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DATA NOTE

Longitudinal data on parental religious behaviour and beliefs from the Avon Longitudinal Study of Parents and Children (ALSPAC) [version 1; referees: awaiting peer review]

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Abstract
There is evidence that, in general, the West is becoming more secular. Religious belief has been shown in some studies to positively impact on outcomes such as coping with serious illness and other life events and general well-being. In this paper, we describe the data collected from parents enrolled in the Avon Longitudinal Study of Parents and Children (ALSPAC) on their religious behaviour and beliefs on three occasions. These data are available for researchers to use in association with other longitudinally collected data on social, biological, genetic and epigenetic features of this culturally largely protestant Christian population. Data were collected antenatally and then subsequently at 5 and 9 years post-delivery from self-completion questionnaires completed by each parent independently. Strong sex differences (all P<0.001) were noted regarding religious beliefs and behaviour: for example, 49.9% of women stated that they believed in God or some divine being compared with 37% of men. Almost twice as many men (28.6%) than women (14.9%) declared they were atheists. Men were less likely to have stated that they had been helped by a divine presence; to appeal to God if they were in trouble, to attend religious services or obtain help from members of religious groups. Among the 6256 women and 2355 men who answered the questions at all three time points, there was evidence of a slight reduction in professed belief and a slight increase in the proportion stating that they were atheists. Information is available from this resource, which is rich in data on the environment, traumatic incidents, health and genetic background. It can be used for research into various aspects of the antecedents and consequences of religious belief and behaviour.

Keywords
ALSPAC, religious belief, religious behaviour, longitudinal cohort, atheist, agnostic

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

The general population in the West has become more secular over time (Chaves, 2017). For example, in the United States, the 2007 Religious Landscape Survey revealed that 92% of Americans believed in God and 56% stated that their faith was very important in their daily lives; a further sweep in 2014 showed that these figures had reduced to 89% and 53% respectively (The Pew Forum on Religion and Public Life, 2017). In the UK, data from the national censuses of 2001 and 2011 showed that the number of people stating they had no religion increased from 14.8% to 25.1% (Office of National Statistics, 2012).

Previous research has shown that religious belief is associated with increases in life satisfaction, feelings of hope and self-worth and reductions in depression (Idler & Kasl, 1997). It has also been shown to be used as a coping mechanism, moderating the effects of stress across the lifespan (McFadden, 1995; Ness & Wintrob, 1980; Pargament, 1990; Seligman, 1991) although not all studies agree. It has also been reported that some view negative life events as opportunities for spiritual growth (Ellison, 1991). Cotton and colleagues (2006) confirmed previous research showing that spiritual coping and religious decision-making were positively associated with health outcomes in adolescents. A review by Regnerus (2003) concluded that religiosity produced moderately positive outcomes in adolescents in regard to physical and emotional health, educational attainment, volunteering, involvement in politics and family well-being.

It has been reported that women tend to display higher levels of religiosity (from attitudes to behaviour) than men (Levin et al., 1994; Roth & Kroll, 2007; Spilka et al., 2003). Results from a group of US-based national surveys found that older participants were more religious than younger ones (Levin et al., 1994; Taylor et al., 1999). The only reduction in religious behaviour reported in the elderly appears to be religious service attendance, perhaps due to ill health and reduced mobility (Ainlay et al., 1992).

In spite of the general findings concerning age and sex, however, there have been few population studies of religious belief. The aim of the present paper is to describe the longitudinal data on religious behaviour and beliefs available from a large longitudinal population birth cohort study—the Avon Longitudinal Study of Parents and Children (ALSPAC)—comprising over 20,000 individuals (women and their partners).

Methods

The ALSPAC sample

All pregnant women resident in the Bristol area of South West England, with expected dates of delivery between 1st April 1991 and 31st December 1992, were invited to enrol in the study. The initial number of pregnancies enrolled was 14,541. Of these initial pregnancies, there was a total of 14,676 fetuses, resulting in 14,062 live births and 13,988 children who were alive by the age of 1 year. Mothers, their partners and the index offspring continue to be followed up via self-completion questionnaires, hands-on clinics and links to routine data collections (Boyd et al., 2013; Fraser et al., 2013; Golding & the ALSPAC Study Team, 2004).

