

The Role of Early Life Stress in Adult Psychiatric Disorders

A Systematic Review According to Childhood Trauma Subtypes

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Abstract: Early life stress (ELS; sexual abuse, physical abuse, emotional abuse, physical neglect, and emotional neglect) has been the focus of numerous studies. It has been associated with the onset and the severity of psychiatric disorders in adults. The objective of this study was to review the literature on ELS associated with psychiatric disorders in adulthood, seeking to identify whether there are independent effects between subtypes of early stress in triggering psychopathology in adults. We reviewed articles from 2001 to 2011 in four databases (PubMed, SciELO, LILACS, and PsycINFO), with the following key words: *child abuse, maltreatment, early life stress, psychiatric disorders, mental disease, and psychopathology*. Forty-four articles were selected, and most of these articles demonstrate that the subtypes of ELS are associated with several psychiatric disorders, more specifically: physical abuse, sexual abuse, and unspecified neglect with mood disorders and anxiety disorders; emotional abuse with personality disorders and schizophrenia; and physical neglect with personality disorders. Physical neglect had the weakest association between the subtypes. ELS subtypes in childhood and adolescence can predict the development of psychopathology in adults. Scientific evidence shows that ELS triggers, aggravates, maintains, and increases the recurrence of psychiatric disorders. These results demonstrate the importance of a deeper understanding about the unique effects of ELS subtypes, especially for mental health professionals.

Key Words: Early life stress, child abuse, maltreatment, psychiatric disorders, violence

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Traumatic events experienced during development may damage neurobiological and neuroendocrine aspects, which remain for the rest of one's life. The effects of early life stress (ELS) affect child development in behavioral, emotional, social, physical, and cognitive areas (Bremne and Vermetten, 2001; Juruena, 2007; Mello et al., 2009; Middlebrooks and Audage, 2008).

The concept of ELS encompasses early traumatic experiences occurring during childhood and adolescence such as undergoing parental loss, parental divorce, caregivers with psychiatric disturbance, childhood illnesses, family violence, absence of basic care, abandonment, deprivation of food or shelter, and lack of encouragement and support (Butchart, 2006; Bernstein et al., 2003; Zavaschi et al., 2002).

The main subtypes of ELS include emotional abuse—any conduct that affects the welfare or the morals of a child, physical abuse—physical assault with risk for injury in general, sexual abuse—any kind of sexual conduct involving a child, emotional neglect—failure to provide the basic emotional and psychological needs, and physical neglect—failure to provide basic care needs (Bernstein et al., 2003).

The person who experienced ELS does not necessarily show clearly what had happened, but some signals could be seen (Cruz et al., 2007). Some characteristics can be observed in those who experienced ELS: guilt, depression, and low self-esteem; syndrome of “damaged wellness” (feeling that the innocence was lost, feeling that dreams were destroyed); impoverished social skills, anger and repressed hostility, and impaired ability; limits of social roles unclear; and pseudomaturity and problems of self-mastery and control (Knell and Ruma, 1999). The symptoms of those who experienced ELS can be subdivided into internalizing symptoms, such as anxiety, depression, inhibition, somatic complaints, physiological arousal, fear, avoidance, and re-experiencing, and externalizing symptoms, such as aggression, delinquency, prostitution, exaggerated increased levels of activity, and problems related to sexual behavior (Friedrich, 1998). Being subjected to ELS affects the social behavior of children and adolescents in short and long terms, resulting in serious consequences throughout life (Amazarray and Koller, 1998; Widom, 1989).

Some researchers who have specifically examined the negative outcomes of each ELS subtype have found more similarities than differences between their effects, whereas other studies have found some differences, particularly that emotional abuse seems to be associated with failure to self-criticism (Sachs-Ericsson et al., 2006), physical abuse is associated with aggressive behavior, and sexual abuse is associated with sexual problems (Mullen et al., 1996).

The literature suggests that the co-occurrence of abuse and neglect is quite common; in other words, the occurrence of only one subtype of ELS is uncommon (Chartier et al., 2010), denoting the magnitude of violence and its relationship with mental health problems (Souza et al., 2012). For example, Felitti et al. (1998) found that when individuals experienced one childhood adversity, the probability of having experienced another was approximately 80%.

Among other ELS consequences, generated in the long-term, there is the model of dysfunctional use of violence as conflict resolution for adults who have experienced abuse and/or neglect in childhood themselves (Bandura, 1977, 1986; Medley and Sachs-Ericsson, 2009; Widom, 1989). Because the childhood and adolescence period nestles the noblest development of brain structures, the marks resulting from ELS are serious and lasting (Teicher, 2002).

ELS can trigger severe and disabling psychiatric disorders in adulthood. The impact of ELS is intense and harmful, with neurobiological and neuroendocrine consequences, leading to greater vulnerability in the development of psychopathology throughout life (Baes et al., 2012; Juruena et al., 2009; Mello et al., 2007). However, despite being a clear risk factor of psychopathology, ELS cannot be considered as a sole factor. Individual vulnerability to develop psychopathology consists of several agents, among these, genetics. Because of the high worldwide incidence of ELS and its known serious individual and social lasting consequences, it is important to better understand the mechanisms by which ELS is triggered, maintaining and exacerbating psychiatric disorders in adulthood (Juruena et al., 2006; Tofoli et al., 2011).

Because of the complex association between different subtypes of ELS and psychiatric disorders in adults, the objective of this study was to systematically analyze articles that associate ELS with psychiatric disorders in adulthood, seeking to identify whether there

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are independent effects between subtypes of early stress in triggering psychopathology in adults.

METHODS

Research was conducted through a systematic literature review in four databases: PubMed, PsycINFO, SciELO, and LILACS. The search terms were the following: *child abuse, maltreatment, early life stress, psychiatric disorders, mental disease, and psychopathology*, and the search limits were publications from 2001 to 2011, in English or Portuguese, in humans, and adults ranging in age from 18 to 64 years. We later refined the search through a systematic review of the articles' abstracts, excluding articles that did not associate ELS with psychiatric disorder. The exclusion criteria can be seen in detail in Figure 1.

To be considered suitable for the present review, the articles should include at least one of the defined forms of ELS: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. These categories were established in accordance with the descriptions found in major studies on the subject (Bernstein et al., 1994; Butchart, 2006). The definition of the subtypes is as follows:

Emotional abuse: verbal abuse that affects the welfare or the morals of the child or any conduct that demeans, embarrasses, frightens, or insults, for example, blaming, ridiculing, belittling, threatening, frightening, discriminating, harassing, provoking, or rejecting

Physical abuse: physical assault committed by someone older, with risk for injury in general, endangering the health and the physical development of the child or adolescent, for example, beating, burning,

