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### **A survey regarding acceptability of oral emergency contraception according to the posited mechanism of action**

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1 A survey regarding acceptability of oral emergency contraception according to the **posited**  
2 mechanism of action.

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11 **Contribution to authorship:** The study was initiated by STC. SJW and STC designed the  
12 questionnaire. SJW organized distribution and collection of the questionnaire and compiled and  
13 analysed the data at the univariable level, with statistical assistance from MM. MM analysed the  
14 data at the multivariable level. All authors assisted in manuscript writing.

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17 **Abstract**

18 **Objective:** To determine the acceptability to women of oral emergency contraception (EC) that  
19 works by inhibiting ovulation, preventing implantation or disrupting implantation. Also, to determine  
20 the characteristics of women associated with the acceptability of each **posited** mechanism of action.

21 **Study design:** Women completed a self-administered, anonymous questionnaire asking whether  
22 they would consider using an EC pill based on each of three **hypothetical** mechanisms of action:  
23 inhibiting ovulation, preventing implantation or disrupting implantation. The questionnaire was  
24 distributed among women **in** Edinburgh, UK: (i) presenting for EC at a community pharmacy, (ii)  
25 attending a clinic for insertion of intrauterine contraception (IUC) or (iii) attending a clinic for an  
26 induced abortion. Descriptive analyses stratified women according to healthcare setting and  
27 personal characteristics. Univariable and multivariable analyses were used to establish factors which  
28 may predict acceptability of each EC pill's mechanism of action.

29 **Results:** Four hundred and nineteen out of 458 (91%) women responded to the survey. **Overall**  
30 **women** reported that EC would be acceptable if it worked by inhibiting ovulation (89%), preventing  
31 implantation (83%) or disrupting implantation (75%). **Among women seeking abortion, more** would  
32 accept an EC pill which disrupted implantation, compared to women **seeking** IUC (OR, 2.19; 95% CI,  
33 1.30-3.69;  $p = 0.004$ ). Based on multivariable analyses, factors associated with acceptability included  
34 previous use of EC, previously holding strong views against abortion and having had a previous  
35 abortion.

36 **Conclusion:** For each of the **posited** mechanisms of action, a majority of women surveyed would be  
37 willing to consider oral EC to prevent unintended pregnancy.

38 **Implications statement:** The scope of the study was limited and further work on the views of  
39 women in the wider population is needed. This is important as the development of such drugs to  
40 prevent pregnancy is likely to raise political and ethical challenges, particularly in relation to  
41 disruption of implantation.

42 **Keywords:** oral emergency contraception; missed-period pill; contragestion; post-fertilization

## 43 1. Introduction

44 In the UK, as many as one third of all pregnancies are thought to be unintended [1, 2] and over half  
45 of these end in termination [1, 2]. The US also reports high rates of unintended pregnancy and  
46 abortion [3]. EC gives women a second chance to prevent unintended pregnancy. The copper  
47 intrauterine device (IUD) is the most effective EC but is not widely used. It is unpopular with women  
48 due to the invasive procedure and requires skilled clinicians to insert it [4]. Oral EC is more  
49 commonly used and is more easily obtainable. However, at the population level, oral EC has not  
50 reduced the number of unintended pregnancies [5]. Whilst this may be due to women failing to use  
51 EC after every act of unprotected sexual intercourse [6], it may also be because current oral EC is not  
52 sufficiently effective.

53 The current oral EC methods available in Europe and the US are levonorgestrel and ulipristal acetate.  
54 Clinical trials have shown that when taken within 120 hours of unprotected sexual intercourse, these  
55 methods resulted in an observed pregnancy rate of 2.6% and 1.8% respectively. This compares to an  
56 expected pregnancy rate of 5.4% and 5.5% respectively, suggesting that these methods might only  
57 prevent between approximately one half and two thirds of pregnancies [7]. The only confirmed  
58 mechanism of action of these oral methods is through delaying ovulation [8].

