Maternal mental health and children’s development: a bi-directional relationship?

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Introduction

- Mental health is a considerable public health concern, with pre-pandemic levels of adult mental distress around 1 in 5
- Now maybe as high as around 1 in 4
- Caregiver mental health and wellbeing has a clear relationship with child development
- Other factors can contribute to this association, e.g. socioeconomic status, genetics, social support.
What we need to know

**Direction**
Does caregivers’ mental health impact the child only? What about vice-versa?

**Pathways**
Are associations age or time-specific? How does the association unfold over-time?

**Confoundering**
What does the association look like if we try and isolate it via covariate adjustment?
Maternal mental health
GP data from SAIL

Child SDQ scores
Taken from the Millennium Cohort Study

Data acquisition and process

Project 1015*
1,961 households in MCS available in SAIL

- 30 households never lived in Wales at any time-point
- 20 households had multiple births

1,911 households lived in Wales and had only singleton births

- 1,714 households at time-point 1
  - 1,331 households with GP data
- 1,755 households at time-point 2
  - 1,364 households with GP data
- 1,828 households at time-point 3
  - 1,411 households with GP data
- 1,566 households at time-point 4
  - 1,217 households with GP data
- 1,390 households at time-point 5
  - 1,047 households with GP data
Cohort details

- 52% of the cohort children were boys
- >90% had a ‘normal’ birthweight
- >60% of mothers tried breastfeeding
- 37% of mother’s had GCSE’s A* - C or equivalent
- 32% had a family net income of £10400 - 20800
- <10% did not reach 36 weeks gestational age
1: Total SDQ model

MH₁ → MH₂: .17
MH₁ → MH₂: -.22
MH₂ → MH₃: .29
MH₂ → MH₃: -.19
MH₃ → MH₄: .39
MH₃ → MH₄: -.40
MH₄ → MH₅: .56
MH₄ → MH₅: .91
MH₅

SDQ₁

SDQ₁ → SDQ₂: -.06
SDQ₁ → SDQ₂: -.13
SDQ₁ → SDQ₂: .21
SDQ₁ → SDQ₂: -.07
SDQ₂

SDQ₂ → SDQ₃: .04
SDQ₂ → SDQ₃: -.21
SDQ₂ → SDQ₃: .67
SDQ₂ → SDQ₃: .47
SDQ₃

SDQ₃ → SDQ₄: .26
SDQ₃ → SDQ₄: .07
SDQ₃ → SDQ₄: .61
SDQ₃ → SDQ₄: .44
SDQ₄

SDQ₄ → SDQ₅: .08
SDQ₄ → SDQ₅: -.09
SDQ₄ → SDQ₅: .62
SDQ₄ → SDQ₅: .46
SDQ₅

MH

MH → SDQ: .45
MH → SDQ: .26
SDQ

SDQ → MH: .62
SDQ → MH: .62
2: Emotional problems model
3: Conduct problems model

MH₁ → MH₂: 0.21 (0.03, 0.38)
MH₁ → CP₁: 0.01 (-0.15, 0.18)
MH₂ → MH₃: 0.32 (0.15, 0.48)
MH₂ → CP₂: 0.04 (-0.16, 0.24)
MH₃ → MH₄: 0.40 (0.25, 0.53)
MH₃ → CP₃: 0.09 (-0.09, 0.26)
MH₄ → MH₅: 0.56 (0.44, 0.67)
MH₄ → CP₄: 0.08 (-0.08, 0.24)
MH₅ → CP₅: 0.07 (-0.14, 0.21)
CP₁ → CP₂: 0.20 (0.07, 0.34)
CP₂ → CP₃: 0.16 (-0.02, 0.39)
CP₃ → CP₄: 0.51 (0.39, 0.62)
CP₄ → CP₅: 0.42 (0.29, 0.53)
CP₁ → MH₁: 0.00 (-16.16)
CP₂ → CP₃: 0.04 (-16.16)
CP₃ → CP₄: 0.07 (-0.08, 0.33)
CP₄ → CP₅: 0.13 (-0.02, 0.27)
CP₁ → CP₂: 0.16 (-0.02, 0.39)
CP₂ → CP₃: 0.51 (0.39, 0.62)
CP₃ → CP₄: 0.42 (0.29, 0.53)
CP₄ → CP₅: 0.52 (0.39, 0.62)

MH intercept → CP intercept: 0.34 (0.20, 0.47)
4: Hyperactivity model
5: Peer-problems model

MH1 \rightarrow MH2: .19 (-.00, .38)
MH2 \rightarrow MH3: .31 (.13, .47)
MH3 \rightarrow MH4: .37 (.22, .51)
MH4 \rightarrow MH5: .55 (.41, .67)

MH1 \rightarrow PPR1: -2.4 (-.45, -.02)
PPR1 \rightarrow PPR2: .02 (-.19, .23)
PPR2 \rightarrow PPR3: .16 (-.05, .38)
PPR3 \rightarrow PPR4: .09 (-.09, .27)
PPR4 \rightarrow PPR5: .26 (.09, .42)
PPR5 \rightarrow MH5: 0.7 (-.09, .23)

MH1 \rightarrow MHI: -2.2 (-.5, .5)
MH2 \rightarrow MHI: -1.5 (-.5, .5)
MH3 \rightarrow MHI: -1.1 (-.5, .5)
MH4 \rightarrow MHI: -.05 (-.5, .5)
MH5 \rightarrow MHI: -1.1 (-.5, .5)

MH intercept \rightarrow PPR intercept: .36 (.20, .55)
## Key recommendations

### Directions
Both the mother’s mental health and child development exert impacts

### Key areas
Impact found in child emotional and conduct problems – not hyperactivity and peer problems

### Earlier the better?
Early mental health treatment reduced development problems in children

### Identifying need
Child problems seem to have more associations at age 7 – perhaps an intervention point
Research team

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Do you have any questions?

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