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ORIGINAL ARTICLE

The impact of childhood adversities on anxiety and depressive disorders in adulthood

Marketa Marackova [1], Jan Prasko [1], Stanislav Matousek [1], Klara Latalova [1], Radovan Hruby [2], Michaela Holubova [1,3], Milos Slepecky [4], Kristyna Vrbova [1], Ales Grambal [1]

1 Department of Psychiatry, Faculty of Medicine and Dentistry, University Palacky Olomouc, University Hospital Olomouc
2 Outpatient psychiatric department, Martin, Slovak Republic
3 Department of Psychiatry, Hospital Liberec, Czech Republic
4 Department of Psychology Sciences, Faculty of Social Science and Health Care, Constantine the Philosopher University in Nitra, Slovak Republic

Correspondence to: Prof. Dr. Jan Prasko, PhD
Department of Psychiatry, Faculty of Medicine and Dentistry
Palacky University Olomouc, University Hospital
I.P.Pavlova 6, 77520 Olomouc, Czech Republic.
TEL: +420 603 414 930; E-MAIL: praskojan@seznam.cz

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Abstract

OBJECTIVES: The childhood adversities model is generally accepted as a predictor of adult psychopathology vulnerability. It stems from child development theories, but the question remains as of how well solid research supports it. The aim of this article is to give a review of the studies concerning childhood adversities and their impact on the development of anxiety disorders and major depressive disorder in adulthood.

METHOD: A computerized search of the MEDLINE database of publications up to 31 March 2016 was done, using the keywords "childhood adversities, abuse, maltreatment, bullying" and "anxiety disorders, depressive disorder". No backward time constraints were used. Non-original studies, conference abstracts, books and book chapters, commentaries, and dissertations were excluded.

RESULTS: The influence of childhood adversities on later age psychopathology is examined in five categories: the negative family atmosphere, abuse, loss of a close person, the social difficulties, and problems at school (including, most importantly bullying). The majority of studies confirmed the connection between childhood adversities and anxiety and depression disorders in adulthood. The character of the adversities is not, apparently, a specific predictor for a concrete psychopathology. Multiple adversities are more frequently connected with depressive and anxiety disorders in adulthood, cumulating together in broader adverse context.

CONCLUSION: Childhood adversities were found to increase vulnerability to the distress, depression, fear and anxiety later in the life. However, specific correlations between a given childhood adversity and a specific form of depression or anxiety disorder were either not found or weak. This is in line with the generally accepted view considering each of these factors a non-specific stressor increasing vulnerability to mood and affect disorders later in life.

INTRODUCTION

Psychiatrists and psychotherapists commonly believe that adversity in childhood increases the vulnerability to adult psychopathology. Childhood adversities could be nonspecific pieces of the mosaic within the multiple etiopathogenesis factors, which influence the development of the psychiatric disorder. Broad surveys studying a wide variety of adversities and outcome measures have established that adverse childhood experiences are common (Kessler *et al.* 1997; Rosenman and Rodgers 2004; Pirkola *et al.* 2005).

The childhood adversity and early-life distress have been for a long time supposed to be an etiopathological aspect of adult psychopathology (Keyes *et al.* 2012). Adversities in childhood could be a part of the conceptualization of patient problems in many psychiatric diagnoses, like depression, anxiety disorder, somatoform and dissociative disorders, personality disorders, but also in many patients with psychosis or bipolar disorders (Longden *et al.* 2016; Paksarian *et al.* 2015). Some researchers hypothesized about a particular type of adversity predicting a particular kind of psychopathology. Aaron T. Beck (1976), author of the theory of cognitive therapy, believed that childhood adversities connected with insecurity and perceived unsafety, like repeated early short separations from the caregiver. It leads to anxiety disorders, while definitive separation from the caregiver would/could precede depression later in life. That is why childhood adversities, like traumas, loss of the parent, abandonment, neglect, sexual, physical or emotional abuse, the atmosphere in the family during childhood, relations with parents and between them, relations with siblings, and bullying in the school are typical topics explored by psychiatrists in patient history.

Not all children exposed to the childhood adversities develop psychopathology later in life. It seems other relevant factors, including genetical, biological and personality predisposition, are at play. These factors then interact with endured childhood adversities could result in the developmental disorders of adolescent and psychopathology in the adult.

This review aims to map as to what has been found about the role of childhood adversities in the development of a predisposition to depressive or anxiety disorders in adult, which childhood adversities have been found to play a part in the process and which other factors contribute to it.