59 The accumulated evidence suggests that while there is scope and considerable enthusiasm among  
60 the research community to develop a more effective oral EC pill that acts both pre- and post-  
61 fertilization, moral objections continue to be expressed by “many opponents” about the use of EC  
62 [9]. Of the two post-fertilization methods, namely preventing or disrupting implantation, the latter,  
63 which occurs once the implantation process has begun, is defined in the UK and US as abortion, not  
64 contraception [10]. Expanding the emergency options available to women throughout the menstrual  
65 cycle by the development of a new post-fertilization fertility control drug would raise political and  
66 ethical challenges. In this paper we have used the term ‘EC’ to describe potential interventions  
67 which (a) inhibit ovulation, (b) prevent implantation or (c) disrupt implantation.

68 Approximately 20 years ago, surveys were conducted [11, 12] involving over 800 women of  
69 reproductive age in Edinburgh, Scotland attending a family planning service. These studies focused  
70 on women's views on the use of a hypothetical once-a-month contraceptive pill. The combined  
71 findings of these surveys showed that a pill that worked through inhibiting ovulation was acceptable  
72 to the majority of respondents. A pill that prevented implantation was acceptable to half of  
73 respondents and a pill which disrupted implantation was acceptable to a smaller proportion. Women  
74 surveyed in China, Romania, Slovenia and South Africa reported a similar pattern of acceptability  
75 [11, 12].

76 No recent data report women's views on acceptability of oral EC and its mechanism of action. The  
77 primary aim of this study was to report on the acceptability of oral EC posited to inhibit ovulation,  
78 prevent implantation or disrupt implantation and whether women would accept a 'missed menses  
79 pill' (a pill that women would take only if a period was late by a few days). We also sought to  
80 establish any relationship between the women's characteristics and their responses.

## 81 **2. Materials and Methods**

82 We designed a questionnaire for self-completion by women attending various sexual and  
83 reproductive healthcare (SRH) settings in Edinburgh, UK. We based it upon previous surveys [11, 12,  
84 13] and we piloted it for understandability and ease of completion amongst women (n=10) attending  
85 a sexual health clinic. Based on their feedback, we then made some small changes to the  
86 questionnaire.

87 In the introduction we explained that women were under no obligation to complete the  
88 questionnaire, that they could leave any parts of it blank and that responses were anonymous and  
89 strictly confidential.

90 Women answered 17 questions in three sections. The first section asked whether 'in theory' they  
91 would consider using a pill which worked in each of three different ways (a) by stopping or delaying

92 an egg being released (inhibiting ovulation), (b) by preventing a very early fertilised egg attaching to  
93 the lining of the womb (preventing implantation) or (c) by dislodging a very early fertilised egg from  
94 the lining of the womb before a period is missed (disrupting implantation). They also **reported**  
95 whether they would use a missed-period pill. The response categories were 'yes', 'no' or 'uncertain'.

96 The second section asked about previous contraceptive use, including previous oral EC and use of  
97 intrauterine contraception (IUC) for EC. The third section asked **respondents** specific questions on  
98 whether they were in a sexual relationship, held any strong religious beliefs and had in the past held  
99 any strong views against abortion, in addition to questions on their previous reproductive history  
100 (including previous births and abortions) and their age. The terms 'strong beliefs' and 'strong views'  
101 were not defined as these are subjective. As in previous surveys [14], we asked whether women had  
102 in the past held any strong views against abortion, rather than asking about their current views,  
103 mindful of the potential sensitivity of their immediate situation. They were also asked for the first  
104 **four** characters of their postcode **pertaining to area, district and sector**, to obtain a Carstairs  
105 deprivation category score (2011) (a marker of deprivation based on postcode area of residence in  
106 Scotland) [15].

107 The questionnaire was distributed between February 2015 and August 2015 and given to three  
108 **groups** of women in Edinburgh attending: (i) five independent community pharmacies across the city  
109 requesting EC, (ii) clinics at the SRH service for insertion of IUC (as a regular method of  
110 contraception) and (iii) clinics at the SRH service for termination of pregnancy (TOP).

111 These respective groups represented women choosing: (a) to use oral EC, (b) to use a method of  
112 contraception that prevents implantation and (c) to terminate (disrupt) a pregnancy that had already  
113 implanted.

114 At each pharmacy, duty pharmacists gave out a questionnaire when a woman requested EC. In the  
115 SRH clinics, receptionists or clinic staff distributed the questionnaires.

116 We coded each questionnaire to track the numbers distributed and returned. Each respondent put  
117 their questionnaire in an opaque, sealed envelope and placed it in a secure box. The questionnaires  
118 were collected regularly and stored securely.

