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DATA NOTE

Traumatic childhood events of parents enrolled in the Avon Longitudinal Study of Parents and Children (ALSPAC) [version 1; peer review: awaiting peer review]

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Abstract

Background: Early life experiences can have a significant impact on an individual’s later behaviour, the way they view the world, their beliefs and their success at forming strong interpersonal relationships. These factors may subsequently influence the way that the individual may parent their children, which in turn may have an effect on their child’s behaviour, mental health and world view. Research has linked early traumatic life experiences in the parent’s childhood to disorganised attachment to their own child. In this paper we describe the data collected from parents enrolled in the Avon Longitudinal Study of Parents and Children (ALSPAC) on traumatic events experienced during their childhood, so that it can act as a resource for researchers in the future when considering outcomes on the adult, their children and grandchildren.

Methods: Data were collected via multiple questionnaires completed by parents enrolled into the ALSPAC study. During pregnancy and post-delivery, questionnaires were administered between 1990 and 1992 via post to the study mothers and their partners. Data were collected on life events including bereavement, sexual abuse, physical abuse, abandonment, neglect, memories of childhood and accidents. Other reports of traumatic events in childhood were reported by parents using free text. This can be made available to researchers for coding on request.

Keywords
ALSPAC, trauma, parent, child, childhood, behaviour, stress, longitudinal cohort

This article is included in the Avon Longitudinal Study of Parents and Children (ALSPAC) gateway.
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Introduction

In creating the ALSPAC resource, the research team included questions designed to examine childhood experiences of trauma for the study mothers, their partners and the offspring. This paper focuses on the data collected on the childhoods of the mother and her partner.

Psychological trauma is a complex psychological state resulting from life events that are physically or emotionally harmful and have lasting adverse effects on wellbeing. It is believed that these effects can be passed down intergenerationally to the children of trauma sufferers in the form of relational trauma.

Traumatic events can include (but are not limited to) events such as war/conflict, childhood physical and sexual abuse, natural disasters, traumatic accidents, illness or witnessing events that result in death, threaten death, serious injury or a threat to the physical integrity of self or others. The symptoms resulting long after the trauma has occurred can include depression, anger, anxiety, dissociative disorders and posttraumatic stress disorder (PTSD).

Whilst we were able to find a large amount of research into the effects of trauma during childhood, and into the effects on the children of parents who experience trauma in adulthood, there is much less research on the effects on the children of parents who have suffered trauma in childhood.

The research that has been carried out to date regarding the relationship between childhood trauma and the impact it has on the offspring of those who experience childhood trauma, is predominantly centred around PTSD caused by parental neglect, domestic or sexual abuse and war.

However, there appear to be fewer research papers available regarding parental childhood trauma from other sources such as natural disasters, illness, extreme poverty, accidental injury, loss of a parent or sibling, or being a witness to a distressing event.

Fisher et al. (2013) studied data from ALSPAC and found an association between adverse early life experiences, harsh parenting and bullying, and psychotic symptoms in the study children. The researchers used variables relating to the child’s lifestyle and life events as reported by the study mother, and evaluated the child’s early environment and bullying data, self-reported by the child to test for adversity. They then evaluated the child’s neurocognitive and psychological markers using these measures: Locus of Control gathered using a 12 item version of the Nowicki-Strickland Internal-External scale (NSIE), self-esteem using a shortened form of Harter’s Self Perception Profile for Children, affective symptoms using the Development and Wellbeing Assessment (DAWBA) and the Short Moods and Feelings Questionnaire (SMFQ) both completed by the child’s parents, and finally, 12 core questions from the semi-structured psychosis interview (PLIKSi). Fisher et al. concluded that harsh parenting was not a factor for psychotic symptoms in the child but was indicated in depressive symptoms, anxiety, external locus of control and low self-esteem. It would be interesting to see whether the parent exhibiting the harsh behaviour also suffered from these symptoms as a result of similar or other traumatic experiences during their own childhoods and whether there is a link to intergenerational trauma here.

Plant et al. (2018) analysed 9,397 ALSPAC mother child dyads with the aim of examining whether children whose mothers had a history of childhood trauma, were at increased risk of exhibiting psychopathology. The researchers tested three main hypotheses, that maternal child maltreatment (defined as whether the mother had been maltreated as a child) would predict child internalising and externalising difficulties, that maternal antenatal depression, maternal postnatal depression, maternal maladaptive parenting and child maltreatment would operate as independent mediators and finally, that there would be an indirect effect of maternal postnatal depression through maladaptive parenting and child maltreatment demonstrating separate cumulative effects. The researchers measured whether the mother had experienced physical abuse, sexual abuse, emotional abuse or neglect during their childhood (defined as <18 years). If the mother answered ‘yes’ to any of these exposures, they were considered to have experienced childhood maltreatment. They also measured whether the mothers showed signs of depression (antenatally and postnatally) using the Edinburgh Postnatal Depression Scale (EPDS) and for symptoms of maladaptive parenting such as shouting, slapping and feelings of hostility towards their child. Child maltreatment (physical, sexual or emotional abuse) was elicited through maternal self-report. At 8 years of age the children were asked to self-report whether they had been bullied by their peers. The child was considered to have experienced maltreatment if a positive response had been given to any of these questions. Child depressive symptoms were measured at ages 10 and 13 by asking the mothers to complete the Development and Wellbeing Assessment (DAWBA) and at 11 years, the Strengths and Difficulties (SDQ) questionnaire. The researchers then looked at symptoms of attention-deficit hyperactivity disorder (ADHD), conduct disorder and oppositional defiant disorder (ODD), and found that maternal childhood maltreatment directly predicted the study child being exposed to maltreatment and subsequently developing psychopathology. This effect was greater when tested alongside maternal depression. Children of maltreated mothers had significantly greater emotional and behavioural difficulties at the ages of 10, 11 and 13, as well as greater peer conduct difficulties and hyperactivity problems. Maternal antenatal depression, postnatal depression and child maltreatment had an effect of independent mediation of the association between maternal child maltreatment and both internalising and externalising behaviour difficulties. Maladaptive parenting did not show this result.

In this paper we describe the data collected from parents enrolled in the Avon Longitudinal Study of Parents and Children (ALSPAC) on traumatic events experienced during their childhood, so that it can act as a resource for researchers in the future when considering outcomes on the adult, their children and grandchildren.
Methods
Participants
14,541 pregnant mothers resident in the former Avon county of South West England were recruited into the ALSPAC study. These mothers all had an expected delivery date of 1st April 1991 to 31st December 1992. From these pregnancies, there were a total of 14,676 fetuses and 14,062 live births. Of these children, 13,988 were still alive at 1 year of age. Mothers were considered enrolled if they had returned at least one questionnaire or attended a “Children in Focus” clinic by 19th July 1999. At the age of 7, the study team reached out to mothers who had previously not been included in the study and recruited additional families in order to boost the number of participants. As such, from the age of 7 the total sample number is 15,454 live births, resulting in 15,589 foetuses, of which 14,901 alive at 1 year of age\(^{1,2,4}\). However, these additional parents did not have data collected on their own childhood exposures.

In order to protect the confidentiality of the sample, data from triplet and quad multiple births have been removed as these children were considered to be at risk of identification. This leaves 14,691 eligible participants remaining. ALSPAC is continuing to monitor these families and are recruiting the Children of the Children of the 90’s\(^{3,5}\). The ALSPAC team continue to gather data concerning the parents and grandparents of the study children, enabling further intergenerational research.

Following the advice of the ALSPAC Ethics and Law Committee, partners were recruited into the study only if the mothers wished them to be included. Questionnaires were sent to the mother who then passed the questionnaire on to the partner with a separate pre-paid return envelope. This method meant that ALSPAC were unable to follow up or communicate directly with the partners\(^{3,6}\). Therefore, the numbers of partners’ questionnaires returned were less than those received for the mother’s questionnaires. Around 75% of the partners participated in the study.

Data collection
Since its inception, the ALSPAC study has collated thousands of variables from the study children and their families using questionnaires and clinics to collect the data.

This paper focuses on the variables we identified as being indicative of maternal childhood trauma experiences. There were 186 maternal variables which were collected from the A, B, C and D questionnaires, and 160 variables from the Partner’s collected via the PA, PB and PF questionnaires (Copies of these questionnaires can be viewed on the ALSPAC website). The variable naming convention for these questionnaires usually follows the format of the questionnaire’s assigned alphabetical letter followed by the number of the variable allocated in a sequential pattern in the data set.

The first four questionnaires were sent out at specific time points based on the mother’s gestation at enrolment. Partners were also surveyed at the mother’s discretion. The questionnaires were sent to the mother and the mother decided whether or not to pass that questionnaire to the partner.

Provided the mother enrolled before 14 weeks gestation, questionnaire A “Your Environment” and PA “You and Your Environment” were sent out on enrolment. If the mother enrolled after 14 weeks, the questionnaire was not sent until 22 weeks gestation. This was to prevent the mother feeling overwhelmed with questionnaires and to avoid clashes with the Having a Baby and Your Pregnancy questionnaires which were confined to certain gestation periods. In total, the Your Environment questionnaire was sent to 45% of participants before 15 weeks gestation, 32% between 22–25 weeks gestation and 23% were sent out later than 25 weeks.

Questionnaire B “Having a Baby” was sent out from 18 weeks gestation until 23 weeks gestation. If the mother enrolled before 24 weeks gestation, she also received the PB “Partners Questionnaire” alongside the B questionnaire. If the mother enrolled after 24 weeks, the PB “Partners Questionnaire” was sent out with the mothers “Your Home and Lifestyle” questionnaire. The “Your Home and Lifestyle” questionnaire is a version of the A “Your Environment” questionnaire which has been adapted for use by mothers who enrolled later into the study and therefore this data is coded alongside the A questionnaire data.

Questionnaire C “Your Pregnancy” was sent out from 32 weeks gestation until 40 weeks gestation. For questionnaire D “About Yourself” the timing of when this questionnaire was considered to be less important and therefore the bulk of these were sent out from 14 weeks gestation until 37 weeks gestation. However, in a small number of cases, questionnaire D was sent after the birth of the study child.

The H “Your Health Events and feelings” questionnaire was sent to mothers at 33 months postpartum and was accompanied by the PF “Partners Health Events and Feelings” questionnaire.

Please note that the study website contains details of all the data that is available through a fully searchable data dictionary and variable search tool.

The ALSPAC team have also provided a Questionnaire Topic guide which summarises the topics in each questionnaire.

The majority of the other questions available were drawn up by either the ALSPAC team or the European Longitudinal Study of Pregnancy and Childhood (ELSPAC) team. However, where suitable established measures existed, these measures were used within the questionnaire, occasionally with minor modifications.

