3%)	8 (11.6%)
completed vocational training	30 (27.3%)	24 (34.8%)
University of Applied Science degree	13 (11.8%)	9 (13.0%)
University degree	8 (7.2%)	11 (15.9%)
other degree	2 (1.8%)	8 (11.6%)
missing	1 (0.9%)	1 (1.4%)
Employment		
full time	12 (10.9%)	21 (30.4%)
part time	9 (8.2%)	13 (18.8%)
minor employment	7 (6.4%)	2 (2.9%)
1-Euro Job	1 (0.9%)	0
unsteady employment	3 (2.7%)	0
vocational Training	2 (1.8%)	4 (5.8%)
unemployed	74 (67.3%)	29 (42.0%)
missing	2 (1.8%)	0
Family status		
unmarried	90 (81.8%)	34 (49.3%)
married, cohabiting	6 (5.5%)	22 (31.9%)
married, not cohabiting	5 (4.5%)	2 (2.9%)
divorced	8 (7.3%)	7 (10.1%)
widowed	0	4 (5.8%)
missing	1 (0.9%)	0
Depression symptom severity, <i>M</i> (<i>SD</i>)		
QIDS-SR		14.64 (5.84)
BPD symptom severity, <i>M</i> (<i>SD</i>)		
BPD-Checklist	132.78 (34.88)	
Social Support <i>M</i> (<i>SD</i>)		
SSQ	44.83 (12.85)	50.83 (12.88)
Child Maltreatment <i>M</i> (<i>SD</i>)		
CTQ	62.58 (24.59)	45.16 (15.79)

Notes: *M* = mean, *SD* = standard deviation, CTQ = Childhood Trauma Questionnaire, SSQ = Social Support Questionnaire, QIDS-SR = Quick Inventory of Depressive Symptomatology-self report, DD = Depressive Disorder, BPD = Borderline Personality Disorder.

the result section. Missing values were not substituted.

To test our hypothesis that the diagnosis (DD vs. BPD) moderates the association between CM and PSS, we calculated a moderation analysis in a multiple linear regression model. To do so, we formed a dummy-variable for the two different diagnostic groups. We entered the CTQ total score, the diagnosis (DD vs. BPD) and the interaction between diagnosis and CTQ total score (diagnosis x CTQ total score) as the independent variables and the sum score of the F-SozU as the dependent variable into a multiple regression analysis. The moderation

analysis was conducted for the CTQ total score as well as for the five subscales of the CTQ in an exploratory analysis.

For our post-hoc analysis we calculated a correlation analysis (Spearman-correlation-coefficient) between the CTQ and the F-SozU separately for the two diagnostic groups and for the whole sample. This correlation analysis was conducted for both the CTQ total score and for the five subscales of the CTQ. The assumptions for the multiple regression analysis were inspected with PP-Plots, scatterplots, and the analysis of the residuals. Due to the fact that for most of the inserted variables the assumption of normality as well as homoscedasticity were violated, we re-examined all our analyses with a BCa-bootstrap evaluation including 1000 BCa-samples.

3. Results

3.1. Moderation analysis

Results of the moderation analysis are displayed in Table 2. Our analyses revealed a significant interaction between the CTQ total score and the assigned diagnosis which was confirmed by bootstrapping evaluation (for results of the bootstrapping evaluation please refer to Table S2 in the supplementary material). When controlling for age, gender, and family status (0 = married and living together, 1 = married and not living together, 2 = single,

3 = divorced, 4 = widowed), the interaction remains significant ($\beta = .44, p = .049$). Detailed information on the adjusted analysis is provided in Table S1 in the supplementary material. For a better overview of the interaction, please refer to the graph in Figure 2 showing a significantly negative association between CM and PSS for BPD, while there is no significant association shown for DD.

In the exploratory analysis of the CTQ subscales we found a significant interaction between emotional abuse in childhood and the assigned diagnosis which remains significant after Bonferroni correction and was confirmed by the bootstrapping evaluation (Table S2 in the supplementary material). When controlling for age, gender, and family status the interaction remains significant ($\beta = .46, p = .011$) (Table S1 in the supplementary material). Figure 3 shows a significantly negative association between experienced emotional abuse in childhood and PSS for BPD, while there is no significant association shown for DD. The other tested interactions were not significant after Bonferroni correction or were not confirmed by the bootstrapping evaluation.

