

Childhood Maltreatment History and Adult Depression: Methodological Issues

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ABSTRACT

The association between childhood maltreatment and later mental health problems, especially adult depression, has been widely studied in the literature. The long-term effects of childhood maltreatment have encouraged investigators to examine possible factors and mechanisms explaining this relationship. Studies investigating genetic and nervous, endocrine and immune systems-related factors explaining the link between childhood adversity and adult depression reported significant results. However, findings of studies examining childhood maltreatment and adult depression relationship should be evaluated carefully before taking actions on them due to a number of limitations. This paper documented some of these methodological issues briefly: concerns about definition and terms used for maltreatment, generalizability of results, uncontrolled factors, unreturned data, multiple maltreatment types and assessment of maltreatment. Findings of research on long-term effects of maltreatment are promising to offer new research directions as well as development of strategies to help individuals with early maltreatment history and depression in adulthood. Future studies should take methodological concerns into consideration and try to overcome related limitations.

Keywords: *childhood maltreatment, adulthood, depression, methodology, limitations*

Çocukluk İstismar Öyküsü ve Yetişkin Depresyonu: Yöntemsel Meseleler

ÖZET

Çocuklukta yaşanan istismar ve yetişkinlikteki zihin sağlığı problemleri, özellikle depresyon, alanyazında oldukça fazla çalışılmış bir konudur. Çocuk istismarının uzun vadeli sonuçları araştırmacıları bu ilişkiyi açıklayan olası faktör ve mekanizmaları incelemeye teşvik etmiştir. Çocuklukta kötü yaşantılar ve yetişkin depresyonu arasındaki bağlantıyı açıklamaya çalışan genetik, sinir sistemi, endokrin sistem ve bağışıklık sistemi ile ilişkili faktörleri inceleyen araştırmalardan anlamlı sonuçlar elde edilmiştir. Ancak, konu ile ilgili çalışmalardan elde edilen bulgular bir takım kısıtlılıklar sebebiyle eylem planlarına dahil edilmeden önce dikkatle değerlendirilmelidir. Bu makalede söz konusu yöntemsel meselelerden bazıları ele alınmakta ve çocuklukta istismar yaşantıları için kullanılan tanım ve terimlere, çalışma sonuçlarının genellenebilirliğine, kontrol edilmeyen faktörlere, geri dönüt alınamayan verilere, istismarın çoklu türlerine ve ölçümüne yönelik endişelere yer verilmektedir. İstismarın uzun vadeli etkileri hakkındaki araştırmalardan elde edilen sonuçlar yeni araştırma fikirlerinin yanında erken istismar geçmişi bulunan ve depresyonu olan yetişkinlere yardım etmek için yeni stratejiler geliştirilmesine katkıda bulunmaktadır. Gelecekteki çalışmalar yöntemsel endişeleri dikkate almalı ve ilgili kısıtlılıkların üstesinden gelmeye çalışmalıdır.

Anahtar kelimeler: çocuk istismarı, yetişkinlik, depresyon, yöntem, kısıtlılıklar

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INTRODUCTION

Childhood maltreatment has been suggested being strongly associated with a wide range of psychiatric disorders in adulthood. Reported rates in psychiatric settings represent the highest prevalence of early maltreatment history (Kendler et al., 2000; Molnar, Buka, & Kessler, 2001). Depression is one of the mostly reported mental disorders associated with childhood maltreatment (Arnow, 2004). A considerable number of individuals (i.e. 25-30%) with a maltreatment history in their childhood were diagnosed with depression in their adulthood (Fergusson, Boden, & Horwood, 2008; Widom, DuMont, & Czaja, 2007; Widom, White, Czaja, & Marmorstein, 2007). Both genetic studies and studies investigating nervous, endocrine and immune systems found a biological foundation of the linkage between childhood adversity and later depression (Brown et al., 2013; Danese & McEwen, 2012). Despite being important and helpful, findings of the studies investigating early maltreatment history and later depression should be evaluated carefully because of some methodological issues about maltreatment history. Current paper will summarize some of these concerns briefly, which are definition- and term-related problems; problems of generalizability, uncontrolled factors, and unreturned data; dilemma of different types of maltreatment; and assessment-related problems. Although there could also be method-related concerns about depression (e.g., differences in terms of onset, symptom severity and course of depression), current work is limited to methodological issues about maltreatment history.