Sample demographics
Table 1a and Table 1b show the demographics of the parents who completed the questionnaires that contained the childhood
Table 1a. Demographic backgrounds of mothers who completed the B, C, D and H questionnaires.

|                          | N  | B Questionnaire | N  | C Questionnaire | N  | D Questionnaire | N  | H Questionnaire |
|--------------------------|----|----------------|----|----------------|----|----------------|----|----------------|
| **Age of mother at birth of child** |    |                |    |                |    |                |    |                |
| <25                      | 11,503 | 2,314 (20.12%) | 11,307 | 2,224 (19.67%) | 11,286 | 2,222 (19.69%) | 9,287 | 1,597 (17.20%) |
| 25-34                    |     | 7,978 (69.36%) |     | 7,875 (69.65%) |     | 7,870 (69.73%) |     | 6,649 (71.59%) |
| 35+                      |     | 1,211 (10.53%) |     | 1,208 (10.68%) |     | 1,194 (10.58%) |     | 1,041 (11.21%) |
| **Mother’s highest education level** | 11,447 | 2,863 (25.01%) | 11,708 | 2,979 (25.44%) | 11,168 | 2,750 (24.62%) | 9,029 | 1,969 (21.81%) |
| <O level                 |     | 4,241 (37.05%) |     | 4,324 (36.93%) |     | 4,274 (38.27%) |     | 3,347 (37.07%) |
| O level                  |     | 4,343 (37.94%) |     | 4,405 (37.62%) |     | 4,274 (38.27%) |     | 3,713 (41.12%) |
| >O level                 |     |                |     |                |     |                |     |                |
| **Partner lives with mother** | 12,976 | 11,797 (90.91%) | 12,272 | 11,231 (91.52%) | 12,364 | 11,316 (91.52%) | 9,579 | 8,880 (92.70%) |
| Yes                      |     | 1,179 (9.09%) |     | 1,041 (8.48%) |     | 1,048 (8.48%) |     | 699 (7.30%)    |
| No                       |     |                |     |                |     |                |     |                |
| **Sex of child** | 13,269 | 6,853 (51.65%) | 12,546 | 6,480 (51.65%) | 12,535 | 6,450 (51.46%) | 9,738 | 5,008 (51.43%) |
| Male                     |     | 6,416 (48.35%) |     | 6,066 (48.35%) |     | 6,085 (48.54%) |     | 4,730 (48.57%) |
| Female                   |     |                |     |                |     |                |     |                |
| **Mother’s Ethnic background** | 12,102 | 11,791 (97.43%) | 12,066 | 12,066 (97.37%) | 11,774 | 11,492 (97.60%) | 9,420 | 9,242 (98.11%) |
| White                    |     | 311 (2.57%)    |     | 326 (2.63%)    |     | 282 (2.40%)    |     | 179 (1.89%)    |
| Non-white                |     |                |     |                |     |                |     |                |

Table 1b. Demographic backgrounds of partners who completed the PA, PB and PF questionnaires.

|                          | N  | PA Questionnaire | N  | PB Questionnaire | N  | PF Questionnaire |
|--------------------------|----|----------------|----|----------------|----|----------------|
| **Age of partner at birth** | 6,638 | 623 (9.39%) | 7,138 | 707 (9.90%) | 4,657 | 325 (6.98%) |
| <25                      |     | 4,500 (67.79%) |     | 4,808 (67.36%) |     | 3,171 (68.09%) |
| 25-34                    |     | 1,515 (22.82%) |     | 1,623 (22.74%) |     | 1,161 (24.93%) |
| 35+                      |     |                |     |                |     |                |
| **Partner’s highest education level** | 7,533 | 1,763 (23.40%) | 9,333 | 2,357 (25.25%) | 4,953 | 987 (19.93%) |
| <O level                 |     | 1,820 (24.16%) |     | 2,238 (23.98%) |     | 1,157 (23.36%) |
| O level                  |     | 3,950 (52.44%) |     | 4,738 (50.77%) |     | 2,809 (56.71%) |
| >O level                 |     |                |     |                |     |                |
| **Partner lives with Mother** | 8,616 | 8,219 (95.39%) | 9,857 | 9,355 (94.91%) | 5,456 | 5,267 (96.54%) |
| Yes                      |     | 397 (4.61%)    |     | 502 (5.09%)    |     | 189 (3.46%)    |
| No                       |     |                |     |                |     |                |
| **Sex of child** | 8,706 | 4,440 (51.00%) | 10,040 | 5,161 (51.40%) | 5,513 | 2,842 (51.55%) |
| Boy                      |     | 4,266 (49.00%) |     | 4,879 (48.60%) |     | 2,671 (48.45%) |
| Girl                     |     |                |     |                |     |                |
| **Partner’s Ethnic background** | 7,902 | 7,715 (97.63%) | 9,910 | 9,622 (97.09%) | 5,113 | 5,030 (98.38%) |
| White                    |     | 187 (2.37%)    |     | 288 (2.91%)    |     | 83 (1.62%)     |
| Non-white                |     |                |     |                |     |                |
events and circumstances. Most of these questionnaires (B, C, D, PA and PB) were completed during pregnancy, H and PF were administered 33 months after the birth of the child. The tables show the range of ages, education level, and ethnicity of the participating parents.

Scale of life events
The life events questions to the mother (Table 2a) comprised a set of 31 specific questions based on the previous work of Coddington, regarding events that may or may not have happened to the respondent before the age of 17. These questions were included in the questionnaire C sent to the mother at around 32 weeks gestation. 30 similar questions were also sent to the mother’s partners in their own questionnaire administered during pregnancy, the question to the mothers concerning whether they had acquired a stepsibling was inadvertently omitted from the partner’s questionnaire (Table 2b). For each specified item the respondent was asked to

