

# Contraceptive risk and compensatory behaviour in young people in education post-16 years: a cross-sectional study

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## Abstract

**Objectives** To describe contraceptive risk and compensatory behaviour, using condoms or emergency contraception (EC), in young people in education aged 16–24 years.

**Design** Cross-sectional study.

**Subjects** A total of 1135 students aged 16–24 years.

**Setting** Educational establishments in and around London, UK.

**Results** Seventy-six percent of women and 55% of men reported having experienced sex either without contraception or when a condom split or came off. Most participants (or their sexual partners) who reported such risks had compensated by using EC at least once (72% women, 55% men) but only a minority had compensated on each occasion of risk (37% women and 22% men). Of the oral contraceptive users the majority (83%) had experienced a pill 'problem' and the majority of these participants had compensated for such problems by using condoms (79%). Fewer than half of the women who experienced pill problems (45%) compensated by using condoms on each occasion. Less than a quarter (23%) of those who experienced pill problems but did not compensate by using condoms ever compensated by using EC.

**Conclusions** This study demonstrates high levels of primary contraceptive risk and low levels of consistent compensatory condom or EC use. The findings suggest that there would be large increases in EC use and repeated use if all primary contraceptive risks were followed by compensatory action. Interventions to increase contraceptive use should focus not only on initiation of contraception use but acknowledge that risks do happen and promote both continuing use and compensatory behaviour.

years age group.<sup>3</sup> Whilst the proportion of young people having first sex without using contraception has decreased,<sup>4</sup> many people have had unprotected intercourse when they do not wish to become pregnant.<sup>5</sup> Furthermore, there are high levels of incorrect pill use,<sup>6</sup> and breakage/slippage of condoms is more common amongst younger or inexperienced users.<sup>7,8</sup>

When contraceptives are used to avoid pregnancy, unsafe sex (for example, when pills are missed) can be compensated for by the use of a second contraceptive method such as a condom or by using emergency contraception (EC).

Recently, there has been considerable focus on increasing the availability of EC either through over-the-counter provision or advance prescription.<sup>9</sup> Some health care professionals have raised concerns that this will increase the number of risks taken with primary contraceptives.<sup>10,11</sup> Existing cross-sectional studies of EC use have focused on levels of past use of oral EC<sup>12,13</sup> but have not reported this in the context of levels of contraceptive risks. Previous research has either focused on contraceptive risk behaviour or compensatory behaviour generally exploring single modes of contraception. The overall experience of contraceptive risk and compensatory behaviour across a range of contraceptive methods in young people is not known. This paper aims to describe contraceptive risk and compensatory behaviour in a sample of young people in education aged 16–24 years.

## Methods

Ethical approval was obtained from the local ethics committee. Young people aged 16–24 years were recruited from schools, further education colleges, sixth form colleges and universities in London and southeast England. Of the 18 schools or colleges approached one declined to take part. A convenience sample was used: in schools all students in the sixth form present on the day of data collection were invited to take part in the study. In the colleges/universities all young people present on the day of data collection in each of the classes sampled were invited to participate in the study. The questionnaires were administered under examination conditions. A researcher was present for all data collection and available to answer any questions arising from the questionnaire during its completion or in private following the administration of the questionnaire. The questionnaire was distributed to 1047 women and 484 men. A completed questionnaire was received from 883 (84%) women and 375 (77%) men. A total of 659 (52%) respondents were recruited from outside London and 599 (48%) were recruited from within London.

This paper reports on the descriptive data regarding sexual behaviour of the 365 men and 770 women aged

## Key message points

- The majority of sexually active young people in this study have experienced contraceptive risks and the majority of these have compensated by using condoms or emergency contraception (EC) on at least one occasion. Only a minority of young people always compensated for primary contraceptive risks.
- The use and repeated use of EC would increase considerably if all risks taken with primary contraceptives were compensated for.