At the time of enrolment (and with advice from the ALSPAC Ethics and Law Advisory Committee), it was decided not to enrol the study fathers directly (Birmingham, 2018). A questionnaire was sent (via the mother) for the partner to complete. The mother could pass this on to him if she wanted her partner to be involved, along with a separate reply-paid envelope. This methodology meant that the study deliberately had no information on whether the mother had invited her partner to take part or not, except on receipt of a completed questionnaire from him. For this reason, reminders could not be sent directly to the partners. In the event, at least one questionnaire was returned by 75% of the partners of the enrolled women.

A major component of the study design was to obtain, from the parents, details of their own personal characteristics, moods and attitudes, including religious behaviour and beliefs, prior to the birth of the index child. The study website contains details of all the data that are available through a fully searchable data dictionary and variable search tool: http://www.bristol.ac.uk/alspac/researchers/our-data/.

Ethical approval and consent

Ethical approval for the study was obtained from the ALSPAC Ethics and Law Committee and the Local Research Ethics Committees (Birmingham, 2018). Questionnaires were completed by parents in their own homes—return of a questionnaire to the study offices was interpreted as giving tacit consent to 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.

Religious belief questions

The religious behaviour and belief questions were devised specifically for ALSPAC by Ursula King (Emeritus Professor of Theology & Religious Studies, University of Bristol) in discussion with Jean Golding. The same questions were included in self-completion questionnaires to both the mother and her partner during pregnancy and at 5 and 9 years after birth. Table 1 shows the actual wording of the questions used. These questions had been piloted to ensure acceptability prior to their inclusion in questionnaires at the three time points. We suggest that the most important question is the first: ‘Do you believe in God or some divine power?’ The responses: ‘yes; not sure; no’ can be used to divide the responders into: believers, agnostics and atheists respectively.

As indicated in Table 1, the participants were asked to indicate their faith and were given 12 options, as well as ‘other Christian’ and ‘other’; if they had ticked either box they were asked to describe as text. The text answers have been coded by Y.I.C. See Supplementary Table 3 and Supplementary Table 4 (Iles-Caven, 2019) for the breakdown of responses and frequencies.

Timing of the questionnaires

Enrolling women in pregnancy provided a number of technical problems for a study that aimed to enrol all such women who were pregnant and resident in a defined geographic area; by their very nature the women recognised their pregnancies at
different stages, the local health services had different criteria as to when pregnancies should receive care, and some women only moved into the area in the second half of pregnancy. The ALSPAC design was for certain questions to be asked at specific gestations, whereas the timing of others was not so crucial. As a result, four questionnaires were designed: one on environmental exposures to be administered as early in pregnancy as possible; one concerning the health and well-being of the woman at 18 weeks and a similar questionnaire at 32 weeks. The remaining questions considered to be important to ask in pregnancy, if at all possible, were included in the questionnaire ‘About Yourself’. If the mother enrolled at gestations <11, 11–14, 15–18, 19–21 or 22–30 weeks, the questionnaire was administered at 14, 23, 26, 28, and 34–37 weeks, respectively. For the 10% of

| Table 1. Questions asked of the mother and father (antenatally, at 5 and at 9 years after delivery) and their variable names. * | AN | 5 years | 9 years |
|---|---|---|---|
| Do you believe in God or in some divine power? Yes/Not sure/No | D810 PB150 | K6240 PH6240 | P4040 PM4040 |
| Do you feel that God (or some divine power) has helped you at any time? Yes/Not sure/No | D811 PB151 | K6241 PH6241 | P4041 PM4041 |
| Would you appeal to God for help if you were in trouble? Yes/Not sure/No | D812 PB152 | K6242 PH6241 | P4042 PM4042 |
| Do you ‘pray’ even if not in trouble? Yes/No** | - - | P4043 PM4043 |
| What sort of religious faith would you say you had? (tick only one) | D813 PB153 | K6243 PH6243 | P4044 PM4044 |
| None | | | |
| Church of England | | | |
| Roman Catholic | | | |
| Jehovah’s Witness | | | |
| Christian Science | | | |
| Mormon | | | |
| Other Christian (please describe) | | | |
| Jewish | | | |
| Buddhist | | | |
| Sikh | | | |
| Hindu | | | |
| Muslim | | | |
| Rastafarian | | | |
| Other (please describe) | | | |
| Are you bringing your child up in this faith? Yes/No* | - - | P4048 PM4048 |
| How long have you had this particular faith? All my life | D815 PB154 | K6246 PH6246 | P4047 PM4047 |
| More than 5 years | | | |
| 3–5 years | | | |
| 1–2 years | | | |
| Less than a year | | | |
| Do you go to a place of worship? Yes, at least once a week | D816 PB155 | K6247 PH6247 | P4049 PM4049 |
| Yes, at least once a month | | | |
| Yes, at least once a year | | | |
| Not at all | | | |
| Do you obtain help and support from leaders of your religious group? Yes/No | D817 PB156 | K6248 PH6248 | P4050 PM4050 |
| Do you obtain help and support from other members of your religious group? Yes/No | D818 PB157 | K6249 PH6249 | P4051 PM4051 |
| Do you obtain help and support from members of other religious groups (please describe)? Yes/No | D819 PB158 | K6250 PH6250 | P4052 PM4052 |