| Variable Number | Question                                      | Categorical responses | Binary responses |
|------------------|-----------------------------------------------|-----------------------|-----------------|
| c400             | Your parent died.                             | N 12,291              |                 |
|                  |                                               | 509 (4.14%)           |                 |
|                  |                                               | 110 (0.89%)           |                 |
|                  |                                               | 65 (0.53%)            |                 |
|                  |                                               | 45 (0.37%)            |                 |
|                  |                                               | 11,562 (94.07%)       |                 |
| c400a            | Your parent died.                             | N 12,291              |                 |
|                  |                                               | 729 (5.93%)           |                 |
|                  |                                               | 11,562 (94.07%)       |                 |
| c401             | Your brother or sister died.                  | N 12,291              |                 |
|                  |                                               | 129 (1.05%)           |                 |
|                  |                                               | 54 (0.44%)            |                 |
|                  |                                               | 51 (0.41%)            |                 |
|                  |                                               | 65 (0.53%)            |                 |
|                  |                                               | 11,992 (97.57%)       |                 |
| c401a            | Your brother or sister died.                  | N 12,291              |                 |
|                  |                                               | 299 (2.43%)           |                 |
|                  |                                               | 11,992 (97.57%)       |                 |
| c402             | A relative died.                              | N 12,291              |                 |
|                  |                                               | 878 (7.14%)           |                 |
|                  |                                               | 1,462 (11.89%)        |                 |
|                  |                                               | 2,452 (19.95%)        |                 |
|                  |                                               | 1,694 (13.78%)        |                 |
|                  |                                               | 5,805 (47.23%)        |                 |
| c402a            | A relative died.                              | N 12,291              |                 |
|                  |                                               | 6,486 (52.77%)        |                 |
|                  |                                               | 5,805 (47.23%)        |                 |
| c403             | A friend died.                                | N 12,291              |                 |
|                  |                                               | 269 (2.19%)           |                 |
|                  |                                               | 476 (3.87%)           |                 |
|                  |                                               | 744 (6.05%)           |                 |
|                  |                                               | 244 (1.99%)           |                 |
|                  |                                               | 10,558 (85.90%)       |                 |
| c403a            | A friend died.                                | N 12,291              |                 |
|                  |                                               | 1,733 (14.10%)        |                 |
|                  |                                               | 10,558 (85.90%)       |                 |
| c404             | A parent had a serious illness.               | N 12,291              |                 |
|                  |                                               | 845 (6.87%)           |                 |
|                  |                                               | 628 (5.11%)           |                 |
|                  |                                               | 515 (4.19%)           |                 |
|                  |                                               | 198 (1.61%)           |                 |
|                  |                                               | 10,105 (82.21%)       |                 |
| c404a            | A parent had a serious illness.               | N 12,291              |                 |
|                  |                                               | 2,186 (17.79%)        |                 |
|                  |                                               | 10,105 (82.21%)       |                 |
| c405             | A parent was in hospital.                    | N 12,291              |                 |
|                  |                                               | 988 (8.04%)           |                 |
|                  |                                               | 1,033 (8.40%)         |                 |
|                  |                                               | 1,406 (11.44%)        |                 |
|                  |                                               | 1,314 (10.69%)        |                 |
|                  |                                               | 7,550 (61.43%)        |                 |
| c405a            | A parent was in hospital.                    | N 12,291              |                 |
|                  |                                               | 4,741 (38.57%)        |                 |
|                  |                                               | 7,550 (61.43%)        |                 |
| c406             | You had a serious physical illness.           | N 12,291              |                 |
|                  |                                               | 175 (1.42%)           |                 |
|                  |                                               | 152 (1.24%)           |                 |
|                  |                                               | 143 (1.16%)           |                 |
|                  |                                               | 120 (0.98%)           |                 |
|                  |                                               | 11,701 (95.20%)       |                 |
| c406a            | You had a serious physical illness.           | N 12,291              |                 |
|                  |                                               | 590 (4.80%)           |                 |
|                  |                                               | 11,701 (95.20%)       |                 |
| c407             | You were in hospital.                         | N 12,291              |                 |
|                  |                                               | 376 (3.06%)           |                 |
|                  |                                               | 621 (5.05%)           |                 |
|                  |                                               | 1,079 (8.78%)         |                 |
|                  |                                               | 1,971 (16.04%)        |                 |
|                  |                                               | 8,244 (67.07%)        |                 |
| c407a            | You were in hospital.                         | N 12,291              |                 |
|                  |                                               | 4,047 (32.93%)        |                 |
|                  |                                               | 8,244 (67.07%)        |                 |
| Variable Number | Question                                                                 | N     | Categorical responses | Binary responses |
|-----------------|--------------------------------------------------------------------------|-------|-----------------------|------------------|
| c408            | Brother or sister had a serious illness.                                | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 203 (1.65%)           | 926 (7.53%)      |
|                 |                                                                          |       | 236 (1.92%)           | 11,365 (92.47%)  |
|                 |                                                                          |       | 277 (2.25%)           |                  |
|                 |                                                                          |       | 210 (1.71%)           |                  |
|                 |                                                                          |       | 11,365 (92.47%)       |                  |
| c409            | Brother or sister was in hospital.                                      | 12,291| Yes, moderate effect  | Yes No           |
|                 |                                                                          |       | 244 (1.99%)           | 2,585 (21.03%)   |
|                 |                                                                          |       | 377 (3.07%)           | 9,706 (78.97%)   |
|                 |                                                                          |       | 721 (5.87%)           |                  |
|                 |                                                                          |       | 1,243 (10.11%)        |                  |
|                 |                                                                          |       | 9,706 (78.97%)        |                  |
| c410            | A parent had a serious accident.                                        | 12,291| Yes, mild effect      | Yes No           |
|                 |                                                                          |       | 141 (1.15%)           | 507 (4.12%)      |
|                 |                                                                          |       | 127 (1.03%)           | 11,784 (95.88%)  |
|                 |                                                                          |       | 139 (1.13%)           |                  |
|                 |                                                                          |       | 100 (0.81%)           |                  |
|                 |                                                                          |       | 11,784 (95.88%)       |                  |
| c410a           | A parent had a serious accident.                                        | 12,291| Yes, no effect        | Yes No           |
|                 |                                                                          |       | 98 (0.80%)            | 441 (3.59%)      |
|                 |                                                                          |       | 104 (0.85%)           | 11,850 (96.41%)  |
|                 |                                                                          |       | 145 (1.18%)           |                  |
|                 |                                                                          |       | 94 (0.76%)            |                  |
|                 |                                                                          |       | 11,850 (96.41%)       |                  |
| c411            | You had a serious accident.                                             | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 98 (0.80%)            | 12,197 (99.24%)  |
|                 |                                                                          |       | 104 (0.85%)           |                  |
|                 |                                                                          |       | 145 (1.18%)           |                  |
|                 |                                                                          |       | 94 (0.76%)            |                  |
|                 |                                                                          |       | 12,197 (99.24%)       |                  |
| c411a           | You had a serious accident.                                             | 12,291| Yes, moderate effect  | Yes No           |
|                 |                                                                          |       | 132 (1.07%)           | 561 (4.56%)      |
|                 |                                                                          |       | 143 (1.16%)           | 11,730 (95.44%)  |
|                 |                                                                          |       | 170 (1.38%)           |                  |
|                 |                                                                          |       | 116 (0.94%)           |                  |
|                 |                                                                          |       | 11,730 (95.44%)       |                  |
| c412            | Brother or sister had a serious accident.                                | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 34 (0.28%)            | 92 (0.75%)       |
|                 |                                                                          |       | 20 (0.16%)            | 12,199 (99.24%)  |
|                 |                                                                          |       | 25 (0.20%)            |                  |
|                 |                                                                          |       | 15 (0.12%)            |                  |
|                 |                                                                          |       | 12,199 (99.24%)       |                  |
| c412a           | Brother or sister had a serious accident.                                | 12,291| Yes, moderate effect  | Yes No           |
|                 |                                                                          |       | 454 (3.69%)           | 94 (0.76%)       |
|                 |                                                                          |       | 152 (1.24%)           | 12,199 (99.24%)  |
|                 |                                                                          |       | 140 (1.14%)           |                  |
|                 |                                                                          |       | 177 (1.44%)           |                  |
|                 |                                                                          |       | 11,368 (92.49%)       |                  |
| c413            | You acquired a physical deformity.                                      | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 183 (1.49%)           | 2,097 (17.06%)   |
|                 |                                                                          |       | 120 (0.98%)           | 10,194 (82.94%)  |
|                 |                                                                          |       | 84 (0.68%)            |                  |
|                 |                                                                          |       | 34 (0.28%)            |                  |
|                 |                                                                          |       | 11,870 (96.57%)       |                  |
| c413a           | You acquired a physical deformity.                                      | 12,291| Yes, moderate effect  | Yes No           |
|                 |                                                                          |       | 24 (0.20%)            | 421 (3.43%)      |
|                 |                                                                          |       | 15 (0.12%)            | 11,870 (96.57%)  |
|                 |                                                                          |       | 20 (0.16%)            |                  |
|                 |                                                                          |       | 33 (0.27)             |                  |
|                 |                                                                          |       | 12,199 (99.25%)       |                  |
| c414            | You became pregnant.                                                    | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 829 (6.74%)           | 2,097 (17.06%)   |
|                 |                                                                          |       | 570 (4.64%)           | 10,194 (82.94%)  |
|                 |                                                                          |       | 398 (3.24%)           |                  |
|                 |                                                                          |       | 300 (2.44%)           |                  |
|                 |                                                                          |       | 10,194 (82.94%)       |                  |
| c414a           | You became pregnant.                                                    | 12,291| Yes, moderate effect  | Yes No           |
|                 |                                                                          |       | 136 (1.10%)           | 11,368 (92.49%)  |
|                 |                                                                          |       | 85 (0.68%)            |                  |
|                 |                                                                          |       | 84 (0.68%)            |                  |
|                 |                                                                          |       | 34 (0.28%)            |                  |
|                 |                                                                          |       | 11,870 (96.57%)       |                  |
| c415            | A parent was imprisoned.                                                | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 680 (5.53%)           | 1,895 (15.42%)   |
|                 |                                                                          |       | 496 (4.04%)           | 10,396 (84.58%)  |
|                 |                                                                          |       | 377 (3.07%)           |                  |
|                 |                                                                          |       | 342 (2.78%)           |                  |
|                 |                                                                          |       | 10,396 (84.58%)       |                  |
| c415a           | A parent was imprisoned.                                                | 12,291| Yes, moderate effect  | Yes No           |
|                 |                                                                          |       | 367 (2.99%)           | 1,431 (11.64%)   |
|                 |                                                                          |       | 336 (2.73%)           | 10,860 (88.36%)  |
|                 |                                                                          |       | 306 (2.49%)           |                  |
|                 |                                                                          |       | 422 (3.43%)           |                  |
|                 |                                                                          |       | 10,860 (88.36%)       |                  |
| c416            | A parent was physically cruel to you.                                    | 12,291| Yes, big effect       | Yes No           |
|                 |                                                                          |       | 390 (3.17%)           | 1,855 (15.42%)   |
|                 |                                                                          |       | 264 (2.15%)           | 10,396 (84.58%)  |
|                 |                                                                          |       | 231 (1.88%)           |                  |
|                 |                                                                          |       | 53 (0.43%)            |                  |
|                 |                                                                          |       | 11,353 (92.37%)       |                  |
| Variable Number | Question                                                                 | N | Yes, big effect | Yes, moderate effect | Yes, mild effect | Yes, no effect | No | Yes | No  |
|-----------------|---------------------------------------------------------------------------|---|------------------|----------------------|-----------------|---------------|----|-----|-----|
| c420a           | A parent was emotionally cruel to you.                                    | 12,291 |                |                      |          |              |    |     | 938 (7.63%) 11,353 (92.37%) |
| c421            | Your parents had serious arguments.                                       | 12,291 | 843 (6.86%)     | 883 (7.18%)         | 1,060 (8.62%) | 506 (4.12%) | 8,999 (73.22%) |
| c421a           | Your parents had serious arguments.                                       | 12,291 |                |                      |          |              |    |     | 3,292 (26.78%) 8,999 (73.22%) |
| c422            | You were sexually abused.                                                 | 12,291 | 368 (2.99%)     | 131 (1.07%)         | 93 (0.76%)  | 36 (0.29%)  | 11,663 (94.89%) |
| c422a           | You were sexually abused.                                                 | 12,291 |                |                      |          |              |    |     | 628 (5.11%) 11,663 (94.89%) |
| c423            | A parent was mentally ill.                                                | 12,291 | 167 (1.36%)     | 145 (1.18%)         | 142 (1.16%) | 63 (0.51%)  | 11,774 (95.79%) |
| c423a           | A parent was mentally ill.                                                | 12,291 |                |                      |          |              |    |     | 517 (4.21%) 11,774 (95.79%) |
| c424            | You discovered you were adopted.                                          | 12,291 | 48 (0.39%)      | 49 (0.40%)          | 43 (0.35%)  | 111 (0.90%) | 12,040 (97.96%) |
| c424a           | You discovered you were adopted.                                          | 12,291 |                |                      |          |              |    |     | 251 (2.04%) 12,040 (97.96%) |
| c425            | Your family moved to a new district.                                       | 12,291 | 461 (3.75%)     | 667 (5.43%)         | 900 (7.32%) | 1,288 (10.48%) | 8,975 (73.02%) |
| c425a           | Your family moved to a new district.                                       | 12,291 |                |                      |          |              |    |     | 3,316 (26.98%) 8,975 (73.02%) |
| c426            | You were in trouble with the police.                                      | 12,291 | 61 (0.50%)      | 83 (0.68%)          | 172 (1.40%) | 177 (1.44%) | 11,798 (95.99%) |
| c426a           | You were in trouble with the police.                                      | 12,291 |                |                      |          |              |    |     | 493 (4.01%) 11,798 (95.99%) |
| c427            | You were expelled or suspended from school.                               | 12,291 | 38 (0.31%)      | 55 (0.45%)          | 134 (1.09%) | 226 (1.84%) | 11,838 (96.31%) |
| c427a           | You were expelled or suspended from school.                               | 12,291 |                |                      |          |              |    |     | 453 (3.69%) 11,838 (96.31%) |
| c428            | You failed an important exam.                                             | 12,291 | 159 (1.29%)     | 338 (2.75%)         | 562 (4.57%) | 451 (3.67%) | 10,781 (87.71%) |
| c428a           | You failed an important exam.                                             | 12,291 |                |                      |          |              |    |     | 1,510 (12.29%) 10,781 (87.71%) |
| c429            | Your family’s financial circumstances got worse.                          | 12,291 | 172 (1.40%)     | 330 (2.68%)         | 565 (4.60%) | 479 (3.90%) | 10,745 (87.42%) |
| c429a           | Your family’s financial circumstances got worse.                          | 12,291 |                |                      |          |              |    |     | 1,546 (12.58%) 10,745 (87.42%) |
| c430            | You acquired a stepbrother or stepsister.                                 | 12,291 | 128 (1.04%)     | 133 (1.08%)         | 232 (1.89%) | 456 (3.71%) | 11,342 (92.28%) |
| c430a           | You acquired a stepbrother or stepsister.                                 | 12,291 |                |                      |          |              |    |     | 949 (7.72%) 11,342 (92.28%) |
| c431            | Other important happening.                                                | 12,291 | 224 (1.82%)     | 59 (0.48%)          | 22 (0.18%)  | 9 (0.07%)   | 11,977 (97.45%) |
| c431a           | Other important happening.                                                | 12,293 |                |                      |          |              |    |     | 313 (2.57%) 11,880 (97.43%) |
choose between five possible answers: ‘yes, affected me a lot’; ‘yes, moderately affected’; ‘yes, mildly affected’; ‘yes, but did not affect me’; ‘no, did not happen’. For each parent a question concerning anything else that occurred was asked, with a description written as text; these responses are not included here.

From the life events scale, two variables were created. The first, the weighted life events scores (c432 and pb481) gives an indication of the perceived degree of effect of each life event the parent experienced. Thus, c432 was created by selecting variables c400-c430, reversing the coding for these variables and setting ‘no’ to 0 (unless all were missing in which case the variable was left as missing). Therefore, greater perceived effects will have a higher score; addition of all life events variables together provides the overall score. [Variable c431 was not included in the score as analysis showed that when

| Variable Number | Question                                      | N      | Affected a lot | Affected a bit | Mild effect | No effect | Did not happen | Yes  | No  |
|-----------------|-----------------------------------------------|--------|----------------|----------------|-------------|-----------|----------------|------|-----|
| pb450           | A parent died                                 | 9,957  | 409 (4.11%)    | 101 (1.01%)    | 42 (0.42%)  | 55 (0.55%) | 9,350 (93.90%) |      |     |
| pb450a          | A parent died                                 | 9,957  |                |                |             |           |                 | 607  | 9,350 |
| pb451           | A brother or sister died                       | 9,957  | 112 (1.12%)    | 46 (0.46%)     | 51 (0.51%)  | 134 (1.35%) | 9,614 (96.56%) |      |     |
| pb451a          | A brother or sister died                       | 9,957  |                |                |             |           |                 | 343  | 9,614 |
| pb452           | A relative died                               | 9,957  | 693 (6.96%)    | 1,038 (10.42%) | 2,204 (22.14%) | 2,171 (21.80%) | 3,851 (38.68%) |      |     |
| pb452a          | A relative died                               | 9,957  |                |                |             |           |                 | 6,106 | 3,851 |
| pb453           | A friend died                                 | 9,957  | 273 (2.74%)    | 508 (5.10%)    | 790 (7.93%) | 567 (5.69%) | 7,819 (78.53%) |      |     |
| pb453a          | A friend died                                 | 9,957  |                |                |             |           |                 | 2,138 | 7,819 |
| pb454           | A parent had a serious illness                 | 9,957  | 739 (7.42%)    | 614 (6.17%)    | 556 (5.58%) | 374 (3.76%) | 7,674 (77.07%) |      |     |
| pb454a          | A parent had a serious illness                 | 9,957  |                |                |             |           |                 | 2,283 | 7,674 |
| pb455           | A parent was in hospital                       | 9,957  | 748 (7.51%)    | 808 (8.11%)    | 1,218 (12.23%) | 1,332 (13.38%) | 5,851 (58.76%) |      |     |
| pb455a          | A parent was in hospital                       | 9,957  |                |                |             |           |                 | 4,106 | 5,851 |
| pb456           | You had a serious physical illness             | 9,957  | 333 (3.34%)    | 194 (1.95%)    | 277 (2.78%) | 249 (2.50%) | 8,904 (89.42%) |      |     |
| pb456a          | You had a serious physical illness             | 9,957  |                |                |             |           |                 | 1,053 | 8,904 |
| pb457           | You were in hospital                           | 9,957  | 409 (4.11%)    | 475 (4.77%)    | 938 (9.42%) | 2,131 (21.40%) | 6,004 (60.30%) |      |     |
| pb457a          | You were in hospital                           | 9,957  |                |                |             |           |                 | 3,953 | 6,004 |
| pb458           | Brother or sister had a serious illness         | 9,957  | 174 (1.75%)    | 197 (1.98%)    | 321 (3.22%) | 371 (3.73%) | 8,894 (89.32%) |      |     |
| pb458a          | Brother or sister had a serious illness         | 9,957  |                |                |             |           |                 | 1,063 | 8,894 |
| pb459           | Brother or sister was in hospital              | 9,957  | 213 (2.14%)    | 269 (2.70%)    | 568 (5.70%) | 1,343 (13.49%) | 7,564 (75.97%) |      |     |

