

RESEARCH REPORT

Young women under 16 years with experience of sexual intercourse: who becomes pregnant?

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Background: The UK has the highest rate of teenage pregnancies in western Europe. Although there is a large body of literature focusing on predictors of conception among this age group, almost all the work compares those young women who have become pregnant with their peers, regardless of whether or not their peers have experienced sexual intercourse.

Objective: To compare 16-year-old young women who have become pregnant with their peers who also have experience of sexual intercourse, but who have not conceived.

Design: Analysis of data from the baseline and follow-up surveys conducted as part of a trial of sex education.

Setting and participants: Female school students aged 14–16 years from the East of Scotland.

Main results: Young age of self and partner, and non-use of contraception, all at first intercourse, are most strongly associated with pregnancy.

Conclusions: Those who engage in sexual intercourse at a relatively young age will often have had more opportunity to become pregnant than those whose sexual debut comes later. Similarly, the fact that those who use contraception at first intercourse have been less likely to conceive than those who do not could reflect the overall patterns of contraceptive use: young women who have used contraception at each occasion of intercourse will have had less chance to conceive than those who have not. Having a young partner at first intercourse suggests that, if this pattern continues, the couple may lack the resources needed to prevent a pregnancy due to the immaturity of both partners.

The UK has the highest rate of teenage pregnancies in western Europe.¹ As a result, it has been a policy priority for several years. In England, for example, the teenage pregnancy strategy, which began in 1999, is a 10-year programme of preventive work aimed at reducing rates of pregnancy in those under 18 years of age and supporting teenage parents and their children.² The high number of teenage pregnancies is seen as undesirable given the transmission of deprivation through successive generations as a result of early childbearing. In Scotland, the recent strategy and action plan for improving sexual health also highlights high teenage conception rates as problematic, citing potential negative social and psychological consequences for the mother such as incomplete education, poverty, social isolation and low self-esteem.³ Although much is now known about the characteristics of teenage mothers, in particular, and, to a lesser extent, about those young women who conceive as a teenager but whose pregnancy does not go to term, there is still a knowledge deficit when it comes to understanding why, precisely, some women conceive while in their teens. Attempts to reduce conception rates among this age group need to be grounded firmly in an understanding of this social phenomenon.

Existing research on teenage conceptions

A large and growing body of literature focuses on the predictors of teenage pregnancy, comparing young women who have become pregnant with their peers. Social exclusion has been found to be of primary importance, with economic and/or educational aspects repeatedly shown to be the key.^{4–13} It has been hypothesised that economic disadvantage in childhood, low educational achievement and/or low expectations about the future may lead to some young women “see[ing] no reason not to get pregnant”.¹⁴ As Blum and Goldhagen¹⁵ put it, “without future possibilities that are worth attaining and possibly

attainable, motherhood becomes a viable, realistic, and socially legitimate alternative, even at a young age”.

However, the literature also informs us that most teenagers who become pregnant say that their pregnancy was not planned: three quarters of teenage pregnancies are thought to be unplanned, with the proportion even larger for young teenagers.^{6–16–17} Furthermore, some existing research suggests that use of contraception is high among teenagers experiencing such unplanned conceptions: 80% of Pearson *et al's*¹⁸ sample reported they were using contraception (mostly condoms) at conception, and Blum and Goldhagen^{15–19} reported that non-use of contraception accounted for only 26% of unplanned pregnancies among their samples. Although it may be that some of those questioned were reluctant to admit that they were engaging in unprotected sex, contraceptive failure, whether through improper use or because of a high level of fecundity among this age group, may not be uncommon.^{20–21}

For those sexually active teenagers who do not use contraception, there is a 90% probability of conceiving in 1 year,¹⁴ although clearly the frequency of unprotected intercourse is relevant.¹⁵ Lack of access, lack of confidence in discussing use with a partner and confusion about the law in relation to use of contraception among those under 16 years are thought to be important factors in understanding why teenagers may not use contraception, even when not actively planning a pregnancy.¹⁴ Simply not thinking about contraception or believing that it (pregnancy) “won't happen to me” may also be important factors. Certainly, non-use of contraception does not necessarily indicate that the couple involved are “planning” to conceive.

Study aims

This study attempted to better understand why some sexually experienced 16-year-old young women have become pregnant while others have not. This was done by comparing the

demographic characteristics, characteristics of friends and parents, self-image, attitudes to school, lifestyle, aspirations, relationship history, cognitions about aspects of sexual behaviour, sexual health knowledge, experience of sex education and attitudes towards sex of the ever and never pregnant groups, as reported by the young women at age 14 years. This study also compared the young women's reports, at age 16 years, of their first experience of sexual intercourse.

