DATA NOTE

Maternal reports of morbidity during the index ALSPAC pregnancy [version 1; peer review: 1 approved, 1 approved with reservations]

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Abstract
Within the ALSPAC (Avon Longitudinal Study of Parents and Children) resource, information concerning the health of the mother during pregnancy is available from three sources: (i) computerised data collected by midwives after the delivery of the baby, known as the STORK database; (ii) data abstracted by ALSPAC staff from detailed medical obstetric records, and (iii) reports by mothers during pregnancy, and shortly after delivery using structured questionnaires completed at home. In this Data Note we focus on source (iii), and detail the information obtained from these mothers concerning their health, signs and symptoms together with medications and supplements taken during pregnancy. We also describe how the data can be accessed.

Keywords
ALSPAC, Pregnancy, Maternal health, Morbidity, Medications, Supplements

This article is included in the Avon Longitudinal Study of Parents and Children (ALSPAC) gateway.
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Introduction
Studies of mothers during pregnancy may use data from medical records or maternal report (the latter is often collected retrospectively sometime after the baby has been born). In general, prospective records are preferable to retrospective recall as they are more likely to be accurate. For this reason, the mothers enrolled in the Avon Longitudinal Study of Parents and Children (ALSPAC) were asked to complete four questionnaires spaced during the pregnancy, and a further questionnaire after delivery. Within three of these questionnaires were questions which asked about the health of the mother during defined periods of time, together with reasons for any medications taken.

In this document we outline the questions asked relating to the mother’s health and her signs and symptoms during the pregnancy. In addition, details of the reasons for the use of medications and the frequency with which she took analgesics such as paracetamol (acetaminophen) and aspirin. Elsewhere the actual medications the mother reported taking during pregnancy are detailed [Headley et al., 2004], as are details of other sources of information such as the data abstracted from the medical records [Birmingham et al., 2021] and the midwife recorded data on the STORK database [Mumme et al., 2020].

Methods
A consequence of enrolling women at unspecified times during pregnancy concerns the complexity of who received specific questionnaires at different time points. The strategy depended on the gestation of the pregnant mother at enrolment, described in detail elsewhere [Iles-Caven et al., 2020]. In brief, data from these five questionnaires were given variable numbers each of which started with a letter of the alphabet: A, B, C, D and E respectively. Just three of these five questionnaires were deliberately linked to a specific gestational period: B was administered at about 18 weeks gestation; C at 32 weeks gestation and E at 8 weeks post-delivery. The other questionnaires (A and D) were administered at variable times according to the mother’s gestation at enrolment [Iles-Caven et al., 2020]. In this descriptive paper we use the data from the B, C and E sources.

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 sample
The study organisers invited pregnant women resident in a defined area of Avon, UK with expected dates of delivery between 1st April 1991 and 31st December 1992 to take part in the study. The initial number of pregnancies enrolled was 14,541, an estimated 80% of the eligible population (Boyd et al., 2013; Fraser et al., 2013).

For each item of data, we present in this paper the actual question used, the variable number, the number of pregnancies for which there are valid responses, and, where appropriate, the proportion responding positively.

1. The mother’s health during pregnancy
1.1. Subjective assessments of health
The mothers were asked to rate their health at various stages from before pregnancy to the last 4 weeks of the pregnancy. The results (Table 1.1) demonstrate that, on average, they felt least well in the first three months of pregnancy, but that the majority were feeling well and healthy subsequently.

1.2. Gastrointestinal signs and symptoms
In Table 1.2 are shown the proportions of pregnant women who suffered from nausea, vomiting or diarrhoea at different stages of pregnancy. As expected, two-thirds of the mothers experienced nausea within the first 3 months of their pregnancy; proportionately fewer cases of vomiting (42%) were reported during this trimester, but the prevalence of diarrhoea increased during the second half of pregnancy. Although constipation is common in pregnancy, there were no direct questions on this, but the mothers were asked if they had taken any medication for the problem (see Section 2.1).

1.3. Infections
The pregnant women were asked on four occasions whether they had had: (a) influenza; (b) rubella; (c) thrush (candida), (d) genital herpes, (e) urinary infection, or (f) any other infection. If the latter, they were asked to describe it. The text descriptions of these infections are available to interested researchers. Finally, a variable was derived to indicate, from the answers to these six questions, whether the women had had an infection of any sort during the pregnancy. The responses to all the questions on infection are listed in Table 1.3.

Table 1.1. Mothers’ assessment of her own health before and during pregnancy.

| Var No. | Time period             | N     | Always fit & well | Usually fit & well | Sometimes unwell | Often unwell | Always unwell |
|---------|------------------------|-------|------------------|--------------------|------------------|--------------|--------------|
| B040    | Before pregnancy       | 12,007| 31.9%            | 60.1%              | 7.0%             | 0.9%         | 0.1%         |
| B041    | First Months of pregnancy | 11,910| 11.1%            | 29.2%              | 32.4%            | 20.0%        | 7.4%         |
| B042    | at 16 – 18 weeks gestation | 11,131| 26.1%            | 48.5%              | 19.7%            | 4.4%         | 1.2%         |
| C050    | at 30 – 32 weeks gestation | 12,033| 26.8%            | 48.2%              | 19.3%            | 4.7%         | 0.9%         |
| E140    | Last 4 weeks of pregnancy* | 11,439| 35.1%            | 50.9%              | 9.6%             | 4.4%         |             |

*Descriptors were changed to: Always fit and well; Mostly felt well and healthy; Often felt unwell; Hardly ever felt well
### Table 1.2. Prevalence of nausea, vomiting and diarrhoea during pregnancy.