Table 2b. Partner’s Life Events Scale indicating the potentially traumatic events that had occurred to the mother before 17 years of age, using questions based on Coddington with the mother’s partner’s indication as to what effect they had on him.
| Variable Number | Question                                      | N     | Affected a lot | Affected a bit | Mild effect | No effect | Did not happen | Binary responses |
|-----------------|-----------------------------------------------|-------|----------------|----------------|-------------|-----------|----------------|-----------------|
| Pb459a          | Brother or sister was in hospital             | 9,957 | 2,393 (24.03%) | 7,564 (75.97%) |            |           |                |                 |
| Pb460           | A parent had a serious accident               | 9,957 | 209 (2.09%)    | 183 (1.84%)    | 172 (1.73%)  |           | 9,022 (90.61%) |                 |
| Pb460a          | A parent had a serious accident               | 9,957 | 9,321 (93.61%) |                |            |           |                |                 |
| Pb451           | You had a serious accident                    | 9,957 | 935 (9.39%)    | 9,022 (90.61%) |            |           |                |                 |
| Pb451a          | You had a serious accident                    | 9,957 | 9,321 (93.61%) |                |            |           |                |                 |
| Pb462           | Brother or sister had a serious accident       | 9,957 | 689 (6.92%)    | 9,268 (93.08%) |            |           |                |                 |
| Pb462a          | Brother or sister had a serious accident       | 9,957 | 689 (6.92%)    | 9,268 (93.08%) |            |           |                |                 |
| Pb463           | You acquired a physical deformity             | 9,957 | 329 (3.30%)    | 9,628 (96.70%) |            |           |                |                 |
| Pb463a          | You acquired a physical deformity             | 9,957 | 329 (3.30%)    | 9,628 (96.70%) |            |           |                |                 |
| Pb464           | Your girlfriend became pregnant               | 9,957 | 1,554 (15.61%) | 8,695 (87.33%) |            |           |                |                 |
| Pb464a          | Your girlfriend became pregnant               | 9,957 | 1,554 (15.61%) | 8,695 (87.33%) |            |           |                |                 |
| Pb465           | A parent was imprisoned                       | 9,957 | 1,262 (12.67%) | 8,967 (90.06%) |            |           |                |                 |
| Pb465a          | A parent was imprisoned                       | 9,957 | 1,262 (12.67%) | 8,967 (90.06%) |            |           |                |                 |
| Pb466           | A parent was physically cruel to you          | 9,957 | 899 (9.94%)    | 8,967 (90.06%) |            |           |                |                 |
| Pb466a          | A parent was physically cruel to you          | 9,957 | 899 (9.94%)    | 8,967 (90.06%) |            |           |                |                 |
| Pb467           | Your parents separated                        | 9,957 | 1,554 (15.61%) | 8,403 (84.39%) |            |           |                |                 |
| Pb467a          | Your parents separated                        | 9,957 | 1,554 (15.61%) | 8,403 (84.39%) |            |           |                |                 |
| Pb468           | Your parents divorced                         | 9,957 | 3,086 (30.99%) | 6,871 (69.01%) |            |           |                |                 |
| Pb468a          | Your parents divorced                         | 9,957 | 3,086 (30.99%) | 6,871 (69.01%) |            |           |                |                 |
| Pb469           | A parent remarried                            | 9,957 | 123 (1.24%)    | 9,606 (96.47%) |            |           |                |                 |
| Pb469a          | A parent remarried                            | 9,957 | 123 (1.24%)    | 9,606 (96.47%) |            |           |                |                 |
| Pb470           | A parent was emotionally cruel to you         | 9,957 | 67 (0.67%)     | 9,606 (96.47%) |            |           |                |                 |
| Pb470a          | A parent was emotionally cruel to you         | 9,957 | 67 (0.67%)     | 9,606 (96.47%) |            |           |                |                 |
| Pb471           | Your parents had serious arguments            | 9,957 | 3,086 (30.99%) | 6,871 (69.01%) |            |           |                |                 |
| Pb471a          | Your parents had serious arguments            | 9,957 | 3,086 (30.99%) | 6,871 (69.01%) |            |           |                |                 |
| Pb472           | You were sexually abused                      | 9,957 | 123 (1.24%)    | 9,606 (96.47%) |            |           |                |                 |
| Pb472a          | You were sexually abused                      | 9,957 | 123 (1.24%)    | 9,606 (96.47%) |            |           |                |                 |
| Pb473           | A parent was mentally ill                     | 9,957 | 123 (1.24%)    | 9,606 (96.47%) |            |           |                |                 |
| Pb473a          | A parent was mentally ill                     | 9,957 | 123 (1.24%)    | 9,606 (96.47%) |            |           |                |                 |
| Variable Number | Question                                                                 | Categorical Responses | Binary responses |
|-----------------|---------------------------------------------------------------------------|-----------------------|------------------|
|                 | N                          | Affected a lot | Affected a bit | Mild effect | No effect | Did not happen | Yes | No    |
| pb473a          | A parent was mentally ill                                               |                       |                  |            |            |                | 351 | 9,606 |
|                 |                             | (4.33%)         | (0.29%)         | (0.38%)     | (0.92%)   | (97.97%)      |     |       |
| pb474           | You discovered you were adopted                                         |                       |                  |            |            |                | 202 | 9,755 |
|                 |                             | (2.03%)         | (0.38%)         | (8.57%)    | (14.29%)  | (68.14%)      |     |       |
| pb474a          | You discovered you were adopted                                         | 9,957                |                  |            |            |                |     |       |
| pb475           | Your family moved to a new district                                      | 9,957                | 395              | 501        | 853        | 1,423          | 6,785|       |
|                 |                             | (3.97%)         | (5.03%)         | (8.57%)    | (14.29%)  | (68.14%)      |     |       |
| pb475a          | Your family moved to a new district                                      | 9,957                |                  |            |            |                |     |       |
| pb476           | You were in trouble with the police                                      |                       |                  |            |            |                |     |       |
|                 |                             | (2.64%)         | (2.46%)         | (5.26%)    | (9.30%)   | (80.34%)      |     |       |
| pb476a          | You were in trouble with the police                                      | 9,957                |                  |            |            |                |     |       |
| pb477           | You were expelled or suspended from school                               | 9,957                | 93               | 82         | 220        | 610            | 8,952|       |
|                 |                             | (0.93%)         | (0.82%0       | (2.21%)    | (6.13%)   | (89.91%)      |     |       |
| pb477a          | You were expelled or suspended from school                               | 9,957                |                  |            |            |                |     |       |
| pb478           | You failed an important exam                                             | 9,957                | 210              | 316        | 646        | 978            | 7,807|       |
|                 |                             | (2.11%)         | (3.17%)         | (6.49%)    | (9.82%)   | (78.41%)      |     |       |
| pb478a          | You failed an important exam                                             | 9,957                |                  |            |            |                |     |       |
| pb479           | Your family's financial circumstances got worse                          | 9,957                | 188              | 272        | 447        | 606            | 8,444|       |
|                 |                             | (1.89%)         | (2.73%)         | (4.49%)    | (6.09%)   | (87.80%)      |     |       |
| pb479a          | Your family's financial circumstances got worse                          | 9,957                |                  |            |            |                |     |       |
| pb480           | Another important happening (please tick and describe)                   | 9,957                | 186              | 46         | 31         | 16             | 9,678|       |
|                 |                             | (1.87%)         | (0.46%)         | (0.31%)    | (0.16%)   | (97.20%)      |     |       |
| pb480a          | Another important happening (please tick and describe)                   | 9,957                |                  |            |            |                |     |       |

Another event was noted, it closely matched another variable between c400-c430 and had been coded into that variable. The same coding system was used for the partners’ variables, pb450 to pb479 (Figures 1a, 1b). The range for mothers and partners were 0-107 and 0-78, with medians of 6 and 7 respectively.

The second derived variables, the Life Events Scores (c433 and pb482), gives the number of life events experienced by each parent and was created by recoding the variables to make all ‘yes’ responses as 1 and the ‘no’ responses as 0, and then adding these variables together. For the mother’s data, the variables used to create the score were c400-c430. The variables used to create the partners’ score were pb450 to pb479. The ranges were 0-27 and 0-22 and medians 3 and 3.5 for mothers and partners respectively (Figures 2a, 2b).

Other childhood circumstances
Questions relating to other circumstances during the parents’ childhood can be found in Table 3a and Table 3b. Variables indicating further questions where the respondent was asked to indicate their actual age at which circumstances occurred are shown in Table 4a and Table 4b. Although not listed in this table, ages are also available for when specific accidents and injuries had occurred, thus enabling childhood events to be computed (see variables d080 to d130 for the mothers and pa110 to pa163 for their partners).

Subsequent to pregnancy, at 33 months after delivery, further questions were asked about abuse during childhood as well as of violent events in the home. The reason for the delay in asking these questions concerned the realisation that they should have been asked earlier but would still be valid to ask at this stage in the parents’ life course (Table 5a and Table 5b).

Childhood happiness and unhappiness
Each parent was asked to rate their memories of happiness/unhappiness at each of three ages: under 6, 6-11 and 12–15 years. As a validation exercise, the mother was asked to do this on two separate occasions, and the data are found in the C files and the D files. Table 6a shows these data, and Table 6b lists the partners’ memories of happiness in their own childhoods as self-reported on one occasion during pregnancy.
Maternal care score

The Parental Bonding Instrument\(^2\) is a scale that seeks to define the principal dimensions of child/parent bonding and to examine the importance of these factors in determining the strength of a child’s relationship with their parent. In 1987, Gamsa\(^2\) re-wrote several of the questions in the Parental Bonding Instrument as in the original test, five of the questions contained double negatives which were considered to be confusing to participants.

The ALSPAC team also changed the responses for the questions as piloting revealed that the participants did not like the original options given in the test. Participants were asked to look at statements and rate how like their relationship with their mother the statements were. The answers in the original scale are “Very like”, “Moderately like”, “Moderately unlike” and “Very unlike”. These answers were changed to “Never”, “Sometimes” and “Usually”. In addition, three questions were removed from the test due to their similarity and the perceived repetition causing annoyance to the participants. The responses to each question used are shown in Table 7a and Table 7b for each parent.

From the questions two separate scales were derived as specified by Gamsa indicating (a) maternal care and (b) maternal over-protection. These can be found in Table 8. To create these variables, all coding was reversed for variables d702, d703, d708, d709 and d711 to make the negative response have the higher value. The binary variables d713, d714, d715, d716, d717, d718, d719, d720 and d721 were also recoded so that they faced the same direction.

The Maternal Care Score, d724 (Figure 3a) was created by adding together the responses for variables d700, d701, d703, d704, d705, d709, d710, d712, d713, d714, d716 and d717, then minus 12 from the total. The over protection scale d727

![Figure 1. a. Mother’s Weighted Life Events Score. b. Partner’s Weighted Life Events Score.](image-url)
(Figure 3b) was created by adding together the responses for variables d702, d706, d707, d708, d711, d717, d718, d719, d720 and d721, and then minus 10 from the total. Similar coding and creating of derived variables were undertaken for the paternal scales.

The Maternal Care Score variable comprises a continuous measure of how much the study parent thought their own mother cared for them on a scale of 0-24, with 24 being the most caring mothers. The Overprotection Scale measured how overprotective the study parent thought their own mother was on a scale of 0-20, with 20 being the most overprotective mothers. The numbers of cases in each scale are shown firstly for the scales based on complete data, secondly for scales where the missing response to the individual data have been replaced by the mode for the item, and thirdly the number of such missing items are given.