Definition and Terms Used for Maltreatment

Childhood maltreatment is defined as the abuse and neglect of children aged under 18 years. There are different types of childhood maltreatment; such as, sexual, physical, psychological and commercial. One of the main methodological concerns about maltreatment studies is the terms used for or the definition of specific maltreatment types. Especially, psychological maltreatment is studied by using multiple terms (e.g., emotional abuse, mental injury and psychological battering), which results in difficulty with literature search, cross-study comparisons and developing new theories (Baker, 2009).. Moreover, there are some inconsistencies between operational and conceptual definitions of psychological maltreatment. Measures of maltreatment history usually require participants to describe parental behaviors, but not the impact of these experiences on them. The focus in the operational definitions (e.g., parental behaviors) is not in line with the legal definitions in which the focus should be on child outcomes (Baker, 2009).

Problems about definition can also be seen in the definition of childhood sexual abuse (CSA). According to the most common definition of CSA, the victim (i.e., the child) should be younger than 15 years old and the abuser should be somebody 5 or more years older than the child (Arnow, 2004). However, studies investigating CSA have not strictly followed this definition, and the cutoff age defining the child in the studies has ranged between 12-18 years (Briere, 1992; Wyatt & Peters, 1986). The use of age-cutoff in “childhood” or “early life” maltreatment research also varies across measures; some measures specifically indicate a cutoff age (e.g., prior to 13 years) whereas others only use the phrase “childhood” with no further details (Baker, 2009). A specified age-cutoff in childhood maltreatment studies is critical since maltreatment in other stages of life (e.g., adolescence) might influence adult depression differently (Hussey, Chang, & Kotch, 2006).

Generalizability, Confounding Variables and Missing Data

Generalizability of research findings is another important issue with regards to methodology, which can be managed by conducting studies with large population-representative samples (Danese & McEwen, 2012). Samples of many studies investigating childhood abuse are recruited from specific groups (e.g., psychiatric patients and/or prisoners), which limits generalizability of results (Fergusson et al., 2008). Gender-bias also negatively affects the generalizability. The majority of studies examining effects of early maltreatment on mental health recruited mostly women (Infurna et al., 2016; Nelson, Baldwin, & Taylor, 2012; Spertus, Yehuda, Wong, Halligan,

& Seremetis, 2003), which limits understanding effects of early childhood adversity on psychiatric health in different gender groups. However, recruiting comparable individuals might also be needed under some circumstances. For example, individuals who were maltreated in childhood might often be living in different environments, such as residential places versus home settings (McCrorry, De Brito, & Viding, 2010). Mixing these groups is likely to result in a high number of uncontrollable confounding variables, which negatively affects interpreting the results.

Undoubtedly, controlling other factors as much as possible leads to a more confident argumentation of study results. Previous studies showed that the association between childhood abuse history and adult mental health outcome including depression could be affected by other factors, such as social and family factors (Fergusson & Lynskey, 1997). Factors that have not been controlled could be confounding variables, mediators, moderators or covariates. For instance, Brown and colleagues (2007) found that conduct problems and shame-withdrawal in childhood mediated the association between parental maltreatment history and adult chronic depression (Brown et al., 2007). Therefore, variables that have potential to affect the relationship between childhood adversity and adult depression suggested by the relevant literature should be assessed and controlled to achieve more valid and reliable results.

