An equal start: the importance of evidence from longitudinal studies to support children’s healthy development

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Smoking in pregnancy

Smoking during pregnancy causes up to 2,200 premature births, 5,000 miscarriages and 300 perinatal deaths every year in the UK.

It also increases the risk of complications in pregnancy and of the child developing a number of conditions later on in life such as:

- Premature birth
- Low birth weight
- Problems of the ear, nose and throat
- Respiratory conditions
- Obesity
- Diabetes

Scotland set to be the first UK country to introduce a smacking ban

Kathleen Nutt
Journalist

Green MSP John Finnie is introducing a Bill which will stop children being smacked
Social determinants for child health and development

Structural determinants

- Socioeconomic position
  - Social class
  - Gender
  - Ethnicity
- Education
- Occupation
- Income

Intermediary determinants

- Behavioural – including home environment and parenting activities (reading and telling stories), family routines (sleeping and meal times, screen based media use), physical activity
- Material - including, housing quality, overcrowding, air pollution
- Psychosocial – including parent mental health, parent-child interactions, discipline strategies, parental warmth and hostility

Child health and development
Verbal months ahead or behind at age 7 by number of risk factors

Number of months advanced or delayed vs Number of risk factors

Kelly et al, forthcoming
Clinically relevant behavioural problems at age 7, by number of risk factors

Kelly et al, forthcoming
Likelihood of clinically relevant socioemotional difficulties by duration of any breastfeeding in term babies

Heikkila, Sacker, Kelly, Renfrew, Quigley. Arch Dis Child 2011;96:635-42
Cumulative effects, regression coefficients for SDQ total difficulties scores at age 7, by non-regular bedtimes throughout early childhood, ref = always regular bedtime.

Kelly et al, 2013
The effects of changes in the regularity of bedtimes on behavioural difficulties scores

The graph shows the difference in behavioural difficulties scores between ages 3 and 7 and ages 5 and 7 for non-regular to regular and regular to non-regular bedtime schedules. The red bars represent the change between ages 3 and 7, and the pink bars represent the change between ages 5 and 7.
Longitudinal Verbal Profiles

- **Average (74.9%)**
- **High (19.5%)**
- **Low (5.6%)**

Mean BAS scores across age groups:

- Age 3: Average = 50, High = 55, Low = 45
- Age 5: Average = 55, High = 60, Low = 50
- Age 7: Average = 60, High = 65, Low = 55
- Age 9: Average = 65, High = 70, Low = 60
- Age 11: Average = 70, High = 75, Low = 65

BMI trajectories in childhood

Being read to at age 3

**Socioemotional difficulties**

- Every day
- 1-6 days/week ***
- Less than weekly ***

**School readiness**

- Every day
- 1-6 days/week ***
- Less than weekly ***

**Verbal ability**

- Every day
- 1-6 days/week ***
- Less than weekly ***

*** differences compared to those read stories to every day p<0.001

Kelly et al, forthcoming
Change in frequency of being read to, ages 3 to age 5

Difference in behavioural difficulties score

Kelly et al, forthcoming
Is age of alcohol initiation associated with heavy drinking patterns in early adolescence?

Kelly et al, forthcoming
Depressive symptoms by (weekday) hours of social media use

Kelly et al, forthcoming
Summary

• Child health and development matters – now and for the future
• Inequalities start early - structural factors shape ‘intermediary’ environments: behavioural, material, psychosocial
• Evidence from longitudinal studies crucial for understanding patterns of healthy development and to inform effective policy and practice
• Essential to refresh and keep longitudinal resources current
• To level the playing field action is needed - not just on intermediary but structural influences
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