



Is education the best contraception: The case of teenage pregnancy in England?



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ABSTRACT

This paper examines potential explanations for recent declines in teenage pregnancy in England. We estimate panel data models of teenage conception, birth and abortion rates from regions in England. Although point estimates are consistent with the promotion of long acting reversible contraception (LARC) having a negative impact on teenage pregnancy rates, the effects are generally small and statistically insignificant. In contrast, improvements in educational achievement and, to a lesser extent, increases in the non-white proportion of the population are associated with large and statistically significant reductions in teenage pregnancy.

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1. Introduction and background

In recent years, teenage pregnancy rates in England have decreased significantly and a number of potential explanations have been proposed. The first and most obvious is increased promotion of long acting reversible forms of contraception (LARCs). LARCs have the advantage over other birth control methods in that, once administered, their efficacy is no longer reliant on the user (Winner et al., 2012). However, the effect of policies to promote LARC will depend not only on the effectiveness of LARCs for individuals, but also on whether the promotion creates unintended consequences amongst the population. For example, economists such as Akerlof et al. (1996) have argued that access to more efficient birth control methods may lower the effective costs of risky sexual behaviour and, hence, increase unintended pregnancy rates.

Another possible explanation for the downward trend in teenage pregnancy is the significant improvement in measures of school-level outcomes in England, particularly in areas characterised by high levels of deprivation. An increased proportion of young people remaining in education after the statutory school leaving age is likely to increase the opportunity cost of early pregnancy and, hence, may contribute to lower teenage pregnancy rates. In addition, England has experienced high levels of

immigration among groups that may be at a lower risk of very early pregnancy (for example due to relatively high religious observance), whilst there has also been a notable decrease in alcohol consumption amongst young people, a factor that is known to be highly correlated with early pregnancy.

In this paper, we use panel data from nearly 100 areas in England to estimate the impact of some of these factors in explaining changes in conceptions, births, and abortions amongst teenagers. In the next section of the paper, we summarise the key findings from previous research on the determinants of teenage pregnancy. In Section 3, we explain recent trends in teenage pregnancy in England and associated policy responses. In Section 4, we introduce our methodology and data, while in the final two sections of the paper we discuss our econometric results and draw out some implications for future research.

2. Existing evidence on the determinants of teenage pregnancy

There is a large body of literature examining the determinants of adolescent pregnancy and abortion rates. There is a consensus that socio-economic and demographic factors are important in explaining differences in rates between areas and over time. In particular, high rates of early pregnancy have been found to be correlated with factors such as poverty, deprivation, low educational achievements, unstable family structures, religion and ethnicity (Adamczyk and Felson, 2008; Akers et al., 2011; Blackman, 2013; Evans et al., 1992; Girma and Paton, 2011; Paton,

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The evidence on more direct determinants such as sex and relationship education (SRE) and contraception is more nuanced. There is little doubt that decreases in adolescent pregnancy rates are associated with both reductions in sexual activity and increases in contraceptive use (see, for example, Santelli et al., 2007; Mohn et al., 2003). However, the effect of policy interventions in these areas has been harder to establish. For example, although Wilkinson et al. (2006) found expenditure on the 1999 English Teenage Pregnancy Strategy was associated with lower under-18 conception rates, they also found specific measures such as high quality SRE or contraceptive access not to be associated with reductions in conception rates. In a review article, Imamura et al. (2007) conclude “evidence that access to services in itself is a protective factor remains inconsistent” (p.630). More recently, Blackman (2013) found that, “dedicated planning to tackle high teenage conception rates appears to make things worse” (p.69).

Looking specifically at school-based sex and relationships education (SRE), Oettinger (1999) provides evidence that, amongst some sub-groups, teenagers who were exposed to school-based SRE experienced slightly higher pregnancy rates than those who were not exposed. In contrast, Kohler et al. (2008) found SRE to be associated with lower self-reported pregnancy rates amongst teenagers. Other researchers conclude that SRE has little or no significant effect on adolescent fertility (DiCenso et al., 2002; Sabia, 2006; Stephenson et al., 2008; Cavazos-Rehg et al., 2012).

The evidence on improving access to birth control is similarly ambiguous. A range of population-level studies and randomised controlled trials (RCTs) from both the USA and the UK (e.g. Arcidiacono et al., 2012; Paton, 2002; DiCenso et al., 2002; Evans et al., 1992) have found little evidence that better access to birth control services reduces teenage pregnancy rates, particularly amongst younger age groups, although there is some evidence that services are associated with fewer adolescent births (Kearney and Levine, 2009) but more abortions (Wilkinson et al., 2006). A number of studies (Durrance, 2012; Girma and Paton, 2011, 2006; Raymond et al., 2007) have focused specifically on access to emergency birth control (the ‘morning after pill’) but these have been unable to find any effect in terms of reductions in unwanted pregnancy or abortion. Much of this work has emphasised how some policy interventions aimed at mitigating the effects of risky sexual activity have the potential to increase the aggregate level of risky behaviour amongst adolescents (see also Klick and Stratmann, 2008).