| Var No. | Time period       | N     | Yes  |
|---------|-------------------|-------|------|
|         | Nausea            |       |      |
| B044    | First 3 months    | 12,130| 68.5%|
| B045    | 4m – 18 weeks     | 12,130| 13.2%|
| C052    | 18 – 32 weeks     | 12,054| 36.7%|
| E100    | 32+ weeks         | 11,641| 23.6%|
|         | Vomiting          |       |      |
| B046    | First 3 months    | 12,135| 41.8%|
| B047    | 4m – 18 weeks     | 12,135| 11.0%|
| C053    | 18 – 32 weeks     | 12,054| 22.8%|
| E101    | 32+ weeks         | 11,641| 12.2%|
|         | Diarrhoea         |       |      |
| B048    | First 3 months    | 12,135| 16.5%|
| B047    | 4m – 18 weeks     | 12,135| 7.8% |
| C054    | 18 – 32 weeks     | 12,054| 29.6%|
| E102    | 32+ weeks         | 11,641| 20.0%|

*After 3 months and by 18 weeks; † in the 3 months before 32 weeks; ‡ from 7 months to the end of pregnancy.

### Table 1.3. Infections experienced by the women during pregnancy.

| Var No. | Time period       | N     | Yes  |
|---------|-------------------|-------|------|
|         | Influenza         |       |      |
| B056    | First 3 months    | 12,135| 8.4% |
| B055    | 4m – 18 weeks     | 12,135| 5.7% |
| C059    | 20 – 32 weeks     | 12,054| 5.9% |
| E106    | 32+ weeks         | 11,641| 4.5% |
|         | Rubella           |       |      |
| B058    | First 3 months    | 12,136| <0.1%|
| B057    | 4m – 18 weeks     | 12,163| <0.1%|
| C060    | 20 – 32 weeks     | 12,054| <0.1%|
| E107    | 32+ weeks         | 11,641| <0.1%|
|         | Thrush            |       |      |
| B060    | First 3 months    | 12,133| 8.9% |
| B059    | 4m – 18 weeks     | 12,133| 5.6% |
| C061    | 20 – 32 weeks     | 12,054| 13.8%|
| E108    | 32+ weeks         | 11,641| 12.6%|

*After 3 months and by 18 weeks; † in the 3 months before 32 weeks; ‡ from 7 months to the end of pregnancy.

*Mother was asked to describe as text. This information can be requested from the ALSPAC Data Team.

### 1.4. Depression and anxiety

At two points during pregnancy (18- and 32-weeks gestation) the mothers’ depression and anxiety levels were measured using the following self-completion scales (Table 1.4):

(i) The Edinburgh Post-Natal Depression Scale (EPDS) developed by Cox and colleagues (1987) comprised 10 items, specifically chosen by the authors because they did not involve somatic items. Each question had 4 response categories scored from 0 to 3 which referred to the feelings of the mother in the past week. Although the measure was developed specifically for use with postnatal women, none of the 10 items is specific to the post-natal experience. The main feature of the scale that designates it as a post-natal scale is that it does not include somatic items because of the possibility of confounding somatic symptoms of depression with normal physiological symptoms at this time. Both our own pilot studies and the study of Murray and Carrothers (1990) found the measure to be acceptable to antenatal respondents, producing high completion rates with little evidence of response error. Validation of the scale during pregnancy, the post-partum period and early parenthood has been examined using standardised psychiatric interviews as the validating measures and shown to have high sensitivity and specificity (e.g. Thorpe, 1993). There are three
Maternal anxiety was measured using the relevant sub-scale of the CCEI, a validated self-rating inventory (e.g., Crisp et al., 1978; example items include “worry a lot” and “feeling strung up inside”). In a pilot study of a random sample of 54 pregnant women attending a routine check-up, this score correlated 0.70 and 0.76 with the State and Trait (respectively) subscales of the Spielberger State-Trait Anxiety Inventory (Spielberger, 2010); internal consistencies (α) exceeded 0.80 for each of the four assessments (O’Connor et al., 2002). There is no established cut-off for this measure; Some authors using this scale have identified mothers who scored in the top 15% (or as close as possible) as ‘very anxious’. The variables reporting the CCEI Anxiety score are: B351, B352b, B352a, C573, C575, C574 respectively for the scores using variables excluding those with missing items. The number of missing items, and those where the mode has been substituted for a missing item (if, however, all items were missing then the latter variable was put to missing).

Using the same strategy, the variables depicting the CCEI depression scale were: B353, B354b, B354a; C579, C581, C580; and those for the CCEI somatic scale were: B355, B356b, B356a; C576, C578, C577 for the scales using complete data; the numbers of missing items and the scales with missing items being put to the mode.

There have been a number of highly referenced ALSPAC publications using the Anxiety CCEI scale, showing the ways in which maternal anxiety varies over time (Heron et al., 2004) as well as ways in which it predicted early childhood behaviour (e.g. O’Connor et al., 2002) as well as mood in late adolescence (e.g. Pearson et al., 2013) in the offspring.

### 1.5. Other specific signs and symptoms

All other conditions for which there were specific questions are listed in Table 1.5. These comprise (a) vaginal bleeding; (b) jaundice; (c) an injury or shock; (d) glycosuria (sugar in the urine); (e) a cold; (f) headache; (g) backache; (h) varicose veins; and (i) other condition. If either items (c) or (i) were ticked, the mother was asked to describe the details – these can be retrieved, upon request, from the ALSPAC data team.