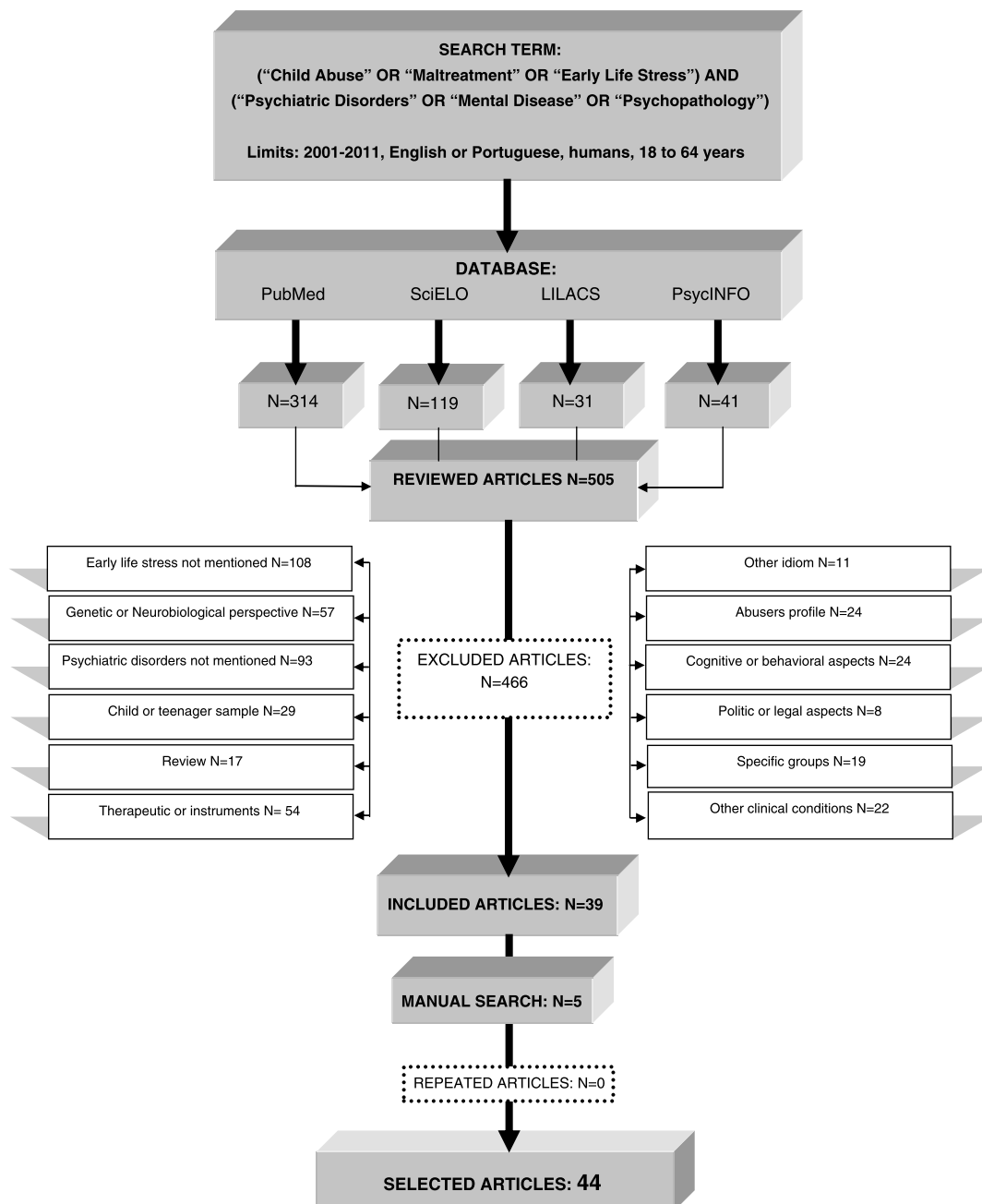


FIGURE 1. Methodology for selection of articles.

biting, twisting, kicking, poisoning, choking, strangling, pushing, pinching, shaking, throwing objects, drowning, or cutting

Sexual abuse: any kind of sexual conduct by an adult or older adolescent involving a child into something that he/she is not mentally or emotionally prepared or does not fully understand or that steps out of societal laws or boundaries, for example, asking, pressing, or inducing the child to any sexual activity; exposing genitals to a child to satisfy one's own desire; or intimidating or using the child for pornographic purposes

Emotional neglect: a pattern of failure of the caregiver to provide the basic emotional and psychological needs, such as love, attention, motivation, encouragement, and emotional support, intentionally or not, for example, does not hold or comfort the baby, does not interact with the child, ignoring the child's needs for affection, or not appreciating the achievements of children

Physical neglect: caregiver fails to provide basic needs such as housing or adequate shelter, physical security, clean clothing appropriate to the climate, supervision, food, and health, for example, leaving the child alone to handle the stove, letting the child be in charge of another younger one, or not taking the child to the physician when needed (Bernstein et al., 2003)

Studies that focused on only other forms of stressful events in childhood, such as separation, death, or illness of family members, were disregarded.

The methodological scheme for the selection of articles is shown in detail in Figure 1.

RESULTS

PubMed identified 314 articles, SciELO identified 119 articles, LILACS identified 31 articles, and PsycINFO identified 41 articles. The combined searches yielded a total of 505 articles. After the application of the exclusion criteria, we selected 39 articles. Other 5 studies were included by manual search, leading to a total of 44 articles to be examined in this review.

Characterization of Studies

Of the 44 articles selected with the issue at hand, in the last decade, 5 are from 2001; 4, from 2002; 1, from 2003; 3, from 2004; 4, from 2005; 3, from 2006; 4, from 2007; 3, from 2008; 5, from 2009; 7, from 2010; and 5, from 2011. The publication rate varies throughout this decade, but in the last 3 years, the number of studies seemed to be growing. Among all articles, the most frequently evaluated subtype of ELS was sexual abuse, present in 43 articles, so only 1 article did not feature this subtype, followed by physical abuse, appearing in 34 studies; then emotional abuse, with 18 references; emotional neglect, in 13 articles; physical neglect, in 13 studies; and last, unspecified neglect, in 7 articles. Each article investigated ELS associated with one or more psychopathologies. The distribution of psychiatric disorders assessed in the 44 articles selected for review is shown in Figure 2.

The composition of the samples ranged from 26 to 51,945 subjects, adding to a total of 145,507 subjects evaluated in these 44 articles. The ages of the sample ranged from 15 to 74 years old, but some studies mentioned only "over 18 years old." Most of the studies included male and female participants in their sample; only 10 studies included an exclusively female sample. Of 44 articles, 25 did not use a control group; 19 used a control group, 14 of which had subjects without mental disorders used as a control group; and 5 used subjects without ELS as a control group. Among the instruments for assessing ELS, the most commonly used was the Childhood Trauma Questionnaire (CTQ; Bernstein and Fink, 1998) in 11 articles. Among the instruments to assess the psychiatric diagnosis, the most commonly used was the Structured Clinical Interview (SCID-I and SCID-II) in 15 articles. However, several other instruments were also used to assess ELS and psychiatric diagnosis.

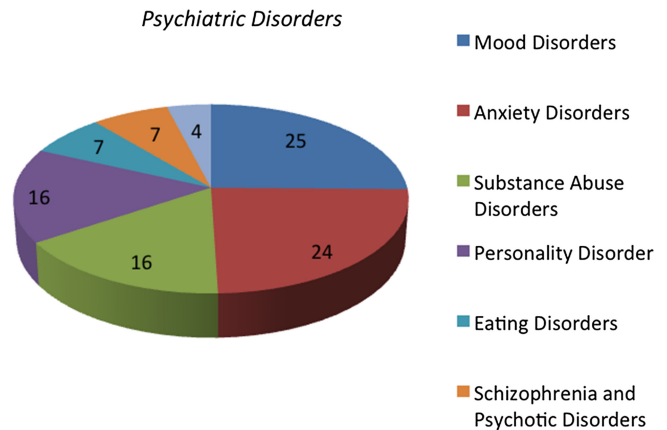


FIGURE 2. Distribution of psychiatric disorders in the articles selected for this review.

Main Results

Early Life Stress

ELS was associated with psychiatric disorders (Afifi et al., 2009), and for some authors, it is closely related to psychopathology (Khoury et al., 2010), with a worsening effect on conditions (Hovens et al., 2010) and their psychiatric symptoms (Roy, 2002). ELS has shown to have common and powerful associations with the occurrence of various types of psychiatric disorders (Green et al., 2010), and it comes to be seen as a strong predictor of mental illness (McLaughlin et al., 2010a). For Molnar et al. (2001b), it is associated with a substantial increase in the risk for developing psychopathologies. Kessler et al. (2010) states that ELS has associations with all classes of disorders at any time of life. According to Lang et al. (2004), the amount of stress subtypes during early life influences the intensity of psychopathology, and according to Afifi et al. (2008), the more subtypes of ELS children experience, the more are the chances of getting mental health impoverished.

ELS is related to depressive disorders. According to Wiersma et al. (2009), it is associated with chronicity of depression, and multiple stresses early in life can be viewed as independent determinants of chronic depression. Still within the mood disorders, Leverich et al. (2002) believe that the presence of ELS leads to a more severe course of bipolar disorder. McLaughlin et al. (2010b) and Hovens et al. (2010) suggest that ELS is associated with anxiety disorder. On the other hand, for Jonas et al. (2011), posttraumatic stress disorder in particular is associated with ELS. Tyrka et al. (2009) point to the association with personality disorder categories, and Sar et al. (2006) corroborate while emphasizing the significant effect on borderline personality disorders. Other disorders are specifically highlighted such as abuse of alcohol disorder and/or drugs and eating disorders (Jonas et al., 2011), or, as in the case of schizophrenia, for Uçok and Bikmaz (2007), it may anticipate the presentation of the first outbreak. Suicidal ideation and behavior are highlighted by some authors (Afifi et al., 2009; Sfoggia et al., 2008), stating that patients who experienced ELS are more prone to suicide attempts. For Bulik et al. (2001), specific characteristics of ELS act differently in the risk for future psychopathology; however, they believe that a unique mechanism among the characteristics of ELS and the onset of specific psychiatric disorders does not seem to exist.

