**Table S1. Parental interest and involvement: 1958 cohort (age 7)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **General populationa**  **(mean, sd)** | **Adoptedb**  **(mean, sd)** | **Birth comparisonc**  **(mean, sd)** | **Group contrasts**1 |
| Parental interest in education2 | 1.27 (0.71) | 1.64 (0.57) | 0.89 (0.73) | b > a > c |
| Parental reading to child3 | 1.44 (0.69) | 1.74 (0.53) | 1.36 (0.71) | b > a, c |
| Parental outings with child4 | 1.86 (0.37) | 1.95 (0.22) | 1.79 (0.50) | b > a > c |
| Parental involvement composite5 | 4.61 (1.21) | 5.33 (0.90) | 4.08 (1.33) | b > a > c |

Outcome-specific weights included in all analyses

1p<.016 Group contrasts controlled for gender

2 Teacher-rated parental interest in education: 0=little interest, 1=some interest, 2=very interested

3 Parent-reported reading to child: 0=hardly ever, 1=occasionally, 2=weekly

4 Parent-reported outings with child: 0=hardly ever, 1=occasionally, 2=weekly

5 Sum of scores for parental interest in education, reading to child and outings (range 0-6)

**Table S2: Overview of ages at assessment of outcome domains in the 1958 and 1970 cohorts**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Outcome domains and measures**  *(self-report unless otherwise specified)* | **1958 cohort** | | | | | | **1970 cohort** | | | | | |
| **Age (years)** | | | | | | **Age (years)** | | | | | |
| **7** | **16** | **23** | **33** | **42** | **50** | **10** | **16** | **30** | | **34** | **42** |
| ***Mental health and well-being*** |  |  |  |  |  |  |  |  |  | |  |  |
| Internalizing problems (Rutter scale, parent-rated) | **√** | **√** |  |  |  |  | **√** | **√** |  | |  |  |
| Malaise Inventory |  |  | **√** | **√** | **√** | **√** |  |  | **√** | |  | **√** |
| Help-seeking re mental health problems |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| Warwick Edinburgh Mental Wellbeing Scale |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| Satisfaction with life so far |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| ***Physical health*** |  |  |  |  |  |  |  |  |  | |  |  |
| Self-rated health |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| BMI, obesity |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| Specific conditions (diabetes, high blood pressure, digestive problems, cancer) |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| Regular exercise |  |  |  |  | **√** |  |  |  |  | |  | **√** |
| ***Externalizing problems*** |  |  |  |  |  |  |  |  |  | |  |  |
| Externalizing problems (Rutter scale, parent-rated) | **√** | **√** |  |  |  |  | **√** | **√** |  | |  |  |
| Police contact by age 16 (parent reported) |  | **√** |  |  |  |  |  | **√** |  | |  |  |
| Convicted1 |  |  |  | **√** | |  |  | **√** | | | |  |
| Daily smoking |  |  |  |  | **√** |  |  |  |  |  | | **√** |
| Hazardous drinking (Alcohol Use Disorders Identification Test - AUDIT) |  |  |  |  |  | **√** |  |  |  |  | | **√** |
| Alcohol problems (CAGE) |  |  |  |  | **√** |  |  |  |  |  | |  |
| Consulted specialist re alcohol/drug problems |  |  |  |  | **√** |  |  |  |  |  | |  |

1 Convictions: 1958 cohort: any conviction ages 33-42 1970 cohort: any conviction ages 16-34

**Table S3. Rutter scale: parent-rated internalizing/externalizing items**

**(i) Internalizing items**

|  |  |  |  |
| --- | --- | --- | --- |
| **1958 cohort** | | **1970 cohort** | |
| **Age 7** | **Age 16** | **Age 10** | **Age 16** |
| Miserable or tearful | Often appears miserable, unhappy, tearful or distressed | Often appears miserable, unhappy, tearful or distressed | Often appears miserable, unhappy, tearful or distressed |
| Worries about many things | Often worried, worries about many things | Often worried, worries about many things | Often worried, worries about many things |
| Upset by new situations, by things happening for the first time | Tends to be fearful or afraid of new things or new situations | Tends to be fearful or afraid of new things or new situations | Tends to be fearful or afraid of new things or new situations |
|  | Fussy or over-particular | Fussy or over-particular | Fussy or over-particular |