After the study pregnancies had been delivered it was realised that there were details concerning the types of early vaginal bleeding that it would be useful to collect. At 33 months after delivery the mother was therefore sent a questionnaire that included the following question: ‘During the first months of the study pregnancy, did you have any bleeding episodes?’ If she answered ‘yes’, she was asked to describe them, distinguishing between: spotting only/ one bleed a bit like a period / quite

### Table 1.4. Measures of mental health during pregnancy.

| Measure            | Var. no | Time period | N     | Range |
|--------------------|---------|-------------|-------|-------|
| Depression - EPDS  | B370    | 18 weeks    | 12,067| 0-30  |
|                    | B371    | 18 weeks    | 12,251| 0-30  |
|                    | C600    | 32 weeks    | 11,972| 0-29  |
|                    | C601    | 32 weeks    | 12,067| 0-29  |
| Depression - CCEI  | B353    | 18 weeks    | 11,788| 0-16  |
|                    | B354a   | 18 weeks    | 12,139| 0-16  |
|                    | C579    | 32 weeks    | 11,630| 0-16  |
|                    | C580    | 32 weeks    | 11,947| 0-16  |
| Somaticism - CCEI  | B355    | 18 weeks    | 11,921| 0-14  |
|                    | B356a   | 18 weeks    | 12,146| 0-14  |
|                    | C576    | 32 weeks    | 11,952| 0-14  |
|                    | C577    | 32 weeks    | 12,104| 0-14  |
| Anxiety - CCEI     | B351    | 18 weeks    | 11,868| 0-16  |
|                    | B352a   | 18 weeks    | 12,140| 0-16  |
|                    | C579    | 32 weeks    | 11,656| 0-16  |
|                    | C580    | 32 weeks    | 11,950| 0-16  |

The EPDS scores obtained in pregnancy have been used widely – both to demonstrate changes over time (e.g. Heron et al., 2004) and associations with the development of the offspring (e.g. Deave et al., 2008; Pearson et al., 2013). Further details of the EPDS in ALSPAC are available elsewhere (Paul & Pearson, 2020).

(ii) Three sub-scales of the Crown-Crisp Experiential Index (CCEI) relating to free-floating anxiety, depression and somaticism (Crown & Crisp, 1979) were included in the questionnaires administered at 18 and at 32 weeks gestation. Although the total score of the 48 items in the original index has been shown to be a useful measure of psycho-neurotic pathology in the community, the need to limit the number of items and our specific interest in depression and anxiety guided the selection of these items. Indeed, most studies using the CCEI, including those of the original authors have focused on the sub-scales and it has been used in this way in the study of mental health of mothers during pregnancy and the post-natal year. The original three sub-scales had varying styles of response, some being a two-point yes/no scale, while others had 3-point categories. We kept the original questions with the lead
Table 1.5. Other specific signs and symptoms during pregnancy.

| Var No. | Time period      | N   | Yes |
|---------|------------------|-----|-----|
| B050    | First 3 months  | 12,135 | 15.2% |
| B049    | 4m – 18 weeks   | 12,135 | 2.8%  |
| C055    | 20 – 32 weeks   | 12,054 | 4.6%  |
| E103    | 32+ weeks       | 11,641 | 4.6%  |
| **Jaundice** |             |       |     |
| B052    | First 3 months  | 12,138 | 0.1%  |
| B051    | 4m – 18 weeks   | 12,138 | <0.1% |
| C056    | 20 – 32 weeks   | 12,054 | 0.1%  |
| E104    | 32+ weeks       | 11,641 | 0.1%  |
| **Sugar in urine** |        |       |     |
| B072    | First 3 months  | 12,124 | 2.2%  |
| C066    | 20 – 32 weeks   | 12,054 | 7.5%  |
| E112    | 32+ weeks       | 11,641 | 5.3%  |
| **Had a cold** |          |       |     |
| C058    | 20 – 32 weeks   | 12,054 | 40.5% |
| **Had a headache** |         |       |     |
| C073    | 20 – 32 weeks   | 12,054 | 61.4% |
| **Had backache** |         |       |     |
| C074    | 20 – 32 weeks   | 12,054 | 80.3% |
| **Varicose veins** |        |       |     |
| C075    | 20 – 32 weeks   | 12,054 | 14.9% |
| **Another problem** |       |       |     |
| E116    | 32+ weeks       | 11,641 | 6.5%  |

* After 3 months and by 18 weeks; † in the 3 months before 32 weeks; ‡ from 7 months to the end of pregnancy.

*Mother was asked to describe as text. This information can be requested from the ALSPAC Data Team.

2. Medications and supplements taken during pregnancy

As outlined in an earlier paper, the mother was asked on four occasions to list the medications (including ointments, herbal treatments and dietary supplements) that she had taken recently. These were all coded individually and are documented elsewhere (Headley et al., 2004). Here we document the medications for which there were direct questions and answers.

2.1. Medications for specific conditions

As shown in Table 2.1, questions were asked at 18 weeks concerning drugs taken during pregnancy, and at 32 weeks gestation regarding medications taken in the past three months. The conditions listed included nausea, heartburn, vomiting, anxiety, infection, migraine, sleep problems, pain, allergies, skin condition, bleeding, depression, haemorrhoids, constipation and cough. The mother was also asked to list any other problems for which she had taken medication during that time period. The list of such conditions is available from the ALSPAC data team.

2.2. Frequency of taking analgesics, sleeping pills and tranquillisers

Although the frequency with which medication was taken was not obtained for the medications in Table 2.1, specific questions on frequency were asked of paracetamol (acetaminophen), aspirin, Anadin or codeine, sleeping tablets and tranquillisers. Far more study mothers were reporting having taken paracetamol at some time during the pregnancy than any other form of medication: 55% by 18 weeks and 44% in the 3 months prior to 32 weeks gestation (Table 2.2). Consequently, the data available to analyse the possible long-term effects of fetal exposure to this drug is more statistically powerful than for any of the other medications. Results of different analyses using these data have shown associations between maternal paracetamol exposure and asthma in the exposed offspring (Shaheen et al., 2010) as well as with early neurocognitive abnormalities (Golding et al., 2020).