3.2. Association between childhood maltreatment and current perceived social support

With a post-hoc analysis we tested whether there is a negative association between CM and PSS. Results

Table 2. Multiple regression analysis predicting social support by childhood maltreatment and the diagnosis (DD vs. BPD).

Predictor	Corrected R ²	F (df)	SE	unstandardized Beta	Standardized Beta	t	p	Confidence interval lower bound	Confidence interval upper bound
Constant	.121	6.49(3)	3.45	58.65		16.23	.000	51.77	65.66
CTQ total score			.05	-.19	-.35	-3.66	.000	-.31	-.10
Diagnosis (DD vs. BPD)			6.20	-9.23	-.35	-1.52	.131	-22.02	8.17
CTQ total score x Diagnosis (DD vs. BPD)			.13	.24	.45	2.11	.037	0.02	.47
Constant	.137	9.49 (3)	3.28	60.21		17.03	.000	53.92	66.39
Emotional Abuse			.19	-.93	-.44	-4.49	.000	-1.31	-.57
Diagnosis (DD vs. BPD)			5.32	-9.97	-.37	-1.98	.050	-19.69	.15
Emotional Abuse x Diagnosis (DD vs. BPD)			.41	1.00	.48	2.77	.006	.29	1.72
Constant	.05	3.61(3)	2.36	49.46		2.42	.000	44.93	54.16
Sexual Abuse			.18	-.34	-.18	-1.93	.055	-.68	-.02
Diagnosis (DD vs. BPD)			4.42	.68	.02	.17	.859	-8.06	6.72
Sexual Abuse x Diagnosis (DD vs. BPD)			.58	.48	.15	1.16	.25	-.563	2.22
Constant	.059	4.28(3)	2.38	51.249		20.21	.000	46.76	56.23
Physical Abuse			.21	-.58	-.24	-2.59	.010	-1.04	-.21
Diagnosis (DD vs. BPD)			4.34	-.31	-.01	-.08	.939	-8.62	8.54
Physical Abuse x Diagnosis (DD vs. BPD)			.50	.55	.20	1.36	.176	-.61	1.49
Constant	.19	12.87(3)	2.99	62.38		17.96	.000	55.99	68.07
Emotional neglect			.193	-1.05	-.47	-5.14	.428	-1.44	-.66
Diagnosis (DD vs. BPD)			5.14	-4.18	-.16	-7.79	.000	-14.63	6.81
Emotional neglect x Diagnosis (DD vs. BPD)			.37	.5	.31	1.59	.113	-.22	1.27
Constant	.09	6.36(3)	3.15	55.46		17.33	.000	48.99	61.88
Physical neglect			.28	-.96	-.32	-3.43	.001	-1.44	-.49
Diagnosis (DD vs. BPD)			5.61	-2.27	-.08	-.45	.652	-12.67	10.67
Physical neglect x Diagnosis (DD vs. BPD)			.65	.66	.23	1.29	.199	-.81	1.64

Notes: CTQ = Childhood Trauma Questionnaire, DD = Depressive Disorder, BPD = Borderline Personality Disorder. Confidence interval and standard error were assessed by BCa bootstrapping including 1000 BCa-samples. Significant coefficients after Bonferroni correction and bootstrapping evaluation are printed in bold.