**Strengths and limitations of the data**

The strengths of these data include the large sample size, with over 20,000 participants with data available. The only inclusion requirements at enrolment for this study were the geographical location the participating mother resided in and the expected date of delivery. The participants recruited to the study were broadly representative of the general population of new parents’ resident in the area at the time in terms of sex, ethnicity and socio-economic status.

All parent participants received the same questions and one of the major strengths of this study is the vast array of other...
| Variable Number | Question                                                                 | N         | Categorical responses | Binary responses |
|-----------------|--------------------------------------------------------------------------|-----------|-----------------------|------------------|
|                 |                                                                          |           |                       |                  |
| d380*           | Were you legally adopted?                                                | 12,293    | 354 (2.88%)           | 11,939 (97.12%)  |
|                 |                                                                          |           |                       |                  |
| d385            | Were you ever “in care” of either a local authority or voluntary agency e.g. Barnardo’s? | 11,911    | 264 (2.22%)           | 11,564 (97.09%)  |
|                 |                                                                          |           |                       | 83 (0.70%)       |
| d387            | Did your parents’ divorce or separate before your 18th birthday?         | 12,235    | 2,372 (19.39%)        | 9,863 (80.61%)   |
|                 |                                                                          |           |                       |                  |
| d389            | Who did you mainly live with after parents divorced or separated?        | 2,328     | 1,757 (75.47%)        | 315 (13.53%)     |
|                 |                                                                          |           |                       | 88 (3.78%)       |
|                 |                                                                          |           |                       | 168 (7.22%)      |
|                 | Did you ever live away from home with any of the following (other than holidays or short visits) before you were 18 years old? | 12,294    | 654 (5.32%)           | 11,640 (94.68%)  |
| d392            | Grandparents                                                             | 12,294    | 493 (4.01%)           | 11,801 (95.99%)  |
| d393            | Other relatives                                                           | 12,294    | 469 (3.81%)           | 11,825 (96.19%)  |
| d394            | Friends                                                                   | 12,294    | 161 (1.31%)           | 12,132 (98.68%)  |
|                 |                                                                          |           |                       | <5 (0.01%)       |
| d395            | Foster parents                                                            | 12,294    | 641 (5.21%)           | 11,653 (94.79%)  |
| d396            | Other home                                                                | 12,294    | 584 (4.78%)           | 11,709 (95.22%)  |
| Variable Number | Question                                                                 | N   | Yes <1 week | Yes 1 week to 1 month | Yes 1 to 6 months | Yes >6 months | Yes, Not known how long | No   | Yes | No   |
|-----------------|---------------------------------------------------------------------------|-----|-------------|-----------------------|-------------------|---------------|-------------------------|------|-----|------|
|                 | Did you ever stay away from home in any of the following places before you were 18 years old? |     |             |                       |                   |               |                         |      |     |      |
| d400            | Hospital                                                                  | 12,250 | 3,085 (25.18%) | 1,654 (13.50%)       | 203 (1.66%)       | 34 (0.28%)    | 7,274 (59.38%)          |      |     |      |
| d400a           | Hospital                                                                  | 12,250 |             |                       |                   |               |                         | 4,976 (40.62%) | 7,274 (59.38%) |      |
| d401            | Boarding school                                                           | 12,198 | 15 (0.12%)   | 24 (0.20%)            | 65 (0.53%)        | 359 (2.94%)   | 11,735 (96.20%)         |      |     |      |
| d401a           | Boarding school                                                           | 12,198 |             |                       |                   |               |                         | 463 (3.80%)    | 11,735 (96.20%) |      |
| d402            | Children’s home                                                           | 12,190 | 6 (0.05%)    | 21 (0.17%)            | 45 (0.37%)        | 121 (0.99%)   | 11,997 (98.42%)         |      |     |      |
| d402a           | Children’s home                                                           | 12,190 |             |                       |                   |               |                         | 193 (1.58%)    | 11,997 (98.42%) |      |
| d403            | Hostel                                                                    | 12,148 | 74 (0.61%)   | 69 (0.57%)            | 20 (0.16%)        | 37 (0.30%)    | 11,948 (98.35%)         |      |     |      |
| d403a           | Hostel                                                                    | 12,148 |             |                       |                   |               |                         | 200 (1.65%)    | 11,948 (98.35%) |      |
| d404            | Stayed in custody                                                         | 12,136 | <5 (0.03%)   | 7 (0.06%)             | 10 (0.08%)        | <5 (0.03%)    | 12,111 (99.79%)         |      |     |      |
| d404a           | Stayed in custody                                                         | 12,136 |             |                       |                   |               |                         | 25 (0.21%)     | 12,111 (99.79%) |      |
| d405            | Stayed in another place                                                   | 12,360 | 84 (0.68%)   | 275 (2.22%)           | 111 (0.90%)       | 211 (1.71%)   | 16 (0.13%)              | 11,663 (94.36%) |     |      |
| d405s           | Stayed in another place                                                   | 12,360 |             |                       |                   |               |                         | 697 (5.64%)    | 11,663 (94.36%) |      |
| d410            | Did you leave home before your 18th birthday?                             | 12,299 |             |                       |                   |               |                         | 2,451 (19.93%) | 9,848 (80.07%) |      |
|                 |                                                                          |     | College accommodation | Hostel | Bedsit | Shared accommodation | Other | Yes | No   |
|                 |                                                                          |     | N             |         |        |                         |         |     |      |
| d411            | Where Mother lived when she first left home before 18 years               | 2,336 | 232 (9.93%)   | 47 (2.01%)           | 413 (17.68%)      | 864 (36.99%) | 780 (33.39%)            |      |     |      |
|                 | Before you were 17 did a parent or person who cared for you die?          |      | Yes | No   |
| d620            | Mother                                                                    | 12,448 |             |                       |                   |               |                         | 218 (1.75%) | 12,230 (98.25%) |      |
| Variable Number | Question                                           | Categorical responses | Binary responses |
|-----------------|----------------------------------------------------|-----------------------|------------------|
| d621            | Father                                             | 12,448                |                  |
|                 |                                                    |                       | 491 (3.94%)      |
|                 |                                                    |                       | 11,957 (96.06%)  |
| d622            | Mother figure                                      | 12,448                |                  |
|                 |                                                    |                       | 33 (0.27%)       |
|                 |                                                    |                       | 12,415 (99.73%)  |
| d623            | Father figure                                      | 12,448                |                  |
|                 |                                                    |                       | 37 (0.30%)       |
|                 |                                                    |                       | 12,411 (99.70%)  |
| d624            | Other (please describe)                           | 12,448                |                  |
|                 |                                                    |                       | 591 (4.75%)      |
|                 |                                                    |                       | 11,857 (95.25%)  |
| d625            | Carer died before Mum was 17                       | 12,448                |                  |
|                 |                                                    |                       | 1,289 (10.36%)   |
|                 |                                                    |                       | 11,159 (89.64%)  |
|                 | N Always Mostly Rarely Never                       |                      |
| d750            | Was your parent’s behaviour stable and predictable to you as a child? | | |
|                 |                                                    | 12,027                |                  |
|                 |                                                    | 6,833 (56.81%)        |                  |
|                 |                                                    | 4,543 (37.77%)        |                  |
|                 |                                                    | 470 (3.91%)           |                  |
|                 |                                                    | 181 (1.50%)           |                  |
| d751            |                                                    | 11,465                |                  |
|                 |                                                    | 6,281 (54.78%)        |                  |
|                 |                                                    | 4,168 (36.35%)        |                  |
|                 |                                                    | 711 (6.20%)           |                  |
|                 |                                                    | 305 (2.66%)           |                  |
| d752            |                                                    | 436                   |                  |
|                 |                                                    | 202 (46.33%)          |                  |
|                 |                                                    | 157 (36.01%)          |                  |
|                 |                                                    | 38 (8.72%)            |                  |
|                 |                                                    | 39 (8.94%)            |                  |
| d753            |                                                    | 697                   |                  |
|                 |                                                    | 288 (41.32%)          |                  |
|                 |                                                    | 274 (39.31%)          |                  |
|                 |                                                    | 73 (10.47%)           |                  |
|                 |                                                    | 62 (8.90%)            |                  |
| d755            | Stability of home in childhood                     | 12,230                |                  |
|                 |                                                    | 5,561 (45.47%)        |                  |
|                 |                                                    | 5,139 (42.02%)        |                  |
|                 |                                                    | 1,054 (8.62%)         |                  |
|                 |                                                    | 476 (3.89%)           |                  |

\* d380 spans ages beyond 17 so only cases where the event happened before 18 years of age have been coded at “yes”. The full age ranges available can be found in Table 4a.
### Table 3b. Partner’s childhood circumstances that might indicate stress during childhood as self-reported in the PA questionnaire

| Variable Number | Question                                                                 | Categorical responses | Binary responses |
|-----------------|--------------------------------------------------------------------------|-----------------------|------------------|
|                 |                                                                          | N | Yes | No | Unsure |                         | Yes | No                         |
| pa380*          | Were you legally adopted?                                                | 8,405                  |                 |     |        |                         | 199 (2.37%) | 8,206 (97.63%) |
| pa385           | Were you ever in care of either a local authority or voluntary agency Barnardo’s? | 8,162                  | 176 (2.16%)     | 7,926 (97.11%) | 60 (0.74%) |                         |                 |
| pa387           | Did your parents’ divorce or separate before your 18th birthday?         | 8,330                  |                 |     |        |                         | 1,312 (15.75%) | 7,018 (84.25%) |
|                 |                                                                          | N | Mother | Father | Shared Mother and Father | Someone else |                         | Yes | No                         |
|                 |                                                                          | 8,317                  | 891 (69.12%)    | 214 (16.60%) | 59 (4.58%) | 125 (9.70%) |                         |                 |
| pa392           | Who did you live with after parents divorced?                            | 8,345                  |                 |     |        |                         | 481 (5.76%) | 7,864 (94.24%) |
| pa393           | Other relatives                                                          | 8,345                  |                 |     |        |                         | 342 (4.10%) | 8,003 (95.90%) |
| pa394           | Friends                                                                  | 8,345                  |                 |     |        |                         | 303 (3.63%) | 8,042 (96.37%) |
| pa395           | Foster parents                                                           | 8,345                  |                 |     |        |                         | 71 (0.85%) | 8,274 (99.15%) |
| pa396           | Other                                                                     | 8,345                  |                 |     |        |                         | 517 (6.20%) | 7,828 (93.80%) |
|                 |                                                                          | N | Yes, <1 week | Yes, 1 week to 1 month | Yes, 1 to 6 months | Yes, > 6 months | Yes, duration not known | No, did not happen | Yes | No                         |
|                 |                                                                          | 8,345                  |                 |     |        |                         |                  |                  | 517 (6.20%) | 7,828 (93.80%) |