Subtypes

Physical abuse

From the 44 articles analyzed in this review, 33 evaluated physical abuse, as follows:

Physical abuse was associated with mood disorders in 14 studies (Afifi et al., 2009, 2006, 2008; Becker and Grilo, 2011; Green et al., 2010; Hovens et al., 2010; Kessler et al., 2010; Lang et al., 2004; Leverich et al., 2002; McLaughlin et al., 2010a, 2010b; Sareen et al., 2005; Wiersma et al., 2009; Zavaschi et al., 2006), especially with major depression and with mania. Physical abuse is predictive of mood disorders, contributing to the severity and the persistence of psychopathology. In addition, it can be seen as an independent determinant of chronicity of depression. Physical abuse can also be associated with earlier onset of bipolar illness and faster cycling frequencies. In only one study (Wonderlich et al., 2007), physical abuse was not significantly associated with mood disorders.

Physical abuse was associated with schizophrenia in five studies (Heins et al., 2011; Holowka et al., 2003; Rubino et al., 2009; Steel et al., 2009; Uçok and Bikmaz, 2007), particularly with dissociation in schizophrenia. It was associated with more positive symptoms and the severity of hallucinations according to Uçok and Bikmaz (2007), and Steel et al. (2009) identified higher levels of paranoia, suspiciousness, and unusual perceptual experiences. Physical abuse influences the course of schizophrenia in first admission (Uçok and Bikmaz, 2007), and it is associated with psychotic disorder in a dose-response fashion (Heins et al., 2011), mediated by frequency of the abuse (Rubino et al., 2009).

Physical abuse was associated with anxiety disorders in 13 studies (Afifi et al., 2009, 2006, 2008; Gibb et al., 2007; Green et al., 2010; Hovens et al., 2010; Kessler et al., 2010; Khoury et al., 2010; Lang et al., 2004; McLaughlin et al., 2010a, 2010b; Sareen et al., 2005; Wingfield et al., 2011), especially with posttraumatic stress disorder. Physical abuse contributes to the severity of anxiety disorders (Hovens et al., 2010). In only one study (Wonderlich et al., 2007), physical abuse was not significantly associated with anxiety disorders.

Physical abuse was associated with eating disorders in four studies (Becker and Grilo, 2011; Rayworth et al., 2004; Sareen et al., 2005; Steiger et al., 2010), linked to elevation of comorbid psychopathology, and especially associated with antisocial, impulsive, and disinhibition traits. Physical abuse was also associated with an earlier onset of obesity.

Physical abuse was associated with substance abuse disorders in 10 studies (Afifi et al., 2009, 2006, 2008; Becker and Grilo, 2011; Green et al., 2010; Kessler et al., 2010; Khoury et al., 2010; Leverich et al., 2002; McLaughlin et al., 2010a; Sareen et al., 2005). Physical abuse was associated with earlier onset and persistence of illness. In only one study (Wonderlich et al., 2007), physical abuse was not significantly associated with substance abuse disorders.

Physical abuse was associated with disruptive behavior disorders in four studies (Afifi et al., 2009, 2006; Green et al., 2010; McLaughlin et al., 2010b); predictive effects persisted throughout the life course.

Physical abuse was associated with personality disorders in six studies (Afifi et al., 2009; Bradley et al., 2005; Grover et al., 2007; Johnson et al., 2001; Sar et al., 2006; Tyrka et al., 2009), especially with borderline personality disorder when it predicted elevated symptoms. In two studies (Laporte et al., 2011; Wonderlich et al., 2007), physical abuse was not significantly associated with personality disorders (Table 1).

Sexual abuse

From the 44 articles analyzed in this review, 43 evaluated sexual abuse, as follows:

Sexual abuse was associated with mood disorders in 19 studies (Afifi et al., 2009, 2006, 2008; Bulik et al., 2001; Green et al., 2010; Hovens et al., 2010; Jonas et al., 2011; Katerndahl et al., 2005; Kessler et al., 2010; Leverich et al., 2002; McLaughlin et al., 2010a, 2010b; Molnar et al., 2001a, 2001b; Sareen et al., 2005; Wiersma et al., 2009; Wingfield et al., 2011; Wonderlich et al., 2007; Zavaschi et al., 2006), especially major depression and bipolar illnesses. Sexual abuse can be

seen as an independent determinant of chronicity of depression, contributing to the severity of psychopathology and an earlier onset of first depressive episode. In only one study (Rubino et al., 2009), sexual abuse was not significantly associated with depression.

Sexual abuse was associated with schizophrenia in four studies (Bebbington et al., 2004; Heins et al., 2011; Steel et al., 2009; Uçok and Bikmaz, 2007). Sexual abuse was associated with psychotic disorder in a dose-response fashion, with more positive but not negative symptoms. Sexual abuse can affect the course of schizophrenia on first admission. In two studies (Holowka et al., 2003; Rubino et al., 2009), sexual abuse was not significantly associated with schizophrenia or with dissociation symptoms in schizophrenia.

Sexual abuse was associated with anxiety disorders in 20 studies (Afifi et al., 2006, 2008; Becker and Grilo, 2011; Bulik et al., 2001; Caspi et al., 2008; Gibb et al., 2007; Green et al., 2010; Hovens et al., 2010; Jonas et al., 2011; Katerndahl et al., 2005; Kessler et al., 2010; Khoury et al., 2010; Lang et al., 2004; McLaughlin et al., 2010a, 2010b; Molnar et al., 2001a, 2001b; Sareen et al., 2005; Wingfield et al., 2011; Wonderlich et al., 2007) and particularly with posttraumatic stress disorder, panic disorder, agoraphobia, and obsessive-compulsive disorder.

Sexual abuse was associated with eating disorders in eight studies (Becker and Grilo, 2011; Bulik et al., 2001; Jonas et al., 2011; Katerndahl et al., 2005; Rayworth et al., 2004; Sareen et al., 2005; Steiger et al., 2010; Wonderlich et al., 2001). It was associated with eating disorders in general and with a more severe comorbid psychopathology, especially with multiple forms of self-destructive behavior.

Sexual abuse was associated with substance abuse disorders in 14 studies (Afifi et al., 2009, 2006, 2008; Bulik et al., 2001; Green et al., 2010; Jonas et al., 2011; Katerndahl et al., 2005; Kessler et al., 2010; Khoury et al., 2010; Leverich et al., 2002; McLaughlin et al., 2010a; Molnar et al., 2001a, 2001b; Sareen et al., 2005).

Sexual abuse was associated with disruptive behavior disorders in five studies (Afifi et al., 2009, 2006; Green et al., 2010; Kessler et al., 2010; McLaughlin et al., 2010b) and with dissociative disorders in one study (Wingfield et al., 2011).

Sexual abuse was associated with personality disorders in 11 studies (Afifi et al., 2009; Bandelow et al., 2005; Bradley et al., 2005; Grover et al., 2007; Johnson et al., 2001; Katerndahl et al., 2005; Laporte et al., 2011; Sar et al., 2006; Tyrka et al., 2009; Wingfield et al., 2011; Zanarini et al., 2002), especially with borderline personality disorder, which was correlated with intrafamilial sexual abuse. Sexual abuse was associated with elevated symptoms of personality disorders (Table 2).

Emotional abuse

From the 44 articles analyzed in this review, 18 evaluated emotional abuse, as follows:

Emotional abuse was associated with mood disorders (major depression) in three studies (Becker and Grilo, 2011; Gibb et al., 2007; Wingfield et al., 2011); a strong link was found between major depression and emotional abuse, and it predicts depressive symptoms.

Emotional abuse was associated with schizophrenia in four studies (Heins et al., 2011; Holowka et al., 2003; Rubino et al., 2009; Uçok and Bikmaz, 2007), highlighting the significant association with dissociation in schizophrenia, and was also associated with more positive symptoms and the severity of hallucinations. Emotional abuse affects the course of schizophrenia in first admission (Uçok and Bikmaz, 2007), and it is associated with psychotic disorder in a dose-response fashion (Heins et al., 2011), mediated by frequency of the abuse (Rubino et al., 2009). In one study (Steel et al., 2009), emotional abuse was not significantly associated with schizophrenia.

