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Poverty dynamics and parental mental health: Determinants of childhood mental health in the UK

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ABSTRACT

Using data from the British Millennium Cohort Study (MCS), an ongoing longitudinal study of a cohort of 18,827 children born in the UK in 2000–2001, we investigate important correlates of mental health issues during childhood. MCS respondents were sampled at birth, at age 9 months, and then when they were 3, 5, 7 and 11 years old. Each sweep contains detailed information on the family's SES, parenting activities, developmental indicators, parental relationship status, and indicators of parental mental health. The Strengths and Difficulties Questionnaire (SDQ) and the related Rutter scale were used to identify behavioral and emotional problems in children. In this paper, childhood problems are separated into four domains: hyperactivity, emotional symptoms, conduct problems, and peer problems. We focus on two aspects of this relationship at ages 5 and 11—the role of temporary and persistent poverty and the role of temporary and persistent mental health problems of mothers and fathers. At ages 11 and 5, without other controls in the model, persistent and transitory poverty have strong estimated associations with all four domains, with somewhat stronger estimated effects for persistent poverty. After a set of controls are added, we document that both persistent levels of poverty and transitions into poverty are strongly associated with levels of and transitions into childhood mental health problems. Similarly, sustained levels and transitions into mothers' mental health problems are strongly associated with levels and transitions into children's mental health problems. This is much less so for fathers.

1. Introduction

Childhood psychological problems are a growing serious problem among children around the world (Smith and Smith, 2010, Goodman et al., 2011). These mental health issues include depression, anxiety, and drug and alcohol abuse. There are severe consequences in the adult years associated with childhood mental health problems. Several longitudinal studies have shown that poor psychological health in childhood is associated with both a child's welfare and their long-run socioeconomic outcomes, including graduation from high school/college (Kessler et al., 1995; Smith and Smith, 2010 in the US; Farmer, 1993 in the UK), employment and lower earnings (Gregg and Machin, 1998; Goodman et al., 2011 in the UK); and even marriage stability (Smith and Smith, 2010, Goodman et al., 2011). The relationship between physical health problems during childhood and later outcomes is much weaker (Currie and Stabile, 2006; Smith and Delaney, 2012).

Given its importance for long-term outcomes, understanding correlates of childhood mental health is a key research focus. We focus on two here: income and parental mental health. Our contribution considers transitions over time in both domains, and whether these transitions matter for components of children's mental health. We treat childhood mental health as multi-faceted and use measures capturing a wide set of emotions and behaviours, including externalising behaviour (conduct and hyperactivity) and internalising behaviour (peer interaction and emotional).

Regarding income, there is evidence that poorer children are more likely to suffer from both physical and mental health problems (see Currie, 2009) for at least two reasons. The first is that low socioeconomic status creates stress within the household, causing poor child health. The second is that socioeconomic status is highly correlated with other factors affecting child health, such as housing quality or marital stability (Berger et al., 2009) and temporal

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patterns of income (Strohschein, 2005). However, we are unaware of studies considering the extent to which transitions into and out of poverty affect sub-components of children's mental health, our key focus.

Our second contribution considers how transitions in parental mental health affect children's mental health. Whilst several studies find that parental mental health, particularly the mother, matters even after controlling for socioeconomic status (Cummings and Davies, 1994; Ackard et al., 2006), we are unaware of any work considering how shifts in parental mental health – improvements and deteriorations – affect children's mental health.

We use a contemporary and nationally representative UK panel study that begins at birth, and analyse a critical period of childhood, spanning the beginning to almost the end of primary education in the UK (ages 5–11). We document that both persistent poverty and transitions into poverty are strongly associated with levels of and transitions into childhood mental health problems. Similarly, sustained levels and transitions into mothers' mental health problems are strongly associated with levels and transitions into children's mental health problems. This is much less so for fathers.

2. Methods

The Millennium Cohort Study (MCS) is an ongoing longitudinal cohort study of 18,827 children (from 18,552 families) born in the UK in 2000–2001. More specifically, it is a representative sample of those born between 1 Sept 2000 and 31 Aug 2001 in England and Wales and those born between 24 Nov 2000 and 10 Jan 2002 in Scotland and Northern Ireland. The sample was taken over a slightly different period to compensate for lower than expected birth rates, and to not coincide with other data collections taking place. An additional 650 were recruited to the study at age 3, who had not registered for child benefit at time of initial recruitment. These individuals are excluded from our sample. Thus, the vast majority are natural mothers (100% at first birth interview and a minimum 98% in other interviews). The MCS contains oversamples for Wales, Scotland and Northern Ireland, for areas with high child poverty and, in England, for areas with higher ethnic minority populations.