Maternal antenatal questionnaire: “About Yourself” (D variables). Maternal 5-year questionnaire: “Study Mother’s Questionnaire” (K variables). Maternal 9-year questionnaire: “Mother of a 9-Year-Old” (P variables). Paternal antenatal questionnaire: “Partner’s Questionnaire” (PB variables). Paternal 5-year questionnaire: “Study Partner’s Questionnaire” (PH variables). Paternal 9-year questionnaire: “Father of a 9-Year-Old” (PM variables).
pregnancies that did not enrol until after 30 weeks, the question-naire was administered at 4 months post-delivery. This question-naire was 36 pages long and included questions concerning the mother’s medical history, her relationship with her partner, details of her parents, including a measure of her relationship with her mother during childhood, the history of events during her childhood, a social network scale, a perceived social support scale, and a generalised locus of control scale. The religiosity questions comprised three pages and were located between the social support and the locus of control scales at the end of the questionnaire and were answered by 12,351 women.

The subsequent administration of the religiosity questions to the study mothers occurred when the study child was 5 years 1 month (The Study Mother’s Questionnaire), and 9 years 2 months (Mother of a Nine-Year-Old). The questions were nested within questionnaires, both of which were 48 pages in length, and were answered by 8904 and 7827 women, respectively.

Questions to the mothers’ partners were included in questionnaires that were sent to the study mother (for forwarding) when she herself was sent those questionnaires containing the religious belief and behaviour questions. These had response rates of 9798, 4484 and 3607 fathers respectively.

Description of population
Table 2 presents the distribution of the responding participants in the antenatal period by demographic factors, including their ages, education levels (divided according to the maximum educational achievement in three groups), whether the partner lived with the mother, ethnic background and the sex of the child. It can be seen that the demographic distributions of the women and their partners are similar with the exception of the smaller number of responses from partners who were not living with the mother of their child.

Table 3 and Table 4 show the data available from each of the three time points. In order to assess whether there are changes of belief and/or behaviour over time, Supplementary Table 1–Supplementary 2 (Iles-Caven, 2019) repeat Table 3 and Table 4, but restrict the data to the individuals who responded at all three time points. These data indicate that for both men and women there is a slight reduction in professed belief, and an increase in atheism over time.

Strengths and limitations of the data
The primary strength of this data set is the size of the sample of participants and the fact that responders comprise a general population of over 20,000 men and women with no restrictions on their selection other than that they were initially expecting a baby. They were roughly representative of the local Avon population in terms of socioeconomic status (slightly more likely to be owner-occupiers, own a car and be married, and live in over-crowded circumstances) but less likely to be non-White (Fraser et al., 2013). The initial religious behaviour and belief questions were asked during pregnancy and responses at that point

| Variable                      | Mothers, % (n) | Fathers, % (n) |
|-------------------------------|----------------|---------------|
| **Age of parents**            |                |               |
| <25                           | 21.2% (2599)   | 21.3% (2042)  |
| 25–34                         | 68.5% (8384)   | 68.4% (6553)  |
| 35+                           | 10.3% (1260)   | 10.3% (988)   |
| **Parental education level**  |                |               |
| <O level                      | 28.5% (3304)   | 26.9% (2436)  |
| O level                       | 35.2% (4089)   | 34.9% (3154)  |
| >O level                      | 36.3% (4219)   | 38.2% (3450)  |
| **Partner lives with mother** |                |               |
| Yes                           | 91.7% (11109)  | 95.2% (9018)  |
| No                            | 8.3% (1003)    | 4.8% (456)    |
| **Sex of child**              |                |               |
| Boy                           | 51.5% (6323)   | 51.5% (4949)  |
| Girl                          | 48.5% (5950)   | 48.5% (4670)  |
| **Ethnic background**         |                |               |
| White                         | 97.6% (11288)  | 97.2% (9367)  |
| Non-white                     | 2.4% (273)     | 2.8% (268)    |
Table 3. Mother’s beliefs/religion and support at each time point, where data for the questions are available.