Emotional abuse was associated with anxiety disorders in two studies (Gibb et al., 2007; Khoury et al., 2010) and a stronger

TABLE 1. Description of Physical Abuse Main Results of Selected Articles

Physical Abuse (PA)				
Author/Year	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms Instruments	Main Results
Becker and Grilo, 2011	CTQ	MD, AD, SAD, ED	SCID-I/P, EDE, BDI, RSES	PA was reported by 28% of binge-ED participants. PA was associated with lifetime depressive disorders, SADs, and with age at obesity onset.
Heins et al. 2011	CTQ	S	PANSS, SISR Revised	PA was associated with psychotic disorder in a dose-response fashion. PA was associated with positive but not negative symptoms
Laporte et al. 2011	CTQ	PD	DIB-R Revised, DIPD-IV, SCID-I, HAM-D, HAM-A, SCL-90-R, DAPP-BQ, BIS, ALS	PA was not associated with PD
Wingenfeld et al. 2011	ETI	MD, PD, AD, DD	SCID; BDI, German version; BSL; PDS; DSS	PA was associated with posttraumatic stress disorder symptoms and dissociative symptoms
Khoury et al. 2010	ETI, TEI	SAD, AD	mPSS, KMSK Scale	Strong links between PA and substance use disorders and their joint associations with PTSD outcome
McLaughlin et al. 2010b	FHRDC, CTS	MD, AD, DBD	CIDI, version 3.0; SDS	PA particularly associated with ADs but also with mood and DBDs. Predictive effects persisted throughout the life course
Kessler et al. 2010	FHRDC, CTS	MD, AD, DBD, SAD	CIDI, version 3.0	PA has strong associations with all classes of disorders at all life-course stages in all groups of World Mental Health countries
Green et al. 2010	FHRDC, CTS	MD, AD, SAD, DBD	CIDI	PA has powerful and often subadditive associations with the onset of many types of largely primary mental disorders throughout the life course
McLaughlin et al. 2010a	FHRDC, CTS	MD, AD, SAD, DBD	CIDI, version 3.0	PA was significantly related to persistence of mood, substance, and ADs. Exposure to multiple other maltreatment types increased the persistence of mood and ADs throughout the life course
Steiger et al. 2010	CTI	ED	EDE, DAPP-BQ, BIS, CES-D	PA was associated with ED in general and linked to elevation of comorbid psychopathology. PA especially corresponded to dissocial, impulsive, and disinhibition traits
Hovens et al. 2010	CTI	MD, AD	CIDI, version 2.1	PA was associated with pure anxiety, pure depression, and anxiety and depression comorbid group. Contributing to the severity of psychopathology
Wiersma et al. 2009	CTI	MD	CIDI, LCI, IDS-SR	PA can be seen as an independent determinant of chronicity of depression. PA was associated with prevalence of comorbid anxiety, more severe depression, and an earlier onset of the first depressive episode. Greater number of trauma subtypes leads to probable lifetime chronic depression.
Rubino et al. 2009	TAQ	S, MD	SCID-I	PA was associated with schizophrenia. Both frequency and number of types of abuse increased the risk for schizophrenia
Steel et al. 2009	TLEQ	S	DASS, SPS, BCSS	PA was associated with higher levels of paranoia, suspiciousness, and unusual perceptual experiences but not magical thinking
Afifi et al. 2009	CTS, FHRDC	MD, AD, SAD, DBD, PD	CIDI, version 1.1	PA was associated with psychiatric disorders and suicidal ideation and attempts
Tyrka et al. 2009	CTQ	PD	SCID-I, SCID-II	PA is a risk factor of PDs. PA was associated with elevated symptoms of PDs
Sfoggia et al. 2008	CTQ	MD, AD, SAD, PD	MINI	Severe PA is a risk factor of suicidal behavior
Afifi et al. 2008	Open questions	MD, AD, SAD	CIDI, version 2.1	PA was associated with all psychiatric disorders and suicide ideation. When associated with sexual abuse, increased odds of suicidal attempts
Wonderlich et al. 2007	CTI	PD, AD, MD, SAD	SCID-I/P, EDE, DIB-R, POMS, PANAS	PA was not significantly associated with disorders
Grover et al. 2007	CTQ	PD	SCID-I, SCID-II	PA was associated with symptoms of paranoid, narcissistic, borderline, antisocial, obsessive-compulsive, passive-aggressive, and depressive PDs
Uçok and Bikmaz, 2007	CTQ, CAQ	S	SCID-I, BPRS, SAPS, SANS	PA was associated with psychotic symptoms. PA was associated with more positive symptoms (but not more negative symptoms). PA was particularly associated with severity of hallucinations. PA can affect the course of schizophrenia in first admission

(Continued next page)

TABLE 1. (Continued)

Physical Abuse (PA)				
Author/Year	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms Instruments	Main Results
Gibb et al. 2007	CTQ	MD, AD	SCID-I/P	PA associated especially with posttraumatic stress disorder
Afifi et al. 2006	CTS, PBI	MD, AD, SAD, DBD	CIDI, version 1.1	PA was associated with psychopathology, especially major depression, alcohol abuse, and dependence. The prevalence of psychiatric disorders progressively increased as the severity of PA increased
Zavaschi et al. 2006	FEI, SSCECV	MD	MINI-Plus 5.0, WAIS-R	Association between PA with adult MDs, especially for manic patients
Sar et al. 2006	CTQ	PD, DD	SCID-II, SDQ	PA was associated with borderline PD
Sareen et al. 2005	CMHSR, FHRDC	MD, AD, SAD, ED	CIDI	PA was independently and significantly associated with mental disorders
Bradley et al. 2005	CDT	PD	Structured questions, SWAP-200	PA was associated with borderline PD symptoms. PA influenced borderline PD symptoms.
Lang et al. 2004	CTQ	MD, AD, DD	SCID, CAPS, LASC, DES-T, CES-D, BAI, ASI	The more subtypes of ELS, the more severe was the psychopathology
Rayworth et al. 2004	Structured questions	ED, MD	Structured questions	Strong association between PA and EDs. Strongest association between EDs when subjects reported both PA and sexual abuse
Holowka et al. 2003	CTQ	S	DES	Significant association between PA and dissociation in schizophrenia
Roy, 2002	CTQ	AD, PD	EPQ	Positive association between PA and neuroticism
Lewis-Fernández et al. 2002	TAQ	AD, DD	SCID, SCID-D, DES	PA was not associated with <i>Ataque de Nervios</i>
Leverich et al. 2002	Open questions	MD, SAD	SCID-P, NIMH-LCM, IDS-C, YMRS, GAF, PDQ-4+	PA was associated with MDs and a more severe course of illness. PA was associated with earlier onset of bipolar illness and an increased number of axis I, II, and III comorbid disorders, including drug and alcohol abuse, faster cycling frequencies, and a higher rate of suicides attempts
Johnson et al. 2001	Open questions	AD, PD, DD, S	PDQ, DISC-I, DPI	PA combined with emotional abuse predicted elevated schizoid, narcissistic, passive-aggressive, and PD symptoms

AD indicates anxiety disorder; ALS, Affective Liability Scale; ASI, Anxiety Sensitivity Index; BAI, Beck Anxiety Inventory; BCSS, The Brief Core Schema Scale; BDI, Beck Depression Inventory; BIS, Barratt Impulsivity Scale; BPRS, Brief Psychiatric Research Scale; BSL, Borderline Symptom List; CAPS, Clinician Administered PTSD Scale for *DSM-IV*; CAQ, Childhood Abuse Questionnaire; CASH, Comprehensive Assessment of Symptoms and History; CES-D, Center for Epidemiologic Studies–Depression Scale; CES-D, Centre for Epidemiological Studies Depression; CIDI, Composite International Diagnostic Interview; CMHSR, Childhood Maltreatment History Self-Report; CTI, Childhood Trauma Interview; CTS, Conflict Tactics Scale; DAPP-BQ, Diagnostic Assessment of Personality Pathology Brief Questionnaire; DAPP-BQ, Dimensional Assessment of Personality Pathology–Basic Questionnaire; DASS, Depression Anxiety Stress Scales; DBD, disruptive behavior disorder; DD, dissociative disorder; DES, Dissociative Experiences Scale; DES-T, Dissociative Experiences Scale; DIB-R, Diagnostic Interview for Borderline Personality Disorder Revised; DIPP-IV, Diagnostic Assessment for Personality Disorders; DISC-I, Diagnostic Interview Schedule for Children; DPI, Disorganizing Poverty Interview; DSS, Dissociation Scale; ED, eating disorder; EDE, Eating Disorders Examination; ETI, Early Trauma Inventory; FEI, Familial Experiences Interview; FHRDC, Family History Research Diagnostic Criteria; GAF, Global Assessment of Functioning; HAM-A, Hamilton Anxiety Scale; HAM-D, Hamilton Depression Scale; IDS-C, Inventory of Depressive Symptomatology; IDS-SR, Inventory of Depressive Symptomatology–Self-Report; KMSK Scale, Kreek-McHugh-Schluger-Kellogg Scale; LASC, Los Angeles Symptom Checklist; LCI, Life Chart Interview; MD, mood disorder; MINI, Mini International Neuropsychiatric Interview; MINI-Plus 5.0, International Neuropsychiatric Interview version MINI Plus; mPSS, modified PTSD Symptom Scale; NIMH-LCM, NIMH–Life Chart Method; PANSS, Positive and Negative Syndrome Scale; PBI, Parental Bonding Index; PD, personality disorder; PDQ, Personality Diagnostic Questionnaire; PDQ-4+, Patient Questionnaire and self-rated Personality Inventory; PDS, Posttraumatic Diagnostic Scale; POMS, Profile of Mood States; PANAS, Positive and Negative Affect States; RSES, Rosenberg Self-Esteem Scale; S, schizophrenia and psychotic disorders; SAD, substance abuse disorder; SANS, Scale for the Assessment of Negative Symptoms; SAPS, Scale for the Assessment of Positive Symptoms; SCID-D, SCID for *DSM-III-R* Dissociative Disorders; SCID-I, SCID for *DSM-IV* Axis I; SCID-I/P, SCID for *DSM-IV* Axis I Disorders Patient Edition; SCID-II, SCID for *DSM-IV* Axis II; SCID-P, SCID for *DSM-IV* Axis I–Patient Edition; SDQ, Steinberg Dissociation Questionnaire; SDS, Sheehan Disability Scale; SISR, Structured Interview for Schizotypy Revised; SPS, Schizotypal Personality Scale; SSCECV, Screening Survey of Children's Exposure to Community Violence; SWAP-200, Shedler-Westen Assessment Procedure 200; TAQ, The Abuse Questionnaire; TAQ, Traumatic Antecedents Questionnaire; TEI, Traumatic Events Inventory; TLEQ, The Trauma Life Events Questionnaire; WAIS-R, Wechsler Intelligence Scale for Adults; YMRS, Young Mania Rating Scale.