*Response format*:

1958 cohort, age 7: never, sometimes, frequently

1958 cohort, age 16: doesn’t apply, applies somewhat, certainly applies

1970 cohort, age 10: visual analogue scale, does not apply—certainly applies, scored 0-100

1970 cohort, age 16: certainly applies, applies somewhat, doesn’t apply

**(ii) Externalizing items**

|  |  |  |  |
| --- | --- | --- | --- |
| **1958 cohort** | | **1970 cohort** | |
| **Age 7** | **Age 16** | **Age 10** | **Age 16** |
| Difficulty in settling to anything for more than a few moments | Very restless. Has difficulty staying seated for long | Very restless. Often running or jumping up and down. Hardly ever still | Very restless. Often running about or jumping up and down. Hardly ever still |
| Squirmy or fidgety | Squirmy, fidgety child | Squirmy or fidgety | Squirmy/fidgety |
| Destroys own or others belongings | Often destroys own or others’ property | Often destroys own or others’ belongings | Often destroys own or others’ belongings |
| Irritable, quick to fly off the handle | Irritable. Is often quick to ‘fly off the handle’ | Irritable. Is quick to ‘fly off the handle’ | Irritable. Is quick to ‘fly off the handle’ |
| Fights with other children | Frequently fights or is extremely quarrelsome with other children | Frequently fights with other children | Frequently fights with others |
| Disobedient at home | Often disobedient | Often disobedient | Often disobedient |
|  | Cannot settle to anything for more than a few moments | Cannot settle to anything for more than a few moments | Cannot settle to anything for more than a few moments |
|  | Bullies other children | Bullies other children | Bullies others |
|  | Often tells lies | Often tells lies | Often tells lies |

*Response format*:

1958 cohort, age 7: never, sometimes, frequently

1958 cohort, age 16: doesn’t apply, applies somewhat, certainly applies

1970 cohort, age 10: visual analogue scale, does not apply—certainly applies, scored 0-100

1970 cohort, age 16: certainly applies, applies somewhat, doesn’t apply

***Appendix: Domestic infant adoption and the British birth cohort studies***

*The first UK legislation to regulate the adoption of children was passed in 1926, and domestic infant adoption remained relatively common until the 1970s (Triseliotis, Shireman & Hundleby, 1997), when the advent of legalized abortion and developments in assisted reproductive technologies were among the factors contributing to a fall in numbers. Most such adoptions in the post Second World War period were of babies given up for adoption by young unmarried mothers. Unmarried motherhood was relatively uncommon in this era: under 4% of babies in the 1958 British birth cohort were born to unmarried mothers, and only just over 5% in the 1970 cohort. Contemporary sources suggest that unmarried motherhood was associated with considerable stigma, and that social and financial provisions to enable mothers to raise their children alone were limited (see e.g. Thane, 2011). As a result, many women arranged (often during their pregnancies) for their children to be placed for adoption after birth. The UK child welfare system at the time was able to place healthy infants for adoption fairly speedily without legal and procedural delays.*

*The 1958 (Power & Elliott, 1996;* <https://cls.ucl.ac.uk/cls-studies/1958-national-child-development-study/>*) and 1970 (Elliott & Shepherd, 1996;* <https://cls.ucl.ac.uk/cls-studies/1970-british-cohort-study/>*) British birth cohort studies form part of the sequence of four nationally representative population cohort studies initiated in Britain since the second world war. Both studies included all births in England, Scotland and Wales in selected study weeks; as a result, both cohorts include small samples of babies identified at subsequent sweeps as having been adopted by non-relatives. A sub-study of the adopted sample in the 1958 cohort was undertaken in the 1970s (see Lambert & Streather, 1980); with this exception, adopted members of the cohorts have been studied in comparable ways to all other cohort members across childhood, adolescence and adulthood. Data from the main study sweeps are available from the UK Data Service (*[*https://ukdataservice.ac.uk/*](https://ukdataservice.ac.uk/)*). Some prior publications based on these data have reported on the development of the adopted samples in the 1958 cohort up to early adulthood (see Collishaw et al, 1998; Maughan et al, 1998). So far as we are aware, outcomes for infant adopted children in the 1970 cohort have not been reported on thus far.*