It should be noted that the Bristol Obstetric Departments were involved in a randomised controlled trial (CLASP, 1994) designed to assess whether low-dose aspirin in pregnancy would reduce the risk of pre-eclampsia. Obviously, the women who were taking part in the trial were not aware whether they were taking the placebo or aspirin and will have been recorded as taking aspirin. We suggest that these participants should be omitted from any analysis of the consequences of taking aspirin using the variable MZ052.

2.3. Complementary medications

From the list of medications and treatments listed in the various questionnaires, an exercise was undertaken to classify those that were considered to be “Complementary and Alternative Medicines” (CAMs). These were largely classified as herbal or homeopathic substances and are described elsewhere (Bishop et al., 2011). A separate question in the 18- and 32-week questionnaires asked for the frequency with which the mother had ever used homeopathic medications. The results are shown in Table 2.3.

heavy bleeding/other (please describe). The variables for these responses are H800 and H801. The text descriptions are available upon request from the ALSPAC data team.
Table 2.1. Medications taken by mother for specific conditions during pregnancy.

| Var No. | Time period         | N    | Yes  |
|---------|---------------------|------|------|
| B101    | First 3 months      | 13,047 | 4.5% |
| B100    | 4m – 18 weeks       | 13,456 | 1.0% |
| C090    | 20 – 32 weeks       | 11,943 | 2.3% |
| B103    | First 3 months      | 13,026 | 6.5% |
| B102    | 4m – 18 weeks       | 13,026 | 9.8% |
| C091    | 20 – 32 weeks       | 11,943 | 36.5%|
| B105    | First 3 months      | 13,045 | 3.6% |
| B104    | 4m – 18 weeks       | 13,045 | 1.1% |
| C092    | 20 – 32 weeks       | 11,943 | 1.8% |
| E101    | 32+ weeks           | 11,641 | 12.2%|
| B107    | First 3 months      | 13,045 | 0.5% |
| B104    | 4m – 18 weeks       | 13,045 | 0.2% |
| C093    | 20 – 32 weeks       | 11,943 | 0.7% |
| B107    | First 3 months      | 13,037 | 8.1% |
| B108    | 4m – 18 weeks       | 13,037 | 6.0% |
| C094    | 20 – 32 weeks       | 11,943 | 11.5%|
| B111    | First 3 months      | 13,018 | 11.8%|
| B110    | 4m – 18 weeks       | 13,018 | 7.7% |
| C095    | 20 – 32 weeks       | 11,984 | 8.0% |
| B113    | First 3 months      | 13,038 | 0.8% |
| B112    | 4m – 18 weeks       | 13,038 | 1.0% |
| C096    | 20 – 32 weeks       | 11,943 | 3.3% |
| B115    | First 3 months      | 13,023 | 11.5%|
| B114    | 4m – 18 weeks       | 13,023 | 9.4% |

*After 3 months and by 18 weeks; †in the 3 months before 32 weeks; from 7 months to the end of pregnancy; *Text descriptions available
Table 2.2. Frequency analgesics, sleeping tablets or tranquillisers used prior to: (a) 18 weeks gestation (b) 32 weeks gestation.

| Var No. | Medicine               | N    | Daily | Most Days | Sometimes | All Yes | Never |
|---------|------------------------|------|-------|-----------|-----------|---------|--------|
|         |                        |      |       |           |           |         |        |
| B170    | Aspirin                | 13,074 | 0.6% | 0.1%      | 4.2%      | 4.8%    | 95.2%  |
| B171    | Paracetamol            | 13,049 | 0.2% | 1.3%      | 53.0%     | 54.5%   | 45.5%  |
| B172    | Codeine or Anadin      | 13,070 | -    | -         | 2.5%      | 2.5%    | 97.5%  |
| B173    | Sleeping tablets       | 13,072 | -    | -         | -         | 0.5%    | 99.5%  |
| B174    | Tranquilisers          | 13,069 | 0.1% | -         | 0.2%      | 0.3%    | 99.7%  |
|         |                        |      |       |           |           |         |        |
| C130    | Aspirin                | 11,988 | 0.6% | 0.1%      | 2.6%      | 3.3%    | 96.7%  |
| C131    | Paracetamol            | 11,988 | 0.2% | 0.9%      | 42.8%     | 43.9%   | 56.1%  |
| C132    | Codeine or Anadin      | 11,988 | 0.1% | 0.1%      | 1.9%      | 2.0%    | 98.0%  |
| C133    | Sleeping tablets       | 11,988 | <0.1%| 0.1%      | 0.7%      | 0.7%    | 99.3%  |

2.4. Dietary and mineral supplements
As well as listing the dietary and mineral supplements taken, the mother completed specific questions concerning whether she had taken, in the preceding 3 months, the mineral supplements of iron, zinc or calcium, dietary supplements containing vitamins, folic acid, or other types of supplement or diet food (Table 2.4). Those who ticked ‘vitamins’ or ‘other types of supplement’ were asked to describe them. These data are available as text from the ALSPAC data team.

2.5. Numbers of different medications and/or supplements taken
From the lists of different medications and supplements listed, the data team computed the actual numbers of different substances taken in the preceding 3 months. The numbers recorded at 18 weeks ranged from 0 to 17 [Variable B180], and at 32 weeks from 0 to 31 [C135]. As mentioned above in 2.2. it is important to note that a subgroup of the pregnant women (n=42) were taking part in a randomised controlled trial of low dose aspirin known as the CLASP study. They can be identified using variable MZ052.

