ONLINE SUPPORTING MATERIALS

***Analysis of Attrition***

Table S1 includes a drop out analysis comparing the sample characteristics at birth for all respondents at birth and the respondents followed up at age 42. Overall, attrition amongst BCS70 cohort member was greatest amongst those with unemployed fathers or absent fathers at birth and those whose parents were unskilled or partly skilled.

*Table S1. Loss to Follow Up: Sample Characteristics at Birth for All Respondents at Birth and Respondents Followed up at Age 42.*

|  |  |  |  |
| --- | --- | --- | --- |
| ***Variables at birth*** |  | **Men** | **Women** |
|  |   | *All participants at birth (%)*  | *Participants at age 42 (%)*  | *All participants at birth (%)*  | *Participants at age 42 (%)*  |
| ***Mother’s Age of Delivery*** | *18 and under*  | 6  | 5  | 6  | 5  |
| *19-24 years*  | 39  | 40  | 39  | 40  |
| *25-29 years*  | 31  | 33  | 31  | 33  |
| *30-34 years*  | 15  | 15  | 15  | 15  |
| *35+ years*  | 8  | 8  | 9  | 8  |
| ***Parental Marital Status*** | *Single*  | 6  | 4  | 6  | 4  |
| *Married*  | 93  | 95  | 92  | 94  |
| *Previously Married*  | 2  | 2  | 2  | 3  |
| ***Birth Region*** | *North*  | 6  | 7  | 6  | 7  |
| *Yorkshire & Humber*  | 8  | 9  | 9  | 9  |
| *East Midlands*  | 6  | 7  | 6  | 6  |
| *East Anglia*  | 3  | 4  | 3  | 3  |
| *South East*  | 29  | 29  | 29  | 29  |
| *South West*  | 6  | 7  | 7  | 8  |
| *West Midlands*  | 10  | 11  | 10  | 10  |
| *North West*  | 13  | 13  | 13  | 13  |
| *Wales*  | 5  | 6  | 5  | 5  |
| *Scotland*  | 10  | 9  | 9  | 7  |
| *Northern Ireland*  | 4  | NA  | 4  | NA  |
| ***Parental Social Class*** | *Unskilled/ partly skilled*  | 23  | 19  | 23  | 21  |
| *Manual*  | 45  | 45  | 44  | 44  |
| *Non-manual*  | 14  | 15  | 13  | 14  |
| *Managerial/Professional*  | 18  | 21  | 18  | 20  |
| *Other or Not stated*  | 1  | 1  | 1  | 1  |
| ***Father’s Employment*** | *Employed*  | 89  | 92  | 88  | 90  |
| *Not employed*  | 4  | 3  | 4  | 3  |
| *Not stated/No Father*  | 8  | 6  | 9  | 7  |
| ***Total sample size*** | 8,463  | 4,346  | 8,290  | 4,746  |

***Sensitivity Analysis – Results using Multiple Imputation***

After comparing the complete case and multiple imputation regression, and with the exception of men who experience two or more dissolutions where the inclusion of age at first partnership attenuated the significant association in the complete case analysis but not in the analysis using multiple imputation, the substantive conclusions are broadly the same. The use of multiple imputation did reduce the size of the coefficients slightly and reduce the size of confidence intervals but it did not change the significant variables in the model. As a result, we continue to present complete case analysis in the main manuscript.

*Table S2. Relative Risk Ratios of Partnership Dissolution According to Whether or Not the Cohort Member had Experienced Parental Separation. Baseline outcome: No Dissolution. With the use of Multiple Imputation*

1*maternal age, parental education and father’s occupational social class, 2 household income under £35 per week, child receiving free school meals and house affected by damp, 3 Malaise Index, 4 combined Edinburgh reading test and friendly math test scores.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No dissolution | 1 Dissolution | 2 Dissolutions | 3+ Dissolution |
|  | **Both genders** | **Men** | **Women** | **Men** | **Women** | **Men** | **Women** |
|  | *RRR (95% CI)* | *RRR (95% CI)* | *RRR (95% CI)* | *RRR (95% CI)* | *RRR (95% CI)* | *RRR (95% CI)* | *RRR (95% CI)* |
| Unadjusted association | REF | **1.47 (1.20 – 1.81)** | **1.60 (1.25 – 2.04)** | **1.76 (1.33 – 2.32)** | **1.54 (1.18 – 2.01)** | **1.58 (1.08 – 2.32)** | **2.40 (1.72 – 3.35)** |
| (+) Parental controls1  | REF | **1.43 (1.16 – 1.76)** | **1.42 (1.17 – 1.73)** | **1.65 (1.23 – 2.19)** | **1.35 (1.93 – 1.79)** | **1.42 (1.15 – 2.11)** | **2.07 (1.44 – 2.95)** |
| (+) Childhood SES2  | REF | **1.38 (1.12 – 1.72)**  | **1.41 (1.15 – 1.72)**  | **1.65 (1.23 – 2.22)**  | 1.29 (0.97 – 1.72)  | 1.28 (0.84 – 1.94)  | **2.15 (1.49 – 3.11)**  |
| (+) Maternal mental wellbeing3 | REF | **1.39 (1.12 – 1.73)** | **1.40 (1.15 – 1.72)** | **1.65 (1.23 – 2.22)** | 1.30 (0.97 – 1.73) | 1.27 (0.84 – 1.92) | **2.14 (1.48 – 3.11)** |
| (+) Child Rutter behaviour | REF | **1.37 (1.10 – 1.71)** | **1.40 (1.14 – 1.71)** | **1.61 (1.19 – 2.17)** | 1.29 (0.97 – 1.72) | 1.25 (0.83 – 1.89) | **2.14 (1.48 – 3.09)** |
| (+) Child Locus of control  | REF | **1.37 (1.10 – 1.70)** | **1.39 (1.13 – 1.70)** | **1.61 (1.19 – 2.16)** | 1.29 (0.96 – 1.72) | 1.24 (0.82 – 1.88) | **2.13 (1.47 – 3.09)** |
| (+) Child cognition4  | REF | **1.35 (1.09 – 1.68)** | **1.38 (1.13 – 1.70)** | **1.59 (1.18 – 2.14)** | 1.29 (0.97 – 1.73) | 1.22 (0.81 – 1.85) | **2.14 (1.48 – 3.10)** |
| (+) Educational achievement  | REF | **1.35 (1.08 – 1.68)** | **1.38 (1.13 – 1.70)** | **1.58 (1.18 – 2.14)** | 1.29 (0.97 – 1.73) | 1.22 (0.81 – 1.85) | **2.15 (1.48 – 3.11)** |
| (+) Age at first partnership | REF | **1.35 (1.09 – 1.69)** | **1.38 (1.12 – 1.71)** | **1.56 (1.15 – 2.12)** | 1.26 (0.94 – 1.70) | 1.18 (0.77 – 1.80) | **1.98 (1.36 – 2.90)** |
| *N* |  | *4023* | *4471* | *4023* | *4471* | *4023* | *4471* |