119 The National Health Service (NHS) ethical officer reviewed the survey and protocol and confirmed  
120 that ethical committee approval was not required. The Quality Improvement Team for SRH and **the**  
121 local NHS Research and Development Office approved the project.

## 122 ***Statistical analysis***

123 The data were coded and **recorded in** Microsoft Excel and responses analysed for each **group** and for  
124 all respondents. IBM Statistical Package for the Social Sciences (SPSS), version 22 was used for  
125 statistical analysis. To allow statistical comparison between age groups, we defined four age  
126 categories ( $\leq 19$ , 20-24, 25-34 and  $\geq 35$  years old) and created deprivation category groupings (1-2 =  
127 affluent, 3-5 = moderate, 6-7 = deprived). We based these on previous studies [13,16].

128 We conducted statistical comparisons of the ages of women across the cohorts using unpaired t-  
129 tests. In testing for associations between categorical variables, the chi-squared test of association or,  
130 where appropriate, Fisher's exact test **was performed**. The chi-squared test of linear trend **was used**  
131 to test for a monotonic trend in acceptability across the different **hypothetical** mechanisms of action  
132 according to when they acted during the reproductive cycle.

133 We assumed a significance level of 0.05 for all univariable analyses and of 0.1 at the final stage of  
134 the multivariable analyses in the identification of possible independent predictors of acceptability.  
135 This was carried out separately for each of the acceptability categories: inhibits ovulation, prevents  
136 ovulation, disrupts implantation and missed period pill. We assumed the weaker significance level  
137 for the multivariable models because in such models, more stringent significant levels carry the risk  
138 of ruling out factors of practical importance [17].

139 **3. Results**

140 A total of 419 out of 458 women responded to the survey (91% response rate): (a) for the EC group  
141 104 out of 104 (100% response rate), (b) for the TOP group 207 out of 238 (87% response rate) and  
142 (c) for the IUC group 108 out of 116 (93% response rate). Table 1 shows the demographic  
143 characteristics of the women in each group. Eight percent (31/407; 95% CI, 0.05-0.11) of women in  
144 all groups indicated that they held strong religious beliefs and 17% (69/403; 95% CI, 0.14-0.21)  
145 indicated that they previously held strong views against abortion.

146 Table 1 shows that 63% (263/417) of women had previously used oral EC; however, the TOP group  
147 was less likely than the EC group to have done so. In total, only 3% (13/414) of the women had  
148 previously had an IUC fitted as EC (95% CI, 0.02-0.05).

149 Table 2 shows that in all groups the acceptability of an EC pill decreased as the posited mechanism  
150 of action during the reproductive cycle moved from inhibiting ovulation to preventing implantation  
151 and then to disrupting implantation. More women requesting TOP considered an EC pill that disrupts  
152 implantation to be acceptable, compared to those attending for IUC insertion. Table 2 shows that  
153 women requesting a TOP found a missed-period pill more acceptable than the EC and the IUC groups  
154 (77% TOP vs 59% EC vs 44% IUC).

155 There was statistical evidence for an association between acceptability of the hypothetical pills and  
156 each of the following factors: previous EC use, being in a sexual relationship, previous abortion,  
157 parity, strong religious beliefs and previously holding strong views against abortion (Table 3).

158 We found a lack of statistical evidence for an association between acceptability of an EC method of  
159 action and any one of deprivation category score, age or the other factors measured (Tables 4a-d).

160 For the EC categories *prevents implantation* and *missed period pill*, the model diagnostics did not  
161 support use of a binary logistic regression model to represent the independent effects of potential  
162 predictor variables from this study. For example, for the EC category *prevents implantation*, inclusion



163 of the variables for holding strong religious beliefs and previously holding strong views against  
164 abortion in the same model removed the statistical significance of the latter variable, leaving only  
165 the former independent variable for consideration. The adjusted odds ratios and corresponding 90%  
166 CIs for the regression models pertaining to the EC categories *inhibits ovulation* and *disrupts*  
167 *implantation* are provided in Table 5.

#### 168 **4. Discussion**

169 The majority of women who took part in this survey indicated that they would be willing to consider  
170 the use of an EC pill with the posited mechanisms of action (inhibiting ovulation, preventing  
171 implantation or disrupting implantation). Although most women would also use a missed-period pill,  
172 the acceptability of this and of a pill which acted by disrupting implantation was less than for EC that  
173 worked by inhibiting ovulation.