Table 2.3. Frequency mother has ever used homeopathic medications as asked at 18- and 32-weeks gestation.

| Var No. | N    | Yes, often | Yes, sometimes | No  |
|---------|------|------------|----------------|-----|
| B160    | 12,985 | 0.9% | 8.9% | 90.2%  |
| C120    | 12,297 | 0.8% | 13.9% | 85.3%  |

Table 2.4. Vitamin and mineral supplements taken in the previous 3 months.

| Var No. | Vitamin or Mineral | N    | Yes |
|---------|--------------------|------|-----|
|         | Prior to 18 weeks  |      |     |
| B140    | Iron               | 13,030 | 22.5% |
| B141    | Zinc               | 13,028 | 1.3% |
| B142    | Calcium            | 13,021 | 3.5% |
| B143    | Folic Acid         | 13,016 | 9.0% |
| B144    | "Vitamins"        | 12,988 | 16.4% |
| B149    | Other supplements or diet food | 12,389 | 2.8% |
|         | Prior to 32 weeks  |      |     |
| C110    | Iron               | 12,006 | 43.1% |
| C111    | Zinc               | 12,006 | 1.3% |
| C112    | Calcium            | 12,006 | 3.6% |
| C113    | Folic Acid         | 12,006 | 18.4% |
| C114    | "Vitamins"        | 12,006 | 11.6% |
| C115    | Other supplements or diet food | 12,006 | 2.3% |

2.6. Numbers of different medications and/or supplements taken
From the lists of different medications and supplements listed, the data team computed the actual numbers of different substances taken in the preceding 3 months. The numbers recorded at 18 weeks ranged from 0 to 17 [Variable B180], and at 32 weeks from 0 to 31 [C135]. As mentioned above in 2.2. it is important to note that a subgroup of the pregnant women (n=42) were taking part in a randomised controlled trial of low dose aspirin known as the CLASP study. They can be identified using variable MZ052.

3. Procedures reported
3.1. Medical tests and procedures
Details of the gestation at which various tests and procedures were reported by the mother as being undertaken are given in Table 3.1 for X-rays, amniocentesis, CVS (chorionic villous sampling), AFP (alpha-feto protein), ultrasound examinations and hospital admissions. The latter exclude admissions after the onset of labour. It should be noted that these details are also recorded in the dataset of information extracted from the medical records (Birmingham et al., 2021).

3.2. Dental procedures
Information on exposure to dental procedures occurring during pregnancy were asked on two occasions, both retrospectively: (a) at 8 weeks post-delivery the mother was asked about attendance at a dentist, how many fillings were given and the month of pregnancy at which the first filling was given; (b) subsequently it was realised that further information on dental amalgams, dental X-rays, and dental anaesthetic could be valuable - but this information was not collected until 33 months post-delivery (Table 3.2). Nevertheless, the information on dental amalgam was shown to be associated with maternal blood mercury level, thus providing some validation of these retrospective measures (Golding et al., 2016).
### Table 3.1. Tests and procedures experienced by the women during pregnancy prior to labour and delivery.

| Var No. | Time period | N       | Yes  |
|---------|-------------|---------|------|
|         |             |         |      |
| **X-ray** |             |         |      |
| B074    | First 3 months | 12,213  | 1.9% |
| B073    | 0 – 18 weeks<sup>a</sup> | 12,214  | 4.0% |
| C068    | 18 – 32 weeks<sup>b</sup> | 12,090  | 1.1% |
| E114    | 32+ weeks<sup>c</sup> | 11,639  | 2.9% |
| **Amniocentesis** |             |         |      |
| B076    | First 3 months | 12,209  | 0.5% |
| B075    | 4m – 18 weeks<sup>a</sup> | 12,209  | 3.3% |
| C069    | 20 – 32 weeks<sup>b</sup> | 12,090  | 1.6% |
| **CVS** |             |         |      |
| B078    | First 3 months | 12,207  | 0.9% |
| B077    | 4m – 18 weeks<sup>a</sup> | 12,207  | 1.6% |

### Table 3.2. Information on dental treatment during pregnancy.

| Var no. | Dental information                                      | N   | Results                                                                 |
|---------|---------------------------------------------------------|-----|-------------------------------------------------------------------------|
|         | *Recollections 2 months after delivery*                 |     |                                                                         |
| E090    | Visited a dentist during pregnancy                      | 5,479 | 75.5% visited dentist                                                  |
| E091    | No. of fillings inserted                                | 5,436 | Range 0–9; 20% had at least 1 filling                                   |
| E092    | Month of pregnancy when had first filling               | 1,823 | Range 0–9; mode = 4 months                                             |
|         | *Recollections 33 months after delivery*                |     |                                                                         |
| H790    | No. of amalgam fillings at start of pregnancy<sup>a</sup> | 8,643 | None: 7.8%; one: 5.7%; 2–3: 6.8%; 4+: 69.8%.                           |
| H791    | Visited dentist during pregnancy                        | 9,561 | 86.1 yes; 11.6% no; 2.3% unsure                                       |
| H792    | Had teeth extracted                                     | 9,413 | 3.8% yes                                                               |
| H793    | Had dental amalgam fillings inserted                    | 9,413 | 24.1% yes                                                             |
| H794    | Had dental amalgam fillings extracted                   | 9,413 | 15.3% yes                                                             |
| H795    | Had dental gas (as anaesthetic)                         | 9,413 | 0.5% yes                                                              |
| H796    | Had dental X-ray                                        | 9,413 | 7.8% yes                                                              |
| H797    | No. of dental X-rays                                     | 9,384 | Range 0–5                                                             |

<sup>*</sup>See text for the question asked

*AFP = alpha-fetoprotein; CVS = Chorionic villus sampling.
Strengths and limitations of the data
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 (Fraser et al., 2013). All mothers who answered at least one of the four early questionnaires and had a record of the pregnancy outcome were included in the descriptions in this paper. The data are linkable to all other data collected throughout the study. This includes information about the relationships with partners and the study child, biological markers from different members of the family, data regarding the parents’ beliefs and behaviours, physical and psychological environments, life experiences and demographics. The advantage of collecting information prospectively on common symptoms as well as over the counter medications is that such information is unlikely to be found in medical records or even recalled months or years later.