METHOD

A computerized search of the PubMed MEDLINE database was conducted using the keywords "childhood adversities", "childhood abuse", "childhood maltreatment", "bullying" in successive logical combination with "adult anxiety disorders" or "adult depressive disorder" (see caption of figure 1 for the details of the search). The search covered the time up to March 31, 2016; no backward time constraints were used. The articles identified and screened for retrieval were selected by the filter in PubMed. Furthermore, the included studies needed to be (1) published in peer-reviewed journals; (2) could be prospective or retrospective original studies in humans; or (3) reviews on the relevant topic; (4) limited to the English language. Excluded studies were (1) non-original studies; (2) conference abstracts; (3) books and book chapters; (4) commentaries, and dissertations.

The total of 728 articles was selected by primary selection using keywords. After analyzing their titles and abstracts; according to the eligibility criteria, 56 articles were chosen. Secondary search articles from the reference list of primarily selected articles were read and evaluated for the eligibility and added to the first list of the articles (n=8). The process of selecting the reviewed articles is summarized in a flow diagram (Figure 1), as suggested by the PRISMA Guidelines (Moher *et al.* 2009).

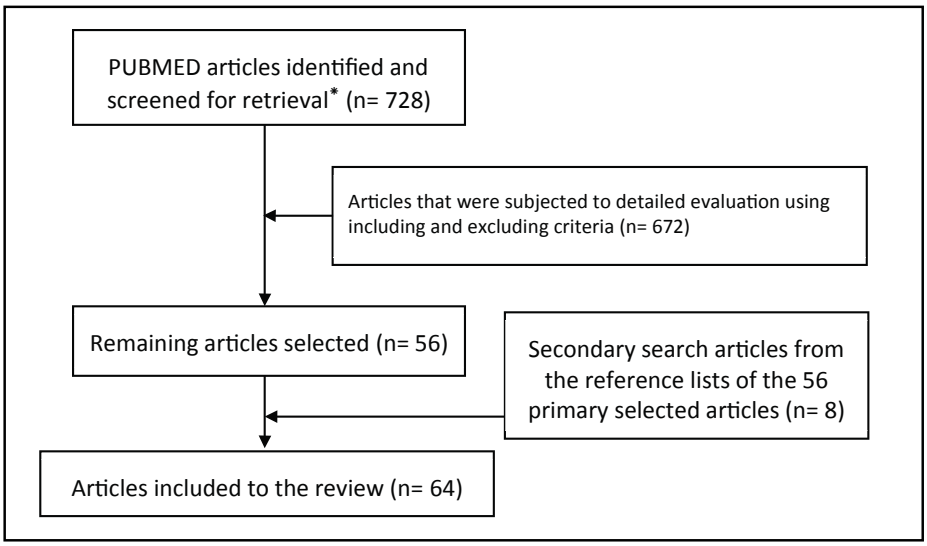

Fig. 1. Summary of the article selection process.
*Results for: [(childhood adversity AND anxiety disorder) OR (childhood adversity) AND (depressive disorder)] OR [childhood abuse) AND (anxiety disorder) OR (childhood abuse) AND (depressive disorder)] OR [(childhood bullying AND anxiety disorder) OR (childhood bullying AND depressive disorder)] or [(childhood maltreatment) AND (anxiety disorder) OR (childhood maltreatment AND depressive disorder)].

RESULTS

Types of adversities

A broad body of investigations on the influence of childhood adversities was found where researchers describe not only the effect of severe traumatic experiences (i.e. sexual, physical or emotional abuse, observing violence within the home,-severe disease) but also the effect of persistent or recurrent stressors. All of these factors have a considerable harmful consequence of the child (Grover *et al.* 2005; Benjet *et al.* 2010; McLaughlin *et al.* 2010a; Ford *et al.* 2011). The covered topics include parental conflict or break up of the relationship between parents (Amato & Keith 1991; Rodgers 1994; Chase-Lansdale *et al.* 1995; Pryor & Rodgers 2001), loss of a parent (Bifulco *et al.* 1992), poor parenting (Quinton 1988; Levitan *et al.* 2003, Rodgers 1996a), emotional abuse (Chapman *et al.* 2004), physical abuse (Kendler *et al.* 2000; Malinosky-Rummell & Hansen 1993), sexual abuse (Mullen *et al.* 1993; Mullen *et al.* 1996; Weiss *et al.* 1999; Molnar *et al.* 2001; Collishaw *et al.* 2007), problematic interpersonal relationships (Waldinger *et al.* 2007), poverty, drug use in the family, parental mental health (Levitan *et al.* 2003), and bullying (Maughan & McCarthy 1997; Gini & Pozzoli 2013).

We grouped these distinctive adversities into five different categories, which will be examined in turns in the following sections of this review. These categories include:

a. sexual or physical abuse;
b. loss of a close person,
c. negative family atmosphere,
d. poor school functioning and bullying,
e. economic and social difficulties in the family.