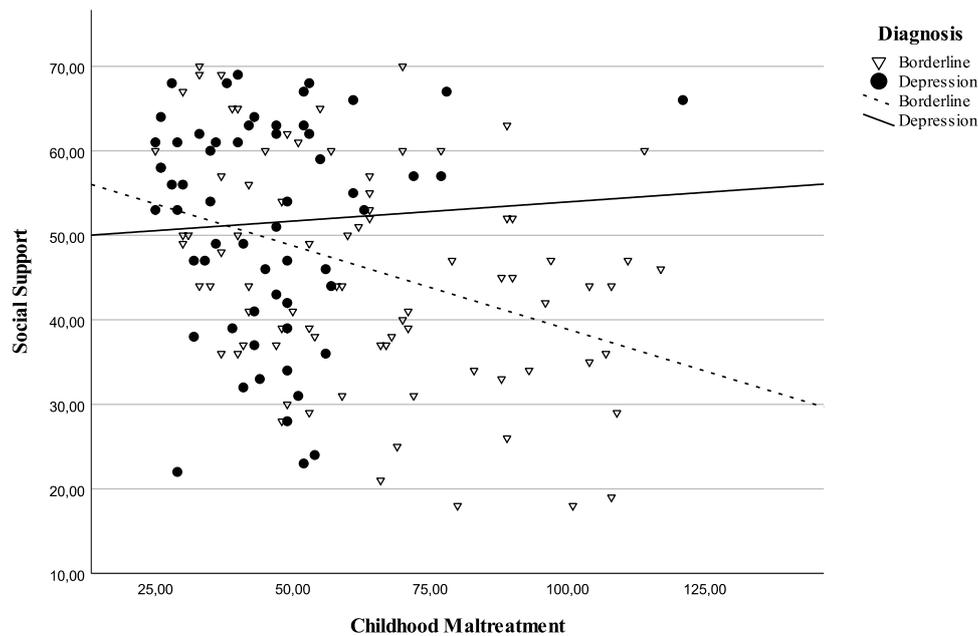


Figure 2. Interaction of reported Childhood Maltreatment (CTQ total score) and the Diagnosis (DD vs. BPD) on perceived Social Support in adulthood.

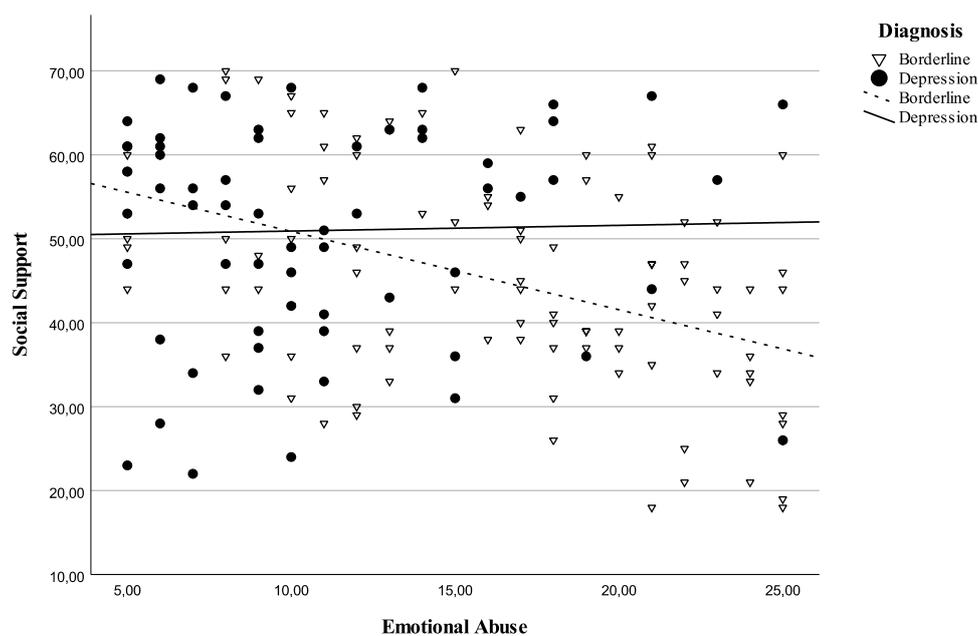


Figure 3. Interaction of reported Childhood Emotional Abuse and the Diagnosis (DD vs. BPD) on perceived Social Support in adulthood.

displayed in Table 3 show significantly negative associations for the whole sample for both, the CTQ total score and the CTQ subscales. In the DD group, no significant associations were found. In the BPD group, a significantly negative association with PSS was found for the CTQ total score and for the CTQ subscales emotional abuse, emotional neglect, and physical neglect. Results were confirmed by the bootstrapping evaluation. Significant associations remained significant after Bonferoni correction but the associations between PSS, sexual abuse and physical abuse (Table S3 in the supplementary material).

4. Discussion

The aim of the present study was to examine the association of retrospectively reported CM and PSS in DD and BPD. Our statistical analysis shows that BPD report significantly more CM than DD and significantly less PSS. Our finding that CM is more pronounced in BPD than in DD is in line with previous studies (Carvalho Fernando et al., 2014; Infurna et al., 2016). Our results also confirm previous research that BPD show significantly higher scores on all types of abuse and neglect than DD (Brakemeier et al., 2018),

Table 3. Spearman correlation coefficients between reported childhood maltreatment and perceived social support for the whole sample and separately for the two diagnostic groups (DD vs. BPD).