174 Overall, one in ten women were not accepting of a pill which worked by inhibiting ovulation. The IUC  
175 group was not unanimously accepting of an EC pill which worked by preventing implantation.  
176 Women's reasons for not accepting the posited mechanisms of action were not determined and this  
177 is an area that requires further investigation.

178 Perhaps unsurprisingly, women requesting an abortion were more likely to find a pill that disrupted  
179 implantation or a missed-period pill acceptable, compared to those who were requesting an IUC.  
180 Women at the IUC clinic were choosing long-acting reversible contraception and so might not need  
181 to use oral EC. One might hypothesise that the TOP group would be more willing to take effective EC  
182 regardless of its mechanism, to avoid having an abortion or because they are accepting of abortion.

183 Based on the multivariable analyses, this study presents a number of important findings (Table 5)  
184 concerning acceptability of EC pills for women attending the types of healthcare clinics in Edinburgh  
185 represented in this study. Firstly, it is estimated that women who have previously held strong views  
186 against abortion are about 75% less likely to consider a hypothetical pill which disrupts implantation

187 as acceptable rather than unacceptable than women who have not or are uncertain whether they  
188 have held such views previously. A similar result applies for acceptability of a hypothetical pill which  
189 inhibits ovulation.

190 Additionally, it is estimated that women from the above population are about twice as likely to  
191 accept a hypothetical pill which disrupts implantation if they have previously had an abortion in  
192 contrast to those who have not. A similar result applies for acceptability of a hypothetical pill which  
193 inhibits ovulation on comparing women who have previously used EC with those who have not used  
194 EC or are uncertain about previous use of EC.

195 More generally, it is implicit from the results of the diagnostic testing of the binary logistic regression  
196 models for the acceptability categories *inhibits ovulation* and *disrupts implantation* that there is a  
197 call for a systematic investigation of potential additional predictive factors of acceptability. This  
198 would produce more valid predictive models which can explain variability in acceptability across  
199 eligible respondents far better and improve on the classification accuracy of these models. For the  
200 categories *prevents implantation* and *missed period pill*, for which no multivariable model was  
201 forthcoming, it is possible that similar work is needed.

202 A strength of this study is that a considerable number of women from different healthcare settings  
203 were surveyed. It also provides comparative data, as the women were from the same city, Edinburgh  
204 and some of them were attending a similar setting (a family planning clinic) as in previous studies  
205 [11, 12]. A limitation of this study is that the questionnaire asked what the women would do 'in  
206 theory', which may not translate into what they would do 'in real life'. Research in the pharmacy  
207 setting can be challenging [13] and it was not possible to ensure that the pharmacists distributed the  
208 questionnaire to all women seeking EC so the data may not be representative. The survey was only  
209 conducted in Edinburgh, amongst subgroups of women. In the future it would be important to have  
210 multi-site and multi-population studies elsewhere to determine if women in the wider population  
211 hold similar views.

212 Compared to the studies of 20 years ago that examined women's views towards a once-a-month  
213 contraceptive [11, 12], our study concludes that a higher proportion of women would be accepting  
214 of a pill that prevents implantation (83% vs 54%), a pill that disrupts implantation (75% vs 18%) or a  
215 missed period pill (64% vs 28%). This suggests that attitudes towards the mechanisms of action of  
216 contraception have changed.

217 A method that works by disrupting implantation would currently raise ethical and legal issues in  
218 many settings including the UK and US as it would be classed as abortion. However, this method  
219 would currently be permissible in countries where 'menstrual induction' (i.e. evacuation of the  
220 uterus in women who have delayed menses but no laboratory confirmation of pregnancy) is  
221 permitted, such as China [18]. In the 1980's, French scientists and clinicians, engaged in  
222 contraceptive research using PRMs, coined the term 'contragestion' to describe a method that could  
223 remain effective after ovulation to prevent or disrupt the establishment of a very early pregnancy at  
224 the end of the luteal phase of the cycle [19, 20]. Perhaps this terminology could be used in future to  
225 convey the concept of an 'emergency' method that works throughout the cycle in order to prevent  
226 unintended pregnancy.