Each category consists of several related previously mentioned subtopics, as will be explored in the following text. Finally, there is clear evidence that whenever several of these adversities occur together, which is not uncommon, the cumulative effect of these adversities increases the risk of adult psychopathology dramatically. This will also be explored in a separate section.

Sexual or physical abuse in childhood

According to Radford's UK population survey (Radford *et al.* 2013), the incidence of abuse in childhood is high. 2.5% of children aged under 11 years and 6% of youngsters aged 11–17 years have had one or more experiences of sexual abuse, by a caregiver in the past year, and 8.9% of children under 11 years, 21.9% of youngsters aged 11–17 years, and 24.5% of young adults had experienced such adversities at least once throughout childhood.

Physical or sexual abuse have been associated with anxiety and depression in later age and have been identified to influence the beginning of anxiety and depression in different stages of life (Malinosky *et al.* 1993; Mullen *et al.* 1993; Mullen *et al.* 1996; Weiss *et al.* 1999; Kendler *et al.* 2000; Statham & Martin 2000; Bulik *et al.* 2001; Paolucci *et al.* 2001; Putman 2003; Grover *et al.* 2005; Afifi *et al.* 2006; Gibb *et al.* 2007; Fergusson *et al.* 2008, Benjet *et al.* 2010; Clark *et al.* 2010; McLaughlin *et al.* 2010b; Ford *et al.* 2011). Keyes *et al.* (2012) obtained records from a nationally representative survey of 34 653 US adults. Lifetime DSM-IV psychiatric problems were evaluated using the Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV (AUDADIS-IV), whereas physical, sexual, and emotional abuse and neglect were assessed using validated methods. The effects have been fully intermediated through the underlying liability dimensions, with an impact on potential liability levels to internalizing and externalizing symptoms rather than particular psychiatric disorders. Significant gender dissimilarities appeared with physical abuse, this being linked only to internalizing liability in females while being only linked to externalizing liability in males. In the investigation of 5995 Australian twins, in the other report, those with a history of childhood sexual abuse were compared to those without such a history and checked for the occurrence of psychiatric problems during a lifetime. Individuals with a positive history of childhood sexual abuse were more probable to develop panic disorder, conduct disorder, major depression and alcoholism during their lives and were more likely to describe suicidal ideation or a history of suicide attempt. Abused women, but not men, were similarly more probable to experience social phobia. Exposure to childhood sexual abuse or additional early life traumatic events has been linked to problems with reproduction and adverse pregnancy outcome (Wosu *et al.* 2015).

Loss of close person

Suffering caused by death or loss of a mother in childhood is connected with adult depression and anxiety (Bifulco *et al.* 1992). However, a more detailed research has found that the maternal absence was not linked with psychopathology in the mid-life or early adulthood if another female family member or a stepmother was able to substitute the female parenting role (Clark *et al.* 2010). This result is consistent with previous analyses of this cohort (Rodgers *et al.* 1997).

Negative family atmosphere

Neglect in Childhood is connected with major depression in adulthood (Horwitz *et al.* 2001; Widom *et al.* 2007). Furthermore, the negative family environment could be considered as a chronic stressor with the ability to increase the risk of anxiety disorders over time (Grover *et al.* 2005; Benjet *et al.* 2010, McLaughlin *et al.* 2010a; McLaughlin *et al.* 2010b). Adversities within the negative family environment category such as lack of family cohesion, illness at home, and parental mental illness were predictive of following anxiety issues (Grover *et al.* 2005; Benjet *et al.* 2010; McLaughlin *et al.* 2010a). The long-term effects of parental divorce

can have influenced the mental health of young adults (Chase-Lansdale *et al.* 1995; Fergusson *et al.* 2007). Childhood sibling negative or problematic relationship can be a predictor of major depression in adulthood as was shown in the 30-years prospective study of Waldinger *et al.* (2007).

However, neglect, parental marital issues, and parental criminal behavior were not recognized to be predictive of anxiety development (Benjet *et al.* 2010). Neglect also was not considerably related with potential liability levels in the national representative survey in the US (Keyes *et al.* 2012).

