

Research paper

Childhood maltreatment preceding depressive disorder at age 18 years: A prospective Brazilian birth cohort study



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ABSTRACT

Background: Childhood maltreatment is linked with increased risk for mental illness in adolescence and adulthood. However, little evidence is available on whether different forms of maltreatment have specific effects, and no prospective studies in low- or middle-income countries have addressed this issue.

Methods: Participants in a population-based, birth cohort study in Pelotas, Brazil (N=3715) self-reported exposure to maltreatment (emotional abuse, physical neglect, physical abuse, sexual abuse, domestic violence) in confidential questionnaires at age 15 years, and were assessed for major depression in interviews at age 18 years, using the MINI. Confounding variables concerning family characteristics were measured in interviews with mothers in the perinatal period and at age 11 years.

Results: Females exposed to emotional abuse (OR=2.7; 95%CI=1.9, 3.8) and domestic violence (OR=1.9; 95%CI=1.2, 2.9) were at increased risk for depression after adjustment for confounders and other types of maltreatment. Females exposed to two or more forms of maltreatment were at particularly high risk for depression (OR=4.1; 95%CI=2.8, 6.1) compared with females not exposed to maltreatment. In adjusted analyses, maltreatment was not associated with depression for males.

Limitations: Detailed information about maltreatment such as timing and frequency was not available, and 1534 individuals were not included in the analyses, who had poorer and less educated mothers.

Conclusions: Emotional abuse and domestic violence are strong risk factors for major depression for females. Early intervention to prevent maltreatment and its consequences is critical, especially for girls exposed to poly-maltreatment.

1. Introduction

Worldwide, 23% of adults report having been physically abused as a child, 36% report having suffered emotional abuse, and 18% of women and 8% of men report experiences of child sexual abuse (Stoltenborgh et al., 2015). Child maltreatment refers to physical, sexual and emotional violence, and neglect of children and adolescents by parents, caregivers and other authority figures (World Health Organization, 2016). Exposure to intimate partner violence is also sometimes included as a form of child maltreatment. This broad range of childhood maltreatment is associated with increased risk of mental illness, including depression, post-traumatic stress disorder, and anxiety disorders (Li et al., 2016). However, empirical evidence is sparse on the specificity of effects of different forms of maltreatment on mental illness

(Alloy et al., 2006; Infurna et al., 2016). It is hypothesised that the effects of different forms of abuse and neglect vary, with emotional abuse having particularly strong associations with depression, because of its effects on cognitive schemas about worthlessness and loss, and physical and sexual abuse having stronger effects on anxiety, given heightened perception of threats and danger (Alloy et al., 2006; Kaplan et al.; Lumley and Harkness, 2007; Shapero et al., 2014).

Depression is a major public health problem. Major depressive disorder was responsible for the highest proportion (24.5%) of Disability-Adjusted Life Years caused by mental, neurological, and substance use disorders in 2010 (Whiteford et al., 2015). Stressful life events have been consistently associated with increased risk of depression (Colman and Ataullahjan, 2010), and it is estimated that as many as half of the cases of depression and anxiety worldwide may be

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attributable to childhood maltreatment (Li et al., 2016). Women are about twice as likely as men to suffer from depression, and an important cause of this sex difference might be the higher rate of child sexual abuse among girls compared with boys (Cutler and Nolen-Hoeksema, 1991; Stoltenborgh et al., 2015).

From a life-course perspective, several studies have linked adult mental illness with exposure to risk factors during critical periods of development during gestation, early childhood, late childhood and adolescence, as well as cumulatively through the life course (Ben-Shlomo and Kuh, 2002; Schlotz and Phillips, 2009). Given known biases in adult retrospective measures of childhood maltreatment (Hardt and Rutter, 2004), prospective studies are particularly important for elucidating consequences of maltreatment through time. In a recent systematic review, five prospective studies were found that showed a positive association between general child maltreatment and adult depression, with a pooled odds ratio (OR) of 2.0 (Li et al., 2016). In the same review, a combined outcome of depression and anxiety was examined in relation to specific types of maltreatment, producing pooled odds ratios of 2.0 for physical abuse, 2.7 for sexual abuse and 1.7 for neglect; however, specific effects of each type of maltreatment on depression were not reviewed. Another recent systematic review examined depression as a specific outcome of different forms of maltreatment, but given the dearth of longitudinal studies, cross-sectional and case-control studies had to be included as well as prospective studies (Infurna et al., 2016). The overall effect size (d) for the association with depression across all these studies was 0.93 for emotional abuse, 0.81 for physical abuse, 0.50 for sexual abuse, and 0.81 for neglect. Ideally, new prospective studies would be conducted to elucidate whether specific forms of maltreatment have different effects on depression.