Evidence regarding the impact of LARC promotion to teenagers is much more limited. Peipert et al. (2012) examined the effect of promoting LARCs amongst adolescents in St. Louis, Missouri and found a subsequently low rate of teen births relative to the general population. However, their sample comprised teens who wished to avoid pregnancy. Given that at least some teens in the general population will be actively seeking to give birth, it is difficult to make inferences from this study about the impact of LARC promotion at the population level. Indeed to date, no empirical study has examined the extent to which promotion of LARCs leads to reductions in unwanted pregnancy rates amongst adolescents. This represents a significant gap in our knowledge.

3. Teen pregnancy in England

Teen pregnancy rates in England are amongst the highest in the western world. Towards the end of 1999, the Government announced a major Teenage Pregnancy Strategy with the objective of achieving significant reductions in under-18 and under-16 pregnancy rates by the year 2010. Fig. 1 illustrates under-18 conception and abortion rates from 1994–2012 along with the

Strategy expenditure. Up until 2008, there was little evidence of a strong impact of the Strategy on either conception or abortion. From 2008, however, pregnancy rates started to decrease significantly and the downward trend has continued even after Strategy ended in 2010.

Throughout this period, a key policy focus has been to increase access to family planning services for young people. In recent years there has been a particular focus on LARCs. In 2005, the National Institute for Health and Care Excellence (NICE) published new guidelines encouraging the promotion of LARCs. This was followed up in 2008 by a further directive from the Department of Health aimed at encouraging local areas to promote the use of LARCs amongst young people (Hairon, 2008). As a result of these initiatives, the relative take-up of these forms of birth control amongst teens has increased steadily. For example, in 2004 which is the earliest year family planning data are reported for under-18s, just 6% of under-18 year olds accessing family planning clinics in England were provided with LARC compared to 34% being given condoms. As shown in Fig. 2, by 2012, the percentage using LARCs had more than doubled, whilst the percentage provided with condoms had decreased by over 10%.

Looking at the other potential explanatory factors for the decrease in teen pregnancies, there has been a significant increase in the proportion of 16 and 17 year olds staying in full-time education (see Fig. 2), along with associated improvements in educational outcomes. Given the consensus regarding the role of education in delaying pregnancy, it is plausible that this has played a role in lower teenage pregnancy rates. There has also been significant demographic change in many areas. For example, Fig. 2 illustrates that the non-white proportion of the population aged 15–17 has increased nationwide from just over 11% in 2004 to more than 16% in 2012. To the extent that recent immigrants are from communities that are at lower risk of very early pregnancy (for example due to relatively high religious observance), this trend may also have contributed to lower teenage pregnancy rates. Indeed, Blackman (2013) notes that decreases in teenage pregnancy rates in England have been most marked in areas with high levels of black and ethnic minority populations. Additionally, if such groups have relatively high educational aspirations, any effect on teenage pregnancy rates may be felt indirectly through better educational outcomes.

The final factor is a more general decrease in risky behaviour which has been observed amongst teenagers. Annual surveys carried out on teenagers in England suggest that drug, alcohol use and smoking have all decreased significantly over the past 10 years (Fuller, 2013). Fig. 2 shows the percentage of 11–15 year olds in these surveys who report using drinking alcohol within the past week had dropped from 23% in 2004 to just 10% in 2012. Given the noted correlation between alcohol and early pregnancy, this appears to be another possible explanatory factor for the recent reduction in pregnancy rates. Rashad and Kaestner (2004) argue that, although alcohol use is strongly correlated with early sexual activity and pregnancy, research to date has failed to confirm that there is a causal effect. Rather, there may exist other social trends which are at the root cause of the general decrease in teen risky behaviour. Indeed, it is notable that the rise in importance of online social networking has occurred over a very similar time period and it is not implausible that virtual social interactions have, to some extent, crowded out physical interactions.

Given that many of these changes have happened over the same period, it is hard to infer from national data which, if any, has played a causal role. The fact that much of the expenditure on the English Teenage Pregnancy Strategy was devolved to the local level, with each area having the discretion to set their own priorities, has meant that local data are likely to be helpful in disentangling at

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