School functioning and bullying

Another risk factor is bullying, which is the systematic abuse of power. It is defined as the aggressive behavior or intentional harm-doing by peers that are carried out repeatedly and includes a discrepancy of power. Being plagued is still often incorrectly considered as a ‚normal rite of passage' (Wolke & Lereya 2015). The hostility can include physical, verbal or gestural forms (Dobry *et al.* 2013). Bullied children and adolescents have a considerably higher risk for psychiatric and psychosomatic problems than non-bullied mates with the same age (Gini & Pozzoli 2013), with a particular risk of anxiety and depressive disorders in adulthood (Maughan & McCarthy 1997) and association between the quantity of described problems and risk for adult mental health concerns (Hammen *et al.* 2000; Chapman *et al.* 2004; Schilling *et al.* 2008). Copeland *et al.* (2013) tested, whether bullying in childhood predicts psychiatric problems and suicidality in young adulthood period after accounting for childhood psychiatric difficulties and family hardships. A total of 1420 participants who had been bullied and bullied evaluated 4 to 6 times during the period from 9 to 16 years. Participants were classified as bullies only, victims only, bullies and victims (hereafter referred to as bullies/victims), or neither. Psychiatric consequences, which included anxiety, depression, substance abuse disorders, antisocial personality disorder, and suicidality, were assessed in 19, 21, and 24–26 years by use of structured diagnostic interviews. Victims and bullies/victims had increased rates of psychiatric disorders in adulthood, but also elevated rates of psychiatric disorders and family hardships in childhood. After controlling for childhood psychiatric difficulties or family adversities, authors found that victims of bullying persistently had an increased prevalence of agoraphobia, generalized anxiety, and panic disorder and bullies/victims were at higher risk for adult suicidality (males only), and depression, panic disorder, agoraphobia (females only). Bullies were at increased risk for development of the antisocial personality disorder only.

Takizawa *et al.* (2014) reported data from the British National Child Development Study, a 50-year prospective cohort of births in the same week in 1958. The researchers showed ordinal logistic and linear regressions of data from 7,771 contributors whose parents reported bullying exposure at ages 7 and 11 years, and who participated in follow-up assessments between ages 23 and 50 years. Victims of recurrent bullying had higher rates of depression, anxiety disorders, and suicidality than their non-victimized peers. Childhood bullying victimization was associated with a lack of social relationships, economic hardship, and poor perceived quality of life at age 50. Children who are bullied and especially those who are frequently bullied-continue to be at risk for a broad range of poor health, social, and economic results almost four decades after the experience.

Economic and social difficulties in the family

Perhaps surprisingly for some, there are childhood adversities that have been shown to have little or no impact on anxiety symptoms later in life. Economic and social adversities—more explicitly defined as low economic status, financial difficulties, parental unemployment, and lack of parental education—are the type of difficulties for which the correlation with anxiety symptoms following them is weak (Grover *et al.* 2005). Only low parental education predicted higher levels of anxiety in early and mid-life (McLaughlin *et al.* 2010b). However, Grover at al also admits, that the weak association between economic factors and anxiety could be due to their sample which wasn´t heterogeneous enough (Grover *et al.* 2005)

The results of this research are contrary to the results of other studies, where poverty was found to be a potential adverse factor associated with major depression and/or anxiety disorders (Levitan *et al.* 2003). Persons with the economic type of adversity had an amplified risk of anxiety and substance abuse disorders (McLafferty *et al.* 2015; Curran *et al.* 2016).

Multiple adverse experiences in childhood

It seems by the common sense that children exposed to one type of maltreatment from their parent or caregiver are more likely to be exposed to additional practices of abuse and adverse conditions, leading to poly-victimization and higher intensities of trauma symptoms.

This has indeed been steadily supported by the research data showing that a substantial portion of participants experienced more than one adversity in childhood (McLaughlin *et al.* 2010a; Benjet *et al.* 2010; Clark *et al.* 2010; Ford *et al.* 2011; Mersky *et al.* 2013), albeit different studies report different exposure to a number of adversities confronted by participants. The adversity subgroups most often described as comorbid with one another were the abuse and the adverse family environment (Benjet *et al.* 2010); however, particular components within each subgroup also co-occur (parental absence and divorce) (Clark *et al.* 2010).

Individuals in the poly-adversity group are more prone to a wide variety of psychiatric problems, including a higher risk of suicidality (McLafferty *et al.* 2015,

Curran *et al.* 2016). Cumulative adversities have a cumulative effect on mental health (Turner & Lloyd 1995; Edwards *et al.* 2003), though some authors suggest that the effect of cumulative adversities may sometimes be confused with the coexistent effect of an adversity of a greater impact (Schilling *et al.* 2008).