Six sweeps have been conducted so far, at ages 9 months, 3, 5, 7, 11 and 14, with the seventh (age 17) planned for 2017. The sixth sweep (age 14) was completed in 2016; data are not now available. 72% of the initial respondents were in the study at the fifth wave, though attrition is not absorbing, and re-entry is possible. Due to these differential patterns of response, weights are provided to adjust for inter-wave attrition (Ketende, 2010).

In each sweep, an interview is carried out with the main parent (normally the mother), resident partners, and, increasingly as the child grows older, with the child. Each sweep contains detailed information on the family, including: parental education; employment and income; housing; family structure; ethnicity; parenting activities – such as reading to child; developmental indicators such as bedwetting; parental relationship status; and parental mental health. Items specific to a certain stage of life are collected – at age 9 months, child birth weight and gestational age; as well as early life conditions including breastfeeding and infant development. Cognitive development is measured directly from children from 3 years. Social and behavioral development is measured via parental reports. For more information, see Connelly and Platt, 2014 and Joshi and Fitzsimons, 2016.

2.1. Participants

The analyses reported are mainly based on sweeps 3 (age 5) and 5 (age 11) measures of childhood mental health. At age 5, there are 15,246 respondents. In 14,792 cases the main respondent was the natural mother, in 394 the natural father. The most common non-parent was a female grandparent (36). Of the 12,216 partner interviews, 11,145 were the natural father and 303 the natural mother. The most common partner response from a non-natural parent was a male step-parent/partner at 560 respondents.

At age 11, there were 13,287 cohort members. In 12,588 cases, the main respondent was the natural mother, who would answer all main questions about the SDQ; in 504 cases, the natural father answered questions. Once again, the largest non-natural parent category was grandparents (52). Of partners, 7535 were natural fathers. The largest category of non-parental partner is step-parent or parent's partner (at 898, with 840 of these men).

Control variables are measured at various sweeps. Results using outcomes from age 7 yield similar results to those at ages 5 and 11 and are available upon request.

3. Measures

3.1. Childhood mental health

The Strengths and Difficulties Questionnaire (SDQ) is a behavioral screening questionnaire for 3–16 year olds used to identify behavioral and emotional problems in children and adolescents (see http://www.sdqinfo.com/; Goodman et al., 2000; Goodman and Goodman, 2009). Goodman (1997) administered the Strengths and Difficulties Questionnaire along with the better-known Rutter questionnaire to parents and teachers of 403 children. He found that scores derived from the SDQ and Rutter questionnaires were highly correlated, and parents' self-reports of SDQ were highly correlated with teachers' reports on the same child.

The SDQ asks about 25 attributes, some positive and others negative, divided across five scales: hyperactivity, emotional symptoms, conduct problems, peer problems and prosocial behaviour (see supplementary material for item list and scoring). Since ours is a general population sample, following Goodman et al. (2010) we use an alternative division of SDQ into 'internalising problems' (emotional + peer symptoms, 10 items) and 'externalising problems' (conduct + hyperactivity symptoms, 10 items). We do not use the prosocial scale (5 items) as it is not well validated. Both total and individual subscale scores were calculated using standard scoring as per SDQ guidelines, including standard rules for missing items or scales. Within each scale, cutoffs for serious problems are: emotional (5/10), conduct (4/10), hyperactivity (7/10), peer (4/10). These are the conventional cut-offs used for 'abnormal behavior'.

The SDQ was used at 3, 5, 7 and 11 years, where it was self-completed by the main respondent, normally the child's mother. We use measures collected at ages 5 and 11, corresponding to the first and final years of children's primary schooling. We also estimated results for age 7, which are qualitatively similar to age 11 results and are available upon request. Our approach allows us to assess how determinants of childhood mental health change during this critical schooling period between early and late childhood.

Appendix Table 1 documents overlap in SDQ scores components in the MCS by listing fractions of respondents with a problem labelled 'BAD' score conditional on having a problem score on each of four components. Cutoffs for falling into the problem group were based on proportion of respondents in the worst group at similar ages. To illustrate, for respondents with a problem emotional score, about a third has a 'BAD' score on conduct, hyperactivity, and peer components. A similar pattern exists for degree of overlap for the other components.