Did you ever stay away from home in any of the following places before you were 18 years old?
| Variable Number | Question                           | Categorical responses | Binary responses |
|-----------------|------------------------------------|-----------------------|------------------|
| pa400           | Hospital                           | 8,268                 | Categorical      |
|                 |                                    | 2,106 (25.47%)        |                  |
|                 |                                    | 1,399 (16.92%)        |                  |
|                 |                                    | 273 (3.30%)           |                  |
|                 |                                    | 66 (0.80%)            |                  |
|                 |                                    | 4,424 (53.51%)        |                  |
| pa400a          | Hospital                           | 8,268                 | Categorical      |
|                 |                                    | 3,844 (46.49%)        |                  |
|                 |                                    | 4,424 (46.49%)        |                  |
| pa401           | Boarding school                    | 8,238                 | Categorical      |
|                 |                                    | 5 (0.06%)             |                  |
|                 |                                    | 23 (0.28%)            |                  |
|                 |                                    | 65 (0.79%)            |                  |
|                 |                                    | 436 (5.29%)           |                  |
|                 |                                    | 7,709 (93.58%)        |                  |
| pa401a          | Boarding school                    | 8,238                 | Categorical      |
|                 |                                    | 529 (6.42%)           |                  |
|                 |                                    | 7,709 (93.58%)        |                  |
| pa402           | Children’s home                    | 8,212                 | Categorical      |
|                 |                                    | <5 (0.02%)            |                  |
|                 |                                    | 21 (0.26%)            |                  |
|                 |                                    | 19 (0.23%)            |                  |
|                 |                                    | 90 (1.10%)            |                  |
|                 |                                    | 8,080 (98.39%)        |                  |
| pa402a          | Children’s home                    | 8,212                 | Categorical      |
|                 |                                    | 132 (1.61%)           |                  |
|                 |                                    | 8,080 (98.39%)        |                  |
| pa403           | Hostel                             | 8,186                 | Categorical      |
|                 |                                    | 96 (1.17%)            |                  |
|                 |                                    | 122 (1.49%)           |                  |
|                 |                                    | 11 (0.13%)            |                  |
|                 |                                    | 30 (0.37%)            |                  |
|                 |                                    | 7,927 (96.84%)        |                  |
| pa403a          | Hostel                             | 8,186                 | Categorical      |
|                 |                                    | 259 (3.16%)           |                  |
|                 |                                    | 7,927 (96.84%)        |                  |
| pa404           | Stayed in custody                  | 8,185                 | Categorical      |
|                 |                                    | 45 (0.55%)            |                  |
|                 |                                    | 31 (0.38%)            |                  |
|                 |                                    | 58 (0.71%)            |                  |
|                 |                                    | 67 (0.82%)            |                  |
|                 |                                    | 7984 (97.54%)         |                  |
| pa404a          | Stayed in custody                  | 8,185                 | Categorical      |
|                 |                                    | 201 (2.46%)           |                  |
|                 |                                    | 7,984 (97.54%)        |                  |
| pa405           | Other                              | 8,410                 | Categorical      |
|                 |                                    | 65 (0.77%)            |                  |
|                 |                                    | 263 (3.13%)           |                  |
|                 |                                    | 82 (0.98%)            |                  |
|                 |                                    | 244 (2.90%)           |                  |
|                 |                                    | 41 (0.49%)            |                  |
|                 |                                    | 7,715 (91.74%)        |                  |
| pa405a          | Other                              | 8,410                 | Categorical      |
|                 |                                    | 695 (8.26%)           |                  |
|                 |                                    | 7,715 (91.74%)        |                  |
| pa410           | Did you leave home before your 18th birthday? | 8,300 | Categorical |
|                 |                                    | 1,561 (18.81%)        |                  |
|                 |                                    | 6,739 (81.19%)        |                  |
|                 |                                    | 1,191                 | Categorical      |
|                 |                                    | <5 (0.08%)            |                  |
|                 |                                    | 16 (1.34%)            |                  |
|                 |                                    | 58 (4.87%)            |                  |
|                 |                                    | 1,116 (93.70%)        |                  |
|                 |                                    | 116 (1.35%)           |                  |
|                 |                                    | 8,505 (98.65%)        |                  |

| N | College Accommodation | Hostel | Bedsit | Shared Accommodation | Other |
|---|-----------------------|--------|--------|-----------------------|-------|
| 1,498 | 261 (17.42%) | 37 (2.47%) | 233 (15.55%) | 405 (27.04%) | 562 (37.52%) |
| 1,191 | <5 (0.08%) | 16 (1.34%) | 58 (4.87%) | 1,116 (93.70%) |       |
| 8,621 |       |        |        |          |        |
| Variable Number | Question                            | Categorical responses | Binary responses |
|-----------------|-------------------------------------|-----------------------|------------------|
|                 |                                     |                       |                  |
| pa621           | Father                              | 8,621                 |                  |
| pa622           | Mother figure                       | 8,621                 |                  |
| pa623           | Father figure                       | 8,621                 |                  |
| pa624           | Other                               | 8,621                 |                  |
| pa625           | One of above carers died            | 8,621                 |                  |
|                 |                                     |                       |                  |
|                 |                                     | Yes, hospitalised     |                  |
|                 |                                     | Yes, saw a doctor     |                  |
|                 |                                     | Yes, home treatment   |                  |
|                 |                                     | No, never             |                  |
|                 | Have any of the following ever      |                       |                  |
|                 | happened?                           |                       |                  |
| pa131*          | You were sexually assaulted         | 8,371                 |                  |
|                 |                                     | N/A                   |                  |
|                 |                                     | 13 (0.16%)            |                  |
|                 |                                     | 66 (0.79%)            |                  |
|                 |                                     | 8,292 (99.06%)        |                  |
| pa132*          | You were sexually assaulted         | 8,371                 |                  |
|                 |                                     | 79 (0.69%)            |                  |
|                 |                                     | 8,313 (99.31%)        |                  |
|                 |                                     | Always                |                  |
|                 |                                     | Mostly                |                  |
|                 |                                     | Rarely                |                  |
|                 |                                     | Never                 |                  |
| pa750           | Mother                              | 8,161                 |                  |
|                 |                                     | 4,715 (57.77%)        |                  |
|                 |                                     | 3,113 (38.14%)        |                  |
|                 |                                     | 101 (1.24%)           |                  |
| pa751           | Father                              | 7,809                 |                  |
|                 |                                     | 4,288 (54.91%)        |                  |
|                 |                                     | 2,953 (37.82%)        |                  |
|                 |                                     | 169 (2.16%)           |                  |
| pa752           | Mother figure                       | 303                   |                  |
|                 |                                     | 147 (48.51%)          |                  |
|                 |                                     | 118 (38.94%)          |                  |
|                 |                                     | 21 (6.93%)            |                  |
| pa753           | Father figure                       | 453                   |                  |
|                 |                                     | 209 (46.14%)          |                  |
|                 |                                     | 173 (38.19%)          |                  |
|                 |                                     | 33 (7.28%)            |                  |
| pa755           | Home stability in childhood         | 8,296                 |                  |
|                 |                                     | 3,892 (46.91%)        |                  |
|                 |                                     | 3,607 (43.48%)        |                  |
|                 |                                     | 234 (2.82%)           |                  |

*pa131, pa132 and pa380 span ages beyond 17 so cases where the event happened after 18 years of age have been coded as "no". The full age ranges available for these events can be found in Table 4b in variables pa133 and pa381.
Table 4a. Questions asked concerning the mother’s notable events together with her age at which the event occurred, thus enabling the women who had experienced the event at particular stages of childhood to be identified.

| Variable Number | Question                                           | N   | Range  |
|-----------------|----------------------------------------------------|-----|--------|
| b023            | Age when pregnant for the very first time?         | 13,179 | 10 – 44 |
| d103            | Age Mother was sexually assaulted                   | 418  | 2 – 34 |
| d381            | Age Mother was adopted                              | 318  | 0 – 27 |
| d388            | Age when her parents divorced or separated before 18th birthday | 2,211 | 0 – 17 |
| d630            | Age when her mother died                            | 408  | 0 – 17+|
| d631            | Age her father died                                 | 799  | 0 – 17+|
| d632            | Age when her Mother figure died                     | 55   | 0 – 17+|
| d633            | Age when Father figure died                         | 59   | 0 – 17+|
| d634            | Age when another carer died                         | 576  | 0 – 17+|
| h136d           | Age when first physically abused                    | 458  | 0 – 16 |

Table 4b. Questions asked concerning the notable events occurring to the mother’s partner during childhood, together with his age at which the event occurred, thus enabling the partner who had experienced the event at particular stages of childhood to be identified.

| Variable number | Question                                           | N   | Range  |
|-----------------|----------------------------------------------------|-----|--------|
| pa133           | Age when he was sexually assaulted                 | 71   | 1–33   |
| pa381           | Age he was legally adopted                         | 207  | 0–40   |
| pa388           | Age when his parents divorced or separated         | 1,213| 0–18+  |
| pa630           | Age when his mother died                           | 339  | 0–17+  |
| pa631           | Age when his father died                           | 675  | 0–17+  |
| pa632           | Age when his mother figure died                    | 71   | 0–17+  |
| pa633           | Age when his father figure died                    | 88   | 0–17+  |
| pa634           | Age when another carer died                        | 399  | 0–17+  |

Table 5a. Mothers recall of childhood abuse and domestic violence asked at 33 months postpartum.

| Variable Number | Question                                                                 | N   | Categorical responses | Binary responses |
|-----------------|--------------------------------------------------------------------------|-----|-----------------------|------------------|
| h134            | Did you feel emotionally neglected during your childhood?                | 9,574| Yes, Severely 251 (2.62%) Yes, somewhat 1,844 (19.26%) No, not at all 7,479 (78.12%) |
| h135            | Were you physically neglected as a child (e.g. not fed or clothed properly)? | 9,585| Yes 25 (0.26%) Yes, somewhat 165 (1.72%) No, not at all 9,395 (98.02%) |
| h136            | Were you physically abused (e.g. beaten) as a child?                     | 9,553| Yes 71 (0.74%) Yes, somewhat 525 (5.50%) No, not at all 8,957 (93.76%) |
| h136a           | Mother                                                                    | 9,361|                       | Yes 248 (2.65%) No, not at all 9,113 (97.35%) |
| h136b           | Father                                                                    | 9,393|                       | Yes 326 (3.47%) No, not at all 9,067 (96.53%) |
| h136c           | Another person                                                            | 9,133|                       | Yes 176 (1.93%) No, not at all 8,957 (98.07%) |
| Variable Number | Question                                                                 | Categorical responses | Binary responses |
|-----------------|--------------------------------------------------------------------------|-----------------------|------------------|
|                 |                                                                          | N                     | Yes, always      | Yes, frequently | Yes, somewhat | No, Not at all |
|                 |                                                                          |                       |                  |                |               |                |
|                 | How would you describe the relationship between your mother and father when you were growing up? |                       |                  |                |               |                |
| h137a           | Violent                                                                 | 8,819                 | 59 (0.67%)       | 185 (2.10%)    | 949 (10.76%)  | 7,626 (86.47%) |
| h137b           | Affectionate                                                             | 8,934                 | 1,367 (15.30%)   | 2,273 (25.44%) | 4,178 (46.77%)| 1,116 (12.49%) |
| h137c           | Quarrelsome                                                             | 8,993                 | 330 (3.67%)      | 1,524 (16.95%) | 5,139 (57.11%)| 2,003 (22.27%) |
| h137d           | Happy                                                                    | 9,002                 | 2,107 (23.41%)   | 3,716 (41.28%) | 2,718 (30.19%)| 461 (5.12%)    |
| h137e           | Frightening                                                             | 8,880                 | 77 (0.87%)       | 274 (3.09%)    | 1,355 (15.26%)| 7,174 (80.79%) |
| h137f           | Friendly                                                                 | 8,938                 | 3,293 (36.84%)   | 3,163 (35.39%) | 2,151 (24.07%)| 331 (3.70%)    |
| h137g           | Respectful                                                              | 8,905                 | 3,260 (36.61%)   | 2,617 (29.39%) | 2,236 (25.11%)| 792 (8.89%)    |
| h137h           | Remote                                                                   | 8,863                 | 246 (2.78%)      | 696 (7.85%)    | 2,797 (31.56%)| 5,124 (57.81%) |

Table 5b. Mothers’ partners’ recall of childhood abuse and domestic violence asked at 33 months postpartum.