Studies have shown that there are high rates of psychiatric comorbidity in those who suffered poly-adversity in early adulthood (Espejo *et al.* 2007; Mersky *et al.* 2013). Major depressive episodes, posttraumatic stress disorder (PTSD) and anxiety disorders are often activated when those who experience major life stressors in adulthood have also experienced childhood adversities (McLaughlin *et al.* 2010a). Depression often manifests along with anxiety as a result of childhood adversities (Espejo *et al.* 2007; Dunn *et al.* 2011). However, the comorbidity of the mood disorders, PTSD, depressive disorder, and anxiety may pose a methodological challenge in the research, as the uncontrolled for correlations in the data could influence the results of the studies when not accounted for (McLaughlin *et al.* 2010a; McLaughlin *et al.* 2010b; Mersky *et al.* 2013).

The sum of difficulties faced in childhood has been consistently presented to influence the anxiety later in life (Grover *et al.* 2005; McLaughlin *et al.* 2010a; Benjet *et al.* 2010; Ford *et al.* 2011; Mersky *et al.* 2013). The probability of displaying anxiety was additionally enlarged when participants described more than three childhood adversities (McLaughlin *et al.* 2010a).

An interesting pathogenetic mechanism was proposed to play a role in the development of anxiety disorders. As shown by McLaughlin *et al.* (2010a) cumulative adversities increase sensitization to stress, which has a bidirectional relation with the anxiety disorders. High-stress reactivity to major life events has been particularly prevalent in participants who described three or more adversities in childhood. Males, in particular, who faced three or more adversities in childhood showed high-stress reactivity to minor life events. The degree of contact widely influences this relationship between accumulative adversities and anxiety as mediated by stress sensitization to adversities (McLaughlin *et al.* 2010a). The greater the experience with childhood adversities, the higher level of distress respondents described when exposed to later stressful life events (Espejo *et al.* 2007; McLaughlin *et al.* 2010a), thus increasing the probability of anxiety.

DISCUSSION

This review includes 143 studies concerned with the effect of childhood adversities on anxiety and depressive disorders in adulthood. The publication time up to 31 March 2016 is covered. Given all the equivocal results of these studies, it should be noted that the existing evidence is in its majority methodologically limited Studies often use retrospective reports of adversity, risking recall bias; as they assess adversity at the same time as psychopathology, the chance that recall is influenced by current psychological state is increased (Brown & Harris 1978). The existing studies also rarely take confounding socioeconomic factors into account (Weich *et al.* 2009) and are predominantly limited to effects on adolescent and early adulthood psychopathology. Despite these studies consistently clearly show that childhood adversities increase vulnerability to the distress, depression, and anxiety later in life (Grover *et al.* 2005; Benjet *et al* . 2010; Clark *et al.* 2010; Ford *et al.* 2011; Jacob 2012; Mersky *et al.* 2013).

Data acquired during exploration of the relationship between childhood adversity and anxiety or depression in adulthood confirmed that, unrelatedly of the type of adversity, multiple adversity groups amplified the odds of anxiety and depression in later years (Grover *et al.* 2005; Benjet *et al.* 2010; Clark *et al.* 2010; Ford *et al.* 2011; Jacob 2012; Mersky *et al.* 2013).

Given all the equivocal results of these studies, it should be noted that the existing evidence is in its majority methodologically limited: studies often use retrospective reports of adversity, risking recall bias; as they assess adversity at the same time as psychopathology, the chance that current psychological state influences recall is increased (Brown & Harris 1978). The existing studies also rarely take confounding socioeconomic factors into account (Weich *et al.* 2009) and are predominantly limited to effects on adolescent and early adulthood psychopathology.

Associations and effect size should be examined in greater detail with prospective measures of adversity, adjustment for social and contextual factors, and longer-term follow-up (Weich *et al.* 2009). Although prospective evidence for childhood adversity predicting adolescent psychopathology is robust (Grant *et al.* 2004a), prospective evidence for adulthood psychopathology is unequivocal (Collishaw *et al.* 2007; Rogers *et al.* 1997, Fergusson *et al.* 2007, Widom *et al.* 2007). This may be a consequence of attenuation of associations with age. Alternatively, the link may be mitigated by other adulthood factors (Collishaw *et al.* 2007; Grant *et al.* 2004b, Ruter 2009) such as interpersonal relationships (Rodgers 1996b; Grant *et al.* 2006) and recent life events (Hazel *et al.* 2008; Espejo *et al.* 2007; Horowitz *et al.* 2001).

The existing research uses both longitudinal investigations and retrospective self-reports to establish connections. In the longitudinal studies, it can be challenging to uniquely determine the outcomes of early life adversity and the origins of anxiety, depression and stress, because the statistics can be confounded by the other psychiatric disorders comorbid or preceding depressive and anxiety disorders and because these psychiatric disorders can also be related to childhood adversities, as was also discussed in this review. When the analytic retrospective method is used, the direction of causality is dubious, as the depressive or anxious subjects are more likely to recall negative memories

(the already mentioned recall bias). The direction of causality is also difficult to ascertain in children with pre-existing anxiety or depressive disorders suffering childhood adversities.