| Question                                                                 | Antenatal, n (%) | 5 years, n (%) | 9 years, n (%) |
|--------------------------------------------------------------------------|------------------|----------------|----------------|
| Do you believe in God or some divine power?                              |                  |                |                |
| Yes                                                                      | 6160 (49.9%)     | 4141 (46.5%)   | 3776 (48.2%)   |
| Not sure                                                                 | 4353 (35.2%)     | 3018 (33.9%)   | 2682 (34.3%)   |
| No                                                                       | 1838 (14.9%)     | 1745 (19.6%)   | 1369 (17.5%)   |
| Do you believe that God/divine power has helped you at any time?         |                  |                |                |
| Yes                                                                      | 4181 (33.9%)     | 2672 (30.1%)   | 2566 (32.9%)   |
| Not sure                                                                 | 4672 (37.9%)     | 3047 (34.3%)   | 2774 (35.6%)   |
| No                                                                       | 3477 (28.2%)     | 3152 (35.5%)   | 2454 (31.5%)   |
| Would you appeal to God for help if you were in trouble?                 |                  |                |                |
| Yes                                                                      | 5738 (46.6%)     | 4070 (45.9%)   | 3578 (45.8%)   |
| Not sure                                                                 | 3861 (31.3%)     | 2653 (29.9%)   | 2288 (29.3%)   |
| No                                                                       | 3477 (28.2%)     | 3152 (35.5%)   | 2454 (31.5%)   |
| Mother prays even if not in trouble                                      |                  |                |                |
| Yes                                                                      | -                | -              | 3012 (39.2%)   |
| No                                                                       | -                | -              | 4677 (60.8%)   |
| Mother bringing up child in this faith                                   |                  |                |                |
| Yes                                                                      | -                | -              | 5167 (72.0%)   |
| No                                                                       | -                | -              | 2010 (28.0%)   |
| Length of time mother has followed her current religion                  |                  |                |                |
| Whole life                                                               | 8905 (81.8%)     | 6610 (83.6%)   | 5667 (80.8%)   |
| >5 years                                                                 | 1472 (13.5%)     | 1018 (12.9%)   | 1135 (16.2%)   |
| 3–5 years                                                                | 290 (2.7%)       | 147 (1.9%)     | 119 (1.7%)     |
| 1–2 years                                                                | 127 (1.2%)       | 83 (1.1%)      | 62 (0.9%)      |
| <1 year                                                                  | 88 (0.8%)        | 44 (0.6%)      | 29 (0.4%)      |
| Frequency mother attends a place of worship                               |                  |                |                |
| At least once a week                                                     | 885 (7.3%)       | 886 (10.3%)    | 927 (12.0%)    |
| At least once a month                                                    | 836 (6.9%)       | 849 (9.8%)     | 723 (9.4%)     |
| At least once a year                                                     | 3520 (29.2%)     | 2287 (26.5%)   | 2235 (28.9%)   |
| Never                                                                    | 6824 (56.6%)     | 4602 (53.4%)   | 3838 (49.7%)   |
| Has the mother received help from:                                       |                  |                |                |
| Leaders in her religious group                                          |                  |                |                |
| Yes                                                                      | 897 (7.7%)       | 645 (7.6%)     | 738 (10.0%)    |
| No                                                                       | 10735 (92.3%)    | 7789 (92.4%)   | 6620 (90.0%)   |
| Members of her religious group                                          |                  |                |                |
| Yes                                                                      | 1087 (9.4%)      | 856 (10.2%)    | 921 (12.6%)    |
| No                                                                       | 10465 (90.6%)    | 7499 (89.8%)   | 6384 (87.4%)   |
| Members of other religious groups                                       |                  |                |                |
| Yes                                                                      | 233 (2.1%)       | 144 (1.8%)     | 186 (2.6%)     |
| No                                                                       | 11059 (97.9%)    | 7911 (98.2%)   | 6862 (97.4%)   |
| Type of religious belief                                                 |                  |                |                |
| Stated “none”                                                            | 1981 (16.2%)     | 1411 (16.1%)   | 1276 (16.6%)   |
| Church of England                                                        | 7774 (63.6%)     | 5532 (63.2%)   | 4608 (60.1%)   |
| Roman Catholic                                                           | 972 (7.9%)       | 670 (7.6%)     | 583 (7.6%)     |
| Jehovah’s Witness                                                        | 53 (0.4%)        | 41 (0.5%)      | 36 (0.5%)      |
| Christian Scientist                                                      | 16 (0.1%)        | 17 (0.2%)      | 11 (0.1%)      |
| Mormon                                                                   | 30 (0.2%)        | 22 (0.3%)      | 16 (0.2%)      |
| Other Christian (please describe)*                                      | 851 (7.0%)       | 797 (9.1%)     | 425 (5.5%)     |
| Judaism                                                                  | 11 (0.1%)        | 11 (0.1%)      | 10 (0.1%)      |
| Buddhist                                                                 | 26 (0.2%)        | 18 (0.2%)      | 28 (0.4%)      |
| Sikh                                                                     | 16 (0.1%)        | 6 (0.1%)       | 5 (0.1%)       |
| Hindu                                                                    | 22 (0.2%)        | 13 (0.1%)      | 6 (0.1%)       |
| Muslim                                                                   | 55 (0.4%)        | 22 (0.3%)      | 18 (0.2%)      |
| Rastafarian                                                              | 5 (0.0%)         | <5 (0.0%)      | <5 (0.0%)      |
| Other (please describe)*                                                | 377 (3.1%)       | 197 (2.3%)     | 21 (0.3%)      |

