Low birth-weight and risk for major depression: A community-based longitudinal study

Stephen Z. Levine*

Department of Community Mental Health, University of Haifa, Haifa 3498838, Israel

ABSTRACT

The current study examines the association between low birth weight and risk for major depression from early adolescence to early adulthood. It accounts for eight documented confounders, and depression within families. Data were analyzed from the National Longitudinal Survey of Youth 1979 on mothers and offspring. Major depression was assessed with the Center for Epidemiologic Studies Depression Scale Short-Form (CES-D-SF) among offspring (N=3398) biannually, from 2000 to 2010 (aged 14–25). Competing models were examined with survival analysis and Generalized Estimated Equations (GEE). CES-D-SF based major depression was reported by 33.46% (n=1137) of participants. Among persons with very low birth weight (≤1500 g), 47.5% (n=19/40) were classified with CES-D-SF depression (OR=1.81, 95% CI=0.97, 3.39). Similar results were found with survival analysis (HR=1.97, 95% CI=0.97, 4.01). Among multiple offspring families, GEE modeling showed a similar trend. On aggregate (unadjusted OR=2.46, 95% CI=1.07, 5.63; adjusted OR=2.43, 95% CI=0.94, 6.23), and within families of mothers with CES-D-SF depression (unadjusted OR=2.54, 95% CI=0.55, 11.66; adjusted OR=1.79, 95% CI=0.28, 11.42).

Compelling evidence is lacking in favor of an association between very low birth weight (<1500 g), and suspected major depression from early adolescence to early adulthood after accounting for documented confounders.

1. Introduction

Depression has been reported to have an estimated lifetime prevalence of 15% in the US (Kessler et al., 1994), and a mean age of onset of 25.7 in high income nations (Kessler and Bromet, 2013). It is also reported to be the single most costly disorder based on days lost to illness based on the analysis of direct (e.g., treatment), indirect (e.g., absenteeism) and intangible (e.g., reduced quality of life) costs (Berto et al., 2000; Luppa et al., 2007). It impacts on family and employers, is associated with an increased risk of suicide (Barker, 1997, 2006), however, made the association not significant. That meta-analysis (Wojcik et al., 2013) has shown that the odds of depression are slightly greater, yet non-significantly higher, for those of low birth weight (<2500 g) compared to those of normal birth weight (≥2500 g) (OR=1.15, 95% CI 1.00, 1.32). Adjustment for publication-bias (i.e., when the published literature is systematically unrepresentative of the population of completed studies; Rothstein et al., 2006), however, made the association not significant. That meta-analytic review concludes that evidence of a weak association between birth weight and depression was found, that may be attributable to publication-bias and vary due to confounders. Also, confounders noted by meta-analysis that do not receive adequate attention are sex, SES, maternal age at childbirth, maternal depression, gestation, maternal alcoholism, and smoking during pregnancy (Wojcik et al., 2013).

With exceptions (Hammen and Brennan, 2003), few epidemiological studies of the association between birth weight and depression account for maternal depression, a reported key risk factor for offspring depression (Wojcik et al., 2013). Also, few studies carefully examine the association within family effects.

ARTICLE INFO

Article history:
Received 21 May 2013
Received in revised form 13 November 2013
Accepted 1 January 2014
Available online 15 January 2014

Keywords:
Low birth weight
Fetal origins
Longitudinal study
Depression

© 2014 Elsevier Ireland Ltd. All rights reserved.

* Tel.: +972 524896083; fax: +972 3 7617374.
E-mail address: stezlev@gmail.com
Specifically, research in support of the association rarely accounts for single and multiple family size and existing research is mixed and based on select samples (Eisenman, 1992; Hallström, 1987; Munro, 1966; Richter et al., 1997). An epidemiological community based study of women, however, has shown that having one or more brothers decreases the likelihood of depression over the age of 30 (Harlow et al., 2002). One theoretical reason for the association is that single children are exposed to greater loneliness (Carballo et al., 2013; Hawley and Cacioppo, 2010).