CONCLUSION

A considerable amount of research work has been dedicated to elucidating the role of childhood adversities, including sexual or physical abuse, bullying, negative family atmosphere, economic and social difficulties in the family, loss of a close person and other on the pathogenesis of anxiety and depressive disorders later in life. There is a clear picture of these adversities having a deleterious effect on future mental health. However, there is a need for further prospective longitudinal research to find out directionality and to measure precisely the strengths of individual relationships in the complex web of causal relationships.-

Professionals working with children and adolescents in all surroundings should be vigilant to identify childhood maltreatment, victimization, and other childhood adversities, thus preventing their accumulative influence on later psychiatric morbidity.

REFERENCES

1 Afifi TO, Brownridge DA, Cox BJ, Sareen J (2006). Physical punishment, childhood abuse, and psychiatric disorders. Child Abuse Neglect. **30**: 1093–1103.
2 Amato PR, Keith B (1991). Parental divorce and adult well-being: a metaanalysis. J Marriage Family. **53**: 43–58.
3 Beck AT (1976). Cognitive Therapy and the Emotional Disorders. International Universities Press, New York.
4 Benjet C, Borges G, Medina-Mora ME (2010). Chronic childhood adversity and onset of psychopathology during three life stages: childhood, adolescence, and adulthood. Journal of Psychiatric Research. **44**(11): 732–740.
5 Bifulco A, Harris T, Brown GW (1992). Mourning or early inadequate cared reexamining the relationship of maternal loss in childhood with adult depression and anxiety. Dev Psychopathol. **4**: 433–449.
6 Brown GW, Harris TO (1978). The Social Origins of Depression: A Study of Psychiatric Disorder in Women. New York: Free Press.
7 Bulik CM, Prescott CA, Kendler KS (2001). Features of childhood sexual abuse and the development of psychiatric and substance use disorders. Br. J. Psychiatry. **179**: 444–449.
8 Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. J Affect Disord. ***82***: 217–225.
9 Chase-Lansdale PL, Cherlin AJ, Kiernan KE (1995). The long-term effects of parental divorce on the mental health of young adults: A developmental perspective. Child Devel. **66**: 1614–1634.
10 Clark C, Caldwell T, Power C, Standsfeld A (2010). Does the Influence of Childhood Adversity on Psychopathology Persist Across the Lifecourse? A 45-Year Prospective Epidemiologic Study. Ann Epidemiol. **20**: 385–394.
11 Collishaw S, Pickles A, Messer J, Rutter M, Shearer C, Maughan B (2007). Resilience to adult psychopathology following childhood maltreatment: Evidence from a community sample. Child Abuse Neglect. **31**: 211–229.
12 Copeland WE, Wolke D, Angold A, Costello EJ (2013). Adult psychiatric outcomes of bullying and being bullied by peers in childhood and adolescence. JAMA Psychiatry. **70**(4): 419–426.
13 Curran E, Adamson G, Stringer M, Rosato M, Leavey G (2016). Severity of mental illness as a result of multiple childhood adversities: US National Epidemiologic Survey. Soc Psychiatry Psychiatr Epidemiol. **51**(5): 647–657.
14 Dobry Y, Braquehais MD, Sher L (2013). Bullying, psychiatric pathology and suicidal behavior. Int J Adolesc Med Health. **25**(3): 295–299.
15 Dunn VJ, Abbott RA, Croudace TJ, Wilkinson P, Jones PB, Herbert J, Goodyer IM (2011). Profiles of family-focused adverse experiences through childhood and early adolescence: The ROOTS project a community investigation of adolescent mental health. BMC Psychiatry. **11**(1): 109.
