Depression in children and young people: family risk factors and underlying mechanisms

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Research overview

- Intergenerational transmission of mental health risks in families
- Emphasis on mechanisms and multiple levels of analyses rather than individual associations
- Specific interest in the role of fathers, their parenting and involvement
Avon Longitudinal Study of Parents and Children

ALSPAC (Children of the 90s)

G0
Mother
Partner

G1
Child (ALSPAC-G2 mother/father)

G2
Partner (ALSPAC-G2 mother/father)
Child
Child
Child

COCO90s | Avon Longitudinal Study of Parents and Children | University of Bristol
Early to middle adolescence is a critical period of development where mental health issues are particularly liable to emerge or escalate.

Depression in childhood and adolescence is a strong risk factor for a number of adverse life outcomes, including poorer mental health, impaired educational attainment and reduced social functioning.

Average age of onset: between 11 and 14 years.

One out of three-four young people meet lifetime criteria for a Diagnostic and Statistical Manual of Mental Disorders (DSM) mental disorder.

Prevalence estimates of subthreshold depressive disorders are generally higher than those of major depression across all age groups.

Depression (29%) and anxiety (26%) are more prevalent in adolescence than in childhood.

High prevalence of sleep disorders (44%) and post-traumatic stress (48%) following Covid-19.
Depression in children and young people

DATA NOTE

Examining the longitudinal nature of depressive symptoms in the Avon Longitudinal Study of Parents and Children (ALSPAC) [version 2; peer review: 3 approved]

Alex S. F. Kwong

➢ Initial low levels of depressive symptoms in late childhood.
➢ Levels of depressive symptoms start to increase from age 13 to 18 years.
➢ Depressive symptoms begin to decline until age 22 and begin to rise again to greater levels than previously observed at 18 years.
➢ Factors that drive increases in depressive symptoms and how their interact to result in potentially different child outcomes is the focus of current research.

Figure 1. The overall pattern of depressive symptoms in the ALSPAC cohort.
Sex differences in mental health are among the most well-established findings in mental health research.

Among pre-adolescents, either no gender differences in rates of depression or even higher rates in pre-adolescent boys.

During adolescence, rates of depression are greater among females than among males, with differences persisting into middle adulthood.

Females report higher prevalence of depression and anxiety than males.

Males exhibit higher levels of externalising problems (e.g., conduct disorder) and neurodevelopmental issues (e.g., Attention Deficit Hyperactivity Disorder; ADHD)

Emerging evidence that males and females also differ in developmental trajectories of mental health symptoms in adolescence.
Individual risk factors: sex differences

Identifying Critical Points of Trajectories of Depressive Symptoms from Childhood to Young Adulthood

Alex S. F. Kwong, David Manley, Nicholas J. Timpson, Rebecca M. Pearson, Jon Heron, Hannah Sallis, Evie Stergiakouli, Oliver S. P. Davis & George Leckie

Journal of Youth and Adolescence 48, 815–927 (2019) | Cite this article

Similar initial levels of depressive symptoms at age 11 years for males and females.

Steeper increase in depressive symptoms in females compared to males across adolescence.

At age 20 years levels of depressive symptoms for both sexes plateau and start to decrease for both sexes.

Levels of depressive symptoms in females reached peak velocity at age 13.5 years compared to males who reached peak velocity at age 16 years.

Age of maximum depressive symptoms for females was 19.6 years and 20.4 years for males.

Figure 1. Averaged population mental health trajectories for females and males.
Children who experienced early father absence had similar trajectories of depressive symptoms at age 12 compared to those whose fathers were present.

However, these trajectories started to deviate from age 14 years, with early father absent children experiencing higher levels of depressive symptoms around ages 16 and 20 years compared to father presence.

The greatest difference in trajectories of depressive symptoms between early father absent and father present children were observed at age 24 years.
Family risk factors: timing biological father absence

➢ Children whose fathers were absent later in childhood, compared to father present, showed similar pattern of depressive symptoms trajectories up to 16 years.

➢ In contrast to early father absence, later father absence was not associated with increase in depressive symptoms trajectories at ages 20 and 24 years respectively.

➢ The gap in depressive symptoms trajectories between later father absent and father present children narrowed into early adulthood.

Figure 2. Main effects of father absence later in childhood (5-10 years) on predicted trajectories of depressive symptoms across childhood, adolescence and young adulthood.
Quality of father’s parenting is an important predictor of child mental health in adolescence, but less is known about specific aspects of fathering that are important.