227 Our study suggests that women in the above healthcare settings may be willing to consider oral EC  
228 which works either by inhibiting ovulation, preventing implantation or disrupting implantation. In  
229 addition, women may also be prepared to use a missed-menses pill to prevent unintended  
230 pregnancy. However, our study was of limited scope and further work on the views of women in the  
231 wider population is needed. This is important, as the development of such drugs to prevent  
232 pregnancy is likely to raise political and ethical challenges, particularly in relation to disruption of  
233 implantation.

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241 previous similar studies and piloting is also gratefully acknowledged. We would also like to thank  
242 Amanda Rae, Chair of Boots Pharmacists Association. Finally, we thank the women who responded  
243 to the survey.

**Table 1.** Demographic characteristics of the women in each **group**.

<b>Group</b>	<b>EC<sup>1</sup></b>	<b>TOP<sup>2</sup></b>	<b>IUC<sup>3</sup></b>	<b>Total</b>
<b>Age (Years)</b>				
Median	21 <sup>a</sup>	25	34 <sup>b</sup>	25
Range	16-45	15-43	18-53	15-53
<b>Deprivation Category Score (n (%))</b>				
1-2 (Affluent)	1 (1)	13 (7)	15 (15)	29 (7)
3-5 (Moderate)	32 (33)	103 (54)	60 (61)	195 (50)
6-7 (Deprived)	31 (32) <sup>c</sup>	27 (14) <sup>d</sup>	6 (6)	64 (17)
Unknown	32 (33)	49 (26)	18 (18)	99 (26)
<b>In a sexual relationship (n (%))</b>				
	71 (70)	162 (81)	93 (89)	326 (80)
<b>Previous use of oral EC (n (%))</b>				
	73 (70)	116 (57) <sup>e</sup>	74 (69)	263 (63)
<b>Previous IUC fitted for EC (n (%))</b>				
	2 (2)	7 (3)	4 (4)	13 (3)
<b>Previous pregnancy (n (%))</b>				
	15 (15)	124 (61)	62 (60)	201 (49)
<b>Previous birth (n (%))</b>				
	1 (1)	93 (46)	56 (54)	150 (37)
<b>Previous TOP (n (%))</b>				
	9 (9)	68 (35)	18 (17)	95 (24)
<b>Hold strong religious beliefs (n (%))</b>				
	9 (9)	12 (6)	10 (10)	31 (8)
<b>In the past held strong views against abortion (n (%))</b>				
	21 (21)	34 (17)	14 (14)	69 (17)

245 <sup>1</sup> EC: Emergency contraception; <sup>2</sup> TOP: Termination of pregnancy; <sup>3</sup>IUC: Intrauterine contraception

246 <sup>a</sup> Women from the TOP group (mean: 26.04; SD: 6.59) and IUC group (mean: 33.88; SD: 8.83) were  
 247 on average older in age than those from the EC group (mean: 22.57, SD: 4.63). The corresponding  
 248 mean differences were 3.47 (95% CI, 2.15-4.79; p < 0.001) and 11.31 (95% CI, 9.33-13.29; p < 0.001),  
 249 respectively.

250 <sup>b</sup> Women from the IUC group were on average older than the women in the other groups (see above  
251 for comparison to EC group; the mean difference in comparison to TOP group was 7.84 (95% CI,  
252 5.85-9.84;  $p < 0.001$ )) and had the largest age range.

253 <sup>c</sup> A woman from the EC group was more likely to live in a deprived area compared to a woman from  
254 the IUC group (OR, 11.74; 95% CI, 4.47-30.84;  $p < 0.001$ ) and a woman from the TOP group (OR, 4.04;  
255 95% CI, 2.12-7.69;  $p < 0.001$ ).

256 <sup>d</sup> A woman from the TOP group was more likely to live in a deprived area compared to a woman  
257 from the IUC group (OR, 2.91; 95% CI, 1.15-7.38;  $p = 0.033$ ).

258 <sup>e</sup> A woman from the TOP group was less likely to have used oral EC in the past compared to a woman  
259 from the EC group (OR, 0.56; 95% CI, 0.34-0.93;  $p = 0.032$ ).

260 **Table 2.** Percentages of women in each **group** who answered ‘yes’ to using potential EC pills  
 261 depending on their mechanism of action and to using a missed-period pill.