CTQ	DD, <i>n</i> = 69	BPD, <i>n</i> = 110	DD and BPD, <i>n</i> = 179
CTQ total score	-.051	-.384**	-.313**
CTQ subscales:			
Emotional abuse	-.001	-.416**	-.306**
Sexual abuse	.150	-.250*	-.210**
Physical abuse	-.134	-.256*	-.237**
Emotional neglect	-.203	-.467**	-.409**
Physical neglect	-.121	-.375**	-.330**

Notes: * $p < .05$; ** $p < .01$; *** $p < .001$, CTQ = Childhood Trauma Questionnaire, DD = Depressive Disorder, BPD = Borderline Personality Disorder, coefficients printed in bold remained significant after Bonferroni correction and BCa-bootstrapping evaluation.

not only on emotional abuse (Carvalho Fernando et al., 2014).

Our results show that the association between CM (particularly emotional abuse) and PSS is influenced by the specific psychopathology of DD and BPD. While in DD patients, the amount of PSS is not affected by the severity of reported CM, this negative association is statistically significant in BPD patients. Interestingly, the interaction between CM and PSS is only significant for the general assessment of CM and emotional abuse. This result indicates that especially emotional abuse seems to play an important role in the perception of lower levels of support in BPD, but not in DD.

This study does not address the underlying mechanisms of the above mentioned differences between DD and BPD, but we would like to offer possible explanations that need to be evaluated in the future research.

This could be the case if (1) BPD patients reach out less for help than DD due to BPD-specific symptomatology and therefore receive less support or (2) reach out for social support as much as DD but receive or perceive less support due to BPD-specific symptomatology.

Firstly, we would like to focus on emotional regulation problems as a possible underlying mechanism that might hinder BPD patients with a history of CM to reach out for help, receive or perceive social support. The association between social support and emotion regulation was found by Flannery, Becker, and Luebbe (2016) and Stevens et al. (2013), who suggested that emotion dysregulation hinders social support. In terms of the link between CM, emotional regulation, and PSS, a study by Barnes, Howell, and Miller-Graff (2016) found that emotion dysregulation partially mediated the relationship between CM and support from family. Emotional dysregulation is considered one of the core symptoms of BPD and is expressed in high baseline affective arousal (Kuo & Linehan, 2009), hypervigilance to negative stimuli (Sieswerda, Arntz, Mertens, & Vertommen, 2007), low threshold for affective responses (Herpertz et al., 1997), more intense negative emotions (Jacob et al., 2009), rapid

change from positive into negative mood (Ebner-Priemer et al., 2007), incapability to experience and describe differential emotions (Wolff, Stiglmayr, Bretz, Lammers, & Auckenthaler, 2007), anxiety sensitivity (Gratz, Tull, & Gunderson, 2008) and incapability to suppress emotional distractors (Domes et al., 2006).

Considering this previous research, it might be possible that emotional dysregulation is more pronounced in BPD than in DD and is associated with less PSS in BPD patients with a history of CM (especially emotional abuse). Future studies should focus on the impact of emotional regulation deficits on the association between CM (particularly emotional abuse) and PSS across psychiatric disorders.

Secondly, another underlying mechanism might be that DD and BPD may not differ in the actual level of social support but in the *perceived* level of social support. This seems especially relevant since BPD patients show significantly higher rejection sensitivity compared to patients suffering from mood disorders (Staebler, Helbing, Rosenbach, & Renneberg, 2011). Zielinski and Veilleux (2014) found first indications that rejection sensitivity mediates the relationship between borderline features and the number of social supports. Additionally, a recent study showed that rejection sensitivity mediates the association between emotional abuse and loneliness as well as the association between emotional neglect and loneliness (Nenov-Matt et al., 2020). In future studies this assumption should be tested with a third-party rating of social support and by including rejection sensitivity as a mediator in the analysis using, for example, the Rejection Sensitivity Questionnaire (RSQ) or the cyberball paradigm (Bauriedl-Schmidt et al., 2017).

Our results suggest that DD and BPD may benefit from different psychological treatments addressing social support in therapy. For BPD clinical interventions should first address the above mentioned BPD-specific interactional and/or perception deficits before directly encouraging the seeking of social support. In contrast, individuals suffering from DD and having a history of CM should be encouraged directly to approach social support from their social network due to its positive effects on mental health.

4.1. Strengths and limitations

We did not match BPD and DD by age, gender or family status. Due to the fact that the BPD sample is mainly female (94.5%), on average 10 years younger (BPD: 31.40, DD: 40.93) and less often married, we cannot exclude the possibility that our results are attributed to these demographic differences. The difference in family status could be particularly relevant when considering differences in PSS of the two patient groups, whereas the lower rates of marriage in BPD could also be a consequence of the above mentioned social

functions deficits in BPD. However, when controlling for age, gender and family status, the interactions between CM and the psychopathology of BPD and DD remained significant, while the demographic variables did not show a significant association with PSS.