A limitation of this study is the lack of diversity, because 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%) to allow for detailed analysis by ethnic background.

In addition, as with all longitudinal studies, there is a loss to follow up over time, either through participants moving and failing to notify the study, dying, or rarely, withdrawing their consent for the study. In the latter case the data are removed. Consequently, the numbers involved in any analyses using these data will be slightly less than shown in this paper.

Data availability
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 Committees. 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. Study members have the right to withdraw their consent for elements of the study or from the study entirely at any time.

Acknowledgements
We are extremely grateful to all the families who took part in this study, the midwives for their help in recruiting them, and the whole ALSPAC team, which includes interviewers, computer and laboratory technicians, clerical workers, research scientists, volunteers, managers, receptionists and nurses.

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Pearson RM, Evans J, Kounali D, et al.: Maternal depression during pregnancy and the postnatal period: risks and possible mechanisms for offspring depression at age 18 years. *JAMA Psychiatry.* 2013; 70(12): 1312–1319. PubMed Abstract | Publisher Full Text | Free Full Text

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Thorpe KJ: A study of the use of the Edinburgh Postnatal Depression Scale with parent groups outside the postpartum period. *J Reprod Infant Psychol.* 1993; 11(2): 119–125. Publisher Full Text
The information on data collection methods was not clear and more detail is required. There also appeared to be some inconsistencies between the methods reported in this report and those reported in the previously referenced study by Iles-Carven et al. (2020). There are also some statements made by the authors that would benefit from references.

The data tables and information as to how the data can be accessed is clear.

The following comments are provided for the authors' consideration:

1. In the Methods section of this paper it states:

   "In brief, data from these five questionnaires were given variable numbers each of which started with a letter of the alphabet: A, B, C, D and E respectively."

What five questionnaires are being referred to? Please expand on this in the present Data Note so the reader knows what questionnaires are being referred to.

In the Iles-Carven paper the questionnaires listed are:
- Your Environment (A)
- Having a Baby (B)
- Your Pregnancy (C)
- About Yourself (D)
- Your Home Life and Filling Gaps (E)

What are the authors referring to by the term “variable numbers”? Do the authors mean that the five questionnaires were labelled A, B, C, D, and E? How are A, B, C, D and E related to variable numbers? This is not clear to the reader.

2. In the Methods, it also states the following:

“Just three of these five questionnaires were deliberately linked to a specific gestational period: B was administered at about 18 weeks’ gestation; C at 32 weeks’ gestation and E at 8 weeks post-delivery.”

It seems odd to suggest that 8 weeks post-delivery is a gestational period. I would suggest the authors re-phrase this sentence. It would be helpful if the authors clearly indicated what specific gestational period each of the questionnaires was focused on. For example, was questionnaire E focused on the period between >32 weeks’ gestation and childbirth?

3. It is important to be consistent among the papers published on the ALSPAC cohort. The Iles-Carven et al. (2020) paper it states that the postnatal questionnaire was sent out at 12 weeks post-delivery. Here in this paper the authors state that the questionnaire was sent out at 8 weeks post-delivery. When was it sent out? Please clarify and ensure that these paper and the Iles-Carven paper report the same information.

4. “The other questionnaires (A and D) were administered at variable times according to the mother’s gestation at enrolment”

The Iles-Carven et al. (2020) paper it states that 4 questionnaires were administered during pregnancy. Could the authors please clarify that A and D were administered during the mother’s pregnancy and ensure that this information is included in the Methods?

5. The authors state the following:

“Three of the questionnaires were deliberately linked to a specific gestational period”

It is no clear to this reviewer, why the term “deliberately” is used. I would suggest that the authors provide some explanation as to why these questionnaires were deliberately linked to specific gestational time periods. Was the post-delivery questionnaire at 8 or 12 weeks post-delivery focused on a specific gestational time period? Did it ask any questions related to the first three months post-delivery?

6. In the section “The ASPAC sample second paragraph, I believe that comma after “and” should be removed. It should read as follows:

“there are valid responses, and where appropriate, the ....”

7. In the section Depression and Anxiety I would suggest the following re-wording:
“The Edinburgh Post-Natal........ (1987) is comprised of 10 items and was specifically chosen by the authors because it did not include somatic items.”

8. In the same section I would suggest adding a comma as follows:

"4 response categories scored 0 to 3, which........."

9. The authors’ need to include a statement indicating that higher scores on the EDPS were associated with more depressive symptoms.

10. This reviewer would suggest re-wording this sentence (bottom of page 4) as follows:

Validation of the scale during pregnancy, the post-partum period and early parenthood has been examined using standardised psychiatric interviews as the validating measures and it has been shown that the EPDS has high sensitivity and specificity.

11. On page 5 the authors state “it has been used in this way in the study of mental health of mothers during pregnancy and the post-natal year.” Please clarify the study being referred to by providing a reference.

12. What were the 3-point category Reponses of the original CCEI? Please provide this information.

13. More detail needs to be provided regarding the Crown-Crisp Experiential Index as this measure is less familiar to most readings. In the description of all three subscales (i.e., anxiety, depression, and somatic and their adaptation for this study please clarify how many items are included in each subscale? What responses women could provide; were they yes-no or did they respond on a rating scale? If a rating scale was used what were the responses? What were the ranges of scores participants could obtain on these scales?