Fathers attitudes to and experiences of childcare at 8 weeks, 8 and 21 months were examined as predictors of depression at age 16 years.

Are these effects independent of maternal and paternal depression, parental social class, and challenging life events in adolescence?
### Family risk factors: characteristics of fathering

Table 1: Responses to questions about fathering at 21 months.

<table>
<thead>
<tr>
<th></th>
<th>This is exactly how I feel</th>
<th>This is often how I feel</th>
<th>This is how I sometimes feel</th>
<th>I never feel this way</th>
<th>Missing data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paternal confidence scores at 21 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenthood is something a man learns naturally</td>
<td>1820 (29.6%)</td>
<td>1841 (29.9%)</td>
<td>1674 (27.2%)</td>
<td>717 (11.6%)</td>
<td>104 (1.7%)</td>
</tr>
<tr>
<td>I often worry whether my child is eating enough</td>
<td>208 (3.4%)</td>
<td>422 (6.9%)</td>
<td>1808 (28.4%)</td>
<td>3677 (59.7%)</td>
<td>41 (0.7%)</td>
</tr>
<tr>
<td>Trying to get my child to eat the right food makes me very anxious</td>
<td>89 (1.4%)</td>
<td>236 (3.8%)</td>
<td>1597 (25.9%)</td>
<td>4193 (68.1%)</td>
<td>41 (0.7%)</td>
</tr>
<tr>
<td>I feel pretty sure that I'm doing the right thing for my child</td>
<td>3297 (53.6%)</td>
<td>2435 (39.6%)</td>
<td>326 (5.3%)</td>
<td>56 (0.9%)</td>
<td>42 (0.7%)</td>
</tr>
<tr>
<td>I feel anxious if someone else is looking after my child</td>
<td>423 (6.9%)</td>
<td>683 (11.1%)</td>
<td>2629 (42.7%)</td>
<td>2372 (38.5%)</td>
<td>49 (0.8%)</td>
</tr>
<tr>
<td><strong>Paternal enjoyment scores at 21 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a young child is absolutely exhausting</td>
<td>658 (10.7%)</td>
<td>1377 (22.4%)</td>
<td>3361 (54.6%)</td>
<td>725 (11.8%)</td>
<td>35 (0.6%)</td>
</tr>
<tr>
<td>Toddlers are fun</td>
<td>3656 (59.4%)</td>
<td>2149 (34.9%)</td>
<td>304 (4.9%)</td>
<td>15 (0.2%)</td>
<td>32 (0.5%)</td>
</tr>
<tr>
<td>I really love my toddler</td>
<td>5813 (94.4%)</td>
<td>271 (4.4%)</td>
<td>340 (6.0%)</td>
<td>15 (0.2%)</td>
<td>23 (0.6%)</td>
</tr>
<tr>
<td>I am glad that we had this child when we did</td>
<td>5286 (85.9%)</td>
<td>548 (8.9%)</td>
<td>211 (3.4%)</td>
<td>65 (1.1%)</td>
<td>46 (0.7%)</td>
</tr>
<tr>
<td>My toddler never gets on my nerves</td>
<td>700 (11.4%)</td>
<td>2067 (33.6%)</td>
<td>2412 (39.2%)</td>
<td>925 (15.0%)</td>
<td>52 (0.8%)</td>
</tr>
<tr>
<td>I don't mind the mess that surrounds a toddler</td>
<td>1719 (27.9%)</td>
<td>2227 (36.2%)</td>
<td>1763 (28.2%)</td>
<td>394 (6.4%)</td>
<td>53 (0.9%)</td>
</tr>
<tr>
<td>It is a great pleasure to watch my child grow</td>
<td>5502 (89.4%)</td>
<td>528 (8.6%)</td>
<td>801 (1.3%)</td>
<td>14 (0.2%)</td>
<td>32 (0.5%)</td>
</tr>
<tr>
<td>My child gives me great joy</td>
<td>5341 (86.8%)</td>
<td>669 (10.9%)</td>
<td>1021 (1.7%)</td>
<td>10 (0.2%)</td>
<td>34 (0.6%)</td>
</tr>
<tr>
<td><strong>Paternal discipline scores at 21 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The best way to calm a child is to cuddle him/her</td>
<td>2500 (40.6%)</td>
<td>2489 (40.4%)</td>
<td>1110 (18.0%)</td>
<td>30 (0.5%)</td>
<td>27 (0.4%)</td>
</tr>
<tr>
<td>Toddlers should be allowed to eat whenever they ask for food</td>
<td>705 (11.5%)</td>
<td>1324 (21.5%)</td>
<td>2809 (45.6%)</td>
<td>1276 (20.7%)</td>
<td>42 (0.7%)</td>
</tr>
<tr>
<td>A smack is the best way to discipline a child</td>
<td>229 (3.7%)</td>
<td>527 (8.6%)</td>
<td>3654 (54.9%)</td>
<td>1695 (27.5%)</td>
<td>51 (0.8%)</td>
</tr>
<tr>
<td><strong>Potential paternal abuse scores at 21 months</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are times when a child's continuous whining can make a parent want to hit him/her</td>
<td>191 (3.1%)</td>
<td>331 (5.4%)</td>
<td>3020 (49.1%)</td>
<td>2582 (41.9%)</td>
<td>32 (0.5%)</td>
</tr>
<tr>
<td>Parents can feel exasperated when they want to calm the child down and nothing works</td>
<td>1046 (17.1%)</td>
<td>1349 (21.9%)</td>
<td>3006 (48.8%)</td>
<td>675 (11.0%)</td>
<td>80 (1.3%)</td>
</tr>
<tr>
<td>I really cannot bear it when my child cries</td>
<td>254 (4.1%)</td>
<td>682 (11.1%)</td>
<td>3389 (55.1%)</td>
<td>1790 (29.1%)</td>
<td>41 (0.7%)</td>
</tr>
<tr>
<td>I am afraid to be left alone with the toddler because</td>
<td>17 (0.3%)</td>
<td>14 (0.2%)</td>
<td>67 (1.1%)</td>
<td>6019 (97.8%)</td>
<td>39 (0.6%)</td>
</tr>
<tr>
<td>I think I might be violent</td>
<td>54 (0.9%)</td>
<td>274 (4.5%)</td>
<td>2378 (38.6%)</td>
<td>3396 (55.2%)</td>
<td>54 (0.9%)</td>
</tr>
<tr>
<td>I feel desperate when my child goes on complaining and being difficult</td>
<td>42 (0.7%)</td>
<td>106 (1.7%)</td>
<td>1631 (26.5%)</td>
<td>4337 (70.5%)</td>
<td>40 (0.6%)</td>
</tr>
</tbody>
</table>
Family risk factors: characteristics of fathering