We have measured subjectively perceived social support and have no objective measurement of interpersonal functioning to cross-validate this finding. A competing explanation for our finding is that patients who have experienced CM (especially emotional abuse) have difficulty recognizing support, even if they actually receive it. On the other hand, the questionnaire also contains semi-objective items such as 'In case of illness, I can without hesitation approach friends or relatives to support me in important matters', which reflect the actual daily experience of the patient.

Another competing explanation for our results is that DD patients reach out more for social support and perceive more social support than BPD, but show greater underreporting of a history of childhood maltreatment than BPD to avoid the memory of abuse and/or neglect in childhood.

Since our study is a cross-sectional study and not a longitudinal study, we can only speculate on reasons of how the association between CM and PSS is influenced by DD and BPD. These influencing factors could either be cross-sectional or longitudinal. Our found results should therefore be considered as a starting point for future longitudinal studies.

The self-report measures of PSS and CM can also be considered a limitation of this study due to the fact that self-report measures include the risk of memory-bias (Hardt & Rutter, 2004; Shaffer, Huston, & Egeland, 2008).

To our knowledge, this is the first study to examine if a psychiatric diagnosis moderates the association between retrospectively reported CM and PSS. Due to the clean separation of the two diagnostic groups by excluding patients in the DD group who suffered from a comorbid BPD, and controlling for demographic variables, we ensured that the identified interaction can be attributed to the specific psychopathology.

4.2. Conclusion

Our results suggest that the association between CM and PSS needs to be considered more differentially than it has been done so far. They put into question the general assumption that CM is always associated with less PSS. Rather, the impact of a specific type of CM (in this case, emotional abuse) on PSS in adulthood seems to depend on the psychopathology of a patient (in this case, BPD). Mediating variables of this association need further research to shed light on the interaction of CM and PSS in DD and BPD.

Acknowledgments

The authors would like to thank all patients for their participation in the study and Elisa Brinkmann, Sophie Tschepe, Nurezvace Aydin, Julia Pockrandt, Wiebke Mehrend and Franziska Jakobs for their contribution to the data collection.

Disclosure statement

JPK received funding for clinical trials (German Federal Ministry of Health, Servier - distributor of the internet intervention 'Deprexis'), payments for presentations on internet interventions (Servier), payments for workshops and books (Beltz, Elsevier, Hogrefe and Springer) on psychotherapy for chronic depression and on psychiatric emergencies.

EF obtained funding for research trials by Else Kröner-Fresenius-Stiftung, Addisca gGmbH and University of Lübeck. Funding bodies played no role in the design of the study, in the collection, analysis and interpretation of data, in the writing of the manuscript and in the decision to submit the manuscript for publication. EF received payments for workshops and DVDs, books (BELTZ) on BPD, depression and psychotherapy.

Contributors

JPK, KB, SG, US designed the study and obtained funding. Patient recruitment was coordinated by SG, KB. UG conducted the statistical analyses. The results were interpreted by UG. UG wrote the manuscript with substantial input from JPK, EF and JO. All authors commented on the manuscript and approved the final version.

Funding

We acknowledge financial support by Land Schleswig-Holstein within the funding programme Open Access Publikationsfonds.

Data sharing statement

Individual participant data that underlie the results reported in this article can be shared with researchers who provide a methodologically sound proposal to JPK. Proposals may be submitted up to 36 months following article publication.

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References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders: DSM-5* (Ed.) (5th ed.), Washington, DC: Author.
- Barnes, S. E., Howell, K. H., & Miller-Graff, L. E. (2016). The relationship between polyvictimization, emotion dysregulation, and social support among emerging adults victimized during childhood. *Journal of Aggression,*