| Variable Number | Question                                                                 | Categorical Responses | Binary responses |
|-----------------|--------------------------------------------------------------------------|-----------------------|------------------|
|                 |                                                                          | N                     | Yes, Severely Neglected | Yes, Somewhat Neglected | No, not at all | Yes | No |
| pf2060          | Did you feel neglected emotionally during your childhood?               | 5,412                 | 106 (1.96%)        | 976 (18.03%)        | 4,330 (80.01%) |     |    |
| pf2061          | Were you physically neglected as a child (e.g. not fed or clothed properly)? | 5,425                 | 22 (0.41%)         | 117 (2.16%)         | 5,286 (97.44%) |     |    |
|                 |                                                                          | N                     | Yes, Severely Abused | Yes, Somewhat Abused | No, not at all |     |    |
| pf2062          | Were you physically abused (e.g. beaten) as a child?                    | 5,422                 | 40 (0.74%)         | 274 (5.05%)         | 5,108 (94.21%) |     |    |
|                 | Who abused you?                                                         |                       |                  |                |               | Yes | No |
| pf2063          | Mother                                                                  | 290                   | 104 (35.86%)      | 186 (64.14%)      |               |     |    |
| pf2064          | Father                                                                  | 328                   | 220 (67.07%)      | 108 (32.93%)      |               |     |    |
| pf2065          | Someone else                                                            | 79                    | 79 (%)            |                 |               |     |    |
|                 |                                                                          | N                     | Yes, always       | Yes, frequently  | Yes, Sometimes | No, Not at all | Single parent family |
|                 |                                                                          |                       |                  |                |               |               |                   |
| pf2070          | Violent                                                                 | 4,771                 | 14 (0.29%)        | 100 (2.10%)      | 475 (9.96%)   | 4,182 (87.65%) |                   |
| pf2071          | Affectionate                                                            | 4,921                 | 630 (12.80%)      | 1,295 (26.32%)   | 2,414 (49.06%)| 457 (9.29%)   | 125 (2.54%)      |
Variable Number | Question | Categorical Responses | Binary responses |
|----------------|----------|-----------------------|-----------------|
| pf2072         | Quarrelsome | 93 (1.93%) | 681 (14.10%) | 2,826 (58.50%) | 1,231 (25.48%) |
| pf2073         | Happy | 1,030 (21.23%) | 2,212 (45.59%) | 1,435 (29.58%) | 175 (3.61%) |
| pf2074         | Frightening | 27 (0.56%) | 101 (2.11%) | 673 (14.06%) | 3,966 (83.27%) |
| pf2075         | Friendly | 1,751 (36.32%) | 1,794 (37.21%) | 1,137 (23.58%) | 139 (2.88%) |
| pf2076         | Respectful of one another | 2,207 (42.42%) | 1,629 (31.31%) | 1,133 (21.78%) | 234 (4.50%) |
| pf2077         | Remote or distant from one another | 110 (2.15%) | 425 (8.32%) | 1,739 (34.04%) | 2,835 (55.49%) |

* For question pf2065, no was coded as missing and therefore we do not have a figure for the number of people

Table 6a. Mother’s memories of happiness and unhappiness in childhood.

| Variable Number | Question | N | Very happy | Moderately happy | Not really happy | Quite unhappy | Very unhappy | Can’t remember |
|----------------|----------|---|------------|------------------|------------------|---------------|--------------|----------------|
| c441           | 0–5 years | 12,305 | 7,984 (64.88%) | 2,068 (16.81%) | 175 (1.42%) | 47 (0.38%) | 55 (0.45%) | 1,976 (16.06%) |
| c442           | 6–11 years | 12,291 | 7,355 (59.84%) | 3,686 (29.99%) | 619 (5.04%) | 204 (1.66%) | 194 (1.58%) | 233 (1.89%) |
| c443           | 12–15 years | 12,293 | 5,231 (42.55%) | 4,796 (39.01%) | 1,251 (10.18%) | 474 (3.86%) | 484 (3.94%) | 57 (0.46%) |
| d760           | 0–5 years | 12,488 | 8,849 (71.09%) | 1,605 (12.89%) | 206 (1.65%) | 46 (0.37%) | 53 (0.43%) | 1,689* (13.57%) |
| d761           | 6–11 years | 12,448 | 7,866 (63.35%) | 3,224 (25.90%) | 668 (5.37%) | 194 (1.56%) | 185 (1.49%) | 291* (2.34%) |
| d762           | 12–15 years | 12,448 | 5,436 (43.67%) | 4,529 (36.38%) | 1,329 (10.68%) | 467 (3.75%) | 508 (4.08%) | 179* (1.44%) |

* For the C questionnaire, ‘Can’t Remember’ was coded as a separate category to those who had responded to the questionnaire but had not answered this particular question. Those who had not answered the question were coded as missing data. For the D questionnaire, instances of ‘Can’t Remember’ have been coded as missing data alongside those who did not answer the question. Therefore, for the D questionnaire, we cannot be certain that every response for ‘Can’t Remember’ is a genuine response and not a missing case.

Table 6b. Mother’s partner’s memories of happiness and unhappiness in childhood.

| Variable Number | Question | N | Very happy | Moderately happy | Not really happy | Quite happy | Very Unhappy |
|----------------|----------|---|------------|------------------|-----------------|-------------|--------------|
| pa760          | 0–5 years | 7,183 | 5,634 (78.44%) | 1,381 (19.23%) | 111 (1.55%) | 20 (0.28%) | 37 (0.52%) |
| pa761          | 6–11 years | 8,218 | 5,148 (62.64%) | 2,515 (30.60%) | 367 (4.47%) | 101 (1.23%) | 87 (1.06%) |
| pa762          | 12–15 years | 8,309 | 4,061 (48.87%) | 3,119 (37.54%) | 724 (8.71%) | 237 (2.85%) | 168 (2.02%) |
| pa763*         | Overall childhood happiness | 8,329 | 3,685 (44.24%) | 3,272 (39.28%) | 881 (10.58%) | 271 (3.25%) | 220 (2.64%) |

The pa763 Overall childhood happiness score is a derived variable computed by adding together the three variables (pa760–pa762) in section F Question 18 of the PA Partners Questionnaire. These questions asked the partner to rate their childhood happiness at 0–5 years (pa760), 6–11 years (pa761) and 12–15 years (pa762)
| Variable Number | Question                                                                 | N     | Never (%) | Sometimes (%) | Usually (%) | Don’t Know (%) | Yes (%) | No (%) |
|-----------------|--------------------------------------------------------------------------|-------|-----------|---------------|-------------|---------------|---------|--------|
| d700            | My mother spoke to me with a warm and friendly voice                     | 12,173| 202 (1.66%)| 2,368 (19.45%)| 9,603 (78.89%)|               |         |        |
| d701            | My mother helped me as much as I needed                                  | 12,210| 325 (2.66%)| 2,087 (17.09%)| 9,798 (80.25%)|               |         |        |
| d702            | My mother let me do those things I liked doing                          | 12,236| 228 (1.86%)| 4,930 (40.29%)| 7,078 (57.85%)|               |         |        |
| d703            | My mother seemed emotionally cold to me                                 | 12,185| 9,294 (76.27%)| 2,296 (18.84%)| 595 (4.88%)  |               |         |        |
| d704            | My mother appeared to understand my problems and worries                | 12,211| 978 (8.00%) | 5,074 (41.53%)| 6,165 (50.46%)| <5 (<0.01%) |        |        |
| d705            | My mother was affectionate to me                                         | 12,212| 558 (4.57%) | 3,097 (25.36%)| 8,557 (70.07%)|               |         |        |
| d706            | My mother tried to control what I did                                    | 12,205| 1,614 (13.22%)| 7,494 (61.40%)| 3,097 (25.37%)|               |         |        |
| d707            | My mother invaded my privacy                                            | 12,189| 6,418 (52.65%)| 4,780 (39.22%)| 991 (8.13%)  |               |         |        |
| d708            | My mother let me decide things for myself                                | 12,217| 563 (4.61%)  | 6,122 (50.11%)| 5,532 (45.28%)|               |         |        |
| d709            | My mother made me feel I wasn’t wanted                                   | 12,219| 10,200 (83.48%)| 1,541 (12.61%)| 478 (3.91%) |               |         |        |
| d710            | My mother talked things over with me                                     | 12,223| 1,216 (9.95%)| 5,584 (45.68%)| 5,423 (44.37%)|               |         |        |
| d711            | My mother gave me the freedom I wanted                                   | 12,213| 899 (7.36%)  | 6,940 (56.82%)| 4,373 (35.81%)| <5 (<0.01%) |        |        |
| d712            | My mother praised me                                                     | 12,792| 832 (6.62%) | 5,012 (41.11%)| 6,348 (52.07%)|               |         |        |
| d713            | My mother enjoyed talking things over with me                            | 11,998|               |               |               | 9,648 (80.41%)| 2,350 (19.59%)|         |
| d714            | My mother frequently smiled at me                                       | 12,104|               |               |               | 10,820 (89.46%)| 1,276 (10.54%)|         |
| d715            | My mother tended to baby me                                             | 12,141|               |               |               | 2,360 (19.44%)| 9,781 (80.56%)|         |
| d716            | My mother seemed to understand what I needed or wanted                  | 11,981|               |               |               | 9,323 (77.81%)| 2,658 (22.19%)|         |
| d717            | My mother could make me feel better when I was upset                     | 12,044|               |               |               | 10,390 (86.27%)| 1,654 (13.73%)|         |
| d718            | My mother felt I could not look after myself unless she was around.     | 12,097|               |               |               | 1,890 (15.62%)| 10,207 (84.38%)|         |
| d719            | My mother let me go out as often as I wanted                             | 12,004|               |               |               | 5,484 (45.68%)| 6,520 (54.32%)|         |
| d720            | My mother was overprotective of me                                       | 12,062|               |               |               | 2,537 (21.03%)| 9,525 (78.97%)|         |
| d721            | My mother let me dress in any way I pleased                              | 12,041|               |               |               | 6,935 (57.59%)| 5,106 (42.41%)|         |
Table 7b. Variables that make up the Gamsa (1987) adapted version of the Parental Bonding Instrument (Parker, Tupling and Brown (1979)). All variables relate to the period up until the mother’s partner was 16 years of age.

| Variable Number | Question                                                                 | N          | Never | Sometimes | Usually | Don’t Know | Yes | No   |
|-----------------|---------------------------------------------------------------------------|------------|-------|-----------|---------|------------|-----|------|
| pa700           | My mother spoke to me with a warm and friendly voice                       | 7,057      | 105 (1.49%) | 1,387 (19.65%) | 5,565 (78.86%) |       |      |
| pa701           | My mother helped me as much as I needed                                    | 7,075      | 149 (2.11%) | 1,208 (17.07%) | 5,718 (80.82%) |       |      |
| pa702           | My mother let me do those things I liked doing                             | 7,112      | 68 (0.96%) | 2,879 (40.48%) | 4,165 (58.56%) |       |      |
| pa703           | My mother seemed emotionally cold to me                                    | 7,086      | 5,777 (81.53%) | 1,049 (14.80%) | 260 (3.67%) |       |      |
| pa704           | My mother appeared to understand my problems and worries                   | 7,092      | 451 (6.36%) | 2,994 (42.22%) | 3,647 (51.42%) |       |      |
| pa705           | My mother was affectionate to me                                           | 7,104      | 226 (3.18%) | 1,828 (25.73%) | 5,050 (71.09%) |       |      |
| pa706           | My mother tried to control what I did                                      | 7,096      | 847 (11.94%) | 4,219 (59.46%) | 2,030 (28.61%) |       |      |
| pa707           | My mother invaded my privacy                                              | 7,095      | 3,825 (53.91%) | 2,798 (39.44%) | 472 (6.65%) |       |      |
| pa708           | My mother let me decide things for myself                                  | 7,098      | 223 (3.14%) | 3,395 (47.83%) | 3,480 (49.03%) |       |      |
| pa709           | My mother made me feel I wasn’t wanted                                     | 7,098      | 6,240 (87.91%) | 654 (9.21%) | 204 (2.87%) |       |      |
| pa710           | My mother talked things over with me                                       | 7,091      | 774 (10.92%) | 3,909 (55.13%) | 2,408 (33.96%) |       |      |
| pa711           | My mother gave me the freedom I wanted                                     | 7,091      | 265 (3.74%) | 3,484 (49.13%) | 3,342 (47.13%) |       |      |
| pa712           | My mother praised me                                                       | 7,090      | 368 (5.19%) | 3,325 (46.90%) | 3,397 (47.91%) |       |      |
| pa713           | My mother enjoyed talking things over with me                             | 6,984      | 5,483 (78.51%) | 1,501 (21.49%) |       |      |
| pa714           | My mother frequently smiled at me                                          | 7,057      | 6,411 (90.85%) | 646 (9.15%) |       |      |
| pa715           | My mother tended to baby me                                               | 7,036      | 2,056 (29.22%) | 4,980 (70.78%) |       |      |
| pa716           | My mother seemed to understand what I needed or wanted                     | 7,013      | 5,682 (81.02%) | 1,331 (18.98%) |       |      |
| pa717           | My mother could make me feel better when I was upset                       | 7,022      | 6,143 (87.48%) | 879 (12.52%) |       |      |
| pa718           | My mother felt I could not look after myself unless she was around.        | 7,039      | 1,315 (18.68%) | 5,724 (81.32%) |       |      |
| pa719           | My mother let me go out as often as I wanted                               | 7,027      | 4,093 (58.25%) | 2,934 (41.75%) |       |      |
| pa720           | My mother was overprotective of me                                         | 7,032      | 1,463 (20.80%) | 5,569 (79.20%) |       |      |
| pa721           | My mother let me dress in any way I pleased                                | 7,021      | 4,198 (59.79%) | 2,823 (40.21%) |       |      |