correlation with social phobia and posttraumatic stress disorder, the latter especially when combined with substance abuse disorder.

Emotional abuse was associated with eating disorders in two studies (Becker and Grilo, 2011; Wonderlich et al., 2007), suggesting that it may be a unique predictor of greater severity in eating disorder symptoms in bulimia nervosa.

Emotional abuse was associated with substance abuse disorder in one study (Khoury et al., 2010), highlighting the risk for, when combined, raised the odds of, a posttraumatic stress disorder outcome.

Emotional abuse was associated with personality disorders in five studies (Grover et al., 2007; Johnson et al., 2001; Laporte et al., 2011; Sar et al., 2006; Tyrka et al., 2009), especially with borderline personality disorder, narcissistic personality disorder, and passive-aggressive personality disorder. Emotional abuse is a risk factor of

personality disorders (Tyrka et al., 2009) and predicted elevated symptoms (Johnson et al., 2001; Table 3).

Neglect

1. Emotional neglect

From the 44 articles analyzed in this review, 13 evaluated emotional neglect, as follows:

Emotional neglect was associated with mood disorders in four studies (Hovens et al., 2010; Lang et al., 2004; Sareen et al., 2005; Wiersma et al., 2009). It was associated with depressive episode and symptoms. It can be seen as an independent and significant determinant of chronicity of depression. It is associated with an earlier onset of the first depressive episode.

TABLE 2. Description of Sexual Abuse Main Results of Selected Articles

Sexual Abuse (SA)				
Author/Year	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms Instruments	Main Results
Becker and Grilo, 2011	CTQ	MD, AD, SAD, ED	SCID-I/P, EDE, BDI, RSES	SA was reported by 31% of binge-eating disorder participants. SA was associated with posttraumatic stress disorder
Heins et al. 2011	CTQ	S	CASH, PANSS, SISR	SA was associated with psychotic disorder in a dose-response fashion. SA was associated with positive but not negative symptoms
Laporte et al. 2011	CTQ	PD	DIB-R, DIPD-IV, SCID-I, HAM-D, HAM-A, SCL-90-R, DAPP-BQ, BIS, ALS	SA was associated with personality disorder. Subjects with borderline personality disorder reported experiencing more intrafamilial SA
Wingenfeld et al. 2011	ETI, ETI	MD, PD, AD, DD	SCID-I, BDI, BSL, PDS, DSS	SA was a significant predictor of all aspects of measured psychopathology
Jonas et al. 2011	TSQ	MD, AD, SAD, ED	CIS-R, AUDIT, SADQ-C, DIS, SCOFFQ	In all cases, the overall association of SA with each disorder was highly significant. The highest scores were associated with nonconsensual sexual intercourse, particularly with phobia and symptoms of PTSD, except panic
Khoury et al. 2010	ETI, TEI	SAD, AD	mPSS, KMSK Scale	Strong links between SA and substance use disorders and their joint associations with PTSD outcome
McLaughlin et al. 2010b	FHRDC, CTS	MD, AD, DBD	CIDI, version 3.0; SDS	SA particularly associated with anxiety disorders but also with mood and disruptive behavior disorders. Predictive effects persisted throughout the life course
Kessler et al. 2010	FHRDC, CTS	MD, AD, DBD, SAD	CIDI, version 3.0	SA has strong associations with all classes of disorders at all life-course stages in all groups of World Mental Health countries
Green et al. 2010	FHRDC, CTS	MD, AD, SAD, DBD	CIDI	SA has powerful and often subadditive associations with the onset of many types of largely primary mental disorders throughout the life course
McLaughlin et al. 2010a	FHRDC, CTS	MD, AD, SAD, DBD	CIDI, version 3.0	SA was significantly but modestly related to persistence of mood, substance, and anxiety disorders. Exposure to multiple other childhood adversities increased the persistence of mood and anxiety disorders throughout the life course
Steiger et al. 2010	CTI	ED	EDE, DAPP-BQ, BIS, CES-D	SA was associated with eating disorder in general and linked to elevation of comorbid psychopathology. High rates of SA especially corresponded with dissocial and impulsive characteristic
Hovens et al. 2010	CTI	MD, AD	CIDI, version 2.1	SA was associated with pure anxiety, pure depression, and anxiety and depression comorbid group. Contributing to the severity of psychopathology
Wiersma et al. 2009	CTI	MD	CIDI, LCI, IDS-SR	SA is an independent determinant of chronicity of depression. SA was associated to prevalence of comorbid anxiety, severe depression, and an earlier onset of depression. Greater number of trauma subtypes may lead to lifetime chronic depression
Rubino et al. 2009	TAQ	S, MD	SCID-I	SA was not associated with schizophrenia or depression even though when it was restricted to intercourse
Steel et al. 2009	TLEQ	S	DASS, SPS, BCSS	SA was associated with higher levels of paranoia, suspiciousness, and unusual perceptual experiences but not magical thinking
Affifi et al. 2009	CTS, FHRDC	MD, AD, SAD, DBD, PD	CIDI, version 1.1	SA was associated with psychiatric disorders and suicidal ideation and attempts
Tyrka et al. 2009	CTQ	PD	SCID-I, SCID-II	SA is a risk factor of personality disorders. SA was associated with elevated symptoms of personality disorders

(Continued next page)

TABLE 2. (Continued)