- Maltreatment & Trauma*, 25(5), 470–486. doi:10.1080/10926771.2015.1133749
- Bauriedl-Schmidt, C., Jobst, A., Gander, M., Seidl, E., Sabaß, L., Sarubin, N., . . . Buchheim, A. (2017). Attachment representations, patterns of emotion regulation, and social exclusion in patients with chronic and episodic depression and healthy controls. *Journal of Affective Disorders*, 210, 130–138. doi:10.1016/j.jad.2016.12.030
- Beeney, J. E., Hallquist, M. N., Clifton, A. D., Lazarus, S. A., & Pilkonis, P. A. (2018). Social disadvantage and borderline personality disorder: A study of social networks. *Personality Disorders: Theory, Research, and Treatment*, 9(1), 62–72. doi:10.1037/per0000234
- Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., . . . Zule, W. (2003). Development and validation of a brief screening version of the childhood trauma questionnaire. *Child Abuse & Neglect*, 27(2), 169–190. doi:10.1016/S0145-2134(02)00541-0
- Bloo, J., Arntz, A., & Schouten, E. (2017). The borderline personality disorder checklist: Psychometric evaluation and factorial structure in clinical and nonclinical samples. *Roczniki Psychologiczne*, 20(2), 311–336. doi:10.18290/rpsych.2017.20.2-3en
- Bradley, R., Schwartz, A. C., & Kaslow, N. J. (2005). Posttraumatic stress disorder symptoms among low-income, African American women with a history of intimate partner violence and suicidal behaviors: Self-esteem, social support, and religious coping. *Journal of Traumatic Stress*, 18(6), 685–696. doi:10.1002/jts.20077
- Brakemeier, E.-L., Dobias, J., Hertel, J., Bohus, M., Limberger, M. F., Schramm, E., . . . Normann, C. (2018). Childhood maltreatment in women with borderline personality disorder, chronic depression, and episodic depression, and in healthy controls. *Psychotherapy and Psychosomatics*, 87(1), 49–51. doi:10.1159/000484481
- Carvalho Fernando, S., Beblo, T., Schlosser, N., Terfehr, K., Otte, C., Löwe, B., . . . Wingenfeld, K. (2014). The impact of self-reported childhood trauma on emotion regulation in borderline personality disorder and major depression. *Journal of Trauma & Dissociation*, 15(4), 384–401. doi:10.1080/15299732.2013.863262
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300–314. doi:10.1097/0006842-197609000-00003
- Domes, G., Winter, B., Schnell, K., Vohs, K., Fast, K., & Herpertz, S. C. (2006). The influence of emotions on inhibitory functioning in borderline personality disorder. *Psychological Medicine*, 36(8), 1163–1172. doi:10.1017/S0033291706007756
- Eagle, D. E., Hybels, C. F., & Proeschold-Bell, R. J. (2019). Perceived social support, received social support, and depression among clergy. *Journal of Social and Personal Relationships*, 36(7), 2055–2073. doi:10.1177/0265407518776134
- Ebner-Priemer, U. W., Kuo, J., Kleindienst, N., Welch, S. S., Reisch, T., Reinhard, I., . . . Bohus, M. (2007). State affective instability in borderline personality disorder assessed by ambulatory monitoring. *Psychological Medicine*, 37(7), 961–970. doi:10.1017/S0033291706009706
- Elzy, M. B. (2011). Examining the relationship between childhood sexual abuse and borderline personality disorder: does social support matter? *Journal of Child Sexual Abuse*, 20(3), 284–304. doi:10.1080/10538712.2011.573526
- Euler, S., Nolte, T., Constantinou, M., Griem, J., Montague, P. R., & Fonagy, P. Personality and Mood Disorders Research Network. (2019). Interpersonal problems in borderline personality disorder: associations with mentalizing, emotion regulation, and impulsiveness. *Journal of Personality Disorders*, 1–17. doi:10.1521/pedi_2019_33_427