METHODS

Data collection

The data were collected as part of a cluster-randomised trial of a specially designed teacher-delivered sex education package. Male and female students, from 25 secondary schools in east Scotland, were surveyed at age 14 years, using a self-completion questionnaire that was validated in five pilot schools. The students were followed up for 2 years after baseline. Two cohorts participated, from subsequent school years. The data were collected between 1996 and 2000. Details of the study, which is still in progress, have been published elsewhere.²²⁻²⁴ The research was approved by Glasgow University's Ethics Committee for non-clinical research involving human subjects, and the relevant local authorities' education departments. Those surveyed in school completed the questionnaires during lesson time, in examination conditions with no teacher present. The baseline sample was representative of all 14 year olds in Scotland in terms of social class and family structure, using 1991 Census data.

The questionnaires focused on sexual attitudes, beliefs and behaviour, as well as on other aspects of the young people's lifestyles. Attitude to school was measured by a five-point scale from "strongly agree" to "strongly disagree", for two statements on liking school and on skipping school if they got the chance (a mean score from the two questions was calculated—Cronbach's α Score 0.54). The parental monitoring score was the mean of four variables, using a four-point scale from "always" to "never", on how often anybody stayed up until they got home, they had to ask permission to go out in the evening, they had to be back in at a certain time in the evening and they had to tell somebody where they were going in the evening (Cronbach's α Score 0.67). This paper dichotomises respondents according to whether they experienced high (≥ 2.5) or low (< 2.5) parental monitoring. Future expectations of having a child by age 18 years were measured on a five-point scale from "very likely" to "very unlikely"; ease of proper condom use was measured on a five-point scale from "very easy" to "very difficult".

Data analysis

The follow-up questionnaire (time 2) asked female respondents whether they had ever been pregnant. Data collected from the baseline questionnaire (time 1) are used here to better understand this pregnancy outcome, as are data collected from the follow-up questionnaire on the circumstances of first intercourse. Respondents were not asked at baseline whether they had ever been pregnant, but we did undertake extensive research in the schools participating in the research and were not aware of any cases of early teenage pregnancy (ie, before students were surveyed at a mean age of 14 years and 2 months). It is therefore assumed that all pregnancies occurred between time 1 and time 2.

Baseline questionnaires were completed by 7616 male and female students and follow-up questionnaires were completed by 5864. Weighting was used to deal with the issue of attrition; original numbers and weighted percentages and p values are presented throughout the paper. Of the 3116 females who completed the follow-up survey, 1175 reported sexual experience.

One education authority did not allow the pregnancy experience question to be asked; young women from this education authority (n = 300) were therefore excluded from these analyses. Multivariate backward stepwise logistic regression was used to assess differences between the excluded females from this education authority and the included sample. The only significant difference between the two groups was in age at first sexual intercourse; the excluded samples were older at first intercourse (OR 1.56, 95% CI 1.09 to 2.22).

A further 18 females did not answer the pregnancy question. They were also excluded, leaving a total sample of 857 young women. An additional 48 (including 12 pregnant young women) were part of a sub-sample of school leavers who were sent a short, and less relevant for the purpose of this analysis, version of the follow-up questionnaire to try to optimise response rates. They were excluded from the bivariate and multivariate analyses, leaving a sample of 809 females.

Bivariate comparisons use the Pearson χ^2 test and analysis of variance unless otherwise stated and significant differences are identified throughout ($p < 0.05$). Multivariate backward stepwise logistic regression was used to produce adjusted ORs and to assess their significance. The statistical package SPSS V.12 was used. Only those variables that are significantly related to the likelihood of pregnancy are reported in the "results" section.

RESULTS

In all, 88 (12.7%) young women with sexual experience had experienced pregnancy. The mean age, when questioned at follow-up, of the ever-pregnant young women was not significantly different from their never-pregnant peers (16.17 and 16.11 years, respectively). A total of 51 (72.9%) of the ever-pregnant young women had left school by the start of fifth year (aged 15/16 years), a significantly higher proportion than among the never-pregnant group, of whom only 197 (39.7%) had left school ($p < 0.001$). Of the 75 young women who answered the question on whether their pregnancy was "wanted", 86.5% said that it was not.