## Introduction

In the UK and other industrialised countries young people predominantly use condoms or the combined oral contraceptive pill for contraception,<sup>1</sup> however the UK currently has the highest teenage pregnancy rate in Western Europe.<sup>2</sup> Unwanted pregnancies as measured by termination of pregnancy rates are highest in the 20–24

**Table 1** Demographic details of subjects

Characteristic	Study participants [n (%)]	England and Wales (%) <sup>15</sup>
Social class	(MD = 79, UD = 47)	
1	136 (13.5)	6.8
2	416 (41.2)	30.6
3 (non-manual)	168 (16.6)	12.0
3 (manual)	223 (22.1)	28.4
4	59 (5.8)	13.5
5	7 (0.7)	4.4
Ethnicity	(MD = 11)	
White British	680 (60.0)	
White other	125 (11.0)	
Black African	97 (8.6)	
Black Caribbean	34 (3.0)	
Black British	36 (3.2)	
Chinese	13 (1.1)	
Asian	80 (7.1)	
Other	59 (5.2)	

MD, missing data; UD, uncodable data.

between 16 and 24 years in the broader cross-sectional study.<sup>14</sup> The questionnaire was designed and piloted for comprehensibility with 25 respondents. Respondents were asked about their demographic characteristics, contraceptive risk and compensatory behaviour. Demographic characteristics included the respondents' age, ethnicity, pregnancy experience and parental occupation. Parental occupation was used to classify the students into social class according to the standard occupational classification. A contraceptive risk was defined as: sex without the use of contraception; or sex in which a condom split or came off. Women were asked about risks with contraceptive pills or the injectable contraceptive. These risks included: being more than 3 hours late taking a tablet whilst using the progestogen-only pill; attending late for their injection, missing more than one pill in the middle of the packet whilst taking the combined pill; missing one pill at the beginning or end of the packet; being more than 12 hours late taking the pill more than once in the packet; taking antibiotics; or having diarrhoea or vomiting. Compensatory behaviour included the use of EC following the non-use of contraception or a condom splitting/coming off. Women were asked about the use of condoms or EC following pill or injection contraceptive risks. Men were also asked about their degree of certainty regarding a sexual partner's use of EC.

## Results

The results were analysed to describe the subjects, their contraceptive risks and to explore their compensatory behaviour. Data from 770 women and 365 men aged 16–24 years were analysed.

**Table 3** Contraceptive risk experience of sexually active respondents

Type and number of contraceptive use problems occurring	Women who experienced this problem [n (%)]	Men who experienced this problem [n (%)]
Condom split or came off when woman was not also on the pill (female MD = 4, male MD = 1)	206/439 (47)	74/228 (32)
No contraception was used and pregnancy was not wanted (female MD = 31, male MD = 29)	201/472 (43)	98/234 (42)
Sexually active participants who experienced either a condom splitting/coming off or who had sex without using contraception when pregnancy was not wanted (female MD = 31, male MD = 29)	359/472 (76)	129/234 (55)
Pill problem (n = 317, MD = 13)	263/317 (83)	–
Type of pill problem		
Woman missed more than one pill in a packet (MD = 4)	144/313 (46)	–
Woman had been more than 12 hours late taking a pill more than once in a packet (MD = 3)	171/314 (54)	–
Woman missed a pill at the beginning or end of a packet (MD = 13)	119/291 (41)	–
Woman had diarrhoea, vomiting or on a course of antibiotics (MD = 9)	111/295 (38)	–
Woman was more than 3 hours late taking the progestogen-only pill	29/37 (78)	–
Late attending for an injection (n = 28, MD = 4) 9/24 (38)	–	–
Other problem with contraception (male MD = 14)	27/473 (5)	11/224 (5)

MD, missing data.

**Table 2** Contraceptives ever used by sexually active respondents or their sexual partner

Contraceptive used	Women [n (%)] (n = 473, MD = 30)	Men [n (%)] (n = 238, MD = 25)
Condom	443/473 (94)	229/238 (96)
Pill	330/473 (70)	112/238 (47)
Type of pill <sup>a</sup> (n = 330)		
Don't know	40/330 (12)	–
Combined oral contraceptive	291/330 (88)	–
Progestogen-only pill	37/330 (11)	–
Injection	32/473 (7)	3/238 (1)
Other (as stated by respondents included the cap or IUD only)	8/473 (2)	2/238 (1)
Emergency contraception	219/473 (46)	38/238 (16)

\*The percentages total >100% as some women had used both the progestogen-only pill and the combined pill.  
IUD, intrauterine device; MD, missing data.