Sexual Abuse (SA)				
Author/Year	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms Instruments	Main Results
Caspi et al. 2008	SSI	AD	SCID-I	Positive association between SA and obsessive-compulsive disorder as well as panic disorder
Sfoggia et al. 2008	CTQ	MD, AD, SAD, PD	MINI	Severe SA is a risk factor of suicidal behavior
Afifi et al. 2008	Open questions	MD, AD, SAD	CIDI, version 2.1	SA was associated with all psychiatric disorders and suicide ideation. When associated with physical abuse, increased odds of suicidal attempts
Wonderlich et al. 2007	CTI	PD, AD, MD, SAD	SCID-I/P, EDE, DIB-R, POMS, PANAS	SA was associated with mood disorders, anxiety disorders, daily purging frequency, and self-destructive behavior
Grover et al. 2007	CTQ	PD	SCID-I, SCID-II	SA was associated with symptoms of paranoid, narcissistic, borderline, antisocial, obsessive-compulsive, passive-aggressive, and depressive personality disorders
Uçok and Bikmaz, 2007	CAQ, CTQ	S	SCID-I, BPRS, SAPS, SANS	SA was associated with psychotic symptoms. SA was associated with more positive symptoms (but not more negative symptoms). SA can affect the course of schizophrenia in first admission
Gibb et al. 2007	CTQ	MD, AD	SCID-I/P	SA associated especially with posttraumatic stress disorder
Afifi et al. 2006	CTS, PBI	MD, AD, SAD, DBD	CIDI, version 1.1	The prevalence of psychiatric disorders progressively increased as the severity SA increased
Zavaschi et al. 2006	FEI, SSCECV	MD	MINI-Plus, WAIS-R	Association between SA and adult mood disorders, especially for manic patients
Sar et al. 2006	CTQ	PD, DD	SCID-II, SDQ	SA was associated with borderline personality disorder
Sareen et al. 2005	CMHSR, FHRDC	MD, AD, SAD, ED	CIDI	SA was independently and significantly associated with mental disorders
Bradley et al. 2005	CDT	PD	Structured questions, SWAP-200	SA contributed to the prediction of borderline personality disorder symptoms over and above other family environment
Katendahl et al. 2005	CSAAS, FOQ, PBI	MD, AD, SAD, PD, ED	SCID-I, SCID-II, BULIT	SA was associated with borderline personality disorder, substance abuse, major depressive episode, suicidality, bulimia, agoraphobia, and panic disorder. Multiple perpetrators increase the probability of developing mental disorders
Bandelow et al. 2005	Open questions	PD	SCID-I, SCID-II	High incidence of SA in borderline personality disorder patients. SA is a strong contributing factor for borderline personality disorder
Bebbington et al. 2004	Open questions	S	SADQ, CIS-R, PSQ, SAN version 2.1	The prevalence of SA in psychosis patients was significantly elevated, but after controlling for depressed mood, the odds ratio for SA was reduced
Lang et al. 2004	CTQ	MD, AD, DD	SCID-I, CAPS, LASC, DES-T, CES-D, BAI, ASI	SA was associated with increased anxiety sensitivity. The more subtypes of ELS, the more severe was the psychopathology
Rayworth et al. 2004	Structured questions	ED, MD	Structured questions	SA was associated with eating disorder. Strongest association with eating disorders when subjects reported both SA and physical abuse
Holowka et al. 2003	CTQ	S	DES	SA was not linked to dissociation in schizophrenia
Zanarini et al. 2002	CEQ-R, AHI	PD	SCID-I, DIB-R, DIPD-R, DES	The severity of SA was linked to the severity of symptoms (affect, cognition, impulsivity, and disturbed interpersonal relationships) in borderline personality disorder
Roy, 2002	CTQ	AD, PD	EPQ	Positive association between SA and neuroticism

TABLE 2. (Continued)

Sexual Abuse (SA)				
Author/Year	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms Instruments	Main Results
Leverich et al. 2002	Open questions	MD, SAD	SCID-P, NIMH-LCM, IDS-C, YMRS, GAF, PDQ-4+	SA was associated with mood disorders and a more severe course of illness. SA was associated with earlier onset of bipolar illness and an increased number of axis I, II, and III comorbid disorders, including drug and alcohol abuse, faster cycling frequencies, and a higher rate of suicides attempts
Wonderlich et al. 2001	Open questions	ED	SCID-I/P, ASI, BIAQ, IBS, EDE	Positive association of SA with eating disorder and its severity, especially with multiple forms of self-destructive behavior. When SA was associated with rape in adulthood, the scores were even more elevated
Bulik et al. 2001	Structured questions	MD, AD, ED, SAD	SCID-I	Positive link between SA and increased risk for psychopathology but not a predictive one
Molnar et al. 2001a	CTS	MD, AD, SAD	CIDI	SA is associated with substantial increased risk for subsequent psychopathology
Johnson et al. 2001	Open questions	AD, PD, DD, S	PDQ, DISC-I, DPI	SA was associated with personality disorders
Molnar et al. 2001b	CTS, FHRDC, DIS	MD, AD, SAD	CIDI	Association between SA and suicidal behavior, mediated by psychopathology. SA increased the risk for suicide attempts

For abbreviations, see Table 1 legend.

AHI indicates Abuse History Interview; ASI, Appearance Schemas Inventory; AUDIT, Alcohol Use Disorders Identification Test; BIAQ, Body Image Avoidance Questionnaire; BULIT, Bulimia Test; CAPS, Clinician Administered PTSD Scale for *DSM-IV*; CEQ-R, Revised Childhood Experiences Questionnaire; CIDI, Composite International Diagnostic Interview version 3.0; CIS-R, Clinical Interview Schedule Revised; CMHSR, Childhood Maltreatment History Self-Report; CSAAS, Child Sexual Abuse and Assault Survey; DIPD-R, Diagnostic Interview for *DSM-III-R* Personality Disorders; DIS, Diagnostic Interview Schedule; EPQ, Eysenck Personality Questionnaire; ETI, Early Trauma Inventory, German version; FOO, Family-of-Origin Questionnaire; IBS, Impulsive Behavior Scale; PDS, Posttraumatic Diagnostic Scale, German Version; PSQ, Psychosis Screening Questionnaire; SADQ, Severity of Alcohol Dependence Questionnaire; SADQ-C, Severity of Alcohol Dependence Questionnaire; SAN, Schedule for Assessment in Neuropsychiatry; SCID-I, SCID for *DSM-IV*; SCOFFQ, SCOFF Questionnaire; SSCECV, Screening Survey of Children's Exposure to Community Violence; SSI, Semi-structured Interview; TSQ, Trauma Screening Questionnaire.

Emotional neglect was associated with schizophrenia in two studies (Heins et al., 2011; Uçok and Bıkmaz, 2007). Emotional neglect can affect the course of schizophrenia in first admission and is associated with more severe symptoms. Emotional neglect was not significantly associated with dissociation in schizophrenia in one study (Holowka et al., 2003).

Emotional neglect was associated with anxiety disorders in two studies (Hovens et al., 2010; Sareen et al., 2005), contributing to the severity of psychopathology. Emotional neglect was independently and significantly associated with anxiety disorders.

Emotional neglect was associated with eating disorders in two studies (Becker and Grilo, 2011; Sareen et al., 2005).

Emotional neglect was associated with substance abuse disorders in one study (Sareen et al., 2005).

Emotional neglect was associated with dissociative disorder in two studies (Lang et al., 2004; Sar et al., 2006). It was associated with dissociative disorder symptoms.

Emotional neglect was associated with personality disorders in two studies (Grover et al., 2007; Tyrka et al., 2009); it was associated with personality disorders in general and with elevated symptoms of personality disorders.

2. Physical neglect

From the 44 articles analyzed in this review, 13 evaluated physical neglect, as follows:

Physical neglect was not significantly associated with mood disorders in two studies (Wonderlich et al., 2007; Zavaschi et al., 2006). Physical neglect was not significantly associated with anxiety disorders and substance abuse disorders in one study (Wonderlich et al., 2007).

Physical neglect was associated with schizophrenia in two studies (Heins et al., 2011; Uçok and Bıkmaz, 2007); it was associated with psychotic disorder in a dose-response fashion and with more positive symptoms. Physical neglect was not significantly associated with dissociation in schizophrenia in only one study (Holowka et al., 2003).

Physical neglect was associated with anxiety disorders in one study (Becker and Grilo, 2011). It was especially associated with post-traumatic stress disorder.

Physical neglect was associated with eating disorders in one study (Becker and Grilo, 2011).

Physical neglect was associated with personality disorders in three studies (Grover et al., 2007; Sar et al., 2006; Tyrka et al., 2009). Physical neglect is a risk factor of personality disorders, especially borderline personality disorder, and it is also associated with more severe symptoms. In two studies, physical neglect was not significantly associated with personality disorders (Laporte et al., 2011; Wonderlich et al., 2007).

3. Unspecified neglect

From the 44 articles analyzed in this review, 7 evaluated unspecified neglect, as follows:

Neglect was associated with mood disorders in five studies (Afifi et al., 2009; Green et al., 2010; Kessler et al., 2010; McLaughlin et al., 2010a, 2010b) at all life-course stages.

Neglect was associated with anxiety disorders in five studies (Afifi et al., 2009; Green et al., 2010; Kessler et al., 2010; McLaughlin et al., 2010a, 2010b), which found powerful association between neglect and anxiety disorders throughout the life course.