***The Role of Childhood Mediators on the Association Between Parental Separation and Age at First Partnership.***

We are interested in whether the inclusion of age at first partnership within the KHB mediation analysis attenuates the effect of the early life mediators. Supporting Tables S3 and S4 present the KHB analysis for men and women, with and without the inclusion of age at first partnership. Mediators that contribute to the share of the total when age at first partnership is*not*included, such as living arrangements, cognition and maternal malaise, still contributed towards the share of the total effect when age at first partnership *is* included, although the effect size of these mediators are slightly reduced. We therefore conclude that although age at first partnership is in itself an important mediator, is does not remove the effect of the early life mediators and as previously discuss early life mediators predict age at first partnership.

*Table S3. KHB Analysis of the Association Between Parental Separation and Partnership Dissolution in Adulthood, Including and Excluding Age at First Partnership (AFP). Men.* ***Base No Dissolution.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No dissolution | 1 dissolution | 2 dissolutions | 3+ dissolutions |
|  |  | Without AFP | With AFP  | Without AFP | With AFP  | Without AFP | With AFP  |
| Share (%) of total effect due to mediators:  | Ref | 21.07  | 37.18 | 14.40 | 30.04 | 42.46 | 62.86 |
| Share (%) of total effect mediated via: |  |   |  |  |  |  |  |
|  Child living conditions1 | Ref |  7.03 | 7.97 | -2.19 | -1.98 | 19.28 | 15.92 |
| Maternal malaise2 (high risk) | Ref |  -1.29 | -2.05 | -0.29 | -1.08 | 0.24 | -0.65 |
| Child Rutter behaviour4 (severe) | Ref |  3.16 | 3.47 | 10.63 | 10.10 | 1.60 | 1.89 |
| Child Locus of control  | Ref |  1.63 | 1.00 | 2.64 | 2.12 | 3.82 | 2.65 |
| Child cognition | Ref | 5.95 | 5.36 | 1.34 | 0.94 | 16.65 | 15.51 |
| Education in adulthood  | Ref |   1.75 | 0.40 | 1.78 | 0.62 | 0.44 | -0.84 |
| Age first partnership5 (20-24) | Ref | / | 1.98 | / | 3.20 | / | 5.62 |
| Age first partnership5 (25+) | Ref | / | 17.03 | / | 16.29 | / | 22.63 |

*Table S4. KHB Analysis of the Association Between Parental Separation and Partnership Dissolution in Adulthood, Including and Excluding Age at First Partnership (AFP). Women.* ***Base No Dissolution.***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No dissolution | 1 dissolution | 2 dissolutions | 3+ dissolutions |
|  |  | Without AFP | With AFP  | Without AFP | With AFP  | Without AFP | With AFP  |
| Share (%) of total effect due to mediators:  | Ref | 17.39 | 38.35 | 23.77 | 65.31 | 9.32 | 32.25 |
| Share (%) of total effect mediated via: |  |  |  |  |  |  |  |
|  Childhood living conditions1 | Ref | 7.15 | 3.96 | 18.15 | 11.68 | -0.91 | -2.78 |
| Maternal malaise2 (high risk) | Ref | 3.44 | 4.10 | -0.53 | 0.93 | 4.26 | 4.71 |
| Child Rutter behaviour4 (severe) | Ref | -0.37 | -0.70 | 0.92 | -0.12 | -0.47 | -1.07 |
| Child Locus of control  | Ref | 1.99 | 1.23 | 2.71 | 1.12 | -0.02 | -0.53 |
| Child cognition | Ref | -2.54 | -1.96 | -3.53 | -1.98 | -0.77 | -0.32 |
| Education in adulthood  | Ref | 0.33 | 0.01 | 0.34 | -0.31 | 0.54 | 0.20 |
| Age first partnership5 (20-24) | Ref | / | 7.64 | / | 14.03 | / | 7.73 |
| Age first partnership5 (25+) | Ref | / | 17.73 | / | 35.94 | / | 18.47 |

*1reference score 1, 2reference low risk, 3higher scores more traditional attitudes, 4 reference normal behaviour, 5reference 19 and under*

*The positive (larger) percentage, the greater the share attributed to the specific mediator. A negative percentage value suggests that the mediator contributed negatively towards the total effect. This may be because the mediator is inversely related, or not associated to, either parental separation or the number of offspring dissolution.*