Finally, missing data due to nonrespondents should be seriously taken into consideration, since they may cause misinterpretation of the results. For instance, if the majority of missing data belong to individuals who have adult depression but not childhood maltreatment history, results might underestimate the effect size in the population. Conversely, if the individuals, who were not included, are mainly those who have maltreatment history but not current depression, the effect size of the study would overestimate the association between adult depression and childhood maltreatment (Arnou, Blasey, Hunkeler, Lee, & Hayward, 2011). Reports should state details about the data from nonrespondents explicitly in order not to risk accurate interpretation of the findings.

Investigating Multiple Types of Maltreatment

A separation between the effects of different types of maltreatment on mental health is important, such as a larger effect of CSA over childhood physical abuse on depression (Fergusson et al., 2008; Putnam, 2003). However, evidence for specific effects of different maltreatment types on depression is limited. This is partly because childhood maltreatment stories often include different types of maltreatment together (Bifulco, Moran, Baines, Bunn, & Stanford, 2002; Mello et al., 2009). Thus, studies investigating effects of childhood maltreatment have difficulties with discerning specific effects by type of maltreatment. Yet, it is important to understand qualitatively distinct characteristics of different types of maltreatment experiences, highlighting the value of interactive models compared to cumulative approach (Berzenski & Yates, 2011). Cumulative risk models depend on the number of maltreatment experiences, suggesting higher number is associated with more adverse outcome (Arata, Langhinrichsen-Rohling, Bowers, & O'Farrill-Swails, 2005; Finkelhor, Ormrod, & Turner, 2007), whereas interactive approaches indicate different effects of several combinations of maltreatment types (Trickett, 1998).

Twin study method can be used to investigate specific type of maltreatment in which other forms of adverse family environment can be controlled; discordant twin pairs for specific type of maltreatment can be investigated in terms of later depression (Arnou, 2004). One of the assumptions of the twin method is "equal environments assumption", according to which environmental influences on the similarity of the twin pairs are almost same for monozygotic (MZ) and dizygotic (DZ) twins reared together so that any differences between the twin groups cannot be attributable to environmental differences (Plomin, DeFries, Knopik, & Neiderhiser, 2013). Therefore, discordance between co-twins for a specific type of maltreatment allows investigators to attribute the effects of the specific form of maltreatment to the form itself rather than to the shared environmental factors (Arnou, 2004). In an Australian twin cohort, Nelson and colleagues (2002) found that discordant co-twins who had a CSA history also had greater risk for

many psychiatric disorders including major depressive disorder (MDD) independent of other factors of adverse family environment such as physical abuse and neglect.

Although examining effects of specific maltreatment types is informative, it seems that when there is more severe and multiple-formed abuse, the relative risk increases (Bifulco et al., 2002; Edwards, Holden, Felitti, & Anda, 2003; Wise, Zierler, Krieger, & Harlow, 2001). Wise and colleagues (2001) examined the association between childhood violent victimization and risk of MDD in adulthood among women (N=732; aged between 36-45 years) in a case-control study. They found that individuals who had physical or sexual abuse in early life were more likely to have MDD in adulthood. Relative risk of MDD in adulthood was higher for women who had both sexual abuse and physical abuse in childhood (3.3) than women who had only physical abuse (2.4) or sexual abuse (1.8) in early life. Bifulco and colleagues (2002) also found several types of maltreatment in childhood strongly associated with lifetime chronic and recurrent depression in women (N=105; aged 18-50 years). It may also be the level of abuse determining the size of the effect. For example, Kendler and colleagues (2000) examined 1411 female adult twins ($M_{age}=30.1$) and found individuals who had CSA showed higher risks for many psychiatric disorders, including depression, compared to their co-twins discordant for CSA, but when the abuse involved intercourse, the risk was significantly higher.

Assessing Maltreatment

Several limitations have been reported about the assessment of maltreatment (Baker, 2009). Some of the measures only question the maltreatment experience without highlighting the perpetrator, while others ask victims to specify whether it was one parent or both parents. There are also inconsistencies among measures about categorizing experiences of abuse under a specific type. For instance, some measures (e.g., the Comprehensive Childhood Maltreatment Scale: CCMS, Higgins & McCabe, 2001) accept witnessing domestic violence as a different form of abuse, while other measures consider it only as a subtype of terrorizing (Baker, 2009). Assessment tools used to measure the type of maltreatment are needed to be improved in terms of construct validity (Herrenkohl & Herrenkohl, 2009). Not only the type, but also the severity of maltreatment should be assessed accurately (Litrownik et al., 2005).