***References***

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*Triseliotis J., Shireman J., & Hundleby, M. (1997). Adoption: Theory, Policy and Practice. London: Cassell.*

**Table S4. Background: group comparisons of maternal, pregnancy and child characteristics and childhood family demographics**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1958 birth cohort** | | | **1970 birth cohort** | | |
| **A vs GP**a  **OR/B (95% CI)** | **BC vs GP**b  **OR/B (95% CI)** | **BC vs A**c  **OR/B (95% CI)** | **A vs GP**a  **(OR/B, 95% CI)** | **BC vs GP**b  **(OR/B, 95%CI)** | **BC vs A**c  **(OR/B, 95%CI)** |
| *Maternal/pregnancy characteristics* |  |  |  |  |  |  |
| % Teen mother1 | 7.69 (5.50,10.75) | 5.93 (4.59,7.66) | 0.77 (0.51,1.16) | 7.58 (4.47,12.84) | 9.33 (7.82,11.14) | 1.23 (0.71,2.13) |
| % Prenatal smoking1 | 1.31 (0.97,1.78) | 1.46 (1.18,1.82) | 1.11 (0.77,1.61) | 2.78 (1.62,4.78) | 1.82 (1.54,2.15) | 0.65 (0.37,1.15) |
| % <=4 antenatal visits1 | 7.67 (5.35,10.98) | 5.86 (4.47,7.69) | 0.76 (0.49,1.18) | 5.07 (2.93,8.76) | 3.24 (2.65,3.97) | 0.64 (0.36,1.14) |
| *Child characteristics* |  |  |  |  |  |  |
| % Male1 | 1.21 (0.90,1.62) | 0.71 (0.58,0.88) | 0.59 (0.41,0.85) | 1.02 (0.75,1.39) | 0.77 (0.65,0.90) | 0.75 (0.53,1.06) |
| Birthweight (grams)2 | -184.5  (-262.9, -106.1) | -94.2  (-149.7, -38.8) | 90.3  (-4.95,185.6) | -118.65  (-236.00,-1.30) | -129.31  (-171.42,-87.20) | -10.66  (-134.74,113.43) |
| *Childhood family demographics* |  |  |  |  |  |  |
| % 2 parent family1 | 3.91 (0.15,15.81) | 0.21 (0.15,0.27) | 0.05 (0.01,0.22) | 2.20 (0.90,5.37) | 0.28 (0.22,0.35) | 0.13 (0.05,0.32) |
| % Non-manual SES1 | 2.64 (1.95,3.57) | 0.47 (0.34,0.64) | 0.18 (0.11,0.27) | 1.77 (1.29,2.44) | 0.50 (0.41,0.62) | 0.28 (0.19,0.41) |
| % Home ownership1 | 2.54 (1.81,3.57) | 0.51 (0.40,0.65) | 0.20 (0.13,0.30) | 2.37 (1.58,3.57) | 0.28 (0.23,0.34) | 0.12 (0.08,0.19) |
| % Father: education beyond compulsory age1 | 2.51 (1.80,3.48) | 0.48 (0.32,0.70) | 0.19 (0.12,0.31) | 1.46 (0.91,2.35) | 0.60 (0.45,0.80) | 0.41 (0.24,0.71) |

Age- and outcome-specific attrition weights included in all analyses; group contrasts controlled for gender as appropriate

a Adopted *vs* general population b Birth comparison *vs* general population c Birth comparison *vs* adopted