Table 1 reports on the risks and protective factors for early teenage pregnancy. Those who have experienced pregnancy were significantly more likely than those who had not, at baseline, to: live in public housing or privately rented accommodation; smoke cigarettes regularly; have more than half of their friends who smoke; have more than half of their friends at other schools; have a negative attitude to school; think it likely that they will have a child by age 18 years; and think using a condom properly is, or would be, easy. They were significantly less likely than the never-pregnant group to live with both parents, and to have a high level of parental monitoring. The ever-pregnant young women reported, at follow-up, being younger at first intercourse, with their partner also having a younger mean age (although the age difference between the young woman and her partner is the same for the ever-pregnant group and the never-pregnant groups). The ever-pregnant young women were less likely to have used contraception at first intercourse, or to have talked to their partner about this.

The variables found to be significant at the bivariate level were entered into a multivariate backward stepwise logistic regression model. The factors that remained significant were: age at first intercourse (OR 0.58, 95% CI 0.46 to 0.72), partner's age at first intercourse (0.82, 0.7 to 0.96) and use of contraception at that time (0.46, 0.28 to 0.75). Therefore, the likelihood of pregnancy was significantly lower among those who were older when they first had sexual intercourse, whose partner was also older and who used contraception at that time.

Table 1 Factors associated with early teenage pregnancy: % or mean scores and unadjusted ORs (unweighted n = 809, weighted n = 764)

	Pregnant	Never pregnant	Unadjusted logistic regression	
	%	%	OR (95% CI)	p Value
Live with both parents				
Yes	43.2	58.2	1	
No	56.8	41.8	1.83 (1.17 to 2.87)	0.008
Housing type				
Privately owned	42.3	59.6	1	
Council or rented accommodation	57.5	40.4	2 (1.25 to 3.22)	0.004
Parental monitoring				
High	52.3	64.4	1	
Low	47.7	35.6	1.66 (1.06 to 2.61)	0.027
Smoked cigarettes				
Never tried	10.5	18.3	1	
Tried	34.9	39	1.48 (0.69 to 3.18)	0.314
Use occasionally	8.1	15.4	0.95 (0.35 to 2.57)	0.918
Use regularly	46.5	27.3	2.85 (1.35 to 6.01)	0.006
Proportion of friends who smoke (cohort 2 only)				
None/few	35	55.3	1	
Half or more	65	44.7	2.27 (1.15 to 4.50)	0.018
Friends at other schools				
None/a few	69.4	79.6	1	
Half or more	30.6	20.4	1.69 (1.03 to 2.79)	0.039
Attitude to school (scale: positive–negative)*	3 (0.97)	2.6 (0.89)	1.5 (1.19–1.89)	0.001
Not likely to have a child in near future (scale: very likely–very unlikely)*	3.4 (1.18)	3.7 (1.13)	0.78 (0.65 to 0.94)	0.01
Using a condom properly would be				
Difficult	27.6	39.5	1	
Easy	72.4	60.5	1.72 (1.05 to 2.84)	0.032
Used contraception at first intercourse†				
No	47.1	25.1	1	
Yes	52.9	74.9	0.38 (0.24 to 0.59)	<0.001
Talked to partner about protection before first intercourse†				
Yes	39	52	1	
No	61	48	1.67 (1.03 to 2.72)	0.037
Age at first sex*†‡	13.5 (1.09)	14.5 (1.08)	0.49 (0.4 to 0.6)	<0.001
Partner's age at first sex*†‡	15 (1.68)	16 (1.66)	0.68 (0.59 to 0.79)	<0.001

Pregnant group (unweighted n = 76 and weighted n = 87); never-pregnant group (unweighted n = 733 and weighted n = 677). Weighting was used to deal with the issue of attrition; original numbers and weighted percentages and p values are presented in the table.

*Mean scores (SD).

†Time two variable.

‡Age range at first sex—pregnant group 11–16 years, never pregnant group 8–16 years; partner's age range at first sex—pregnant group 10–20 years, never pregnant group 10–21 years.

The model's goodness of fit has been evaluated by means of a Hosmer-Lemeshaw test ($\chi^2 = 11.20$, $p = 0.19$). The estimation of the area below the ROC curve is 0.78.

DISCUSSION

Of those teenagers who have experience of sexual intercourse, who becomes pregnant? The analysis conducted here suggests those who were, at first intercourse, very young, whose partner was also young and who did not use contraception are most likely to become pregnant. Our data do not allow us to verify this, but it may be that those who were very young at first intercourse may simply have experienced more lifetime episodes of sexual intercourse, and if the pattern of non-use of contraception continued, more episodes of unprotected sexual intercourse. They may, therefore, have had more opportunity to become pregnant. The processes linking the

young age of partner at first intercourse to early pregnancy, however, are probably more complex.