<b>Group</b>	<b>Inhibits ovulation (n (%))</b>	<b>Prevents implantation (n (%))</b>	<b>Disrupts implantation (n (%))</b>	<b>Missed-period pill (n (%))</b>
<b>EC<sup>1</sup> (n=104)</b>	93 (89)	85 (82)	79 (77)	61 (59)
<b>TOP<sup>2</sup> (n=207)</b>	182 (88)	176 (85)	159 (80) <sup>a</sup>	157 (77) <sup>b</sup>
<b>IUC<sup>3</sup> (n=108)</b>	96 (89)	85 (79)	69 (64) <sup>a</sup>	48 (44)
<b>Total (n=419)</b>	<b>371 (89)<sup>c</sup></b>	<b>346 (83)<sup>c</sup></b>	<b>307 (75)<sup>c</sup></b>	<b>266 (64)</b>

262 <sup>1</sup> EC: Emergency contraception; <sup>2</sup> TOP: Termination of pregnancy; <sup>3</sup>IUC: Intrauterine contraception

263 <sup>a</sup> There was an absence of statistical evidence for a difference between **groups** for acceptability of EC  
 264 except between women requesting abortion (TOP) and women attending for IUC for a method that  
 265 disrupts implantation (OR, 2.19; 95% CI, 1.30-3.69; p=0.004).

266 <sup>b</sup> A woman requesting a TOP was more likely to find a missed-period pill acceptable than a woman  
 267 from the EC **group** (OR, 2.41; 95% CI, 1.44-4.01; p=0.001) and the IUC **group** (OR, 4.27; 95% CI, 2.58-  
 268 7.05; p < 0.001).

269 <sup>c</sup> The proportion of women who considered a potential EC pill as acceptable decreased as the  
 270 mechanism of action moved from inhibiting ovulation, to preventing implantation, to disrupting  
 271 implantation ( $\chi^2= 27.853$ , p < 0.001).

272

**Table 3.** Factors for which there is evidence of an association with the acceptability of a) EC pills,

273

depending on their mechanism of action and b) a missed-period pill

	<b>Factor</b>	<b>N (%)</b>	<b>OR and 95% CI</b>	<b>p-value</b>
<b>Inhibits ovulation</b>	Previous use of EC vs. no or uncertain previous use of EC	242 (65) vs. 128 (35)	2.25; 1.21-4.18	0.014
	Having children vs. no children	126 (35) vs. 236 (65)	0.51; 0.27-0.95	0.048
	Hold strong religious beliefs vs. do not hold strong religious beliefs or uncertain	23 (6) vs. 338 (94)	0.41; 0.18-0.91	0.036
	In the past held strong views against abortion vs. in the past not held strong views against abortion or uncertain	51 (14) vs. 306 (86)	0.25; 0.13-0.49	<0.001
	Hold strong religious beliefs vs. do not hold strong religious beliefs or uncertain	21 (6) vs. 315 (94)	0.37; 0.15-0.92	0.044
<b>Prevents implantation</b>	In the past held strong views against abortion vs. in the past not held strong views against abortion or uncertain	43 (13) vs. 289 (87)	0.26; 0.14-0.46	<0.001
	Previous abortion vs. no previous abortion	81 (28) vs. 212 (72)	2.53; 1.34-4.78	0.005
	In a sexual relationship vs. not in a sexual relationship or uncertain	248 (83) vs. 51 (17)	1.77; 1.04-3.03	0.048
<b>Disrupts implantation</b>	In the past held strong views against abortion vs. in the past not held strong views against abortion or uncertain	32 (11) vs. 263 (89)	0.22; 0.13-0.39	<0.001
	Previous abortion vs. no previous abortion	75 (30) vs. 178 (70)	2.75; 1.58-4.78	<0.001
	In the past held strong views against abortion vs. in the past not held strong views against abortion or uncertain	33 (13) vs. 222 (87)	0.47; 0.28-0.80	0.007
<b>Missed-period pill</b>				

274



275 **Table 4a.** Factors for which there is a lack of evidence for an association with the acceptability of an