1 Odds ratio (95% confidence interval)

2 B coefficient (95% confidence interval)

**Table S5. Outcomes: group comparisons of indicators of internalizing problems, mental health and well-being**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1958 birth cohort** | | | **1970 birth cohort** | | |
| **A vs GP**a  **(OR/IRR/B, CI)** | **BC vs GP**b  **(OR/IRR/B, CI)** | **BC vs A**c  **(OR/IRR/B, CI)** | **A vs GP**a  **(OR/IRR/B, CI)** | **BC vs GP**b  **(OR/IRR/B, CI)** | **BC vs A**c  **(OR/IRR/B, CI)** |
| *Childhood* |  |  |  |  |  |  |
| Internalizing1 | 0.93 (0.79,1.10) | 0.96 (0.87,1.07) | 1.03 (0.85,1.25) | 0.87 (0.78,0.98) | 1.07 (1.00,1.14) | 1.23 (1.08,1.40) |
| *Adolescence* |  |  |  |  |  |  |
| Internalizing1 | 1.26 (0.99,1.60) | 1.13 (0.97,1.32) | 0.90 (0.68,1.19) | 0.93 (0.76,1.14) | 1.11 (0.98,1.25) | 1.19 (0.94,1.51) |
| *Adulthood* |  |  |  |  |  |  |
| Psychological distress  (mean, sd)1 |  |  |  |  |  |  |
| Age 23 | 0.84 (0.65,1.08) | 1.38 (1.22,1.55) | 1.64 (1.24,2.17) | - | - | - |
| Age 33/30 | 0.99 (0.72,1.37) | 1.37 (1.15,1.62) | 1.38 (0.96,1.98) | 1.00 (0.82,1.21) | 1.05 (0.94,1.18) | 1.06 (0.85,1.32) |
| Age 42 | 1.05 (0.85,1.30) | 1.13 (0.98,1.29) | 1.07 (0.83,1.37) | 0.94 (0.75,1.17) | 1.11 (0.98,1.26) | 1.18 (0.91,1.51) |
| Age 50 | 0.93 (0.71,1.23) | 1.30 (1.10,1.54) | 1.40 (1.01,1.92) | - | - | - |
| % Help-seeking re mental health problems2 | 0.81 (0.42,1.60) | 1.94 (1.35,2.80) | 2.39 (1.12,5.10) | 1.46 (0.88,2.43) | 1.39 (1.05,1.86) | 0.95 (0.53,1.70) |
| Mental wellbeing3 | 0.03  (1.71,1.77) | -1.53  (-2.95,-0.10) | -1.56  (-3.79, 0.67) | -0.24  (-1.90, 1.43) | -0.88  (-1.91,0.14) | -0.65  (-2.58,1.28) |
| Satisfaction with life so  far2 | 0.82  (0.60,1.10) | 0.58  (0.43,0.79) | 0.72  (0.47,1.09) | 0.89  (0.62,1.27) | 0.64  (0.53,0.79) | 0.72  (0.48,1.08) |

Age- and outcome-specific attrition weights included in all analyses; group contrasts controlled for gender as appropriate

a Adopted *vs* general population b Birth comparison *vs* general population c Birth comparison *vs* adopted

1 Incident rate ratio (95% confidence interval)

2 Odds ratio (95% confidence interval)

**Table S6. Outcomes: group comparisons of physical health at mid-life (age 42)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1958 birth cohort** | | | **1970 birth cohort** | | |
| **A vs GP**a  **(OR/IRR/B, CI)** | **BC vs GP**b  **(OR/IRR/B, CI)** | **BC vs A**c  **(OR/IRR/B, CI)** | **A vs GP**a  **(OR/IRR/B, CI)** | **BC vs GP**b  **(OR/IRR/B, CI)** | **BC vs A**c  **(OR/IRR/B, CI)** |
| Self-rated health1 | 0.79 (0.57,1.10) | 0.70 (0.53,0.93) | 0.89 (0.58,1.37) | 1.00 (0.69,1.46) | 0.68 (0.56,0.83) | 0.68 (0.45,1.03) |
| BMI2 | -0.07 (-1.08,0.95) | 0.55 (-0.28,1.37) | 0.61 (0.69,1.92) | 0.68 (-0.28,1.65) | 0.50 (-0.10,1.10) | -0.18 (-1.31,0.94) |
| % Obese1 | 1.02 (0.60,1.73) | 1.29 (0.88,1.88) | 1.26 (0.66,2.40) | 1.25 (0.78,2.01) | 1.18 (0.89,1.56) | 0.94 (0.55,1.62) |
| % Diabetes1 | 1.50 (0.47,4.80) | 1.77 (0.77,4.07) | 1.18 (0.29,4.83) | 0.74 (0.16,3.50) | 0.95 (0.48,1.88) | 1.35 (0.29,6.38) |
| % High blood pressure1 | 0.55 (0.26,1.20) | 1.22 (0.81,1.85) | 2.21 (0.92,5.26) | 1.34 (0.71,2.54) | 1.37 (0.95,1.99) | 1.03 (0.50,2.13) |
| % Digestive problems1 | 0.65 (0.34,1.21) | 1.30 (0.90,1.87) | 2.01 (0.98,4.15) | 0.71 (0.34,1.48) | 1.59 (1.18,2.15) | 2.25 (1.02,4.95) |
| % Cancer1 | 2.56 (1.10,5.98) | 0.83 (0.30,2.28) | 0.33 (0.09,1.20) | n/a3 | 0.77 (0.31,1.96) | n/a3 |
| % Regular exercise1 | 0.80 (0.54,1.20) | 0.64 (0.48,0.85) | 0.80 (0.49,1.30) | 1.47 (0.91,2.37) | 0.75 (0.59,0.94) | 0.51 (0.30,0.86) |