- Feldman, B. J., Conger, R. D., & Burzette, R. G. (2004). Traumatic events, psychiatric disorders, and pathways of risk and resilience during the transition to adulthood. *Research in Human Development*, 1(4), 259–290. doi:10.1207/s15427617rhd0104_3
- Flannery, A. J., Becker, S. P., & Luebbe, A. M. (2016). Does emotion dysregulation mediate the association between sluggish cognitive tempo and college students' social impairment? *Journal of Attention Disorders*, 20(9), 802–812. doi:10.1177/1087054714527794
- Fydrich, T., Geyer, M., Hessel, A., Sommer, G., & Brähler, E. (1999). Fragebogen zur Sozialen Unterstützung (F-SozU): Normierung an einer repräsentativen Stichprobe. *Diagnostica*, 45(4), 212–216. doi:10.1026/0012-1924.45.4.212
- Fydrich, T., Sommer, G., Tydecks, S., & Brähler, E. (2009). Fragebogen zur sozialen unterstützung (F-SozU): Normierung der Kurzform (K-14). *Zeitschrift Für Medizinische Psychologie*, 18(1), 43–48. https://w24005286/24005286/Fragebogen_zur_sozialen_Unterst%C3%BCtzung_F_SozU_Normierung_der_Kurzform_K_14
- Geurtzen, N., Keijsers, G. P. J., Karremans, J. C., & Huttschemaekers, G. J. M. (2018). Patients' care dependency in mental health care: Development of a self-report questionnaire and preliminary correlates. *Journal of Clinical Psychology*, 74(7), 1189–1206. doi:10.1002/jclp.22574
- Gratz, K. L., Tull, M. T., & Gunderson, J. G. (2008). Preliminary data on the relationship between anxiety sensitivity and borderline personality disorder: The role of experiential avoidance. *Journal of Psychiatric Research*, 42(7), 550–559. doi:10.1016/j.jpsychires.2007.05.011
- Grav, S., Hellzèn, O., Romild, U., & Stordal, E. (2012). Association between social support and depression in the general population: The HUNT study, a cross-sectional survey: Association between social support and depression in the general population. *Journal of Clinical Nursing*, 21(1–2), 111–120. doi:10.1111/j.1365-2702.2011.03868.x
- Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry*, 45(2), 260–273. doi:10.1111/j.1469-7610.2004.00218.x
- Herpertz, S., Gretzer, A., Steinmeyer, E. M., Muehlbauer, V., Schuerkens, A., & Sass, H. (1997). Affective instability and impulsivity in personality disorder. *Journal of Affective Disorders*, 44(1), 31–37. doi:10.1016/S0165-0327(97)01444-4
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: A meta-analytic review. *PLoS Medicine*, 7(7), e1000316. doi:10.1371/journal.pmed.1000316
- Ibrahim, J., Cosgrave, N., & Woolgar, M. (2018). Childhood maltreatment and its link to borderline personality disorder features in children: A systematic review approach. *Clinical Child Psychology and Psychiatry*, 23(1), 57–76. doi:10.1177/1359104517712778
- Infurna, M. R., Brunner, R., Holz, B., Parzer, P., Giannone, F., Reichl, C., . . . Kaess, M. (2016). The specific role of childhood abuse, parental bonding, and family functioning in female adolescents with borderline personality disorder. *Journal of Personality Disorders*, 30(2), 177–192. doi:10.1521/pedi_2015_29_186
- Jacob, G. A., Hellstern, K., Ower, N., Pillmann, M., Scheel, C. N., Rüschi, N., & Lieb, K. (2009). Emotional reactions to standardized stimuli in women with borderline personality disorder: Stronger negative affect, but no differences in reactivity. *The Journal of Nervous and*