Many of these issues above can be more challenging when investigating maltreatment history retrospectively. Yet, the link between childhood maltreatment and depression in adulthood have widely been investigated using this method. Retrospective self-reports of maltreatment may lead to some limitations, such as missing information due to poor memory or unwilling to share this adverse experience with others (Raphael & Cloitre, 1994; Schraedley, Turner, & Gotlib, 2002). Especially depressive mood and distorted cognitive skills of individuals might risk the accuracy of their reports, causing possible misremembering and negative reporting-bias (Schraedley et al., 2002; Widom, Raphael, & DuMont, 2004). However, retrospective inquiry of childhood maltreatment is advantageous in terms of the time spent and procedures followed. In longitudinal studies, researchers wait several years to observe the later effects of childhood maltreatment, to track individuals, and to collect data in multiple sessions. Since it is a sensitive issue, collecting data from maltreated children and their parents is difficult. These challenges might be overcome by using retrospective questioning in adult samples. Moreover, researchers might benefit from more mature perspective of the victim since they are assumed to evaluate the long-term consequences of the maltreatment more comprehensively compared to children and their parents (Baker, 2009).

Several methods to limit reporting bias have been suggested. One way is to recruit samples with maltreatment history that is confirmed by official records. However, while this method eliminates reporting bias, it causes selection bias. Another method is using multiple indicators in which individuals are assessed multiple times; general population samples can be used in studies using this approach. Moreover, statistical models can be developed to examine the errors of abuse reports and to classify abuse considering measurement errors in the observed data (Fergusson,

Horwood, & Woodward, 2000). Using additional parent and sibling reports can also be advantageous to avoid possible biases of self-reports (Kaysen, Scher, Mastnak, & Resick, 2005). For example, Brown and colleagues (2007) investigated the validity of questioning maltreatment history retrospectively. Since they used pairs of sisters in their sample, investigators blind to self-reports of the individuals asked the experience of one sister-pair to the other pair. Comparisons showed that there is a high agreement between the reports. Moreover, the association between childhood maltreatment and adult depression remained significant, although some decrease has been observed ($\Gamma=.71$ vs. $.56$). No reporting bias (e.g., due to inaccurate recall) of lifetime prevalence of depression was detected (Brown, Craig, Harris, Handley, & Harvey, 2007).

CONCLUSION

Several lines of evidence suggest that childhood maltreatment history might lead to depression in adulthood. Possible biological mechanisms that explain the link between childhood adversity and adult depression have been suggested. Although findings are promising to explain the relationship between child abuse and long-term detrimental emotional effects, they should be evaluated carefully due to possible limitations in methodology. Current work highlighted some of these concerns; such as, generalizability of research findings, definition and assessment-related problems. Being aware of these limitations and trying to overcome as much as possible, results of relevant studies will be more of use with regards to future research directions and other practices.