Notably, all studies of maltreatment and depression identified in two recent systematic reviews (Infurna et al., 2016; Li et al., 2016) were conducted in high-income countries. Ribeiro et al. (2009) found no prospective studies of maltreatment and depression in LMICs. About 90% of children and youth (aged 0–29 years) live in LMICs (United Nations Department of Economic and Social Affairs Population Division, 2015), where there are fewer social support services for children and fewer psychological and psychiatric treatment resources than in high-income countries, which may amplify the risks associated with maltreatment for children. One recent study in Pelotas, Brazil found that general maltreatment predicted depression in late adolescence, with an amplification in that effect among individuals possessing a small 5-HTTLPR allele (Rocha et al., 2015). Brazil is a middle-income country with a high-rate of violence (Murray et al., 2013; Reichenheim et al., 2011), and one of the highest rates of child maltreatment worldwide, according to the Childhood Trauma Questionnaire (Viola et al., 2016). The current study aimed to investigate prospective associations between specific forms of childhood maltreatment and depression in late adolescence in a Brazilian birth cohort.

2. Methods

2.1. The 1993 Pelotas birth cohort study

Pelotas city is situated in the extreme south of Brazil in Rio Grande do Sul state, with an estimated population of 343,000 inhabitants (IBGE, 2015). The 1993 Pelotas birth cohort is a population-based study designed to assess the trends in maternal and child health indicators, and evaluate to the associations between early life variables and later health outcomes. All births occurring between 1st February and 31st December of 1993 in the five maternity clinics in the town were monitored (99% of births in Pelotas occurred in hospital). For the 5265 children born alive, only 16 mothers could not be interviewed or refused to participate in the study, and 5249 (99.6%) were included in the initial cohort. The mothers were interviewed about demographic, socioeconomic, and health-related characteristics and the children have

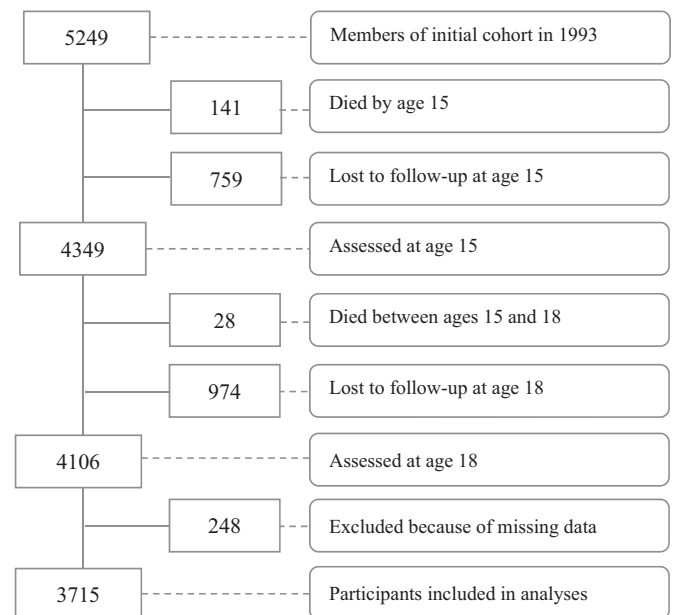


Fig. 1. Flow-chart of participant inclusion in current study and analyses: Pelotas (Brazil) Birth Cohort.

been followed in ongoing assessments. In 2004/2005, 2008/2009 and 2011/2012, all the cohort members were sought at ages 11, 15 and 18 years, with response rates of 87.5%, 85.7% and 81.4%, respectively. At ages 11 and 15, mothers as well as cohort members were interviewed, but at age 18 only cohort members were interviewed. More details on the methodology can be found in other publications (Gonçalves et al., 2014; Victora et al., 2008).

For the current analyses, 3715 (70.8% of the original cohort) participants were included who had data on both depression at age 18 years and complete data on maltreatment at age 15 years. Participants were excluded from the current analyses if they had died or were lost to follow-up by age 18, if they had missing data on maltreatment at age 15, or missing data on depression at age 18 (see Fig. 1).

The study protocol and all follow-ups were approved by the Medical Ethics Committee of the Federal University of Pelotas. Participating mothers gave prior and informed consent. At age 18 young members signed their own consent form, agreeing to participate in the research.

2.2. Measures

2.2.1. Major depression

Major depression was assessed for the first time in the age 18 visit (2011–2012). All cohort members were assessed by trained psychologists for psychiatric diagnoses, using the Mini International Neuropsychiatric Interview (MINI V5.0) (Sheehan et al., 1998), which has been validated for use in Brazil (Amorim, 2000). The MINI is a standardized diagnostic interview that assesses the major psychiatric disorders of axis I according to the Diagnostic and Statistical Manual of Mental Disorders – IV revision (DSM-IV) and the International Statistical Classification of Diseases and Related Health Problems – 10th Revision (ICD-10). This study considered as current major depression cases individuals who scored positive for an episode of depression during the past two weeks.

2.2.2. Maltreatment and domestic violence

Information about exposure to maltreatment was obtained at the age 15 home visit (2008). In this large, population-based study a long interview to determine maltreatment was not possible. Selected items were adapted from the Brazilian version of the Childhood Trauma

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