➢ Indication of potential paternal abuse was associated with increased risk of depressive symptoms at age 16 years.

➢ Some evidence that children living in higher social class households were at higher risk of depressive symptoms with increasing scores in paternal abuse.

➢ No evidence of these effects in lower social class categories.

➢ Effects were independent of parental depression and challenging life events in adolescence.
Exposure to socioeconomic adversity is a strong risk of depression.

Role of individual factors, such as Locus of Control (LoC; 16 years), that may explain this association are not well understood.

Depression diagnosis was established using the Clinical Interview Schedule Revised (CIS-R) at 18 years.

Indicators of early socio-economic adversity were collected from birth to 5 years and modelled as a composite measure (latent factor).

Analyses controlled for child’s sex, maternal and paternal depression and maternal cognitive style.

Figure 1. Hypothesised associations among socioeconomic adversity in early life, locus of control and depression diagnosis at 18 years, adjusted for potential confounders.
Exposure to socioeconomic adversity was associated with more external LoC orientation at 16 years.

External LoC orientation was higher risk of depression diagnosis at 18 years.

Although attenuated, there was evidence of a direct association between early socioeconomic adversity and depression at 18 years.

External LoC explained approximately 34% of this association.

No evidence that these associations differed by gender.

Figure 1. Hypothesised associations among socioeconomic adversity in early life, locus of control and depression diagnosis at 18 years, adjusted for potential confounders.
Parental risk factors: parenting and parent-child relationship

Specific domains of early parenting, their heritability and differential association with adolescent behavioural and emotional disorders and academic achievement

Iryna Culpin, Marc H. Bornstein, Diane L. Putnick, Hannah Sallis, Ruby Lee, Miguel Cordero, Priya Rajaguru, Katarzyna Kordas, Tim Cadman & Rebecca M. Pearson

European Child & Adolescent Psychiatry 29, 1401–1409 (2020) | Cite this article

2412 Accesses | 2 Citations | 2 Altmetric | Metrics

➢ Mother-child interactions and the quality of early parenting are associated with mental health and socio-emotional development.