276 EC pill inhibiting ovulation

<b>Factor</b>	<b>N (%)</b>	<b>OR and 95% CI</b>	<b>p-value</b>
<b>Previous use of IUD for EC vs. no or uncertain previous use of IUD for EC</b>	10 (3) vs. 358 (97)	0.40 0.11-1.51	0.166
<b>In a sexual relationship vs. not in a sexual relationship or uncertain</b>	291 (80) vs. 71 (20)	1.21 0.57-2.56	0.773
<b>Previous pregnancy vs. no previous pregnancy</b>	173 (48) vs. 188 (52)	0.61 0.33-1.15	0.171
<b>Previous abortion vs. no previous abortion</b>	85 (24) vs. 268 (76)	1.11 0.59-2.34	0.929
<b>DEPCAT</b>			
Affluent vs. moderate	18 (10) vs. 172 (90)	1.20 0.26-5.53	1.000
Moderate vs. deprived	172 (75) vs. 57 (25)	0.92 0.37-2.25	1.000
Affluent vs. deprived	18 (24) vs. 57 (76)	1.10 0.21-5.80	1.000
<b>Age</b>			
<20 vs. 20-24	51 (31) vs. 115 (69)	1.44 0.45-4.64	0.735
<20 vs. 25-34	51 (32) vs. 110 (68)	1.23 0.39-4.20	0.779
<20 vs. >34	51 (43) vs. 68 (57)	2.06 0.62-6.85	0.356
20-24 vs. 25-34	115 (51) vs. 110 (49)	0.89 0.38-2.06	0.944
20-24 vs. >34	115 (63) vs. 68 (37)	1.43 0.61-3.37	0.549
25-34 vs. >34	110 (62) vs. 68 (38)	1.62 0.67-3.93	0.403

277

278 **Table 4b.** Factors for which there is a lack of evidence for an association with the acceptability of an

279 EC pill preventing implantation

<b>Factor</b>	<b>N (%)</b>	<b>OR and 95% CI</b>	<b>p-value</b>
<b>Previous use of EC vs. no or uncertain previous use of EC</b>	224 (65) vs. 121 (35)	1.52 0.91-2.55	0.145
<b>Previous use of IUD for EC vs. no or uncertain previous use of IUD for EC</b>	10 (3) vs. 333 (97)	0.68 0.18-2.54	0.474
<b>In a sexual relationship vs. not in a sexual relationship or uncertain</b>	275 (82) vs. 62 (18)	1.65 0.91-2.99	0.133
<b>Previous pregnancy vs. no previous pregnancy</b>	169 (50) vs. 167 (50)	1.23 0.74-2.06	0.503
<b>Having children vs. not having children</b>	120 (36) vs. 217 (64)	0.76 0.45-1.27	0.358
<b>Previous abortion vs. no previous abortion</b>	85 (26) vs. 244 (74)	2.09 1.02-4.27	0.057
<b>DEPCAT</b>			
Affluent vs. moderate	14 (8) vs. 162 (92)	0.46 0.17-1.33	0.207
Moderate vs. deprived	162 (75) vs. 53 (25)	1.02 0.48-2.16	1.000
Affluent vs. deprived	14 (21) vs. 53 (79)	0.48 0.15-1.10	0.219
<b>Age</b>			
<20 vs. 20-24	49 (31) vs. 107 (69)	1.60 0.61-4.22	0.463
<20 vs. 25-34	49 (33) vs. 101 (67)	1.70 0.64-4.48	0.393
<20 vs. >34	49 (44) vs. 62 (56)	2.24 0.82-6.15	0.171
20-24 vs. 25-34	107 (51) vs. 101 (49)	1.06 0.55-2.06	0.999
20-24 vs. >34	107 (63) vs. 62 (37)	1.40 0.69-2.85	0.460
25-34 vs. >34	101 (62) vs. 62 (38)	1.32 0.65-2.69	0.564

280

281 **Table 4c.** Factors for which there is a lack of evidence for an association with the acceptability of an