*These descriptors were coded and are described in Supplementary Table S3 (Iles-Caven, 2019).
| Question                                                                 | Antenatal | 5 years | 9 years |
|-------------------------------------------------------------------------|-----------|---------|---------|
| **Do you believe in God or some divine power?**                         |           |         |         |
| Yes                                                                     | 3621 (37.0%) | 1505 (33.6%) | 1275 (35.3%) |
| Not sure                                                                | 3376 (34.5%) | 1573 (35.1%) | 1183 (32.8%) |
| No                                                                      | 2801 (28.6%) | 1406 (31.4%) | 1149 (31.9%) |
| **Do you believe that God/divine power has helped you at any time?**    |           |         |         |
| Yes                                                                     | 2472 (25.3%) | 1031 (23.0%) | 876 (24.3%) |
| Not sure                                                                | 3158 (32.3%) | 1430 (32.0%) | 1117 (31.0%) |
| No                                                                      | 4144 (42.4%) | 2013 (45.0%) | 1606 (44.6%) |
| **Would you appeal to God for help if you were in trouble?**            |           |         |         |
| Yes                                                                     | 3536 (36.2%) | 1586 (35.5%) | 1248 (34.9%) |
| Not sure                                                                | 6288 (27.5%) | 1319 (29.5%) | 1014 (28.3%) |
| No                                                                      | 3548 (36.3%) | 1566 (35.0%) | 1319 (36.8%) |
| **Father prays even if not in trouble**                                 |           |         |         |
| Yes                                                                     |           |         | 902 (25.4%) |
| No                                                                      |           |         | 2650 (74.6%) |
| **Father bringing up child in this faith**                              |           |         |         |
| Yes                                                                     |           |         | 2012 (60.7%) |
| No                                                                      |           |         | 1301 (39.3%) |
| **Length of time father has followed his current religion**             |           |         |         |
| Whole life                                                              | 6671 (79.0%) | 3052 (78.3%) | 2449 (76.2%) |
| >5 years                                                                | 1409 (16.7%) | 744 (19.1%) | 678 (21.1%) |
| 3–5 years                                                               | 180 (2.1%) | 48 (1.2%) | 54 (1.7%) |
| 1–2 years                                                               | 89 (1.1%) | 29 (0.7%) | 20 (0.6%) |
| <1 year                                                                 | 94 (1.1%) | 23 (0.6%) | 15 (0.5%) |
| **Frequency father attends a place of worship**                         |           |         |         |
| At least once a week                                                    | 588 (6.1%) | 358 (8.2%) | 322 (9.0%) |
| At least once a month                                                   | 415 (4.3%) | 282 (6.5%) | 240 (6.7%) |
| At least once a year                                                    | 2515 (26.2%) | 987 (22.7%) | 952 (26.7%) |
| Never                                                                   | 6077 (63.3%) | 2712 (62.5%) | 2049 (57.5%) |
| **Father receives help from:**                                          |           |         |         |
| Leaders in his religious group                                          |           |         |         |
| Yes                                                                     | 559 (6.0%) | 301 (7.1%) | 287 (8.2%) |
| No                                                                      | 8717 (94.0%) | 3947 (92.9%) | 3198 (91.8%) |
| Members of his religious group                                          |           |         |         |
| Yes                                                                     | 642 (7.0%) | 335 (7.9%) | 327 (9.4%) |
| No                                                                      | 8544 (93.0%) | 3894 (92.1%) | 3146 (90.6%) |
| Members of other religious groups                                       |           |         |         |
| Yes                                                                     | 144 (1.6%) | 65 (1.6%) | 55 (1.6%) |
| No                                                                      | 8944 (98.4%) | 4093 (98.4%) | 3356 (98.4%) |
| **Type of religious belief**                                            |           |         |         |
| Stated “none”                                                           | 2523 (26.2%) | 1086 (24.9%) | 896 (25.6%) |
| Church of England                                                       | 5238 (54.3%) | 2455 (56.2%) | 1849 (52.8%) |
were not influenced by the birth nor future characteristics of the child. Identical questions were asked 5 and 9 years after the birth of the child. A major advantage of the data is that it can be linked to information already collected on the individuals including: (a) characteristics of their parents, (b) their own childhoods including their health, well-being and traumatic events, (c) their social and educational background, (d) their personality, attitudes and behaviour, (e) their interactions with their children, (f) and future outcomes. In addition, the data can be linked to characteristics of the child such as development, health and well-being.

