



Department
of Health &
Social Care

Sex Ratios at Birth in Great Britain, 2012-16

A report on sex ratios at birth in Great Britain

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Executive Summary

Aim

This report provides statistics on the analysis of male to female birth ratios in Great Britain using the most recent data for the period 2012-16.

The purpose of these Official Statistics is to update and inform the public and Parliament on whether or not there is evidence for sex selective abortions happening at scale within specific communities in Great Britain. Data are sourced from birth registration data in England, Wales and Scotland. This analysis does not use data on abortions, as sex of the fetus at termination is not available, however some indicative data is presented on abortions in Appendix A.

This analysis uses a generally accepted birth sex ratio upper limit of 107 (see paragraph 1.16) i.e. we are looking for birth ratios with significantly more than 107 boys born for every 100 girls within a community. Where the ratio of boys to girls for a particular country or ethnicity is significantly greater than 107 (after adjusting for multiple testing and the order of birth of the child) this may indicate that people in this community have been involved in sex selective abortions. A lower sex birth ratio limit is not used, as we are not investigating if there are many more girls born than boys born in Great Britain.

Key Findings from 2012 to 2016 data

This report presents statistics on the analysis of male to female birth ratios in Great Britain for the period 2012 to 2016:

- This analysis of birth sex ratios finds no evidence for sex selective abortions occurring in Great Britain over the period 2012 to 2016.
- There were 3.8 million births registered in Great Britain in this period with a ratio of boys to girls of 105.4, which is below the accepted upper limit of 107. (See Table 1; Results)
- Latest analyses by **country of origin of mother** for overall birth ratios, and by birth order, shows no ratio was found to be significantly higher than a boy to girl birth ratio of 107. (See Table 2).
- Analysis of sex birth ratios by **ethnicity of the child** for both overall birth ratio, and birth ratios by birth order, found no ratio to be significantly higher than 107. (See Table 3).

1. Background

- 1.1 The Department of Health and Social Care made a [commitment to publish sex birth ratio](#) analysis annually, in line with the recommendation of the Council of Europe Parliamentary Assembly that member states should collect the sex ratio at birth, monitor its development and take prompt action to tackle possible imbalances' and 'encourage research on sex ratios at birth among specific communities'. If more boys than girls are being born than is expected, this could imply some pregnancies are being terminated with an abortion due to the sex of the fetus. This process is known as a sex selective abortion. However, a number of factors can influence the sex of a child including maternal and paternal age, coital rates, number of children and sex of previous children.

The legal context

- 1.2 Concern has been raised in some countries about the occurrence of sex selective abortions^{1,2}.
- 1.3 Sex is not itself a lawful ground for abortion in England, Wales and Scotland (Abortion Act 1967). Department of Health and Social Care guidance, in May 2014, states that abortion on the grounds of sex alone is illegal.
- 1.4 However, under the Abortion Act, it is lawful to abort a fetus where two registered medical practitioners (RMPs) (i.e. doctors) are of the opinion, formed in good faith, "that there is a substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped." There are some serious conditions which are known to be related to a person's sex.
- 1.5 In early 2015 the Serious Crime Act contained a requirement that the Secretary of State should arrange for an assessment to be made, within six months of Royal Assent, of the evidence for sex-related abortions occurring. [A report](#) was subsequently laid before Parliament in August 2015, which contained the assessment of evidence of terminations of pregnancy being undertaken on the grounds of the sex of the fetus, and a statement and explanation of why the Secretary of State for Health considered a formal plan under sub-section (3) (a) of the clause was not required.

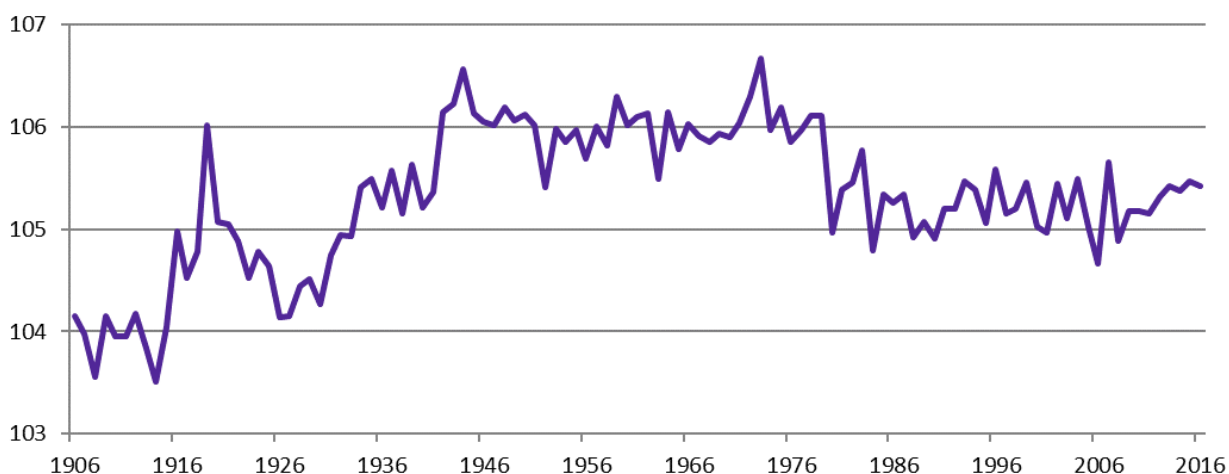
Identifying the Sex of a Fetus with Technology

- 1.6 Antenatal sexing of the fetus is not a routine part of antenatal care. Scans are undertaken to support the clinical care of the mother and unborn baby such as: the number of foetuses, the age of the fetus, and screening for fetal anomalies. It is usually only possible to identify the sex of a baby at the second ultrasound scan, which takes place at around 18-21 weeks gestation. Disclosing the sex of a fetus is a local decision, adhering to local policies, and should be based on clinical judgment about the certainty of the assessment and the individual circumstances of each case.
- 1.7 Ultrasound Imaging can be used to accurately determine the sex of a fetus where gestational age is over 12 weeks and certain other factors are present. However, where these factors are not present, and gestation is less than 11 weeks and 4 days, it is not possible to accurately identify the sex of a fetus using ultrasound imaging.
- 1.8 The introduction of new and emerging technologies (such as Non-Invasive Prenatal Testing which is currently available in private clinics and on the internet) provide further context from which the monitoring of birth ratios needs to be considered. Further details on NIPT are available in the [August 2015 report on the evidence for sex selective abortions](#). Plans are underway to make the NIPT test available on the NHS. The UK National Screening Committee made a recommendation to use NIPT, a contingent test in the NHS Fetal Anomaly Screening Programme only for Trisomy 13, 18 and 20 and not for any other genetic marker, including sex. (A trisomy is a disorder characterised by an additional chromosome).
- 1.9 The majority of abortions take place in the first trimester of pregnancy (90% upto 12 weeks; 51% upto 7 weeks gestation), whilst NHS antenatal sexing of a fetus typically takes place much later in the pregnancy, usually between 18-21 weeks gestation. The majority of abortions are therefore taking place nearly two months before most women could have been told the sex of the fetus in the antenatal screening pathway. It is acknowledged that some people may seek information on sex through tests available on the internet and private clinics however data is not available on the extent to which this is happening. See Appendix A for further information on abortions by gestation and ethnicity.

Trends in Birth Sex Ratios

1.10 Within large populations, we can expect the birth ratio to vary, due to external factors³, including wars and economic crises. Figure 1 shows the fluctuation within England, Wales and Scotland since 1906. The chart shows that the birth ratio has never been above 107 over that period. The minimum ratio was 103.5 in 1914 and the maximum ratio was 106.7 in 1973. The male to female birth ratio has been consistently around 105 since 1980.

Figure 1 - Live male births per 100 live female births, England, Wales and Scotland



Source: Office for National Statistics and National Records of Scotland

1.11 The issue of sex ratios of new born babies is the subject of numerous academic articles, where there is a range of evidence. A 2011 World Health Organisation report stated a biologically normal sex ratio at birth ranges from 102 to 106 male births, per 100 female births⁴. Although other studies have stated that 105 or lower is a more “normal” ratio of boys to girls¹. Evidence suggests that a number of factors can influence the sex of a child, including maternal and paternal age, coital rates, number of children and sex of previous children⁵. It is important to note that the interaction between factors that could influence the sex of the child has not been controlled for, or taken into account in this analysis.

- 1.12 For this publication a birth ratio upper limit of 107 boys to 100 girls is used as a threshold for comparisons. This is based on a review of available literature^{1,2}, advice from academic experts and on examination of data on birth ratios in more developed countries.
- 1.13 Birth ratios for selected countries based on UN data for 2010-2015 are shown in Figure 4 of the results section and are compared with Great Britain data for 2012-2016 based on the mother's country of birth.

Calculations and statistical tests used

- 1.14 The birth ratios were calculated for each ethnicity and country of birth by dividing the number of male births by the number of female births and multiplying this value up by 100 to achieve a ratio of the number of boys born per 100 girls. Ratios are examined for all births and by birth order (so whether a child is first born, second born, third born or more).
- 1.15 The aim of this analysis is to investigate if any of the birth ratios considered are statistically significantly higher than 107, i.e. if any group or community has statistically significantly more than 107 boys born for every 100 girls.
- 1.16 Birth ratios above the 107 threshold do occur, but could be due to chance, rather than due to a real difference. Statistical significance testing is carried out to determine whether any differences observed between the birth ratios and the 107 threshold are likely to be "real" or whether they are consistent with chance fluctuations.
- 1.17 This publication uses a number of techniques to test whether ratios over 107 are statistically significant. The first stage of the process is to calculate the probability ('p values') that the differences observed could arise by chance as opposed to there being a real difference. We have used the common acceptable level of 5% significance level in this analysis, which means that a statistically significant result is found for any p values less than 0.05 (5%) – in other words, such a result would occur rarely by chance alone.
- 1.18 However, this methodology presents some difficulties when there are many tests. For example, the 'country of mother's origin' analysis involved testing the significance level for 172 countries and five birth orders, equivalent to 860 statistical tests. (856 tests were carried out as 4 countries in the unknown birth order category had no data available). With so many tests, it would be expected that some results appear statistically significant due to chance alone. For example, at the 5% significance level used here, you would expect on average, even when there was no real difference from a ratio of 107, that 1 in 20 results

would be found to be significant. When applying this across these country of birth tests there is a high chance of a “false positive” result, and inferring evidence about sex selective abortions incorrectly.

- 1.19 In order to address this issue, known as the ‘multiple testing problem’, a statistical technique called the Benjamini-Hochberg procedure was applied using the p values already calculated as part of our method to assess statistical significance. In addition to this procedure, the Storey technique is also used to estimate false positive discovery rate as a form of sensitivity analysis. The application of these techniques is discussed in detail in the technical guidance.

Limitations of the analysis

- 1.20 Using birth registration data to calculate birth ratios is an indirect method for investigating evidence for sex selective abortions.
- 1.21 The relatively small number of births within many of the groups in this analysis are such that large differences between birth ratios and the expected upper limit of 107 would need to be observed for the ratio to be identified as statistically significantly higher than the expected upper limit of 107. Therefore, evidence would only be identified through this means if sex selection were taking place on a significant scale.
- 1.22 Any differences in the birth ratios seen could be due to a number of factors, not just sex selective abortions. There is evidence that paternal and maternal age, coital rates and the number and sex of previous children can influence the sex of a child.

2. Results

Coverage of Analysis

- 2.1 This report presents statistics on the analysis of male to female birth ratios in Great Britain for the period 2012-2016.
- 2.2 Birth ratios are examined for:
- All mothers for 2012-2016 for Great Britain
 - The country of birth of the mother of the baby born for 2012-2016 for Great Britain
 - Ethnicity of child for 2012-2016 for England and Wales
- 2.3 In each case, the analysis looks at:
- Overall sex birth ratios
 - Birth ratios by birth order (that is for first born children, second born children etc).

All Births

- 2.4 In the period 2012-2016, there were 3.8 million live births in Great Britain and an overall ratio of boys to girls of 105.4 which is below the upper limit of 107. (Analysis covered countries where the total number of births for 2012-16 was 100 or more to ensure adequate sample sizes, so excluding some countries).
- 2.5 The sex birth ratio across the different birth orders did not vary significantly (see Table 1 below). The sex birth ratio among the 1.4 million first born children was 105.6, among the 1.3 million second born children was 105.3 and among the third born or more children was 105.3.

Table 1: Sex birth ratios by birth order, Great Britain, 2012-2016

Birth order	Number of births	Birth ratio
All births	3,795,286	105.4
1st born	1,439,502	105.6
2nd born	1,303,100	105.3
3rd born or more	885,900	105.3
Unknown	166,784	104.9

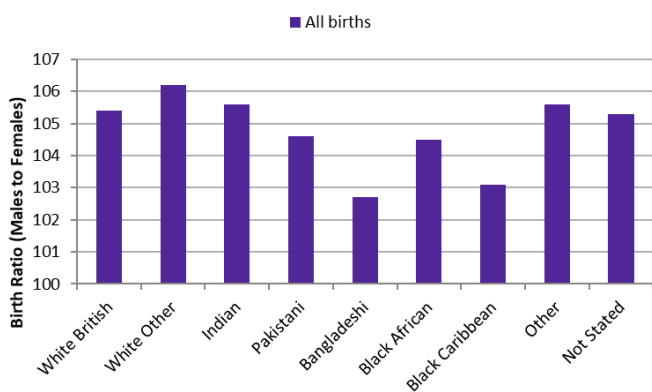
(Unknown birth order represents those babies whose birth order was unknown).

Births by Ethnicity of Child

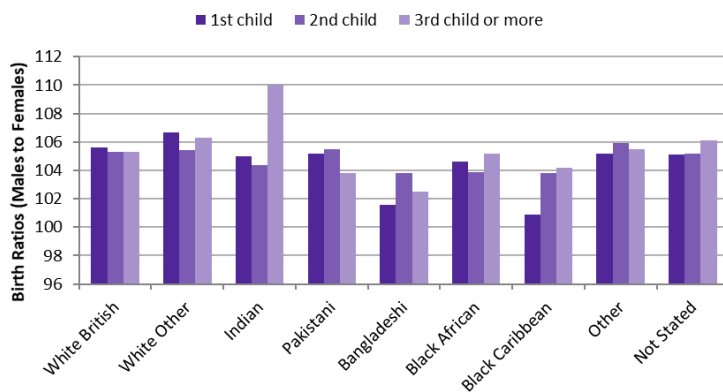
- 2.6 Data on ethnicity of the child is not available for Scotland and therefore this component of the analysis is limited to England and Wales.
- 2.7 There were 3.5 million births included in the analysis of birth ratios by ethnicity of the child and birth order, for England and Wales. The majority of births in England and Wales were for children in the White British ethnic group (63%).
- 2.8 An analysis of birth sex ratios by the ethnicity of the child for England and Wales both for overall birth ratio and by birth order, showed no ratio to be significantly higher than 107. Table 3 shows the results.
- 2.9 Although some birth ratios were higher than 107, such as third born or later babies of Indian ethnicity, following the statistical testing, no ethnicity and birth order were found to be statistically significant.

Figure 2: Birth ratios by ethnicity: England and Wales, 2012-2016

a) All births



b) 1st, 2nd and 3rd child



- 2.10 When interpreting the birth ratios in Table 3 below, it is important to keep in mind that this analysis covers 9 ethnic groups for 5 categories of birth order (all, first born, second born, third born or later, and unknown birth order). We would therefore expect to see high birth ratios for some groups simply as a result of random variation and small sample sizes.

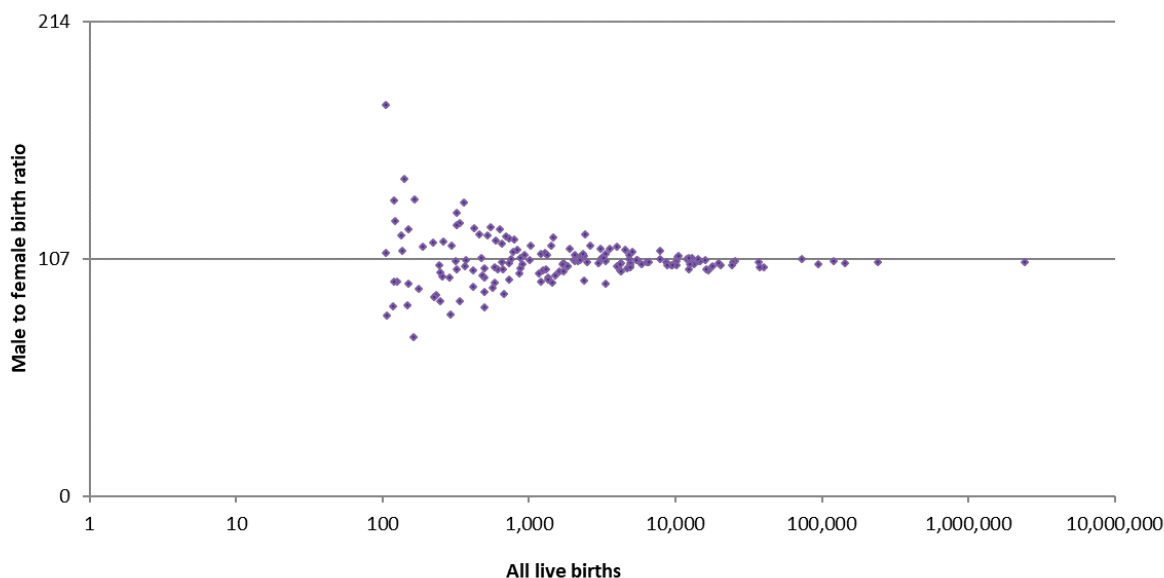
Births by mother's country of origin

- 2.11 The majority of births in Great Britain were to mothers born in England, Wales and Scotland (73%). This analysis focuses on the mother's country of origin for

the 27% (representing 1,007,290 births) of babies born to mothers from countries outside of England, Wales or Scotland.

- 2.12 The analysis of birth sex ratios by the mother’s country of origin for Great Britain for the overall birth sex ratio and by birth order, showed no ratio to be significantly higher than 107. Table 2 shows the sex birth ratios for all of the countries included in the analysis.
- 2.13 When interpreting the birth ratios in Table 2, it is important to keep in mind that this analysis covers 172 country of origin groups for 5 categories of birth order (all, 1st born, 2nd born, 3rd born or later, and unknown birth order). We would therefore expect to see high birth sex ratios for some groups simply as a result of random variation and small sample sizes. To illustrate, during 2012-2016 for women born in Swaziland, there were 55 babies who were the first born with a sex birth ratio of 189.5 whilst 57 babies were the second born with a sex birth ratio of 83.9. This wide variation exists, particularly where sample sizes are smaller (see Figure 3 below).

Figure 3: Plot of Male to Female birth ratio by country of origin of the mother: All births, England, 2012-2016



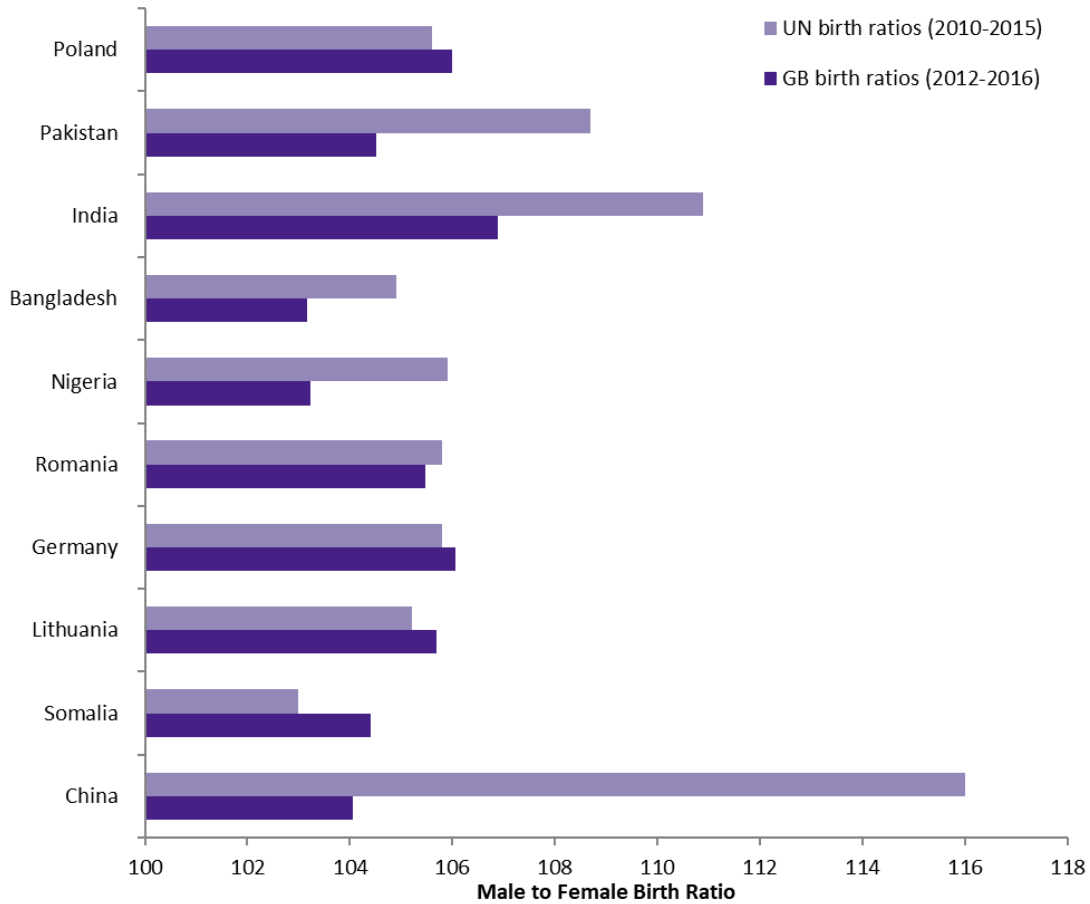
- 2.14 The greater variation in countries with lower numbers of live births is shown in Figure 3 in relation to the unadjusted birth ratios, and compared to the 107 boys to 100 girls ratio used as the threshold for comparisons. Over half the countries (65 per cent) are below the 107ratio threshold, with most of those that are higher having low sample sizes, for example Tajikistan and Antigua & Barbuda where the ratio is 176 and 133 boys to 100 girls respectively. Similar variation is seen below the 107 line, with El Salvador where there were 81 boys born for

every 100 girls. As noted above, when testing using the Benjamini-Hochberg technique, there were no countries found to be significantly higher than the 107 ratio.

Comparison of GB country of birth with international data

- 2.15 Figure 4 shows a comparison between birth sex ratios in Great Britain by mother's country of birth compared to UN birth ratios within those countries. This is presented for the Top 10 countries for live births in Great Britain. Although the selection of years used in this chart is different, this data still provides a useful basis for comparison.
- 2.16 The comparison of birth sex ratios in Great Britain with UN sex ratios for the countries shown in figure 4, shows that where the mother's country of origin is European (Poland, Romania, Germany and Lithuania) the birth ratio within Britain is similar to the birth ratio within the country of origin. Birth ratios for these countries are around 105 to 106 boys to 100 girls.
- 2.17 Figure 4 also shows that for countries where the mother's country of origin is outside Europe, the birth ratios within Great Britain are generally lower than the ratio in the country of origin. This is particularly marked for China, where the UN data shows a birth ratio of 116 boys born per 100 girls within China, compared to a ratio of 104 for births in Great Britain by Chinese-born mothers. Similarly for Pakistan the birth ratio is 109 in the country of origin compared to 105 in Great Britain and in India the ratio is 111 compared to 107 in Great Britain. However, Somalia does not follow this trend, showing male to female birth ratio for Somalia-born mothers in GB slightly higher at 104 when compared to 103 for births to women living in Somalia.

Figure 4: Live male births per 100 live female births, comparison of Great Britain against UN data for Top 10 births registered by mother's country of origin, various years



Abortions by Gestation and Ethnicity

2.1 To supplement the sex birth ratio analysis, further analysis has been done to investigate the relationship between gestation (and thus when sex can be identified) and abortion rates, by ethnic group of the woman. See Annex A.

Conclusion

2.2 Following extensive statistical testing, this analysis of sex birth ratios finds **no evidence** for sex selective abortions occurring in Great Britain over the period 2012-2016.

Table 2: Sex birth ratios by mother's country of origin, births registered in Great Britain 2012-2016

Great Britain		Totals and Ratios				
Country of mother's origin	Total number of births	Sex birth ratio (number of males to 100 female births)				
		All births	1st child	2nd child	3rd child or more	Unknown ¹
Total	3,795,286	105.4	105.6	105.3	105.3	104.9
Africa						
Africa (NOS) ²	322	102.5	135.6	72.3	98.4	150.0
Eastern Africa						
Burundi	754	107.1	159.1	92.9	103.7	54.2
Djibouti	117	85.7	76.9	85.7	91.2	50.0
Eritrea	5,088	110.1	105.2	119.9	108.1	93.5
Ethiopia	3,319	96.0	99.8	88.3	102.4	86.4
Kenya	5,871	104.6	106.5	103.6	104.4	94.2
Malawi	1,715	101.3	101.9	97.8	105.7	95.8
Mauritius	2,615	112.9	106.5	114.9	131.1	62.9
Mozambique	520	117.6	125.0	111.8	116.7	125.0
Rwanda	664	102.4	101.3	117.4	91.8	120.0
Seychelles	221	114.6	123.5	97.7	113.6	266.7
Somalia	24,348	104.4	101.0	103.0	105.5	111.8
Tanzania	1,906	111.5	104.1	115.8	115.1	105.3
Uganda	4,275	101.3	105.8	107.1	94.4	88.3
Zambia	2,208	106.5	111.5	94.5	113.2	176.2
Zimbabwe	12,424	102.4	100.9	105.4	102.0	91.1
Middle Africa						
Angola	2,387	97.4	99.3	101.8	96.7	77.9
Cameroon	2,484	105.5	104.2	100.8	107.1	176.0
Congo	1,201	109.2	106.1	145.4	96.9	100.0
Congo (Democratic Republic)	4,900	104.3	123.7	92.2	102.4	111.7
Sao Tome and Principe	544	121.1	150.8	148.0	95.9	28.6
Northern Africa						
Algeria	4,836	106.9	110.8	102.5	108.2	100.0
Canary Islands	105	110.0	118.5	105.9	80.0	100.0
Egypt	2,045	105.9	104.5	117.3	96.3	125.0
Libya	3,558	111.5	108.2	107.7	115.9	89.3
Morocco	4,173	102.0	101.4	108.0	97.5	86.1
Sudan	4,152	104.7	112.7	106.7	98.7	126.1
Tunisia	788	115.9	115.7	127.8	92.9	600.0

Sex Ratios at Birth in Great Britain, 2012-2016

Great Britain	Totals and Ratios					
	Country of mother's origin	Total number of births	Sex birth ratio (number of males to 100 female births)			3rd child or more
All births			1st child	2nd child		
Southern Africa						
Botswana	416	101.9	89.5	89.0	145.8	77.8
Namibia	477	99.6	106.3	93.1	96.0	137.5
South Africa	19,675	105.0	102.8	104.5	111.4	108.6
Swaziland	150	120.6	189.5	83.9	76.5	700.0
Western Africa						
Benin	137	110.8	240.0	76.9	100.0	75.0
Cape Verde	231	90.9	69.0	134.4	85.4	50.0
The Gambia	3,221	107.7	109.2	112.7	103.6	107.1
Ghana	16,852	102.1	103.7	101.5	100.9	107.3
Guinea	1,011	106.7	91.2	137.0	99.2	100.0
Guinea-Bissau	908	104.5	104.4	118.9	97.9	81.0
Ivory Coast	1,679	104.8	109.8	98.8	102.3	148.4
Liberia	499	98.8	91.8	111.7	89.1	200.0
Nigeria	37,379	103.2	101.4	103.3	104.4	109.4
St Helena and Dependencies	126	96.9	138.1	106.3	46.2	400.0
Senegal	494	85.0	56.3	85.9	102.7	133.3
Sierra Leone	3,059	111.5	109.9	115.7	107.6	126.8
Togo	245	104.2	84.0	105.7	132.7	18.2
Americas						
Caribbean						
Antigua and Barbuda	119	133.3	116.0	158.3	137.5	150.0
Bahamas	149	96.1	83.3	111.1	125.0	60.0
Barbados	246	87.8	62.3	102.6	147.6	66.7
Cuba	258	115.0	125.0	111.1	110.0	33.3
Dominica	187	112.5	128.0	126.7	76.7	200.0
Dominican Republic	356	132.7	124.5	146.0	144.2	28.6
Grenada	255	99.2	108.7	97.6	82.1	250.0
Jamaica	9,508	104.3	108.1	106.5	101.7	95.2
Montserrat	456	118.2	108.1	126.7	109.5	176.9
St Lucia	492	92.2	110.3	76.9	93.8	69.2
St Vincent	318	122.4	137.8	105.0	137.5	100.0
Trinidad and Tobago	1,327	108.6	119.8	111.9	91.4	87.1
Central America						
El Salvador	107	81.4	104.3	68.0	60.0	100.0
Guatemala	121	124.1	136.0	122.2	90.9	N/A*
Mexico	1,413	113.1	117.0	113.0	100.0	87.5

Sex Ratios at Birth in Great Britain, 2012-16

Great Britain	Totals and Ratios					
	Country of mother's origin	Total number of births	Sex birth ratio (number of males to 100 female births)			
All births			1st child	2nd child	3rd child or more	
South America						
Argentina	1,249	102.1	101.4	106.9	95.0	92.3
Bolivia	566	93.8	80.3	92.8	121.3	100.0
Brazil	7,880	106.8	107.9	107.4	102.4	102.5
Chile	611	102.3	99.3	107.5	102.2	80.0
Colombia	2,954	105.3	104.9	102.0	113.7	123.3
Ecuador	1,355	98.7	104.9	99.2	85.9	191.7
Guyana	654	105.7	97.3	114.6	104.3	116.7
Peru	926	109.0	116.9	107.3	89.9	111.1
Uruguay	120	96.7	108.7	85.7	94.1	N/A*
Venezuela	1,437	96.3	98.2	105.1	73.1	53.3
Northern America						
Bermuda	363	103.9	84.4	116.7	125.0	100.0
Canada	6,337	105.7	105.9	106.6	101.5	115.4
United States	17,923	103.9	105.1	104.2	101.2	100.7
Asia						
Asia (Except Middle East) (NOS)²						
	337	123.2	89.6	133.3	242.1	75.0
Central Asia						
Kazakhstan	836	111.1	112.9	109.1	105.2	166.7
Kyrgyzstan	247	100.8	96.0	84.0	160.0	66.7
Tajikistan	105	176.3	230.0	238.5	92.3	50.0
Turkmenistan	226	89.9	146.3	50.0	90.0	50.0
Uzbekistan	630	120.3	116.7	133.0	110.9	62.5
Eastern Asia						
China	20,302	104.1	104.1	104.7	104.0	96.5
China (Taiwan)	859	100.7	93.8	111.6	111.1	25.0
Hong Kong (Special admin. Region of China)	4,919	105.2	101.6	113.0	95.3	133.3
Japan	4,002	112.6	115.5	114.9	96.0	110.5
Korea (South)	1,474	116.8	120.8	121.5	92.6	60.0
Mongolia	424	120.8	122.7	105.2	125.5	550.0
Southern Asia						
Afghanistan	14,321	106.1	104.6	103.4	108.5	93.5
Bangladesh	40,230	103.2	105.2	102.6	102.6	97.7
India	72,368	106.9	105.4	106.9	110.6	116.3
Iran	5,490	106.5	104.5	113.3	96.3	91.2
Nepal	5,395	106.4	105.4	103.0	127.6	130.0

Sex Ratios at Birth in Great Britain, 2012-2016

Great Britain		Totals and Ratios				
Country of mother's origin	Total number of births	Sex birth ratio (number of males to 100 female births)				Unknown ¹
		All births	1st child	2nd child	3rd child or more	
Pakistan	93,950	104.5	105.7	104.6	103.9	100.0
Sri Lanka	16,284	102.2	100.3	103.2	104.2	93.7
South-Eastern Asia						
Brunei	319	127.9	103.8	171.8	130.4	N/A*
Burma	655	114.1	108.6	133.7	101.7	83.3
Cambodia	141	143.1	122.7	147.8	150.0	400.0
East Timor	412	94.3	108.8	86.3	92.9	73.3
Indonesia	1,281	109.7	107.1	98.3	143.5	83.3
Malaysia	4,686	102.8	99.2	106.7	103.9	93.1
Philippines	11,944	106.8	106.9	103.8	109.4	135.2
Singapore	1,173	100.5	97.0	100.9	103.5	160.0
Thailand	4,919	103.2	99.5	106.7	105.8	87.9
Vietnam	4,565	111.0	106.0	109.9	116.2	165.5
Western Asia						
Armenia	289	81.8	77.2	102.0	57.7	66.7
Azerbaijan	473	107.5	100.0	102.3	144.1	100.0
Bahrain	493	102.9	99.1	101.1	115.0	133.3
Cyprus	2,031	106.6	115.1	97.7	115.6	65.3
Georgia	585	96.3	85.7	109.1	100.0	100.0
Iraq	12,432	104.6	107.0	101.9	105.3	108.0
Israel	2,370	108.3	109.0	93.3	118.3	135.7
Jordan	725	97.5	95.2	101.6	97.4	33.3
Kuwait	2,039	108.9	117.6	96.9	110.4	135.0
Lebanon	1,846	104.0	101.3	104.5	106.3	107.7
Oman	368	106.7	100.0	118.6	102.7	300.0
Palestine	294	113.0	118.4	129.4	101.5	100.0
Qatar	315	105.9	113.2	108.9	102.0	40.0
Saudi Arabia	4,270	105.2	101.8	107.6	109.8	60.0
Syria	2,353	109.2	110.6	113.7	104.7	100.0
Turkey	12,235	107.6	106.9	106.5	110.7	100.9
United Arab Emirates						
Yemen	1,843	103.6	105.0	104.5	104.7	55.0
Europe						
Eastern Europe						
Belarus	1,017	113.2	106.8	114.5	132.2	127.3
Bulgaria	10,382	107.9	106.5	109.9	107.6	108.5
Czech Republic	9,325	104.4	104.0	102.4	106.5	111.3
Hungary	10,178	104.2	102.0	105.8	110.5	102.5
Kosovo	3,105	107.4	107.5	102.9	110.5	121.9

Sex Ratios at Birth in Great Britain, 2012-16

Great Britain		Totals and Ratios				
Country of mother's origin	Total number of births	Sex birth ratio (number of males to 100 female births)				
		All births	1st child	2nd child	3rd child or more	Unknown ¹
Poland	120,222	106.0	107.6	105.0	103.8	105.0
Moldova	2,165	106.0	100.8	110.2	114.9	107.4
Romania	36,914	105.5	107.5	101.4	107.5	105.7
Russia	6,518	105.4	105.5	104.1	108.6	103.9
Slovakia	14,189	107.1	109.6	106.7	103.1	105.2
Ukraine	4,157	104.7	102.6	107.7	103.9	101.9
Union of Soviet Socialist States	338	87.8	90.7	70.1	137.5	N/A*
Northern Europe						
Channel Islands	1,308	102.2	105.8	94.9	105.3	131.6
Denmark	1,708	105.3	113.9	92.4	113.7	93.8
England	2,405,185	105.4	105.4	105.3	105.6	105.1
Estonia	1,622	101.5	108.0	90.9	104.3	121.4
Finland	1,359	97.5	105.7	91.6	80.6	147.4
Iceland	176	93.4	81.6	116.1	84.2	66.7
Ireland	15,947	106.6	107.1	108.3	102.5	111.0
Isle of Man	679	91.3	107.1	83.3	82.0	53.3
Latvia	14,665	106.0	107.4	102.7	106.1	120.3
Lithuania	24,616	105.7	102.4	108.7	106.4	114.0
Northern Ireland	12,934	107.2	111.9	104.2	103.9	103.9
Norway	1,209	96.9	98.5	98.2	88.7	105.9
Scotland	239,385	105.5	105.6	106.0	104.6	105.3
Sweden	3,346	106.2	108.6	97.8	124.5	96.8
Wales	143,426	105.0	107.3	104.7	102.7	100.7
Southern Europe						
Albania	7,851	110.5	113.6	104.6	115.9	109.1
Bosnia and Herzegovina	773	110.1	105.0	128.3	103.1	43.8
Croatia	736	116.5	114.7	118.1	125.5	80.0
Gibraltar	693	117.2	115.7	113.8	125.6	110.0
Greece	3,339	109.2	112.3	108.4	105.8	63.2
Italy	8,636	105.5	104.0	107.0	112.9	87.8
Macedonia	592	115.3	137.0	103.4	102.6	66.7
Malta	584	103.5	103.1	116.9	91.7	60.0
Portugal	10,455	108.4	106.8	108.6	109.3	120.2
Serbia	736	105.0	90.9	135.6	98.1	100.0
Slovenia	288	98.6	88.0	100.0	123.5	250.0
Spain	8,739	104.4	101.7	109.5	105.0	95.7
Yugoslavia	135	117.7	168.2	66.7	150.0	100.0
Western Europe						
Austria	871	107.4	106.9	118.8	88.5	100.0

Sex Ratios at Birth in Great Britain, 2012-2016

Great Britain		Totals and Ratios				
Country of mother's origin	Total number of births	Sex birth ratio (number of males to 100 female births)				Unknown ¹
		All births	1st child	2nd child	3rd child or more	
Belgium	2,240	107.8	97.7	124.7	103.5	108.7
France	13,385	104.8	104.4	108.2	99.7	102.9
Germany	25,616	106.0	107.2	106.0	103.1	110.0
Luxembourg	166	133.8	120.6	150.0	140.0	100.0
Netherlands	3,956	103.6	102.4	112.7	93.6	87.5
Switzerland	1,501	99.6	103.2	87.6	104.3	183.3
Oceania						
Australia and New Zealand						
Australia	10,208	106.3	105.7	107.3	106.0	104.1
New Zealand	4,862	108.8	102.6	114.8	119.0	93.0
Melanesia						
Fiji	875	103.0	119.5	100.7	97.9	66.7
Papua New Guinea	147	86.1	72.4	76.7	116.7	150.0
Not Stated	163	71.6	60.0	70.0	61.8	112.5

1 The information on previous children born to mothers in England and Wales was only available for all live births from May 2012 onwards and for Scotland from January 2013 onwards. Prior to this, information about previous live births was only available for births within marriage. Where birth order data is unavailable, these births have been put in this 'ratio unknown' category.

2 NOS refers to countries 'not otherwise stated' within a Continent.

*N/A refers to countries where it was not possible to calculate a male to female birth ratio due to there being either zero males or females or zero for both males and females in these countries in this unknown birth order category.

Source: Office for National Statistics and the National Records of Scotland

Table 3: Sex birth ratios and test result by child's ethnicity, births registered in England and Wales, 2012-2016

England and Wales		Totals and Ratios				
Ethnicity of the child	Sex birth ratio (number of males to 100 female births)					
	Total number of births	All births	1st child	2nd child	3rd child or more	Unknown ¹
Total	3,513,814	105.3	105.5	105.2	105.3	104.9
White						
British	2,208,941	105.4	105.6	105.3	105.3	104.6
White Other	352,751	106.2	106.7	105.4	106.3	106.7
Indian	111,474	105.6	105.0	104.4	110.0	98.2
Pakistani	143,911	104.6	105.2	105.5	103.8	99.7
Bangladeshi	50,233	102.7	101.6	103.8	102.5	106.3
Black						
African	118,825	104.5	104.6	103.9	105.2	101.2
Black						
Caribbean	31,455	103.1	100.9	103.8	104.2	104.9
Other	374,348	105.6	105.2	105.9	105.5	108.8
Not Stated	121,876	105.3	105.1	105.2	106.1	103.5

1 The information on previous children born to mothers in England and Wales was only available for all live births from May 2012 onwards and for Scotland from January 2013 onwards. Prior to this, information about previous live births was only available for births within marriage. Where birth order data is unavailable, these births have been placed in this 'ratio unknown' category.

Source: Office for National Statistics

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Appendix A: Abortions by Gestation and Ethnicity

Data on the sex of the fetus at an abortion is not available, which is why birth registrations data are used in this analysis. We can however analyse abortions data by ethnicity and gestation to provide wider context around the birth sex ratio analysis. Any evidence for unusual sex birth ratios might imply sex selective abortions were taking place in the population.

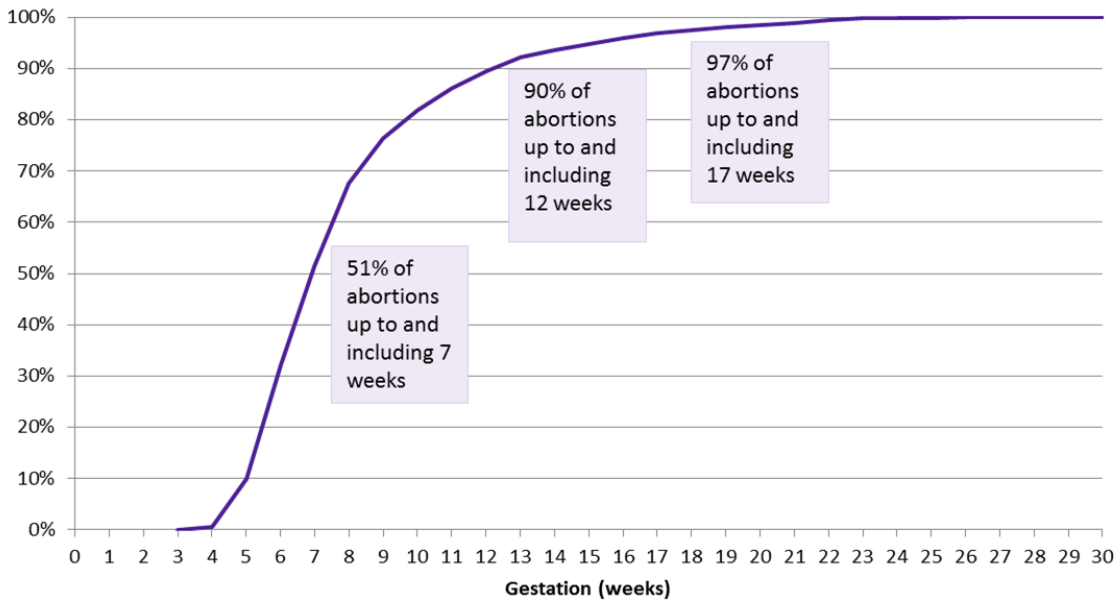
This section adds some additional context on abortions by gestation and ethnicity from the annual abortion statistics publication: <https://www.gov.uk/government/statistics/abortion-statistics-for-england-and-wales-2017>

This covers residents of England and Wales in 2017.

All Abortions, by gestation

The total number of abortions for residents of England and Wales in 2017 was 189,859. This was an increase of 2.3% from 2016, and a similar level to 2011. The majority of abortions took place in the early stages of pregnancy: 90% up to and including 12 weeks; 51% up to and including 7 weeks gestation), whilst NHS antenatal sexing of a fetus typically takes place much later in the pregnancy at 18-21 weeks gestation. The majority of abortions are therefore taking place nearly two months before most women could have been told the sex of the fetus in the antenatal screening pathway. It is acknowledged that some people may seek information on the child's sex through tests available on the internet and private clinics however data is not available on the extent to which this is happening.

Chart 1: Proportion of abortions by gestation week, England and Wales, 2017

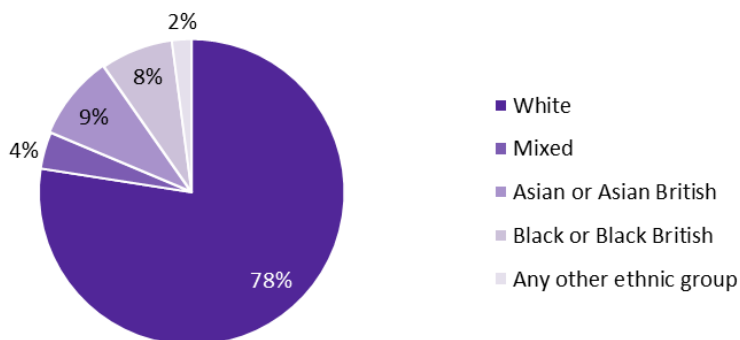


All Abortions, by ethnic group

Ethnicity was recorded on 98% of the forms received for 2017. Of all ethnicities recorded, 78% were reported as White, 9% as Asian or Asian British and 8% as Black or Black British.

Chart 2: Abortion statistics split by ethnic group, England and Wales, 2017

2017 Abortion Statistics - Abortions by Ethnicity, England & Wales



All Abortions, by gestation and ethnic group

There are variations between the gestation period of an abortion when comparing different ethnicities. The proportion of abortions before 17 weeks range from 95 to 98 per cent depending on the ethnic group of the woman. For abortions carried out before 12 weeks the range between different ethnic groups is from 82 to 91 per cent, with a wider range for abortions carried out before 7 weeks from 26 to 40 per cent depending on the ethnic group of the woman.

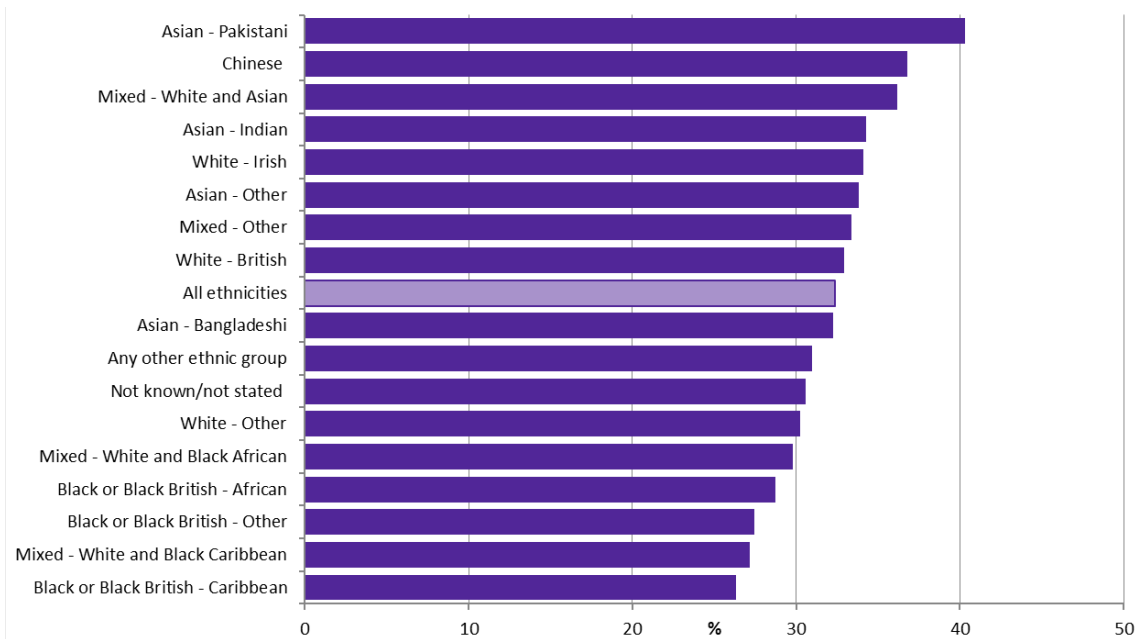
Table 1: Abortions by gestation and ethnic group, residents of England and Wales, 2017

	Gestation weeks					
	Total Number	Percentage				
		<7	7-11	12-16	17-21	22+
All ethnicities	189,859	32	54	10	3	1
White – British	125,237	33	54	9	3	1
White – Irish	1,272	34	53	9	3	1
White – Other	17,745	30	54	11	4	1
Mixed - White and Black Caribbean	3,182	27	57	12	3	1
Mixed - White and Asian	924	36	52	7	3	1
Mixed - White and Black African	1,001	30	58	8	3	1
Mixed – Other	2,081	33	52	10	4	1
Asian – Indian	6,024	34	53	8	4	1
Asian – Pakistani	3,991	40	47	8	3	1
Asian – Bangladeshi	1,677	32	58	8	2	1
Asian – Other	4,090	34	54	8	3	1
Black or Black British – African	8,710	29	57	10	3	1
Black or Black British – Caribbean	4,139	26	56	13	4	1
Black or Black British – Other	1,341	27	57	12	3	1
Chinese	1,362	37	55	6	1	1
Any other ethnic group	2,525	31	54	11	3	1
Not known/not stated	4,558	31	56	10	2	1

For abortions under 7 weeks, 'Asian or Asian British – Pakistani' women have the highest proportion (40 per cent), with 'Chinese' (37 per cent) and 'Mixed – White and Asian' (36 per cent) also having a high proportion of women having abortions under 7 weeks.

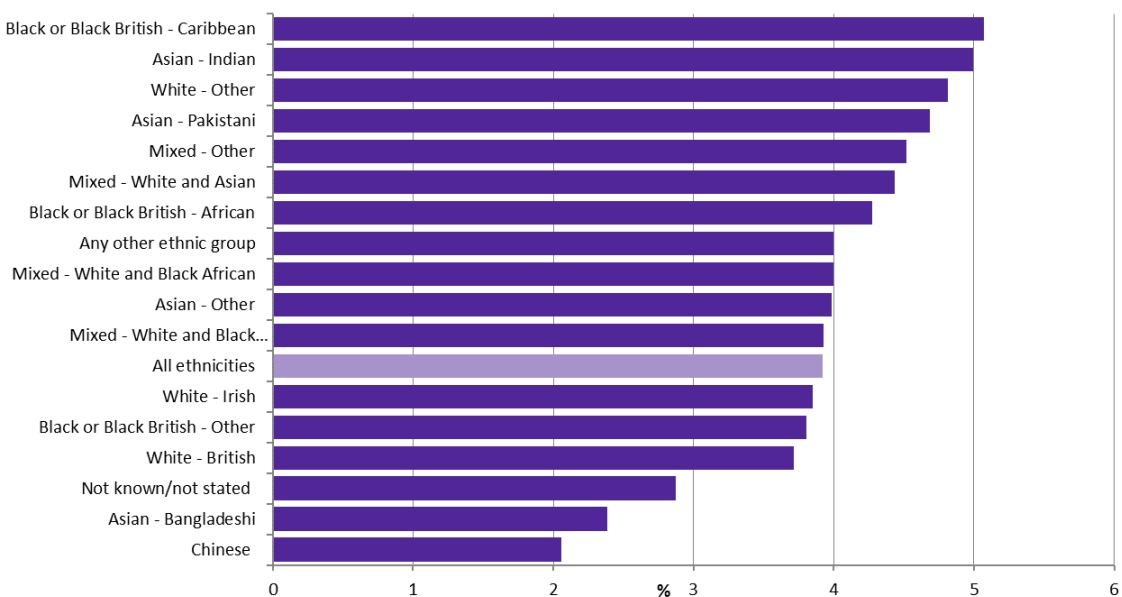
Ethnic groups with the lowest proportion having an abortion under 7 weeks gestation were: 'Black or Black British – Caribbean' (26 per cent) 'Black or Black British – Other', and 'Mixed – White and Black Caribbean' (both 27 per cent).

Chart 3: Abortions by gestation and ethnic group: proportion under 7 weeks gestation



Abortions over 17 weeks account for 3 per cent of all abortions. There is a variation across ethnicities for this gestation with women of 'Black or Black British - Caribbean' ethnicity having over 5 per cent of abortions over 17 weeks as a proportion of the total abortions for this ethnicity. See chart 4 below.

Chart 4: Abortions by gestation and ethnic group: proportion over 17 weeks gestation



Repeat abortions and ethnic group

Of all women who had an abortion in 2017, 39 per cent had already had one or more previous abortions. Again, amongst women who have had a previous abortion, there was variation across ethnic groups.

34% of Asian or Asian British, and 31% of Chinese women having abortions in 2017 had previously had at least one abortion, compared with 47% of Black or Black British women and 45% of women of mixed ethnic groups.

Table 2: Percentage of women who had one, two and three or more previous abortions, by ethnic group, England and Wales, 2017

	Number of previous abortions				Total
	0	1	2	3 or more	
All ethnicities	61	28	8	3	100
White	61	28	8	3	100
Mixed	55	30	11	4	100
Asian or Asian British	66	25	7	2	100
Black or Black British	53	32	11	5	100
Chinese	69	22	7	2	100
Any other ethnic group	67	24	7	2	100
Not known/not stated	66	25	7	3	100

Further Information

Enquiries

Enquiries about the data or requests for further information should be addressed to:

Birth Ratio Statistics
Department of Health and Social Care
39 Victoria Street
Westminster
London
SW1H 0EU

e-mail:

birthratios@dh.gsi.gov.uk

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Links

This bulletin for birth ratio analysis for 2012-2016, and previous reports, can be found on:

<https://www.gov.uk/government/collections/gender-birth-ratios-for-the-uk>

Related links:

See abortion statistics, 2017

<https://www.gov.uk/government/statistics/abortion-statistics-for-england-and-wales-2017>

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