282 EC pill disrupting implantation

<b>Factor</b>	<b>N (%)</b>	<b>OR and 95% CI</b>	<b>p-value</b>
<b>Previous use of EC vs. no or uncertain previous use of EC</b>	203 (66) vs. 103 (34)	1.56 0.99-2.46	0.069
<b>Previous use of IUD for EC vs. no or uncertain previous use of IUD for EC</b>	8 (3) vs. 297 (97)	0.53 0.17-1.67	0.330
<b>Hold strong religious beliefs vs. do not hold strong religious beliefs or uncertain</b>	20 (7) vs. 278 (93)	0.66 0.30-1.47	0.420
<b>Previous pregnancy vs. no previous pregnancy</b>	152 (51) vs. 147 (49)	1.29 0.82-2.02	0.329
<b>Having children vs. not having children</b>	106 (36) vs. 193 (64)	0.85 0.54-1.35	0.573
<b>DEPCAT</b>			
Affluent vs. moderate	13(9) vs. 136 (91)	0.77 0.29-2.02	0.775
Moderate vs. deprived	136 (72) vs. 53 (28)	0.46 0.22-0.96	0.054
Affluent vs. deprived	13 (20) vs. 53 (80)	0.35 0.11-1.10	0.108
<b>Age</b>			
<20 vs. 20-24	45 (32) vs. 97 (68)	1.30 0.58-2.90	0.660
<20 vs. 25-34	45 (35) vs. 84 (65)	1.82 0.82-4.02	0.191
<20 vs. >34	45 (43) vs. 59 (57)	1.53 0.65-3.58	0.445
20-24 vs. 25-34	97 (54) vs. 84 (46)	1.40 0.79-2.50	0.318
20-24 vs. >34	97(62) vs. 59 (38)	1.17 0.61-2.27	0.757
25-34 vs. >34	84 (59) vs. 59 (41)	0.84 0.44-1.60	0.707

283

284 **Table 4d.** Factors for which there is a lack of evidence for an association with the acceptability of a

285 missed-period pill

<b>Factor</b>	<b>N (%)</b>	<b>OR and 95% CI</b>	<b>p-value</b>
<b>Previous use of EC vs. no or uncertain previous use of EC</b>	171 (65) vs. 94 (35)	1.159 0.77-1.76	0.553
<b>Previous use of IUD for EC vs. no or uncertain previous use of IUD for EC</b>	7 (3) vs. 259 (97)	0.64 0.21-1.93	0.557
<b>In a sexual relationship vs. not in a sexual relationship or uncertain</b>	208 (80) vs. 51 (20)	1.02 0.61-1.70	1.000
<b>Hold strong religious beliefs vs. do not hold strong religious beliefs or uncertain</b>	19 (7) vs. 239 (93)	0.98 0.45-2.11	1.000
<b>Previous pregnancy vs. no previous pregnancy</b>	136 (53) vs. 123 (47)	1.48 0.98-2.23	0.076
<b>Having children vs. not having children</b>	95 (37) vs. 164 (63)	1.05 0.69-1.60	0.916
<b>DEPCAT</b>			
Affluent vs. moderate	11 (8) vs. 119 (92)	0.77 0.31-1.95	0.755
Moderate vs. deprived	119 (73) vs. 43 (27)	0.78 0.43-1.41	0.490
Affluent vs. deprived	11 (20) vs. 43 (80)	0.60 0.21-1.66	0.468
<b>Age</b>			
<20 vs. 20-24	40 (32) vs. 84 (68)	1.40 0.70-2.80	0.441
<20 vs. 25-34	40 (34) vs. 77 (66)	1.46 0.72-2.94	0.382
<20 vs. >34	40 (47) vs. 45 (53)	2.02 0.96-4.23	0.093
20-24 vs. 25-34	84 (52) vs. 77 (48)	1.04 0.62-1.76	0.986
20-24 vs. >34	84 (65) vs. 45 (35)	1.44 0.81-2.57	0.271
25-34 vs. >34	77 (63) vs. 45 (37)	1.39 0.77-2.48	0.343

286

**Table 5.** Independent predictors of acceptability of EC pills according to mechanism of action

	<b>Factor</b>	<b>Adjusted odds ratio</b>	<b>90% CI</b>	<b>p-value</b>
<b>Inhibits ovulation</b>	Previous use of EC vs. no or uncertain previous use of EC	1.98	(1.16, 3.39)	0.037
	In the past did hold strong views against abortion vs. did not or uncertain	0.27	(0.15, 0.48)	p<0.001
<b>Disrupts implantation</b>	Previous abortion vs. no previous abortion	1.98	(1.14, 3.43)	0.041
	In the past did hold strong views against abortion vs. did not or uncertain	0.24	(0.15, 0.39)	p<0.001

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