One limitation of this data is that extrinsic and intrinsic religiosity were not measured directly which prevents more complex analyses. Extrinsic individuals are more likely to exploit religion, e.g. to provide security and solace, for social reasons, status and self-justification. Intrinsic individuals aim to live their life according to the tenets of that religion and exhibit behaviours consistent with those tenets (Allport & Ross, 1967).

Other limitations concern the reduction in the numbers of men answering the questionnaires; this was largely due to the fact that the mother was seen as the centre of the enrolment, and consequently there was no direct contact with the study fathers. A further limitation is the lack of diversity, because at the time of enrolment, the county of Avon was mainly Caucasian, and there were too few non-white participants (<6%) to enable 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. Note that Table 1 in this paper gives the variable numbers for the religion data. 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.

1. 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.

2. 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).

The ALSPAC data management plan (http://www.bristol.ac.uk/media-library/sites/alspac/documents/researchers/data-access/alspac-data-management-plan.pdf) describes in detail the policy regarding data sharing, which is through a system of managed open access.

#### Extended data

Open Science Framework: Longitudinal data on parental religious behaviour and beliefs from the Avon Longitudinal Study of Parents and Children (ALSPAC). https://doi.org/10.17605/OSF.IO/KX2EN (Iles-Caven, 2019). The following tables are included in Supplementary Tables.pdf:

- Supplementary Table 1. Maternal: where data for each question are available for all time points
- Supplementary Table 2. Paternal: where data for each question are available for all time points
- Supplementary Table 3. Coding of the ‘Other Christian’ and ‘Other’ – Mothers

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| Question                  | Antenatal | 5 years | 9 years |
|---------------------------|-----------|---------|---------|
| Roman Catholic            | 699 (7.3%)| 314 (7.2%)| 274 (7.8%)|
| Jehovah’s Witness         | 32 (0.3%) | 21 (0.5%)| 12 (0.3%) |
| Christian Scientist       | 13 (0.1%) | 7 (0.2%) | <5 (0.1%) |
| Mormon                    | 18 (0.2%) | 13 (0.3%)| 5 (0.1%)  |
| Other Christian (please describe)* | 591 (6.2%)| 374 (8.6%)| 166 (4.7%) |
| Judaism                   | 7 (0.1%)  | 5 (0.1%) | <5 (0.1%) |
| Buddhist                  | 29 (0.3%) | 11 (0.3%)| 21 (0.6%) |
| Sikh                      | 18 (0.2%) | <5 (0.1%)| <5 (0.1%) |
| Hindu                     | 19 (0.2%) | <5 (0.1%)| <5 (0.1%) |
| Muslim                    | 59 (0.6%) | 16 (0.4%)| 10 (0.3%) |
| Rastafarian               | 5 (0.1%)  | <5 (0.0%)| <5 (0.1%) |
| Other (please describe)*  | 381 (4.0%)| 91 (2.1%)| 6 (0.2%)  |

*These descriptors were coded and are described in Supplementary Table S4 (Iles-Caven, 2019).
• Supplementary Table 4. Coding of the ‘Other Christian’ and ‘Other’ – Partners

Extended data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).

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References

Ainlay SC, Singleton R, Swigert VL: Pew Forum on Religion and Public Life: Roth L, Kroll JC: Idler EL, Kasl SV: Ness RC, Wintrob RM: Golding J, The ALSPAC Study Team: Levin JS, Taylor RJ, Chatters LM: Allport GW, Ross JM: Taylor RJ, Mattis J, Chatters LM: Iles-Caven Y: Seligman MEP: Chaves M: Office of National Statistics: Fraser A, Macdonald-Wallis C, Tilling K, Birmingham K: Pargament KI: Cotton S, Zebracki K, Rosenthal SL, Ellison CG: Spilka B, Hood RW, Hunsberger B, Regnerus MD: Boyd A, Golding J, 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. Published Abstract | Publisher Full Text

Chaves M: American Religion Contemporary Trends. 2nd edition. Princeton, NJ: Princeton University Press. 2017. Reference Source

Cotton S, Zebracki K, Rosenthal SL, et al.: Religion/spirituality and adolescent health outcomes: a review. J Adolesc Health. 2006; 38(4): 472–480. PubMed Abstract | Publisher Full Text

Ellison CG: Religious involvement and subjective well-being. J Health Soc Behav: 1991; 32(1): 80–99. PubMed Abstract | Publisher Full Text

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

Golding J, The ALSPAC Study Team: The Avon Longitudinal Study of Parents and Children (ALSPAC)–study design and collaborative opportunities. Eur J Endocrinol. 2004; 151 Suppl 3: U118–U123. Published Abstract

Idler EL, Kasl SV: Religion among disabled and nondisabled persons II: attendance at religious services as a predictor of the course of disability. J Gerontol B Psychol Sci Soc Sci. 1997; 52(B): S306–S316. PubMed Abstract | Publisher Full Text

Iles-Caven Y: Longitudinal data on religious behaviour and beliefs from the Avon Longitudinal Study of Parents and Children (ALSPAC), 2019. http://www.doi.org/10.17605/OSF.IO/KX2E2

Levin JS, Taylor RJ, Chatters LM: Race and gender differences in religiosity among older adults: findings from four national surveys. J Gerontol. 1994; 49(3): S137–S145. PubMed Abstract | Publisher Full Text

McFadden S: Religion and well-being in aging persons in an aging society. J Soc Issues. 1996; 51(2): 161–175. Publisher Full Text

Ness RC, Wintrob RM: The emotional impact of fundamentalist religious participation: an empirical study of intragroup variation. Am J Orthopsychiatry. 1980; 50(2): 302–315. PubMed Abstract | Publisher Full Text

Office of National Statistics: Religion in England and Wales 2011. Accessed 4.1.18. 2012. Reference Source

Pargament KI: God help me: Towards a theoretical framework for the psychology of religion. In ML. Lynn and DO. Moberg (Eds.), Research in the social scientific study of religion. Greenwich, CT: JAI Press. 1990; 2: 195–224. Pew Forum on Religion and Public Life: U.S. Religious Landscape Survey: Religious Beliefs and Practices 2017. 2017. Reference Source

Regnerus MD: Religion and positive adolescent outcomes: a review of research and theory. Rev Religious Res. 2003; 44(4): 384–413. Publisher Full Text

Roth L, Kroll JC: Risky business: assessing risk preference explanations for gender differences in religiosity. Am Soc Rev. 2007; 72(3): 205–220. Publisher Full Text

Seligman MEP: Learned optimism. New York: Simon & Schuster. 1991. Reference Source

Spilka B, Hood RW, Hunsberger B, et al.: The psychology of religion: an empirical approach. New York, NY: Guilford Press. 2003. Reference Source

Taylor RJ, Mathis J, Chatters LM: Subjective religiosity among African Americans: a synthesis of findings from five national samples. J Black Psychol. 1999; 25(4): 524–543. Publisher Full Text