data that is available with several decades of follow up and the opportunity to examine effects across generations. Available data includes information about the study parents’ relationships with the study child, biological markers from parents and children, data regarding the grandparent’s health, life experiences and demographics and data gathered from the grandchildren. This makes the data very flexible and relatable to intergenerational aspects of the family’s life.
Table 8. Derived continuous variables based on questions asked of each parent about their relationship with their mother during childhood.

| Variable Number | Question                                                      | N       | Range |
|-----------------|---------------------------------------------------------------|---------|-------|
| d724            | Maternal care score using the Parental Bonding Instrument     | 11,431  | 0 – 24 |
| d725            | Maternal care score: Modes/no. missing cases*                 | 12,447  | 0 – 24 |
| d726            | Maternal care score: No. missing items                        | 12,448  | 0 – 12 |
| d727            | Maternal overprotection score using the Parental Bonding Instrument | 11,545  | 0 – 20 |
| d728            | Maternal overprotection score: Modes/no. missing cases*      | 12,447  | 0 – 20 |
| d729            | Maternal overprotection score: No. missing items              | 12,447  | 0 – 10 |
| pa724           | Maternal care score                                           | 6,707   | 0 – 24 |
| pa725           | Maternal care score – Modes/missing cases*                    | 7,117   | 0 – 24 |
| pa726           | Maternal care score – No. missing items                       | 7,305   | 0 – 12 |
| pa727           | Maternal overprotection score                                 | 6,819   | 0 – 20 |
| pa728           | Maternal overprotection score – Modes/missing cases*         | 7,108   | 0 – 20 |
| pa729           | Maternal overprotection score – No. missing cases             | 7,305   | 0 – 10 |

* Missing cases were put to the modes of the distribution

Figure 3. a. Maternal Care Score. b. Maternal Overprotection Score.
A key limitation of the study is the lack of ethnic diversity. At the time of enrolment, the county of Avon was mainly Caucasian, therefore there were too few Black, Asian and Minority Ethnic (BAME) participants (<6% in total) to allow for detailed analysis by ethnic background.

Data availability
Underlying data
ALSPAC data access is through a system of managed open access. The steps below highlight how to apply for access to the data included in this paper and all other ALSPAC data.

1. Please read the ALSPAC access policy (http://www.bristol.ac.uk/media-library/sites/alspac/documents/researchers/data-access/ALSPAC_Access_Policy.pdf) which describes the process of accessing the data and biological samples in detail, and outlines the costs associated with doing so.

2. You may also find it useful to browse our fully searchable research proposals database (https://proposals.epi.bristol.ac.uk/), which lists all research projects that have been approved since April 2011.

3. Please submit your research proposal (https://proposals.epi.bristol.ac.uk/) for consideration by the ALSPAC Executive Committee using the online process. You will receive a response within 10 working days to advise you whether your proposal has been approved.

If you have any questions about accessing data, please email: alspac-data@bristol.ac.uk (data) or bbl-info@bristol.ac.uk (samples).

Ethical approval and consent
Prior to commencement of the study, approval was sought from the ALSPAC Ethics and Law Committee and the Local Research Ethics Committees1. Informed consent for the use of data collected via questionnaires and clinics was obtained from participants following the recommendations of the ALSPAC Ethics and Law Committee at the time. Questionnaires were completed in the participants own home and return of the questionnaires was taken as continued consent for their data to be included in the study. Full details of the approvals obtained are available from the study website (http://www.bristol.ac.uk/alspac/researchers/research-ethics/). Study members have the right to withdraw their consent for elements of the study or from the study entirely at any time.

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References

1. Isobel S, Goodyear M, Furnes T, et al.: Preventing Intergenerational Trauma Transmission: A Critical Interpretive Synthesis. J Clin Nurs. 2019; 28(7-8): 1100–1113. Published Abstract | Publisher Full Text

2. Nelson BS, Wampler KS. Systemic Effects of Trauma in Clinic Couples: An Exploratory Study of Secondary Trauma Resulting From Childhood Abuse. J Marital Fam Ther. 2007; 26(2): 171–184. Published Abstract | Publisher Full Text

3. Singer M, Anglin TM, Song L, et al.: Adolescents’ Exposure to Violence and Associated Symptoms of Psychological Trauma. JAMA. 1995; 273(6): 477–482. Published Abstract | Publisher Full Text

4. Kauftman J, Zigler E: Do Abused Children Become Abusive Parents? Am J Orthopsychiatry. 1987; 57(2): 186–192. Published Abstract | Publisher Full Text

5. Roezlter TA, McKenzie N: Effects of Childhood Trauma on Psychological Functioning in Adults Sexually Abused as Children. J Nerv Ment Dis. 1994; 182(3): 145–159. Published Abstract | Publisher Full Text

6. Steel Z, Silove D, Phan T, et al.: Long-term Effect of Psychological Trauma on the Mental Health of Vietnamese Refugees Resettled in Australia: A Population-Based Study. Lancet. 2002; 360(9339): 1056–1062. Published Abstract | Publisher Full Text

7. van Zutendoorn MH, Bakermans-Kranenberg Mj, Sagi-Schwartz A: Are Children of Holocaust Survivors Less Well-Adapted? A Meta-Analytic Investigation of Secondary Traumatization. J Trauma Stress. 2003; 16(5): 459–469. Published Abstract | Publisher Full Text

8. Overstreet S, Salloum A, Burch B, et al.: Challenges Associated with Childhood Exposure to Severe Natural Disasters: Research Review and Clinical Implications. J Child Adolesc Trauma. 2011; 4(1): 52–68. Publisher Full Text

9. Tunstel S, Pac M: Late Consequences of Chronic Pediatric Illness. Psychiatr Clin North Am. 2007; 30(4): 819–835. Published Abstract | Publisher Full Text | Free Full Text

10. Wong CF, Clark LF, Marlote L: The Impact of Specific and Complex Trauma on the Mental Health of Homeless Youth. J Interpers Violence. 2014; 31(5): 831–854. Published Abstract | Publisher Full Text

11. van Meijel EPM, Gijzendijk MR, Verhulst FC, et al.: Long-Term Posttraumatic Stress Following Accidental Injury in Children and Adolescents: Results of a 2-Year Follow-Up Study. J Clin Psychol. 2013; 69(4): 459–470. Published Abstract | Publisher Full Text | Free Full Text

12. Luukenen LJ, Roubinov DS: Pathways to lifespan health following childhood parental death. Soc Personal Psychol Compass. 2013; 7(4): 243–257. Published Abstract | Publisher Full Text | Free Full Text

13. Lehmann P: The Development of Posttraumatic Stress Disorder (PTSD) in a Sample of Child Witnesses to Mother Assault. J Fam Violence. 1997; 12(3): 241–257. Published Full Text

14. Fisher HL, Schneider A, Zambon S, et al.: Pathways Between Childhood Victimization and Psychosis-like Symptoms in the ALSPAC Birth Cohort. Schizophrenia Bull. 2013; 39(5): 1045–1055. PubMed Abstract | Publisher Full Text | Free Full Text

15. Nowicki S, Strickland BR: A locus of control scale for children. J Consult Clin Psychol. 1973; 41(1): 148–154. Publisher Full Text

16. Harter S: Manual for the Self-Perception Profile for Children. Denver, CO: University of Denver; 1989.

17. Goodman R, Ford T, Richards H, et al.: A Scales of Child Behaviour (SCB) for Use in Epidemiological Studies of Depression in Children and Adolescents. J Child Psychol Psychiatry. 2000; 41(5): 645–655. PubMed Abstract | Publisher Full Text

18. Angold A, Costello EJ, Messer SC, et al.: Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. Int J Methods Psychiatr Res. 1995; 5(4): 251–262. Reference Source
19. Horwood J, Salvi G, Thomas K, et al.: IQ and non-clinical psychotic symptoms in 12-year-olds: results from the ALSPAC birth cohort. Br J Psychiatry. 2008; 193(3): 185–191. PubMed Abstract | Publisher Full Text | Free Full Text

20. Plant DT, Jones FW, Patiante CM, et al.: Association between maternal childhood trauma and offspring childhood psychopathology; mediation analysis from the ALSPAC cohort. Br J Psychiatry. 2018; 211(3): 144–150. PubMed Abstract | Publisher Full Text | Free Full Text

21. Cox JL, Holden JM, Sagovsky R: Detection of Postnatal Depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry. 1987; 150: 782–6. PubMed Abstract | Publisher Full Text

22. Goodman R: The Strengths and Difficulties Questionnaire: a research note. J Child Psychol Psychiatry. 2006; 38(5): 581–586. PubMed Abstract | Publisher Full Text

23. Boyd A, Golding G, Macleod J, et al.: Cohort Profile: the ‘children of the 90s’–the index offspring of the Avon Longitudinal Study of Parents and Children. Int J Epidemiol. 2013; 42(1): 111–127. PubMed Abstract | Publisher Full Text | Free Full Text

24. Fraser A, Macdonald-Wallis C, Tilling K, et al.: Cohort Profile: the Avon Longitudinal Study of Parents and Children: ALSPAC mothers cohort. Int J Epidemiol. 2013; 42(1): 97–110. PubMed Abstract | Publisher Full Text | Free Full Text

25. Lawlor DA, Lewcock M, Rena-Jones L, et al.: The second generation of The Avon Longitudinal Study of Parents and Children (ALSPAC-G2): a cohort profile. [version 1; peer review: 1 approved, 1 approved with reservations]. Wellcome Open Res. 2019; 4: 36. PubMed Abstract | Publisher Full Text | Free Full Text

26. Birmingham K: Pioneering ethics in longitudinal studies. The early development of the ALSPAC Ethics & Law Committee. Bristol: Policy Press. 2018. Publisher Full Text

27. Coddington RD: The significance of life events as etiologic factors in the diseases of children—II a study of a normal population. J Psychosom Res. 1972; 16(3): 205–213. PubMed Abstract | Publisher Full Text

28. Parker G, Tapling H, Brown LB: A Parental Bonding Instrument. Br J Med Psychol. 1979; 52: 1–10. Publisher Full Text

29. Gamsa A: A note on a modification of the Parental Bonding Instrument. Br J Med Psychol. 1987; 60(3): 291–294. Publisher Full Text