REFERENCES

- Arata, C. M., Langhinrichsen-Rohling, J., Bowers, D., & O'Farrill-Swails, L. (2005). Single versus multi-type maltreatment: An examination of the long-term effects of child abuse. *Journal of Aggression, Maltreatment & Trauma, 11*(4), 29-52.
- Arnou, B. A. (2004). Relationships between childhood maltreatment, adult health and psychiatric outcomes, and medical utilization. *The Journal of Clinical Psychiatry, 65*, 10-15.
- Arnou, B. A., Blasey, C. M., Hunkeler, E. M., Lee, J., & Hayward, C. (2011). Does gender moderate the relationship between childhood maltreatment and adult depression? *Child Maltreatment, 16*(3), 175-183.
- Baker, A. J. (2009). Adult recall of childhood psychological maltreatment: Definitional strategies and challenges. *Children and Youth Services Review, 31*(7), 703-714.
- Berzenski, S. R., & Yates, T. M. (2011). Classes and consequences of multiple maltreatment a person-centered analysis. *Child Maltreatment, 16*(4), 250-261.
- Bifulco, A., Moran, P. M., Baines, R., Bunn, A., & Stanford, K. (2002). Exploring psychological abuse in childhood: II. Association with other abuse and adult clinical depression. *Bulletin of the Menninger Clinic, 66*(3), 241-258.
- Briere, J. (1992). Methodological issues in the study of sexual abuse effects. *Journal of Consulting and Clinical Psychology, 60*(2), 196-203.
- Brown, G. W., Ban, M., Craig, T. K., Harris, T. O., Herbert, J., & Uher, R. (2013). Serotonin transporter length polymorphism, childhood maltreatment, and chronic depression: A specific gene-environment interaction. *Depression and Anxiety, 30*(1), 5-13.
- Brown, G. W., Craig, T. K., Harris, T. O., Handley, R. V., & Harvey, A. L. (2007). Validity of retrospective measures of early maltreatment and depressive episodes using the Childhood Experience of Care and Abuse (CECA) instrument: A life-course study of adult chronic depression-2. *Journal of Affective Disorders, 103*(1-3), 217-224.

- Brown, G. W., Craig, T. K., Harris, T. O., Handley, R. V., Harvey, A. L., & Serido, J. (2007). Child-specific and family-wide risk factors using the retrospective Childhood Experience of Care & Abuse (CECA) instrument: A life-course study of adult chronic depression-3. *Journal of Affective Disorders, 103*(1-3), 225-236.
- Danese, A., & McEwen, B. S. (2012). Adverse childhood experiences, allostasis, allostatic load, and age-related disease. *Physiology & Behavior, 106*(1), 29-39.
- Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *American Journal of Psychiatry, 160*(8), 1453-1460.
- Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2008). Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse & Neglect, 32*(6), 607-619.
- Fergusson, D. M., Horwood, L. J., & Woodward, L. J. (2000). The stability of child abuse reports: A longitudinal study of the reporting behaviour of young adults. *Psychological Medicine, 30*(3), 529-544.
- Fergusson, D. M., & Lynskey, M. T. (1997). Physical punishment/maltreatment during childhood and adjustment in young adulthood. *Child Abuse & Neglect, 21*(7), 617-630.
- Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect, 31*(1), 7-26.
- Herrenkohl, R. C., & Herrenkohl, T. I. (2009). Assessing a child's experience of multiple maltreatment types: Some unfinished business. *Journal of Family Violence, 24*(7), 485-496.
- Higgins, D. J., & McCabe, M. P. (2001). The development of the comprehensive child maltreatment scale. *Journal of Family Studies, 7*(1), 7-28.
- Hussey, J. M., Chang, J. J., & Kotch, J. B. (2006). Child maltreatment in the United States: Prevalence, risk factors, and adolescent health consequences. *Pediatrics, 118*(3), 933-942.
- Infurna, M. R., Reichl, C., Parzer, P., Schimmenti, A., Bifulco, A., & Kaess, M. (2016). Associations between depression and specific childhood experiences of abuse and neglect: A meta-analysis. *Journal of Affective Disorders, 190*, 47-55.
- Kaysen, D., Scher, C. D., Mastnak, J., & Resick, P. (2005). Cognitive mediation of childhood maltreatment and adult depression in recent crime victims. *Behavior Therapy, 36*(3), 235-244.
- Kendler, K. S., Bulik, C. M., Silberg, J., Hettema, J. M., Myers, J., & Prescott, C. A. (2000). Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and cotwin control analysis. *Archives of General Psychiatry, 57*(10), 953-959.
- Litrownik, A. J., Lau, A., English, D. J., Briggs, E., Newton, R. R., Romney, S., & Dubowitz, H. (2005). Measuring the severity of child maltreatment. *Child Abuse & Neglect, 29*(5), 553-573.
- McCrary, E., De Brito, S. A., & Viding, E. (2010). Research review: The neurobiology and genetics of maltreatment and adversity. *Journal of Child Psychology and Psychiatry, 51*(10), 1079-1095.
- Mello, M. F., Faria, A. A., Mello, A. F., Carpenter, L. L., Tyrka, A. R., & Price, L. H. (2009). Childhood maltreatment and adult psychopathology: Pathways to hypothalamic-pituitary-adrenal axis dysfunction. *Revista Brasileira de Psiquiatria, 31*, 41-48.
- Molnar, B. E., Buka, S. L., & Kessler, R. C. (2001). Child sexual abuse and subsequent psychopathology: Results from the National Comorbidity Survey. *American Journal of Public Health, 91*(5), 753-760.