No study of the association between very low birth weight and subsequent major depression from early teenage years to mid-20s simultaneously accounts for all the major documented confounders highlighted by the meta-analysis alluded to earlier (Wojcik et al., 2013). Also, studies of the association specifically examine within-family confounders. Finally, to date generally repeated assessments of depression are rare from late-adolescent to early adulthood (Cheung et al., 2002), a key period of depression. To overcome previous shortcomings the current study aims to examine the association between low birth weight and major depression from age 14 to 24 accounting for multiple confounders documented in the literature (maternal depression and within familial effects) in a representative US community sample.

2. Method

2.1. Cohort description

Data were reanalyzed from the National Longitudinal Survey of Youth (NLSY) 1979 survey (Bureau of Labor Statistics, 2008) and NLSY Children and Young Adults (NLSY-CYA) Children and Young Adults cohorts (Bureau of Labor Statistics, 2002). The NLSY 1979 is a well studied (e.g., Baum II and Ruhm, 2009; Gortmaker et al., 1993; Van Claeve et al., 2010) representative US-based national probability cohort of people born from 1957 to 1964. The NLSY 1979 cohort were interviewed from 1979 to 1994 annually and then bi-annually till 2010. Data on the offspring of NLSY 1979 mothers were collected since 1986 and constitute the NLSY-CYA. The offspring of the respondents in the NLSY-CYA are estimated to represent over 90% of all the children ever to be born to this cohort of women.

The total NLSY-CYA sample consists of 11,504 offspring born from 1970 to 2009. Data collection on offspring began in 1986, hence pre-1985 births were removed, leaving a sample size of 6395. Of these respondents, 4115 were interviewed on at least one occasion on the CES-D-SF from 2000 to 2010 when they were aged from 14 to 24. Cases with missing values on the study variables were removed, leaving a total of 3398 study participants with completely available information. They were born from 1985 to 1995 (M = 1989.05, S.D. = 2.89). The complete and analyzed offspring samples did not statistically differ by sex.

2.2. Measures

Depression was assessed with the seven-item Center for Epidemiological Studies Depression Scale Short Form (CES-D-SF). Symptom severity is measured by asking the frequency of occurrence of each item over the preceding week. Responses range from 0 (rarely or none of the time/one day) to 3 (most or all of the time/5–7 days). This consists of seven items: poor appetite; trouble keeping mind on tasks; depressed; took extra effort; restless sleep; sad; and could not get along. The CES-D-SF has been associated with more marijuana use (Harder et al., 2006), lower earnings (Cseh, 2008) and income (Prause et al., 2009), and age at first pregnancy (Ganzach, 1998; Walsh et al., 2012). This composite parental SES score was split into low (under 0.042) and high (over 0.041) groups based on z-scores.

3. Results

3.1. Missing value analysis

Cases with missing values on the study variables were removed, leaving a total of 3398 study participants with completely available information. They were born from 1985 to 1995 (M = 1989.05, S. D. = 2.89). Based on χ² tests, compared with those omitted, those included in the study did not significantly (P > 0.05) differ by sex. On the remaining study variables, however, compared with those not included, in the study those included were statistically (P < 0.05) more likely to be high on SES (48.3%), have mothers with CES-D-SF depression (23.8%), have mothers who gave birth before the age of 20 (67.9%), be late preterm on gestational age (91.7%), have alcoholic mothers (59.2%), have a mother who smoked (35.24%), and were born 1500–2500 g (8.52%). Missing value analysis showed that the data significantly deviated from the assumption of being missing at random, hence suggesting that bias was present due to missing values (Little’s MCAR test: χ² = 7839.38, d.f. = 308, P < 0.05).

The study sample described in Table 1 shows that, based on the CES-D-SF cutoff score of ≥ 8 to classify depression, 33.46%...
دریافت فوری متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات