Cross-national differences in the use of contraception and abortion services between England, Wales and Scotland

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Although cross-national fertility differences have persisted for decades between England, Scotland and Wales, few studies have investigated differences in contraceptive use and abortion as proximate determinants of country-level fertility differences. This is partly due to a paucity of continuously collected and comparable data on contraceptive use within the different nations. Omnibus Survey data on contraception in England and Wales were collected from 1998-2008, but not in Scotland. Currently, contraceptive use rates are available for Scotland through administrative records across service providers, but England and Wales only publish absolute numbers of supplies dispensed in sexual and reproductive health clinics.

This paper uses two data sources that are comparable across countries: published aggregate data on abortion rates and survey data pooled from the National Survey of Sexual Attitudes and Lifestyles, 1990 to 2010. We find that abortion rates are lower in Scotland than in England and Wales and so conclude that use of abortion cannot account for the lower fertility levels in Scotland. Using multinomial logistic regression, we compare use of different contraceptive methods across countries among sexually active men and women, controlling for key background characteristics, and find marked country differences in the contraceptive method mix. Our results highlight greater levels of female sterilization and lower levels of barrier/traditional method use in Scotland compared with England, which persists when background characteristics – such as religion, age, ethnicity, education – are accounted for.

Extended Abstract

Background

In 1971, Scotland had a total fertility rate (TFR) of 2.53, followed closely by Wales and England at around 2.40. By 2019 however, this pattern had reversed and the total fertility rate in England (1.66) was higher than in Wales (1.54) and Scotland (1.37). Although cross-national fertility differences have persisted for decades, few studies have investigated differences in contraceptive use and abortion to examine their role as proximate determinants of country-level fertility differences. To do so, we need either a large sample of UK-wide administrative data or a national survey. However, there is a paucity of continuously collected and comparable data on contraceptive use within the different nations. Omnibus Survey data on contraceptive use rates in England and Wales were collected from 1998-2008, but not in Scotland. Currently, contraceptive use rates are available from administrative data across service providers in Scotland, while England and Wales only publish absolute numbers of supplies dispensed in sexual and reproductive health clinics. Datasets compiled from patient records often focus on one locality or NHS trust (Morgan and Liu 2017). Cea Soriano et al. (2014a, 2014b) analysed a large dataset from GP practices across the UK but did not include country as an indicator of interest.

The National Survey of Sexual Attitudes and Lifestyles do collect data on contraceptive use in England, Wales and Scotland and are the main source of comparable national level data from 1990-2010, across three waves. A fourth wave was scheduled for 2020 but delayed due to COVID-19. According to NATSAL 1 (1990 wave), 67% of women aged 16-59 had used contraception in the last year, with lower levels being reported by non-White women, those who had lower levels of education, attended religious services and those who were aged over 45 (Bentley et al., 2009). The condom was the most common method, followed by the contraceptive pill, then male and female sterilization, and lastly IUDs (Bentley et al., 2009). Survey data from NATSAL 2 (2000) and 3 (2010) found that although condoms and the pill continued to be the most used contraceptive methods, long acting reversible contraceptive (LARC) use (such as IUDs) had increased, especially among young women (French et al 2020). In recent years, LARCs have continued to increase in popularity, while sterilization use receded. The decline in sterilization in favour of other methods may be attributed in part to changes in provider behaviours and attitudes. In 2009-10, the UK government introduced financial incentives to primary care practices to counsel female patients on LARCs if they had previously been prescribed contraceptives (Arrowsmith et al., 2014).

Extant analyses of NATSAL data have not explicitly focused on cross-national differences in contraceptive use nor have they analysed whether background predictors of contraceptive use vary by country.

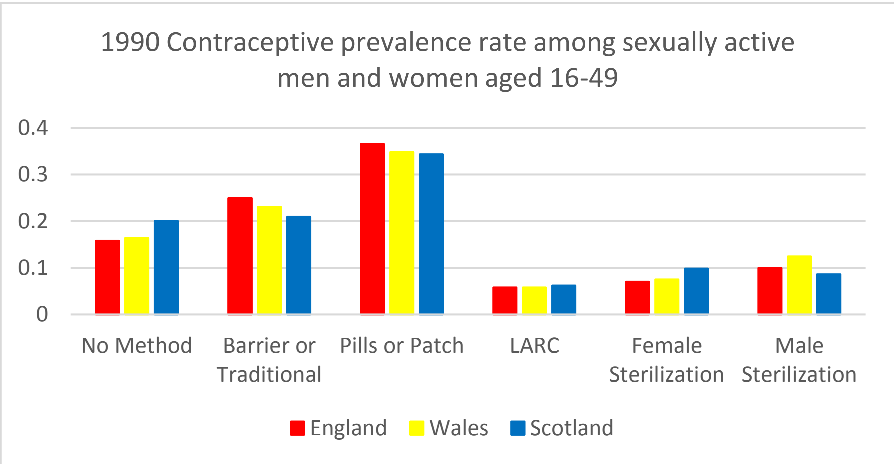
Data and Methods

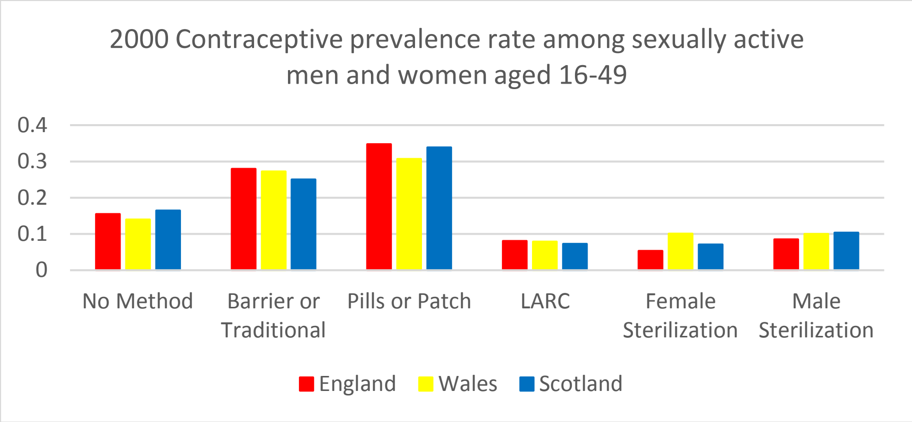
We use pooled data from the three available waves of the National Survey of Sexual Attitudes and Lifestyles, spanning 1990 to 2010 (n=32,095). Men and women in NATSAL were asked “Which have you used at all with a partner in the past year” and then asked about a list of contraceptive methods. For methods such as withdrawal, the prompt for the interviewer is adjusted depending on the sex of the respondent (i.e. “I have withdrawn” for men or “partner has withdrawn”; “I am sterilized for men” or “partner had a vasectomy for women”). Our analysis focuses on respondents who have ever been sexually active, up to age 49. Using multinomial logistic regression, we compare use of different contraceptive methods across countries among sexually active men and women, controlling for key background characteristics, such as age, parity, partnership status, education, religiosity, ethnicity, and sex. The categories of the outcome variable are no method used, barrier/traditional method, pills of patch, long acting reversible contraception (IUD, IUS, implants, injectables), female sterilization and male sterilization.

Results

Descriptive analyses of the NATSAL data (Figure 1) show similar levels of overall contraceptive use across countries, but differences by method. Scotland has lowest use of barrier/traditional methods across time, and most recently, highest use of LARCs and female sterilization. Wales has highest use of male sterilization, across time. England shows highest pill use in 1990 and 2000, but similar pill use when compared with Wales and Scotland in 2010. England also consistently has highest use of barrier/traditional methods. However, Figure 2 shows that in all three countries, pill use and female sterilization have decreased and LARC use has increased markedly. Male sterilization has decreased in England and Wales. This is consistent with background literature (Chen et al 2008, Mattison and Mansour 2006; Rowlands 2007). This is also consistent with data from Omnibus Surveys conducted in England and Wales over the 2000 to 2008 period, demonstrating a steady increase in the use of LARCs as a percentage of the female population (16-49) (Lader 2009).

Figure 1




2000 Contraceptive prevalence rate among sexually active men and women aged 16-49
0.4
0.3
0.2
0.1
0
No Method
Barrier or Traditional
Pills or Patch
LARC
Female Sterilization
Male Sterilization
England
Wales
Scotland

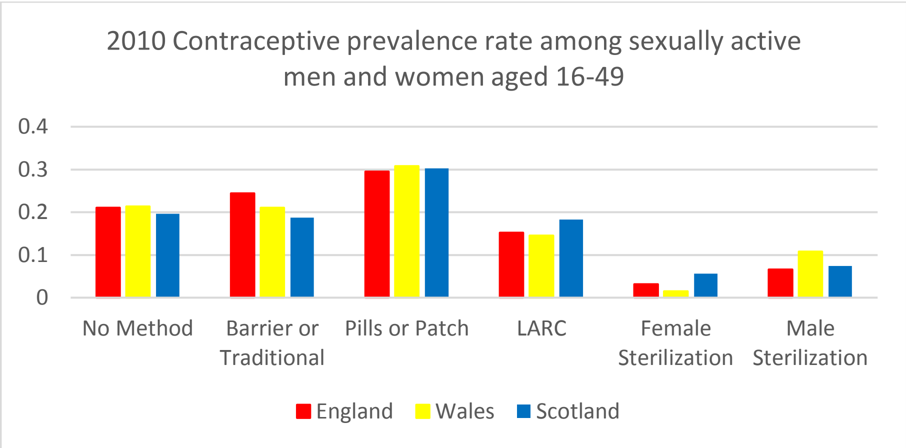
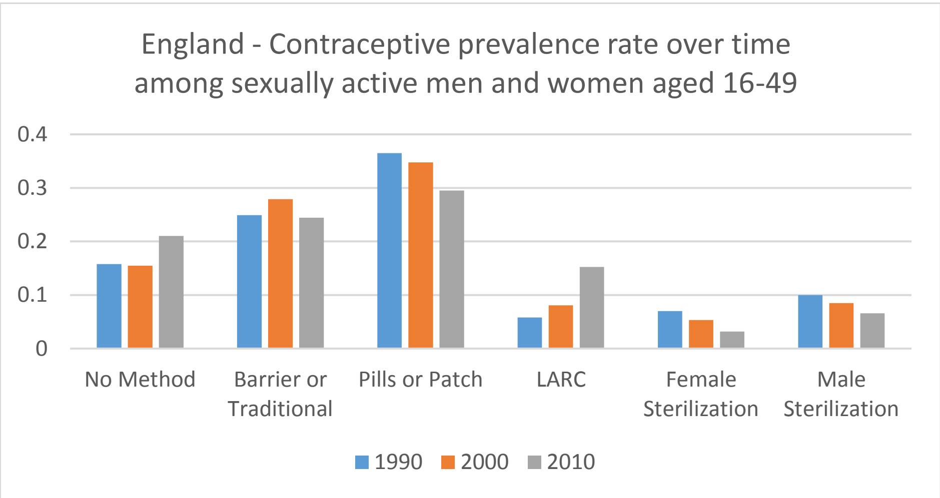
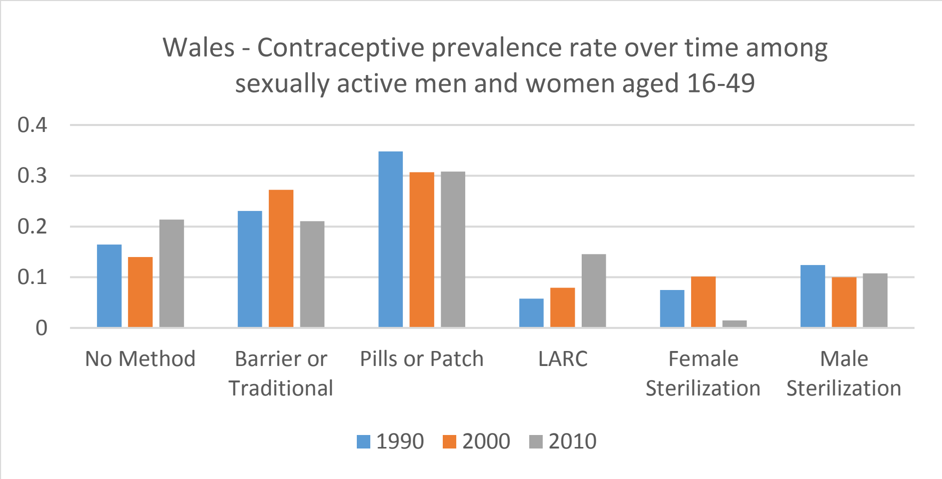

2010 Contraceptive prevalence rate among sexually active men and women aged 16-49
0.4
0.3
0.2
0.1
0
No Method
Barrier or Traditional
Pills or Patch
LARC
Female Sterilization
Male Sterilization
England
Wales
Scotland

Figure 2


England - Contraceptive prevalence rate over time among sexually active men and women aged 16-49
0.4
0.3
0.2
0.1
0
No Method
Barrier or Traditional
Pills or Patch
LARC
Female Sterilization
Male Sterilization
1990
2000
2010



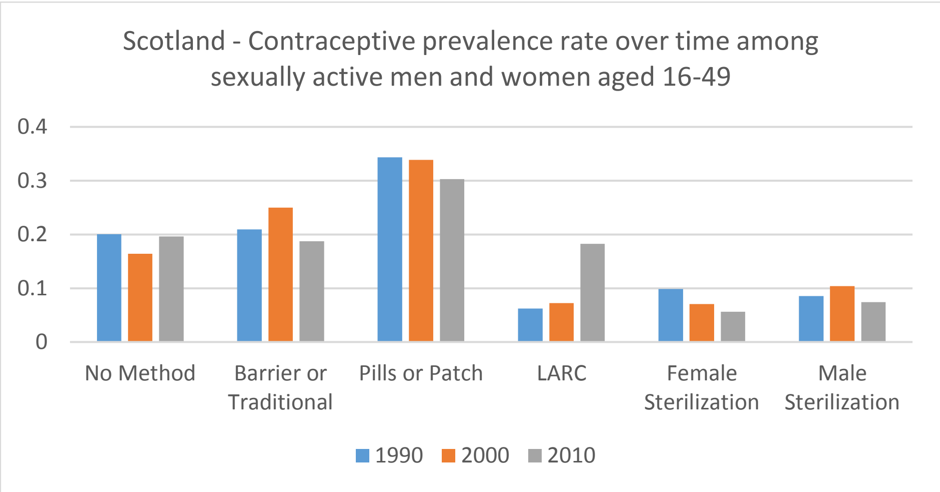


Table 1 shows the relative risk ratios for each type of contraceptive use, relative to not using any method, among sexually active men and women aged 16-49. Results from Model 1 showed country differences in the risk of female sterilization. Respondents in Scotland were 24 percent less likely to use a barrier/traditional method, 14 percent less likely to use the pill or patch and 34 percent more likely to report use of female sterilization, compared with respondents in England. Respondents in Wales were 33 percent more likely to report use of male sterilization, compared with those in England. We then included additional socio-economic controls to see if this explained the cross-national differences. Country differences persisted for barrier/traditional use, widened considerably for female sterilization, and disappeared for pill use and male sterilization. This suggests that compositional differences may explain higher male sterilization use in Wales, compared with England. It also suggests that lower pill use in Scotland may be due to compositional differences, but higher rates of female sterilization use and lower rates of barrier/traditional method use are likely not.

Discussion and Further Work

Our results highlight greater levels of female sterilization use in Scotland, as compared to England, and lower levels of barrier/traditional method use. Our next step is to estimate how different levels of sterilization may have impacted number of births averted and population fertility levels across countries.

Table 1: Relative risk ratios from multinomial logistic model of contraceptive use. NATSAL surveys 1990-2010. Baseline outcome is not using contraception. Sexually active men and women aged 16-49.

	Model 1: Just age and survey year controlled					Model 2: With other socio-economic controls				
	Barrier or Traditional	Pills or Patch	LARC	Female sterilization	Male sterilization	Barrier or Traditional	Pills or Patch	LARC	Female sterilization	Male sterilization
Country (ref = England)										
Wales	0.92	0.93	0.97	1.26	1.33*	1.00	0.99	0.99	1.14	1.26
Scotland	0.76***	0.86*	0.98	1.34**	0.96	0.75**	0.93	1.06	1.53***	0.91
Survey year (ref = 1990)										
2000	1.26***	1.11*	1.49***	0.76***	0.84**	1.02	0.90	1.10	0.71***	0.80**
2010	0.90*	0.83***	2.31***	0.23***	0.33***	0.73***	0.70***	1.77***	0.28***	0.40***
Age (continuous)	0.94***	0.90***	0.96***	1.11***	1.13***	0.94***	0.89***	0.93***	1.06***	1.07***
Number of children (continuous)						1.08**	0.96	1.42***	1.62***	1.63***
Partnership status (ref = unpartnered)										
Cohabiting						1.33***	2.58***	1.76***	2.10***	2.60***
Married						1.37***	1.73***	1.28***	1.87***	4.61***
Highest educational qualification (ref = degree)										
Other higher						0.73***	0.96	1.12	1.33*	1.27*
CGSE, O Level, CSE						0.50***	0.74***	0.97	1.51***	0.98
Foreign or other						0.69*	0.38***	0.80	1.23	0.79
None						0.26***	0.36***	0.42***	1.01	0.45***
Sex (ref=male)										
Female						0.70***	0.78***	1.13*	1.16*	0.95
Religion (ref= no religion)										

Christian – Church of England						1.12	1.08	0.96	0.96	1.04
Christian – Roman Catholic						1.12	0.97	0.83*	0.62***	0.68***
Christion- Other						1.15	1.04	0.90	0.69**	0.94
Muslim						0.94	0.53**	0.63*	0.12***	0.10***
Hindu						0.90	0.56*	0.76	0.60	1.33
Other non-Christian						0.97	0.72	0.80	0.40**	0.65
No response						1.03	0.66	0.21	0.47	0.59
Ethnicity (ref= white)										
Asian/Asian British						0.92	0.51***	0.52**	0.62	0.13***
Black/Black British						0.92	0.73*	0.84	0.82	0.17***
Chinese						0.95	0.26***	0.28*	0.41	0.00***
Other						0.84	1.07	1.04	0.60	0.54
Mixed						1.30	1.14	1.51	0.00***	0.08**
No response						3.44*	1.56	3.21	1.90	0.99
(n=32,095)										

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