➢ However, parenting is a complex construct, often cast along three main domains:
  ➢ Warmth and enjoyment (e.g., sensitivity, involvement, warmth)
  ➢ Conflict and harsh discipline (e.g., control, excessive monitoring)
  ➢ Activities that promote learning (e.g., stimulation)

➢ Importance of specific aspects of parenting for particular child outcomes is not well-understood.
Parental risk factors: parenting and parent-child relationship

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Maternal postnatal depression (PND) is a strong risk factor for adverse mental health in childhood and adolescence.

Maternal sensitivity is often disrupted by depression and may explain the link between maternal and child mental health.

Maternal nurturing activities essential to infant care and their potential explanatory role in transmission of mental health risks from mother to child received less research attention.

Attending to infant’s basic needs may be particularly challenging for mothers who experience depression.
Maternal PND was associated with less optimal responses and strategies to manage crying, as well as higher levels of worries about feeding.

These dimensions of maternal nurturing behaviours were also associated with higher risk of offspring depression in early adulthood and explained the association between maternal and offspring depression.

Once the indirect pathways through maternal nurturing behaviours were accounted for, there was no evidence of an association between maternal and offspring depression.
Parental risk factors: maternal depression and paternal involvement

- Existing research is predominantly focused on maternal sensitivity and parenting in the context of maternal depression.
- Role of paternal parenting and involvement for child mental health in families with mothers experiencing depression is not well understood.
- Paternal involvement may be particularly important in the context of maternal depression because of the role that fathers play in supporting the mother and caring for the child.
Parental risk factors: maternal depression and paternal involvement

Child-focused paternal involvement (behavioural, affective and cognitive dimensions)

- 11 items (8 weeks-2 years 9 months) Parental parenting confidence
- 19 items (8 weeks-2 years 9 months) Paternal conflictual relationship with child
- 27 items (8 weeks-3 years 11 months) Paternal enjoyment and warmth
- 8 items (8 weeks-8 months) Paternal involvement in childcare
- 6 items (8 months-1 year 9 months) Paternal beliefs regarding caregiving
- 4 items (1 year 9 months-2 years 9 months) Paternal worries about child

Mother-influenced paternal involvement

- 12 items (8 weeks-8 months) Paternal help with household tasks
- 7 items items (8 weeks) Paternal perception of maternal ‘gatekeeping’
- 3 items (8 week) Paternal beliefs regarding mother-father relationship and parenting
- 5 items (8 weeks-2 years 9 months) Paternal beliefs regarding employment and parenthood
Parental risk factors: maternal depression and paternal involvement

Child-focused paternal involvement

- Paternal postnatal depression 8 months (EPDS)
- Maternal postnatal depression 8 weeks (EPDS)
- Offspring development 7 years (SDQ)
- Child characteristics (polygenic neuroticism score, gender)
- Socioeconomic characteristics (financial problems, homeownership status)
- Maternal characteristics (age, education)
- Family characteristics (parental conflict, marital status)
- Paternal parenting confidence
- Paternal conflictual relationship with child
- Paternal enjoyment and warmth
- Paternal involvement in childcare
- Paternal beliefs regarding caregiving
- Paternal worries about child

Mother-influenced paternal involvement

- Paternal postnatal depression 8 months (EPDS)
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- Socioeconomic characteristics (financial problems, homeownership status)
- Maternal characteristics (age, education)
- Family characteristics (parental conflict, marital status)
- Paternal help with household tasks
- Paternal perception of maternal "gatekeeping"
- Paternal beliefs regarding mother-father relationship and parenting
- Paternal beliefs regarding employment and parenthood
Mounting evidence supports increased risk of postnatal depression in men (estimated prevalence approximately 10.4%).

Strong reciprocal relationships between maternal and paternal depression.

Increasingly evidence highlights adverse impact of paternal postnatal depression on child development, including mental health.

However, the evidence base is even more limited when it comes to mechanisms that transmit adverse effects of paternal depression on the child.
Parental postnatal depression and offspring emotional and behavioural development at age 7 years in a UK-birth cohort: the mediating role of paternal confidence, warmth and conflict