14. The authors state when discussing the DDEI “internal consistencies (α) exceeded 0.80 for each of the four assessments”. What four assessments are being referred to here? Please clarify.

15. Please change the ; after measure to ‘a’.

“There is no established cut-off for this measure;”

16. Please provide references to support the following statement.

“Some authors using this scale have identified mothers who scored in the top 15% (or as close as possible) as ‘very anxious.”

17. Please clarify that is meant by the statement “using variable excluding those with missing values”. More detail is required.

18. This is not a complete sentence. The authors need to re-word this statement so that it is clear to the reader.
The number of missing items, and those where the mode has been substituted for a missing item (if, however, all items were missing then the latter variable was put to missing)."

19. On page 6 the authors' state:

“As outlined in an earlier paper, the mother was asked on four occasions to list the medications (including ointments, herbal treatments and dietary supplements)”

What earlier paper? Please provide the reference/ What four occasions? Please list the specific questionnaires or time points?

20. On page 8 was the Dental procedures information collected at 8 weeks post-delivery or 12 weeks? When was the post-delivery questionnaire information collected at 8 or 12 weeks post-delivery?

21. What are the early questionnaires (A, B, C, and D?????) Please clarify.

Is the rationale for creating the dataset(s) clearly described?
Yes

Are the protocols appropriate and is the work technically sound?
Yes

Are sufficient details of methods and materials provided to allow replication by others?
Partly

Are the datasets clearly presented in a useable and accessible format?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Maternal and child health research; longitudinal cohort studies, neurodevelopment

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 24 Oct 2022
Yasmin Iles-Caven, University of Bristol, Bristol, UK

We are very grateful to the reviewer for their very helpful comments which have enabled us to clarify various aspects of the data collection description. We hope the paper is now much clearer. Responses to each comment are in bold.

"The following comments are provided for the authors' consideration:
In the Methods section of this paper it states:

“In brief, data from these five questionnaires were given variable numbers each of which started with a letter of the alphabet: A, B, C, D and E respectively”.

What five questionnaires are being referred to? Please expand on this in the present Data Note so the reader knows what questionnaires are being referred to. We have done this.

In the Iles-Caven paper the questionnaires listed are:
- Your Environment (A)
- Having a Baby (B)
- Your Pregnancy (C)
- About Yourself (D)
- Your Home Life and Filling Gaps (E) E was the postnatal questionnaire Me and My Baby. We have substantially rewritten the Methods and hope this is now clarified.

What are the authors referring to by the term “variable numbers”? Do the authors mean that the five questionnaires were labelled A, B, C, D, and E? How are A, B, C, D and E related to variable numbers? This is not clear to the reader. Clarified

1. In the Methods, it also states the following:

“Just three of these five questionnaires were deliberately linked to a specific gestational period: B was administered at about 18 weeks’ gestation; C at 32 weeks’ gestation and E at 8 weeks post-delivery.”

It seems odd to suggest that 8 weeks post-delivery is a gestational period. I would suggest the authors re-phrase this sentence. It would be helpful if the authors clearly indicated what specific gestational period each of the questionnaires was focused on. For example, was questionnaire E focused on the period between >32 weeks’ gestation and childbirth? We have changed the wording to reflect the input of the E questionnaire.

2. It is important to be consistent among the papers published on the ALSPAC cohort. The Iles-Carven et al (2020) paper it states that the postnatal questionnaire was sent out at 12 weeks months post-delivery [Filling the Gaps]. Here in this paper the authors state that the questionnaire was sent out at 8 weeks post-delivery. When was it sent out? Please clarify and ensure that these paper and the Iles-Carven paper report the same information. We apologise for the confusion over when the different questionnaires were sent out. The description of these has now been rewritten and clarified.

3. “The other questionnaires (A and D) were administered at variable times according to the mother’s gestation at enrolment”

The Iles-Carven et al (2020) paper it states that 4 questionnaires were administered during pregnancy. Could the authors please clarify that A and D were administered during the mother’s pregnancy and ensure that this information is included in the Methods? We hope this is now clarified.
4. The authors state the following:
   *Three of the questionnaires were deliberately linked to a specific gestational period*"  

   It is no clear to this reviewer, why the term “deliberately” is used. I would suggest that the authors provide some explanation as to why these questionnaires were deliberately linked to specific gestational time periods. Was the post-delivery questionnaire at 8 or 12 weeks post-delivery focused on a specific gestational time period? Did it ask any questions related to the first three months post-delivery? We hope this has been clarified now

5. In the section “The ASPAC sample second paragraph, I believe that comma after “and” should be removed. It should read as follows:
   "there are valid responses, and where appropriate, the ....”  Done

6. In the section Depression and Anxiety I would suggest the following re-wording:  
   *The Edinburgh Post-Natal.......... (1987) is comprised of 10 items and was specifically chosen by the authors because it did not include somatic items." We have reworded as suggested

7. In the same section I would suggest adding a comma as follows:  
   "4 response categories scored 0 to 3, which.........." Done

8. The authors' need to include a statement indicating that higher scores on the EDPS were associated with more depressive symptoms. We have added this.  

9. This reviewer would suggest re-wording this sentence (bottom of page 4) as follows:  
   Validation of the scale during pregnancy, the post-partum period and early parenthood has been examined using standardised psychiatric interviews as the validating measures and it has been shown that the EPDS has high sensitivity and specificity. We have reworded as suggested.