TABLE 3. Description of Emotional Abuse Main Results of Selected Articles

Emotional Abuse (EA)				
Author/Year	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms Instruments	Main Results
Becker and Grilo, 2011	CTQ	MD, AD, SAD, ED	SCID-I/P, EDE, BDI, RSES	EA was reported by 52% of binge-eating disorder participants. EA was associated with dysthymic disorder
Heins et al. 2011	CTQ	S	CASH, PANSS, SISR	EA was associated with psychotic disorder in a dose-response fashion. EA was associated with positive but not negative symptoms
Laporte et al. 2011	CTQ	PD	DIB-R, DIPD-IV, SCID-I, HAM-D, HAM-A, SCL-90-R, DAPP-BQ, BIS, ALS	EA was associated with personality disorder. Subjects with borderline personality disorder reported experiencing more EA
Wingenfeld et al. 2011	ETI	MD, PD, AD, DD	SCID-I, BDI, BSL, PDS, DSS	EA predicted depressive and dissociative symptoms
Khoury et al. 2010	ETI, TEI	SAD, AD	mPSS, KMSK Scale	Strong links between AE and substance use disorders and their joint associations with posttraumatic stress disorder outcome
Rubino et al. 2009	TAQ	S, MD	SCID-I	EA was associated with schizophrenia. Both frequency and number of types of abuse increased the risk for schizophrenia
Steel et al. 2009	TLEQ	S	DASS, SPS, BCSS	Individuals who had experienced EA did not show higher scores within any of the measures of schizotypy
Tyrka et al. 2009	CTQ	PD	SCID-I, SCID-II	EA is a risk factor of personality disorders. EA was associated with elevated symptoms of personality disorders
Sfoggia et al. 2008	CTQ	MD, AD, SAD, PD	MINI	Severe EA is a risk factor of suicidal behavior
Wonderlich et al. 2007	CTI	PD, AD, MD, SAD	SCID-I/P, EDE, DIB-R, POMS, PANAS	EA was associated with eating disorder, average daily mood, and mood lability
Grover et al. 2007	CTQ	PD	SCID-I, SCID-II	EA was associated with symptoms of paranoid, narcissistic, borderline, antisocial, obsessive-compulsive, passive-aggressive, and depressive personality disorders
Uçok and Bikmaz, 2007	CTQ, CAQ	S	SCID-I, BPRS, SAPS, SANS	EA was associated with psychotic symptoms. EA was associated with more positive symptoms (but not more negative symptoms). EA was particularly associated with severity of hallucinations. EA can affect the course of schizophrenia in first admission
Gibb et al. 2007	CTQ	MD, AD	SCID-I/P	Strong links between EA and major depression and social phobia. But EA also associated with posttraumatic stress disorder
Sar et al. 2006	CTQ	PD, DD	SCID-II, SDQ	EA was associated with borderline personality disorder
Lang et al. 2004	CTQ	MD, AD, DD	SCID-I, CAPS, LASC, DES-T, CES-D, BAI, ASI	The more subtypes of ELS, the more severe was the psychopathology
Holowka et al. 2003	CTQ	S	DES	Significant correlation between EA and dissociation in schizophrenia
Roy, 2002	CTQ	AD, PD	EPQ	Positive association between EA and neuroticism
Johnson et al. 2001	Open questions	AD, PD, DD, S	PDQ, DISC-I, DPI	Emotional abuse predicted elevated schizoid, narcissistic, passive-aggressive, and personality disorder symptoms

For abbreviations, see Table 1 legend.

EPQ indicates Eysenck Personality Questionnaire.

Neglect was also associated with substance abuse disorders in four studies (Afifi et al., 2009; Green et al., 2010; Kessler et al., 2010; McLaughlin et al., 2010a). Neglect often has subadditive associations with the onset of substance abuse disorders throughout the life course.

Neglect was also associated with disruptive behavior disorders in four studies (Afifi et al., 2009; Green et al., 2010; Kessler et al., 2010; McLaughlin et al., 2010b). Neglect predictive effects persisted throughout the life course.

Finally, neglect was associated with personality disorders in three studies (Afifi et al., 2009; Johnson et al., 2001; Zanarini et al., 2002), especially with borderline personality disorder (Table 4).

DISCUSSION

Most of the articles selected for this review confirmed the association between the ELS subtypes (emotional abuse, physical abuse, sexual abuse, emotional neglect, and unspecific neglect) and the

development, persistence, and severity of adult psychopathology. However, the physical neglect subtype had contradictory results.

Physical abuse was associated with personality disorders (especially with borderline personality disorder), schizophrenia, anxiety disorders (especially with posttraumatic stress disorder), substance abuse disorders, mood disorders (especially with major depression and bipolar illness), disruptive behavior disorders, and eating disorders (Afifi et al., 2009, 2006, 2008; Bradley et al., 2005; Gibb et al., 2007; Green et al., 2010; Grover et al., 2007; Heins et al., 2011; Holowka et al., 2003; Hovens et al., 2010; Johnson et al., 2001; Kessler et al., 2010; Khoury et al., 2010; Lang et al., 2004; Leverich et al., 2002; McLaughlin et al., 2010a, 2010b; Rayworth et al., 2004; Rubino et al., 2009; Sar et al., 2006; Sareen et al., 2005; Steel et al., 2009; Steiger et al., 2010; Tyrka et al., 2009; Uçok and Bikmaz, 2007; Wiersma et al., 2009; Wingenfeld et al., 2011; Zavaschi et al., 2006). Only two studies (Laporte et al., 2011; Wonderlich et al., 2007) found no association between physical abuse and psychopathology.

TABLE 4. Description of Physical and Emotional Neglect and Unspecified Neglect Main Results of Selected Articles

Physical Neglect (PN) / Emotional Neglect (EN) / Unspecified Neglect (N)						
Author/Year	ELS Subtype	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms	Instruments	Main Results
Becker and Grilo, 2011	PN and EN	CTQ	MD, AD, SAD, ED	SCID-I/P, EDE, BDI, RSES		EN was reported by 66%; and PN, 48%, of binge-eating disorder participants. EN was negatively associated with age at dieting onset. PN was associated with posttraumatic stress disorder
Heins et al. 2011	PN and EN	ETI	S	CASH, PANSS, SISR		PN and EN were associated with psychotic disorder in a dose-response fashion
Laporte et al. 2011	PN	CTQ	PD	DIB-R, DIPD-IV, SCID-I, HAM-D, HAM-A, SCL-90-R, DAPP-BQ, BIS, ALS		PN was not associated with personality disorder
McLaughlin et al. 2010b	N	FHRDC, CTS	MD, AD, DBD	CIDI version 3.0, SDS		N particularly associated with anxiety disorders but also with mood and disruptive behavior disorders. Predictive effects persisted throughout the life course
Kessler et al. 2010	N	FHRDC, CTS	MD, AD, DBD, SAD	CIDI, version 3.0		N has strong associations with all classes of disorders at all life-course stages in all groups of World Mental Health countries
Green et al. 2010	N	FHRDC, CTS	MD, AD, SAD, DBD	CIDI		N has powerful and often subadditive associations with the onset of many types of largely primary mental disorders throughout the life course
McLaughlin et al. 2010a	N	FHRDC, CTS	MD, AD, SAD, DBD	CIDI, version 3.0		N was significantly but modestly related to persistence of mood, substance, and anxiety disorders. Exposure to multiple other childhood adversities increased the persistence of mood and anxiety disorders throughout the life course
Hovens et al. 2010	EN	CTI	MD, AD	CIDI, version 2.1		EN was associated with pure anxiety, pure depression, and anxiety and depression comorbid group. Contributing to the severity of psychopathology
Wiersma et al. 2009	EN	CTI	MD	CIDI, LCI, IDS-SR		EN can be seen as an independent determinant of chronicity of depression. A high score of EN was associated with higher prevalence of comorbid anxiety, more severe depression, and an earlier onset of the first depressive episode. The greater the number of childhood traumas, the higher the probability of lifetime chronic or recurrent depression
Afifi et al. 2009	N	CTS, FHRDC	MD, AD, SAD, DBD, PD	CIDI, version 1.1		N was associated with psychiatric disorders and suicidal ideation and attempts
Tyrka et al. 2009	EN and PN	CTQ	PD	SCID-I, SCID-II		EN and PN are risk factors of personality disorders. EN and PN were associated with elevated symptoms of personality disorders
Sfoggia et al. 2008	EN and PN	CTQ	MD, AD, SAD, PD	MINI		Severe EN and PN are risk factors of suicidal behavior
Wonderlich et al. 2007	PN	CTI	PD, AD, MD, SAD	SCID-I/P, EDE, DIB-R, POMS, PANAS		PN was not significantly associated with psychiatric disorders
Grover et al. 2007	EN and PN	CTQ	PD	SCID-I, SCID-II		EN and PN were associated with symptoms of paranoid, narcissistic, borderline, antisocial, obsessive-compulsive, passive-aggressive, and depressive personality disorders
Uçok and Bıkmaz, 2007	EN and PN	CAQ, CTQ	S	SCID-I, BPRS, SAPS, SANS		EN and PN were associated with psychotic symptoms. EN and PN were associated with more positive symptoms (but not more negative symptoms). EN and PN can affect the course of schizophrenia in first admission
Zavaschi et al. 2006	PN	FEI, SSCECV	MD	MINI-Plus 5.0, WAIS-R		PN was not significantly associated with mood disorder
Sar et al. 2006	EN and PN	CTQ	PD, DD	SCID-II, SDQ		PN was associated with borderline personality disorder; and EN, with dissociative disorder
Sareen et al. 2005	EN	CMHSR, FHRDC	MD, AD, SAD, ED	CIDI		EN was independently and significantly associated with mental disorders
Lang et al. 2004	EN and PN	CTQ	MD, AD, DD	SCID-I, CAPS, LASC, DES-T, CES-D, BAI, ASI		EN was associated with more dissociative and depressive symptoms. The more subtypes of ELS, the more severe was the psychopathology
Holowka et al. 2003	EN and PN	CTQ	S	DES		PN and EN were not associated with dissociation in schizophrenia
Zanarini et al. 2002	N	CEQ-R, AHI	PD	SCID-I, DIB-R, DIPD-R, DES		The severity of N was linked to the severity of borderline personality disorder