## Demographic characteristics

The median age of the women was 18 (interquartile range, 17–20) years and the men 17 (range, 16–19) years. A total of 35% (n = 267) of the women and 30% of men (n = 102) were virgins.

The data on students' social class by parental occupation show that students from social classes 1, 2 and 3 (non-manual) were over-represented and those from social classes 4 (manual), 5 and 6 were slightly underrepresented as compared to the general population (Table 1).<sup>15</sup> The sample was ethnically diverse, with 29% of participants from ethnic minority groups. One percent of men and women reported that they had children. Five percent of the women reported having had a termination of pregnancy whilst 1% of men thought a sexual partner had had a termination of pregnancy. Almost all the participants who had been sexually active had used condoms at some time and the majority of sexually active women had used the pill. About half of the men thought a sexual partner had used the pill (Table 2).

## Contraceptive risks

The majority of sexually active men (55%) and women (76%) reported either experiencing a risk with a condom or not using contraception on at least one occasion (Table 3). The majority of those using oral contraceptives had experienced a problem with pill use (Table 3).

## Compensatory behaviour

EC had been used by 46% (n = 219) of sexually active women, and 16% (n = 38) of men thought their sexual

**Table 4** Compensatory behaviour following condom risks and non-use of contraceptives

Type of contraceptive problem (n)	Proportion of the time emergency contraception was used [n (%)]			
	Never	Some of the times this happened	Most times this happened	Every time this happened
Condom split/came off				
Women (n = 206, MD = 0)	54 (26)	40 (19)	14 (7)	98 (48)
Men (n = 73, MD = 1)	24 (32)	13 (18)	9 (12)	23 (31)
No contraception				
Women (n = 201, MD = 14)	91 (45)	45 (22)	17 (8)	48 (24)
Men (n = 89, MD = 9)	43 (48)	15 (17)	14 (16)	17 (19)
Non-use of contraception or a condom splitting/coming off				
Women (n = 359)	124 (35)	132 (37)	–	103 (37)
Men (n = 129)	57 (44)	43 (33)	–	29 (22)

MD, missing data.

partner had used EC (Table 2). Seventeen percent (n = 84) of sexually active women had used EC between two and five times and 2% (n = 12) had used EC more than five times.

Almost three-quarters of the women who experienced either a condom splitting/coming off or had had sex without using contraception reported compensating for this by using EC (Table 4). Only a minority of women did this on each occasion. Just over half of the men thought their sexual partner had compensated for condom risks or non-use of contraception by using EC.

Of those men who experienced a condom splitting or coming off, 51 (69%) reported being certain or pretty sure about whether or not their sexual partners used EC, 11 (15%) were unsure and 10 (14%) had no idea. Of those men who reported sexual intercourse without using contraception when pregnancy was unwanted, 62 (67%) reported being certain or pretty sure about whether or not their sexual partner used EC, 17 (18%) were unsure and 14 (15%) had no idea.

The majority of pill users had compensated for a pill use problem (Table 5). They used a condom at least some of the time a problem occurred and over one-third reported using a condom on each occasion there was a problem. Less than a quarter of women who experienced a pill problem or who were late attending for an injection, and who had not compensated by using a condom, reported using EC.

## Discussion

This study describes levels of compensatory EC and condom use in relation to contraceptive risk experience.

### Discussion of the methods

The sample used for this study was drawn from those staying on in education. Not unexpectedly, respondents were more likely to originate from a higher social class than the general population. The ethnic diversity of the

sample reflects that almost half the sample was drawn from inner London. Given that rates of teenage pregnancy are higher in those who do not continue in education, it may be that the contraceptive risk experience within this sample is lower than that of the general population. Some features of the study could have introduced bias. In one further education college the head selected classes for recruitment. It could be that classes with a higher proportion of girls and unwanted pregnancies were more likely to be selected. One Catholic school approached declined to take part in the study, and there was one single-sex (female) school included. It is possible that the sexual behaviour of students in these schools is different to those in other schools. The use of a convenience sample means that selection bias cannot be excluded. Despite these limitations the demographic data collected suggests that the social class mix of students recruited was reasonable. The core findings of the study relating to high levels of contraceptive risks experienced, reasonably high levels of compensatory behaviour but much lower levels of compensation on each occasion of risk, are unlikely to be solely found within this particular sample of young people.