10. On page 5 the authors state “it has been used in this way in the study of mental health of mothers during pregnancy and the post-natal year.” Please clarify the study being referred to by providing a reference. Done

11. What were the 3-point category Responses of the original CCEI? Please provide this information

12. More detail needs to be provided regarding the Crown-Crisp Experiential Index as this measure is less familiar to most readings. In the description of all three subscales (i.e., anxiety, depression, and somatic and their adaptation for this study please clarify how many items are included in each subscale? What responses women could provide; were they yes-no or did they respond on a rating scale? If a rating scale was used what were the responses? What were the ranges of scores participants could obtain on these scales? The authors have expanded on the description of the CCEI as requested and hope this is much clearer.

13. The authors state when discussing the CCEI “internal consistencies (α) exceeded 0.80 for
each of the four assessments". What four assessments are being referred to here? Please clarify. We agree that this was confusing and consequently has now been omitted.

14. Please change the ; after measure to 'a'. Done

“There is no established cut-off for this measure;”

15. Please provide references to support the following statement.

“Some authors using this scale have identified mothers who scored in the top 15% (or as close as possible) as ‘very anxious.” O’Connor et al 2002 has been added here.

16. Please clarify that is meant by the statement “using variable excluding those with missing values”. More detail is required. We hope this has been clarified

17. This is not a complete sentence. The authors need to re-word this statement so that it is clear to the reader.

“The number of missing items, and those where the mode has been substituted for a missing item (if, however, all items were missing then the latter variable was put to missing).” This has been rewritten

18. On page 6 the authors’ state:

“As outlined in an earlier paper, the mother was asked on four occasions to list the medications (including ointments, herbal treatments and dietary supplements)”

What earlier paper? Please provide the reference/ What four occasions? Please list the specific questionnaires or time points? Again, this has been clarified and a reference added.

19. On page 8 was the Dental procedures information collected at 8 weeks post-delivery or 12 weeks? When was the post-delivery questionnaire information collected at 8 or 12 weeks post-delivery? We confirm that this was at 8 weeks and have clarified.

What are the early questionnaires (A, B, C, and D?????) Please clarify. This is correct and has been clarified in the text.

Competing Interests: None
Rachel Rowe
National Perinatal Epidemiology Unit, Nuffield Department of Population Health, University of Oxford, Oxford, UK

This paper is a helpful summary of the data available within the ALSPAC resource about the physical and mental health of women during pregnancy collected from women themselves, largely prospectively, during pregnancy and shortly after birth. Data about medications, medical tests, and medical and dental procedures are also described. The rationale for data collection is detailed in full elsewhere in the ALSPAC gateway. Data collection methods are clearly described and are technically sound. Data are summarised clearly and information about how to access the data is clear.

I have a number of very minor comments:

1. In Table 1.1 'Months' should not have a capital M and 'at' should have a capital A

2. In Table 1.2 the period described in the footnote as 'in the 3 months before 32 weeks' is described as '18-32 weeks'. In Table 1.3 this same period is described as '20-32 weeks'. I assume the latter is correct, but it's not clear

3. In Table 1.3 no data are presented for 'Another infection' at 32+weeks - are these missing? For 'Any infection', '1st 3 months' should be written as 'First 3 months' for consistency, and data for 4m-18 weeks appear to be missing.

4. Use postnatal or post-natal consistently.

5. In Table 2.1 it is not clear from the text why there are data for 32+ weeks for medication for vomiting only. Are data for this period for other medications not available or are they missing from the table?

6. In Table 2.2, one of the response options listed is 'All Yes'. It wasn't immediately clear to me what this means, but I see now that it simply means that the woman reported taking that medication at some point (either daily, most days, or sometimes). Can a footnote be added to explain this?

7. In Table 3.1 the footnotes for superscripts a, b, and c are missing. It is not clear to me why the time periods for the various tests and procedures are different. Can this be explained please?

8. Not essential, but it would be my preference to use the word 'birth' instead of 'delivery' where possible.

Is the rationale for creating the dataset(s) clearly described?
Yes

Are the protocols appropriate and is the work technically sound?
Yes

Are sufficient details of methods and materials provided to allow replication by others?
Yes

Are the datasets clearly presented in a useable and accessible format?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Maternity services research

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 24 Oct 2022

Yasmin Iles-Caven, University of Bristol, Bristol, UK

We thank the reviewer for their very helpful comments which have enabled us to clarify certain aspects of the data collection.

I have a number of very minor comments:

1. In Table 1.1 'Months' should not have a capital M and 'at' should have a capital A - We have corrected this.

2. In Table 1.2 the period described in the footnote as 'in the 3 months before 32 weeks' is described as '18-32 weeks'. In Table 1.3 this same period is described as '20-32 weeks'. I assume the latter is correct, but it's not clear. This has been corrected to 18-32 weeks throughout

3. In Table 1.3 no data are presented for 'Another infection' at 32+weeks - are these missing? This has now been inserted in the table. For 'Any infection', '1st 3 months' should be written as 'First 3 months' (done) for consistency,

4. For 'any infection' data for 4m-18 weeks appear to be missing. This has been clarified to 'Any of the above infections'

5. Use postnatal or post-natal consistently. We have done this.

6. In Table 2.1 it is not clear from the text why there are data for 32+ weeks for medication for vomiting only. Are data for this period for other medications not available or are they missing from the table? Apologies, vomiting medication was a typo and has been omitted.

7. In Table 2.2, one of the response options listed is 'All Yes'. It wasn't immediately clear to me what this means, but I see now that it simply means that the woman reported taking that medication at some point (either daily, most days, or sometimes). Can a footnote be added to explain this? We have clarified this.

8. In Table 3.1 the footnotes for superscripts a, b, and c are missing. It is not clear to me
why the time periods for the various tests and procedures are different. Can this be explained please? **We have corrected this.**

9. Not essential, but it would be my preference to use the word 'birth' instead of 'delivery' where possible. **We have altered where appropriate and think this reads better.**

**Competing Interests:** None