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TABLE 4. (Continued)

Physical Neglect (PN) / Emotional Neglect (EN) / Unspecified Neglect (N)						
Author/Year	ELS Subtype	ELS Instrument	Diagnosis	Diagnosis and Severity of Symptoms	Instruments	Main Results
Roy, 2002	EN and PN	CTQ	AD, PD	EPQ		Positive association between EN and PN with neuroticism
Johnson et al. 2001	N	Open questions	AD, PD, DD, S	PDQ, DISC-I, DPI		N was associated with personality disorders

For abbreviations, see Table 1 legend.
 AHI indicates Abuse History Interview; CEQ-R, Revised Childhood Experiences Questionnaire; DIPD-R, Diagnostic Interview for *DSM-III-R* Personality Disorders; EPQ, Eysenck Personality Questionnaire.

Sexual abuse was associated with personality disorders (especially with borderline personality disorder), schizophrenia, anxiety disorders (especially with posttraumatic stress disorder, panic disorder, agoraphobia, and obsessive-compulsive disorder), substance abuse disorders, mood disorders (especially major depression and bipolar illness), disruptive behavior disorders, eating disorders, and dissociative disorders (Afifi et al., 2009, 2006, 2008; Bandelow et al., 2005; Bebbington et al., 2004; Bradley et al., 2005; Bulik et al., 2001; Caspi et al., 2008; Gibb et al., 2007; Green et al., 2010; Grover et al., 2007; Heins et al., 2011; Hovens et al., 2010; Johnson et al., 2001; Jonas et al., 2011; Katerndahl et al., 2005; Kessler et al., 2010; Khoury et al., 2010; Lang et al., 2004; Laporte et al., 2011; Leverich et al., 2002; McLaughlin et al., 2010a, 2010b; Molnar et al., 2001a, 2001b; Rayworth et al., 2004; Sar et al., 2006; Sareen et al., 2005; Steel et al., 2009; Steiger et al., 2010; Tyrka et al., 2009; Uçok and Bikmaz, 2007; Wiersma et al., 2009; Wingefeld et al., 2011; Wonderlich et al., 2001, 2007; Zananini et al., 2002; Zavaschi et al., 2006). Only two studies (Holowka et al., 2003; Rubino et al., 2009) found no association between sexual abuse and psychopathology.

Emotional abuse was associated with personality disorders (especially borderline personality disorder, narcissistic personality disorder, and passive-aggressive personality disorder), schizophrenia, anxiety disorders (social phobia and posttraumatic stress disorder), mood disorders (major depression), and substance abuse disorders (Gibb et al., 2007; Grover et al., 2007; Heins et al., 2011; Holowka et al., 2003; Johnson et al., 2001; Khoury et al., 2010; Laporte et al., 2011; Rubino et al., 2009; Sar et al., 2006; Tyrka et al., 2009; Uçok and Bikmaz, 2007; Wingefeld et al., 2011). Only one study (Steel et al., 2009) found no association between emotional abuse and psychopathology.

Emotional neglect was associated with personality disorders, schizophrenia, anxiety disorders, substance abuse disorders, mood disorders, eating disorders, and dissociative disorders (Grover et al., 2007; Heins et al., 2011; Hovens et al., 2010; Lang et al., 2004; Sareen et al., 2005; Tyrka et al., 2009; Uçok and Bikmaz, 2007; Wiersma et al., 2009). Only one study (Holowka et al., 2003) found no association between emotional neglect and psychopathology.

Physical neglect was associated with personality disorders (especially borderline personality disorder) and schizophrenia (Grover et al., 2007; Heins et al., 2011; Sar et al., 2006; Tyrka et al., 2009; Uçok and Bikmaz, 2007).

However, it was not significantly associated with personality disorders, schizophrenia, anxiety disorders, substance abuse disorders, and mood disorders in four studies (Holowka et al., 2003; Laporte et al., 2011; Wonderlich et al., 2007; Zavaschi et al., 2006). Among the ELS subtypes, physical neglect was the one that had the fewer positive associations with psychiatric disorders; only five studies found an association between only two diagnostic categories. At the same time, it had the greater number of no associations with psychiatric disorders.

Unspecified neglect was associated with personality disorders (especially with borderline personality disorder), anxiety disorders, substance abuse disorders, mood disorders, and disruptive behavior disorders (Afifi et al., 2009; Green et al., 2010; Johnson et al., 2001;

Kessler et al., 2010; McLaughlin et al., 2010a, 2010b; Zananini et al., 2002).

Research on the association between ELS and adult psychiatric disorders is recent, and the articles indicate that the onset of this kind of study occurred within less than 20 years (Collishaw et al., 2007; Edwards et al., 2003; Kessler et al., 1997; Mullen et al., 1996). The publication dates of the 44 articles included in this review seemed to grow through the years, which may indicate an increased interest in the topic. Certainly, the growing awareness of the environment as a fundamental tool for construing the synaptic structure of the adult brain (Antonov et al., 2003) has brought the attention of academic scholars to the importance of a “reasonable balanced upbringing.” That is when the acknowledgement occurred on how the world and people “function” for a developing and rapidly learning brain.

One of the most elementary limitations of the area is the fact that there is no consensus about the concept of ELS in the literature, which ultimately leads to a mismatch in the choice of the instruments for evaluation, although there seems to be a preference for using the CTQ—an instrument that investigates three types of abuse (emotional, physical, and sexual abuse) and two types of neglect (physical and emotional neglect)—because it was used by nine studies, which accounts for less than 25% of the studies. However, many other instruments were used, some of which include other subtypes of ELS, such as parental loss, psychiatric disease of the caregivers, family's economic situation, domestic violence, or parental divorce. The disparity of a consensus on the issue becomes apparent mainly in the case of neglect because although some studies consider emotional neglect and physical neglect as independent subtypes of ELS, other studies classified them as a single subtype. Among the subtypes of ELS, neglect yielded lesser consensus, which can be explained by the fact that it is the most recently researched subtypes.

Another important limitation to consider is how to collect data on ELS because these are collected through instruments of regression analysis, which depends on the memory of the subjects about traumatic events of their childhood. There is a possibility that the experience of the trauma itself could affect the information retained in the memory as well as its meaning.

Another factor to consider is that ELS is characterized by events occurring during childhood and adolescence, with no distinction about the timing of development in which ELS has occurred. What might be a confounding factor is, as some authors suggest, correlations between the age at which ELS occurred and an increased risk for developing psychopathology, as well as the severity and worse course of the illness. Likewise, the amount of the subtypes of ELS the subject has undergone contributes to a worst outcome of psychopathology.

Despite the limitations involved, the significant results of the studies are shown to be valid and useful. The affirmative studies fortify themselves by the sum of homogeneous results. They emphasize the potential damaging effects of ELS for both the individual and the larger social sphere.

Ultimately, it is hoped that a robust body of research shall spring in the near future and be consistent enough to convince decision makers

and government policy makers that preventing, investigating, and stopping child abuse and neglect are a fundamental element for public health.

CONCLUSIONS

The ELS subtypes: physical abuse, sexual abuse, emotional abuse, emotional neglect, and unspecified neglect are individual predictors of psychiatric disorders in adulthood. Most studies certify these associations, generating scientific evidence that demonstrates this relationship and that these subtypes of ELS trigger, aggravate, maintain, and increase the recurrence of psychiatric disorders. These results demonstrate the importance of this understanding, especially for mental health professionals, and press the urgency for preventive practices against this complex public health problem.

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