Little evidence can be found in the existing literature to elucidate why, precisely, young partner at sexual debut is linked with pregnancy for these very young women: there is a dearth of up-to-date information on the men/boys who form the other half of partnerships that produce such pregnancies.²⁵ Furthermore, interpreting this result is difficult when it is not possible to ascertain from our data whether the young woman's partner on the occasion she actually became pregnant was also of a relatively young age. It is not unreasonable to assume, however, that if first intercourse took place with a partner only slightly older than oneself, this pattern may continue (whether with the same partner or with someone else of a similar age). Hence, early teenage pregnancies may probably occur in couples where both partners are very young.

This hypothesis is plausible on a number of accounts. Both members of the couple, because of their young age, may lack the maturity necessary to adequately plan the prevention of a pregnancy.^{26, 27} In some cases they may be lacking in a sense of vulnerability,²⁸ which may motivate them to even try to contracept.²⁷ It is unlikely that they will know other girls of their age who have become pregnant, or other boys who have fathered a pregnancy. It is less likely still that they will have direct experience of others of their age who are living with a baby of their own, with all the limitations that this may place on one's social life and other freedoms. In short, they may think that pregnancy "will not happen to them", and may not have developed concerns about what the implications would be for them if it did.

In other cases, one or both members of the couple may be concerned about preventing pregnancy, but may be reluctant to obtain contraception, due to embarrassment,²⁹ fears about the law relating to "underage" sex and/or about confidentiality if visiting a general practice^{27, 29, 30} or family planning service. If the decision has been made to buy condoms, lack of money²⁷ may be an issue in obtaining an adequate supply (indeed, anecdotal evidence suggests that if condoms are obtained free of charge, they are often rationed, particularly when being given to younger males as clinic staff may presume they are being used to "mess around" and not for their correct purpose). Compounding all of this may be the lack of skills and confidence on the part of both partners to discuss contraceptive use with each other.^{29, 31}

Furthermore, although the young women who become pregnant are probably relatively experienced in sexual intercourse (although compared with other sexually active young women of their own age only), their young partners may not be. This may also have implications for contraceptive use. The couple may, for example, fail to use a condom as intercourse may not be expected and, therefore, they may not have one in hand. Or, they may use a condom incorrectly due to lack of practice or experience.^{27, 31}

In short, the barriers to obtaining contraception and using it correctly for those aged <16 years may be greater than for those who are older; and the effort required to surmount them may be perceived as too great. Therefore, in cases where both partners are very young, the wherewithal and/or resources to adequately plan to prevent conception may, simply, be lacking.

What this paper adds

- Although there is a large body of literature focusing on predictors of conception among teenagers, almost all the work compares those young women who have become pregnant with their peers, regardless of whether or not their peers have experienced sexual intercourse.
- This paper takes a novel approach, comparing 16-year-old young women who have become pregnant with their peers who also have experience of sexual intercourse but who have not conceived.
- The findings highlight the importance of focusing on the partner of the young woman who becomes pregnant to better understand early teenage pregnancy.
- Initiatives that target teenagers of both sexes who are likely to embark on sexual activity at an early age, as well as those already sexually active, and which focus on promoting the use of contraception and on delivering the skills needed to use contraception correctly may reduce conception rates among young teenagers.

Our analyses raise as many questions as they answer about early teenage pregnancy. It is crucial, if teenage pregnancy rates are to be reduced further, that more is learnt about the partners of those young women who do become pregnant. Are they relatively young, as much of this discussion has assumed? It is startling that although a great deal of demographic data now exist about teenage women in UK who have become pregnant, there are no systematic data about their partners on the occasion of their becoming pregnant. There is a pressing need to discover more about the pathways to early fatherhood, and to examine ways of preventing very young men from conceiving pregnancies.²⁵ How do couplings that occur between two young teenagers differ from those between two older (even if only slightly older) teenagers? How can these young teenagers be better targeted to reduce their risk of conception, either by delaying sexual debut or by increasing correct usage of contraception? What is the nature and extent of condom failure among this age group, and how is the contraceptive pill used by young teenagers?

If a very young man and very young woman are going to engage in intercourse, we must ensure not only that they are able and willing to obtain contraceptives but also that they use them correctly. More research is needed before initiatives can be designed, which will achieve these challenging objectives. This research must attend to the perspectives of both partners responsible for creating a pregnancy.

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