- Mental Disease*, 197(11), 808–815. doi:10.1097/NMD.0b013e3181bea44d
- Klinitzke, G., Romppel, M., Häuser, W., Brähler, E., & Glaesmer, H. (2012). Die deutsche version des Childhood Trauma Questionnaire (CTQ) – Psychometrische Eigenschaften in einer bevölkerungsrepräsentativen Stichprobe. *PPmP - Psychotherapie · Psychosomatik · Medizinische Psychologie*, 62(2), 47–51. doi:10.1055/s-0031-1295495
- Kuo, J. R., & Linehan, M. M. (2009). Disentangling emotion processes in borderline personality disorder: Physiological and self-reported assessment of biological vulnerability, baseline intensity, and reactivity to emotionally evocative stimuli. *Journal of Abnormal Psychology*, 118(3), 531–544. doi:10.1037/a0016392
- Lakey, B., & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review*, 118(3), 482–495. doi:10.1037/a0023477
- Liebke, L., Koppe, G., Bungert, M., Thome, J., Hauschild, S., Defiebre, N., ... Lis, S. (2018). Difficulties with being socially accepted: An experimental study in borderline personality disorder. *Journal of Abnormal Psychology*, 127(7), 670–682. doi:10.1037/abn0000373
- McLewin, L. A., & Muller, R. T. (2006). Attachment and social support in the prediction of psychopathology among young adults with and without a history of physical maltreatment. *Child Abuse & Neglect*, 30(2), 171–191. doi:10.1016/j.chiabu.2005.10.004
- Nelson, J., Klumparendt, A., Doebler, P., & Ehring, T. (2017). Childhood maltreatment and characteristics of adult depression: Meta-analysis. *British Journal of Psychiatry*, 210(2), 96–104. doi:10.1192/bjp.bp.115.180752
- Nenov-Matt, T., Barton, B. B., Dewald-Kaufmann, J., Goerigk, S., Reik, S., Zentz, K., ... Reinhard, M. A. (2020). Loneliness, social isolation and their difference: A cross-diagnostic study in persistent depressive disorder and borderline personality disorder. *Frontiers in Psychiatry*, 11, 608476. doi:10.3389/fpsy.2020.608476
- Pepin, E. N., & Banyard, V. L. (2006). Social support: A mediator between child maltreatment and developmental outcomes. *Journal of Youth and Adolescence*, 35(4), 612–625. doi:10.1007/s10964-006-9063-4
- Powers, A., Ressler, K. J., & Bradley, R. G. (2009). The protective role of friendship on the effects of childhood abuse and depression. *Depression and Anxiety*, 26(1), 46–53. doi:10.1002/da.20534
- Roniger, A., Späth, C., Schweiger, U., & Klein, J. (2015). A psychometric evaluation of the German version of the Quick Inventory of Depressive Symptomatology (QIDS-SR16) in outpatients with depression. *Fortschritte Der Neurologie · Psychiatrie*, 83(12), e17–e22. doi:10.1055/s-0041-110203
- Rush, A. J., Trivedi, M. H., Ibrahim, H. M., Carmody, T. J., Arnow, B., Klein, D. N., ... Keller, M. B. (2003). The 16-Item quick inventory of depressive symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): A psychometric evaluation in patients with chronic major depression. *Biological Psychiatry*, 54(5), 573–583. doi:10.1016/S0006-3223(02)01866-8
- Schuck, A. M., & Widom, C. S. (2003). Childhood victimization and alcohol symptoms in women: An examination of protective factors. *Journal of Studies on Alcohol*, 64(2), 247–256. doi:10.15288/jsa.2003.64.247
- Schumm, J. A., Briggs-Phillips, M., & Hobfoll, S. E. (2006). Cumulative interpersonal traumas and social support as risk and resiliency factors in predicting PTSD and depression among inner-city women. *Journal of Traumatic Stress*, 19(6), 825–836. doi:10.1002/jts.20159
- Shaffer, A., Huston, L., & Egeland, B. (2008). Identification of child maltreatment using prospective and self-report methodologies: A comparison of maltreatment incidence and relation to later psychopathology. *Child Abuse & Neglect*, 32(7), 682–692. doi:10.1016/j.chiabu.2007.09.010
- Sieswerda, S., Arntz, A., Mertens, I., & Vertommen, S. (2007). Hypervigilance in patients with borderline personality disorder: Specificity, automaticity, and predictors. *Behaviour Research and Therapy*, 45(5), 1011–1024. doi:10.1016/j.brat.2006.07.012
- Sperry, D. M., & Widom, C. S. (2013). Child abuse and neglect, social support, and psychopathology in adulthood: A prospective investigation. *Child Abuse & Neglect*, 37(6), 415–425. doi:10.1016/j.chiabu.2013.02.006
- Staebler, K., Helbing, E., Rosenbach, C., & Renneberg, B. (2011). Rejection sensitivity and borderline personality disorder. *Clinical Psychology & Psychotherapy*, 18(4), 275–283. doi:10.1002/cpp.705
- Stevens, N. R., Gerhart, J., Goldsmith, R. E., Heath, N. M., Chesney, S. A., & Hobfoll, S. E. (2013). Emotion regulation difficulties, low social support, and interpersonal violence mediate the link between childhood abuse and posttraumatic stress symptoms. *Behavior Therapy*, 44(1), 152–161. doi:10.1016/j.beth.2012.09.003
- Uchino, B. N., Cacioppo, J. T., & Kiecolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin*, 119(3), 488–531. doi:10.1037/0033-2909.119.3.488
- Vranceanu, A.-M., Hobfoll, S. E., & Johnson, R. J. (2007). Child multi-type maltreatment and associated depression and PTSD symptoms: The role of social support and stress. *Child Abuse & Neglect*, 31(1), 71–84. doi:10.1016/j.chiabu.2006.04.010
- Wolff, S., Stiglmayr, C., Bretz, H. J., Lammers, C.-H., & Auckenthaler, A. (2007). Emotion identification and tension in female patients with borderline personality disorder. *British Journal of Clinical Psychology*, 46(3), 347–360. doi:10.1348/014466507X173736
- Zielinski, M. J., & Veilleux, J. C. (2014). Examining the relation between borderline personality features and social support: The mediating role of rejection sensitivity. *Personality and Individual Differences*, 70, 235–238. doi:10.1016/j.paid.2014.07.005