- Nelson, S., Baldwin, N., & Taylor, J. (2012). Mental health problems and medically unexplained physical symptoms in adult survivors of childhood sexual abuse: An integrative literature review. *Journal of Psychiatric and Mental Health Nursing*, 19(3), 211-220.
- Nelson, E. C., Heath, A. C., Madden, P. A., Cooper, M. L., Dinwiddie, S. H., Bucholz, K. K., ... & Martin, N. G. (2002). Association between self-reported childhood sexual abuse and adverse psychosocial outcomes: Results from a twin study. *Archives of General Psychiatry*, 59(2), 139-145.
- Plomin, R., DeFries, J. C., Knopik, V. S., & Neiderhiser, J. M. (2013). *Behavioral genetics* (6th ed.). New York: Worth Publishers.
- Putnam, F. W. (2003). Ten-year research update review: Child sexual abuse. *Journal of the American Academy of Child & Adolescent Psychiatry*, 42(3), 269-278.
- Raphael, K. G., & Cloitre, M. (1994). Does mood-congruence or causal search govern recall bias? A test of life event recall. *Journal of Clinical Epidemiology*, 47(5), 555-564.
- Schraedley, P. K., Turner, R. J., & Gotlib, I. H. (2002). Stability of retrospective reports in depression: Traumatic events, past depressive episodes, and parental psychopathology. *Journal of Health and Social Behavior*, 43(3), 307-316.
- Spertus, I. L., Yehuda, R., Wong, C. M., Halligan, S., & Seremetis, S. V. (2003). Childhood emotional abuse and neglect as predictors of psychological and physical symptoms in women presenting to a primary care practice. *Child Abuse & Neglect*, 27(11), 1247-1258.
- Trickett, P. K. (1998). Multiple maltreatment and the development of self and emotion regulation. *Journal of Aggression, Maltreatment & Trauma*, 2(1), 171-187.
- Widom, C. S., DuMont, K., & Czaja, S. J. (2007). A prospective investigation of major depressive disorder and comorbidity in abused and neglected children grown up. *Archives of General Psychiatry*, 64(1), 49-56.
- Widom, C. S., Raphael, K. G., & DuMont, K. A. (2004). The case for prospective longitudinal studies in child maltreatment research: Commentary on Dube, Williamson, Thompson, Felitti, and Anda (2004). *Child Abuse & Neglect*, 28(7), 715-722.
- Widom, C. S., White, H. R., Czaja, S. J., & Marmorstein, N. R. (2007). Long-term effects of child abuse and neglect on alcohol use and excessive drinking in middle adulthood. *Journal of Studies on Alcohol and Drugs*, 68(3), 317-326.
- Wise, L. A., Zierler, S., Krieger, N., & Harlow, B. L. (2001). Adult onset of major depressive disorder in relation to early life violent victimisation: A case-control study. *The Lancet*, 358(9285), 881-887.
- Wyatt, G. E., & Peters, S. D. (1986). Issues in the definition of child sexual abuse in prevalence research. *Child Abuse & Neglect*, 10(2), 231-240.