16 Edwards VJ, Holden GW, Anda RF, Felitti VJ (2003). Experiencing multiple forms of childhood maltreatment and adult mental health: results from the adverse childhood experiences (ACE) study. American Journal of Psychiatry. **160**: 1453–1460.
17 Espejo EP, Hammen CL, Connolly NP, Brennan PA, Najman JM, Bor W (2007). Stress sensitization and adolescent depressive severity as a function of childhood adversity: A link to anxiety disorders. J Abnormal Child Psychol. **35**: 287–299.
18 Fergusson DM, Boden JM, Horwood LJ (2008). Exposure to childhood sexual and physical abuse and adjustment in early adulthood. Child Abuse Negl. **32**: 607–619.
19 Fergusson DM, Boden JM, Horwood LJ (2007). Exposure to single parenthood in childhood and later mental health, educational, economic, and criminal behavior outcomes. Arch Gen Psychiatry. **64**: 1089–1095.
20 Ford E, Clark C, Stansfeld SA (2011). The influence of childhood adversity on social relations and mental health at mid-life. Journal of Affective Disorders. **133**(1–2): 320–327.
21 Gibb BE, Chelminski I, Zimmerman M (2007). Childhood emotional, physical, and sexual abuse, and diagnoses of depressive and anxiety disorders. Depress. Anxiety. **24**: 256–263.
22 Gini G, Pozzoli T (2013). Bullied children and psychosomatic problems: a meta-analysis. Pediatrics. **132**(4): 720–729.
23 Grant BF, Stinson FS, Dawson DA, Chou SP, Dufour MC, Compton W, Pickering RP, Kaplan K (2004a). Prevalence and co-occurrence of substance use disorders and independent mood and anxiety disorders: results from the National Epidemiologic Survey on alcohol and related conditions. Archives of General Psychiatry. **61**(8):807–816.
24 Grant KE, Compas BE, Thurm AE, McMahon SD, Gipson PY, Campbell AJ, Krochock K, Westerholm RI (2006). Stressors and child and adolescent psychopathology: Evidence of moderating and mediating effects. Clin Psychol Rev. **26**: 257–283.
25 Grant KE, Compas BE, Thurm AE, McMahon SD, Gipson PY (2004b). Stressors and child and adolescent psychopathology: Measurement issues and prospective effects. J Clin Child Adolesc Psychol. **33**: 412–425.
26 Grover RL, Ginsburg GS, Lalongo N (2005). Childhood predictors of anxiety symptoms: A longitudinal study. Child Psychiatry and Human Development. **36**(2): 133–153.
27 Hammen C, Henry R, Daley SE (2000). Depression and sensitization to stressors among young women as a function of childhood adversity. J Consulting Clin Psychol. **68**: 782–787.
28 Hazel NA, Hammen C, Brennan PA, Najman J (2008). Early childhood adversity and adolescent depression: the mediating role of continued stress. Psychol Med. **38**: 581–589.
29 Horwitz AV, Widom CS, McLaughlin J, White HR (2001). The impact of childhood abuse and neglect on adult mental health: A prospective study. J Health Soc Behav. **42**: 184–201.
30 Kendler KS, Bulik CM, Silberg J, Hettema JM, Myers J, Prescott CA (2000). Childhood sexual abuse and adult psychiatric and substance use disorders in women: an epidemiological and cotwin control analysis. Arch Gen Psychiatry. **57**: 953–959.
31 Kessler RC, Davis CG, Kendler KS (1997). Childhood adversity and adult psychiatric disorder in the US national comorbidity survey. Psychol Med. **27**:1101–1119.
32 Keyes KM, Eaton MR, Krueger RF, McLaughlin KA, Wall MM, Grant BF, Hasin DS (2012). Childhood maltreatment and the structure of common psychiatric disorders. Br J Psychiatry. **200**(2): 107–115.