Outcome-specific attrition weights included in all analyses; group contrasts controlled for gender as appropriate

a Adopted *vs* general population b Birth comparison *vs* general population c Birth comparison *vs* adopted

1 Odds ratio (95% confidence interval)

2 B coefficient (95% confidence interval)

3 no cases in adopted group

**Table S7. Outcomes: group comparisons of indicators of externalizing problems**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1958 birth cohort** | | | **1970 birth cohort** | | |
| **A vs GP**a  **(OR/IRR/B, CI)** | **BC vs GP**b  **(OR/IRR/B, CI)** | **BC vs A**c  **(OR/IRR/B, CI)** | **A vs GP**a  **(OR/IRR/B, CI)** | **BC vs GP**b  **(OR/IRR/B, CI)** | **BC vs A**c  **(OR/IRR/B, CI)** |
| ***Antisocial behaviour*** |  |  |  |  |  |  |
| *Childhood* |  |  |  |  |  |  |
| Externalizing 1 | 1.02 (0.92,1.13) | 1.10 (1.02,1.19) | 1.08 (0.95,1.23) | 1.03 (0.93,1.14) | 1.23 (1.16,1.31) | 1.20 (1.07,1.34) |
| *Adolescence* |  |  |  |  |  |  |
| Externalizing1 | 1.36 (1.07,1.73) | 1.70 (1.47,1.98) | 1.25 (0.95,1.66) | 1.31 (1.03,1.66) | 1.27 (1.11,1.46) | 0.97 (0.74,1.27) |
| % Police contact by age 162 | 0.92 (0.47,1.79) | 1.93 (1.36,2.75) | 2.10 (0.99,4.45) | 1.29 (0.68,2.44) | 1.67 (1.14,2.44) | 1.29 (0.62,2.68) |
| *Adulthood* |  |  |  |  |  |  |
| % Convicted: ages 16-342 | - | - | - | 2.39 (1.52,3.76) | 2.13 (1.60,2.84) | 0.89 (0.53,1.52) |
| ages 33-422 | 3.42 (1.95,5.98) | 2.61 (1.54,4.43) | 0.76 (0.36,1.63) | - | - | - |
| ***Substance use*** |  |  |  |  |  |  |
| % Smoking (daily, age 42)2 | 1.92 (1.32,2.79) | 2.91 (2.21,3.82) | 1.51 (0.96,2.40) | 2.07 (1.37,3.13) | 1.73 (1.36,2.20) | 0.83 (0.52,1.34) |
| % Hazardous/higher risk  drinking (ages 50/42)2 | 1.21 (0.70,2.09) | 1.34 (0.88,2.02) | 1.10 (0.56,2.18) | 1.16 (0.72,1.88) | 1.38 (1.04,1.83) | 1.19 (0.68,2.06) |
| % Alcohol problems age 422 | 1.94 (1.22,3.08) | 1.61 (1.11,2.33) | 0.83 (0.46,1.49) | - | - | - |
| % Seen specialist for  alcohol/drugs (age 42)2 | 2.87 (1.14,7.21) | 3.10 (1.47,6.51) | 1.08 (0.34,3.46) | - | - | - |

Age- and outcome-specific attrition weights included in all analyses; group contrasts controlled for gender as appropriate

a Adopted *vs* general population b Birth comparison *vs* general population c Birth comparison *vs* adopted

1 Incident rate ratio (95% confidence interval)

2 Odds ratio (95% confidence interval)