For the purposes of this study a pragmatic definition of risk was used based on advice in current fpa (Family Planning Association) leaflets regarding contraception use. Current Faculty of Family Planning and Reproductive Health Care advice for use of EC following missed or late combined oral contraceptive pills is different to their advice for compensatory condom use. Currently, EC is only advised if two or more pills are missed in the first 7 days of the packet or if four or more pills are missed in the rest of the pack, provided if three or fewer pills are missed in the last week that the next pill pack is started without a pill-free interval.<sup>16</sup> A decision was made for the purpose of this study to define pill risks according to the need to use condoms. This limits the data obtained in relation to compensatory use of EC for these pill problems.

**Table 5** Compensatory behaviour following pill and injection contraceptive risks

Type of contraceptive problem (n)	Proportion of the time a condom was used [n (%)]			
	Never	Some of the times this happened	Most times this happened	Every time this happened
Pill problem (n = 251, MD = 12)	53 (21)	42 (17)	42 (17)	114 (45)
Late attending for an injection (n = 9)	2 (22)	0 (0)	3 (33)	4 (44)
The proportion of the times that a second contraceptive was not used, but emergency contraception was used				
Pill problem women (n = 137, MD = 18)	90 (66)	17 (13)	10 (9)	2 (1.5)
Late attending for an injection (women)	4 (80)	0 (0)	0 (0)	1 (20)

MD, missing data.

*Discussion of the results*

Overall the findings show both high levels of contraceptive use and high levels of contraceptive risk, highlighting the importance of maintaining use of contraception, promoting dual contraceptive use<sup>17</sup> and compensatory behaviour if risks occur. Current policy has aimed to increase the availability of oral EC by making it available over the counter. Some health care professionals (doctors, pharmacists and nurses) have raised concerns that promoting compensatory behaviour will reduce the use of primary contraceptives.<sup>7,8</sup> The low proportion of contraceptive risks that were compensated for in this study demonstrates the existing large scope for increasing EC use without this reflecting an increase in primary contraceptive risks.

The study shows a discrepancy between levels of primary contraceptive risks and compensatory behaviour. This highlights the importance of measuring the impact of interventions promoting EC use through levels of EC use in relation to levels of primary contraceptive risk. The impact of interventions promoting EC could also be measured in terms of unwanted pregnancy rates. This study, however, suggests that a low proportion of contraceptive risks result in pregnancy. This, combined with the level of efficacy of EC, means that a large, consistent increase in EC use and a very large sample size would be required for an impact on unwanted pregnancy to be demonstrated.

Female respondents in this study were more likely to have used EC than respondents in other recent surveys.<sup>1</sup> This is likely to reflect the use of a sample of young people aged over 16 years in education, as those from more socially deprived backgrounds may be less willing to use EC.<sup>13</sup>

Existing research has highlighted a range of reasons why young women may not use EC including: their perceptions regarding their susceptibility to pregnancy; links made between EC and a negative female sexuality; and concerns about side effects and concern about health care professionals' attitudes.<sup>13,18,19</sup> Within and between subject attitudinal differences between episodes of risky sex which were compensated for and those which were not are reported elsewhere.<sup>14</sup>

**Conclusions**

In this study the majority of sexually active people experienced contraceptive risks that, in many cases, were not followed by compensatory behaviour. The study findings suggest that interventions promoting contraceptive use should focus on the maintenance of behaviour and the need for compensatory behaviours (condom or EC use) when contraception goes wrong. Such an approach involves the acknowledgement that contraceptive risks do happen but can be managed.

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**Statements on funding and competing interests**

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**The 4-0-8 Sheffield Fund**

In 2001 the 4-0-8 Young People's Consultation Centre Ltd, Sheffield, UK made a significant donation to the Faculty of Family Planning and Reproductive Health Care (FFPRHC) for the purpose of funding training for health care professionals who had limited funding for attending training meetings. Any person working in the field of reproductive and sexual health care within the UK may apply. Approximately £1000 will be allocated every 3 months, either as a single award or divided between the successful applicants.

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