33 Levitan RD, Rector NA, Sheldon T, Goering P (2003). Childhood adversities associated with major depression and/or anxiety disorders in a community sample of Ontario: Issues of co-morbidity and specificity. Depression Anxiety. **17**: 34–42.
34 Longden E, Sampson M, Read J (2016). Childhood adversity and psychosis: generalized or specific effects? Epidemiol Psychiatr Sci. **25**(4): 349–359.
35 Malinosky Rummell R, Hansen DJ (1993). Long-term consequences of childhood physical abuse. Psychol Bull. **114**: 68–79.
36 McLafferty M, Armour C, McKenna A, O'Neill S, Murphy S, Bunting B (2015). Childhood adversity profiles and adult psychopathology in a representative Northern Ireland study. J Anxiety Disord. **35**: 42–48.
37 McLaughlin KA, Conron KJ, Koenen KC, Gilman SE (2010a). Childhood adversity, adult stressful life events, and risk of past-year psychiatric disorder: A test of the stress sensitization hypothesis in a population-based sample of adults. Psychological Medicine. **40**(10): 1647–1658.
38 McLaughlin KA, Kubzansky LD, Dunn EC, Waldinger R, Vaillant G, Koenen KC (2010b). Childhood social environment, emotional reactivity to stress, and mood and anxiety disorders across the life course. Depression and Anxiety. **27**(12): 1087–1094.
39 Mersky JP, Topitzes J, Reynolds AJ (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. Child Abuse, Neglect, No Pagination Specified.
40 Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Methods of systematic reviews and meta-analysis preferred reporting items for systematic reviews and meta-Analyses: The PRISMA Statement. Journal of Clinical Epidemiology. **62**: 1006e1012.
41 Molnar BE, Buka SL, Kessler RC (2001). Child sexual abuse and subsequent psyhopathology: results from the National Comorbidity Study. Am J Public Health. **91**:753–760.
42 Mullen PE, Martin JL, Anderson JC, Romans SE, Herbison GP (1993). Childhood sexual abuse and mental health in adult life. Br J Psychiatry. **163**: 721–732.
43 Mullen PE, Martin JL, Anderson JC, Romans SE, Herbison GP (1996). The long-term impact of the physical, emotional, and sexual abuse of children: A community study. Child Abuse Neglect. **20**: 7–21.
44 Paksarian D, Eaton WW, Mortensen PB, Merikangas KR, Pedersen CB (2015). A population-based study of the risk of schizophrenia and bipolar disorder associated with parent-child separation during development. Psychol Med. **45**(13): 2825–2837.
45 Paolucci EO, Genuis ML, Violato C (2001). A meta-analysis of the published research on the effects of child sexual abuse. J Psychol. **135**: 17–36.
46 Pirkola S, Isometsä E, Aro H, Kestilä L, Hämäläinen J, Veijola J, Kiviruusu O, Lönnqvist J. (2005). Childhood adversities as risk factors for adult mental disorders: results from the Health 2000 study. Social Psychiatry and Psychiatric Epidemiology. **40**: 769–777.
47 Pryor J, Rodgers B (2001). Children in changing families: Life after parentel separation. Oxford: Blackwell.
48 Putman FW (2003). Ten-year research update review: child sexual abuse. J Am Acad Child Adolesc Psychiatry. **42**: 269–278.
49 Quinton DRM (1988). Parenting Breakdown: The Making and Breaking of Inter-Generational Links. Aldershot: Avebury.
50 Radford L, Corral S, Bradley C, Fisher HL (2013). The prevalence and impact of child maltreatment and other types of victimization in the UK: findings from a population survey of caregivers, children and young people and young adults. Child Abuse Negl. **37**(10): 801–813.
51 Rodgers B, Power C, Hope S (1997). Parental divorce, and adult psychological distress: Evidence from a national birth cohort: A research note. J Child Psychol Psychiatry Allied Discip. **38**: 867–872.
52 Rodgers B (1994). Pathways between parental divorce and adult depression. J Child Psychol Psychiatry Allied Disc. **35**: 1289–1308.
53 Rodgers B (1996a). Reported parental behaviour and adult affective symptoms. 1. Associations and moderating factors. Psychol Med. **26**: 51–61.
54 Rodgers B (1996b). Reported parental behaviour and adult affective symptoms. 2. Mediating factors. Psychol Med. **26**: 63–77.
55 Rosenman S, Rodgers B (2004). Childhood adversity in an Australian population. Social Psychiatry and Psychiatric Epidemiology. **39**: 695–702.
56 Schilling E, Aseltine R, Gore S (2008). The impact of cumulative childhood adversity on young adult mental health: measures, models, and interpretations. Social Science and Medicine. **66**: 1140–51.
57 Takizawa R, Maughan B, Arseneault L (2014). Adult health outcomes of childhood bullying victimization: evidence from a five-decade longitudinal British birth cohort. Am J Psychiatry. **171**(7): 777–784.
58 Turner RJ, Lloyd DA (1995). Lifetime traumas and mental health: the significance of cumulative adversity. Journal of Health and Social Behavior. **36**: 360–376.
59 Waldinger RJ, Vaillant GE, Orav EJ (2007). Childhood sibling relationships as a predictor of major depression in adulthood: A 30-year prospective study. Am J Psychiatry. **164**: 949–954.
60 Weich S, Patterson, Shaw R, Stewart-Brown S (2009). Family relationships in childhood and common psychiatric disorders in later life: Systematic review of prospective studies. Br J Psychiatry. **194**: 392–398.
61 Weiss EL, Longhurst JG, Mazure CM (1999). Childhood sexual abuse as a risk factor for depression in women: Psychosocial and neurobiological correlates. Am J Psychiatry. **156**: 816–828.
62 Widom CS, DuMont K, Czaja SJ (2007). A prospective investigation of major depressive disorder and comorbidity in abused and neglected children grown up. Arch Gen Psychiatry. **64**: 49–56.
63 Wolke D, Lereya ST (2015). Long-term effects of bullying. Arch Dis Child. **100**(9): 879–885.
64 Wosu AC, Gelaye B, Williams MA (2015). Maternal history of childhood sexual abuse and preterm birth: an epidemiologic review. BMC Pregnancy Childbirth. **15**: 174. doi: 10.1186/s12884-015-0606-0.