Men's experiences of unintended pregnancies: results from a national survey in France

Anna Kågesten MPH[a]; Nathalie Bajos, PhD[b]; Aline Bohet, MHS[b], the FECOND group* and Caroline Moreau, PhD[a,b]*

a. Department of Population, Family and Reproductive Health, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, Baltimore, MD 21205, USA
b. Gender, sexual and reproductive health, CESP Centre for research in Epidemiology and Population Health, U1018, Inserm, F-94807, Kremlin Bicêtre, France.

Corresponding author:

Anna Kågesten, Department of Population, Family and Reproductive Health, Johns Hopkins Bloomberg School of Public Health, 615 North Wolfe Street, Baltimore, MD 21205, USA

alarsson@jhsph.edu. Phone: 443-838-6044

*The FECOND working group, includes N. Bajos and C. Moreau (PIs), A. Bohet (coordinator), A. Andro, L. Aussel, J. Bouyer, G. Charrance ,C. Debest, D. Dinova, D. Hassoun, M. Le Guen, S. Legleye, E. Marsicano, M. Mazuy, E. Moreau, H. Panjo, N. Razafindratsima, A. Régnier-Loilier, V. Ringa, E. de la Rochebrochard, V. Rozée, M. Teboul, L. Toulemon, C. Ventola.

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ABSTRACT

Context Despite increased focus on men's role in family planning, little is known about the circumstances and characteristics of men who experience unintended pregnancies.

Methods Data are drawn from the nationally representative *FECOND* Study in France (2010). This study included 2,997 men, 664 of whom reported 893 recent pregnancies (5 years preceding the survey). Multivariate Poisson regression with population averaged marginal effects was applied to assess the individual and contextual factors associated with pregnancy intentions for pregnancies in the last 5 years. The contraceptive circumstances leading to unintended pregnancies were also explored.

Results Five percent of all heterosexually active men experienced an unintended pregnancy in the last 5 years. A total of 19.6% of recent pregnancies were unintended, of which 45% ended in induced abortion. Two in three pregnancies following a previous unintended pregnancy were themselves unintended. Pregnancy intentions were related to age, immigration status, mother's education and to the respondent's relationship situation at time of conception. The majority of unintended pregnancies occurred when men or their partners were using contraceptives; 58% of contraceptive users considered that the pregnancy was due to inconsistent use and 39% that it resulted from method failure. Half of non-users who experienced an unintended pregnancy thought that their partner was using a contraceptive method.

Conclusion Men's experiences of unintended pregnancies are strongly related to inconsistent contraceptive use, or false assumptions about their partner's use of contraception. These results call for gender-inclusive family planning programs, which fully engage men as active participants in their own rights.

Key words

Introduction

The importance of understanding the circumstances and determinants of unintended pregnancies is well demonstrated among women. Similar to in the United States and other Western country settings (1-3), in France unintended pregnancies are disproportionally represented among young, single women from disadvantaged socioeconomic backgrounds (4). However, decisions about whether or not to have sex, to use contraception and to end an unwanted pregnancy, are rarely made by a woman in isolation (5-7). Despite efforts to involve men in family planning, few studies examine male contraceptive behaviors and very little is known about the circumstances and characteristics of men who experience unintended pregnancies (8). Data from the National Survey of Family Growth (NSFG) indicated that one in three US males experienced a recent mistimed or unwanted birth (8, 9). The NSFG is one of a few national studies with published birth intentions, collected retrospectively from both males and females. A more common method is instead to estimate partner intentions using women's reports. Such proxy measures that are based on perceived partner intentions fail to take into account those who are not in relationships or for other reasons are unaware of their partner's perspective (1, 10). In addition, as explicated in the framework of couple's fertility intentions developed by Miller et al. (2004), men's inner state desires and female partner's perceptions of men's desires are interrelated, yet distinct constructs (11). Studies focused on teenage maternal and paternal views indicate that discrepancies in wantedness may influence prenatal care and maternal and child health outcomes (12). However, understanding men's experiences of unintended pregnancies and the factors associated with these events is not only essential for gender-inclusive family planning; but also an important dimension of men's sexual and reproductive health trajectories. As highlighted in a recent study by Lindberg et al. (2013), there is need to focus research on men's pregnancy perspectives in their own rights (8). In this study, we used nationally representative data to explore characteristics and circumstances of men who experienced recent unintended pregnancies in France. To our

knowledge, no national study in Europe has focused specifically on male's pregnancy intentions and practices.

Material and methods

Data are drawn from the FECOND Study, a population-based survey on sexual and reproductive health, including questions on contraceptive practices and pregnancy intentions conducted in France in 2010. Individuals were included following a two-stage random probability sampling method. The initial sample of households was drawn from random digit dialing (including landline and cell phones) and one individual per phone number was randomly selected. The sample comprised 8675 individuals aged 15-49 years, including 3,373 men. The refusal rate was 20% among all respondents. The FECOND survey received the approval of the relevant French government oversight agency (CNIL). This study was also approved by the Johns Hopkins Institutional Review board.

After giving oral consent, men responded to a telephone interview which collected information on a wide range of domains including socio-demographic characteristics and various topics related to sexual and reproductive health. In particular, they described all of their pregnancies regardless of outcome. Our study population included 2,997 men who reported ever having heterosexual intercourse. Of these men, 1,535 reported 3,482 pregnancies, of which 893 (reported by 664 men) occurred in the last 5 years.

Measure of unintended pregnancy

Our outcome variable was a retrospective account of pregnancy intentions summarized as a dichotomous indicator (unintended, intended). Respondents were randomly assigned 1 of 2 questions per pregnancy. Half answered the question "Had you planned this pregnancy" while the other half answered the question "Had you wanted this pregnancy". Our indicator combined responses to these 2 questions. The 5 response options were similar for both questions. We combined the items "sooner" or "at that time" as the intended category; and response items "not at all", "later" or "I hadn't thought about it" as the unintended category. Additional information on the reasons for contraception non-use in the month of conception served to reclassify any pregnancy as "intended" if the respondent was not using

contraception at the time of conception because he "wanted a child". This added information lead to a decrease in the proportion of unintended pregnancies from 29% to 21%.

Prior analysis indicated greater odds of unplanned as compared to unwanted pregnancies (OR=1.4, p<.001). However the factors associated with unplanned and unwanted pregnancies were similar and the effect of wording was not statistically significant in our final models.

Predictor variables

In order to explore characteristics of men with unintended pregnancies, we used a set of socio-demographic and sexual health factors assessed at time of survey. Demographic variables included age, parity and immigration status (native defined as born in France to French parents, second generation born in France to at least one immigrant parent, first generation born in foreign country). We also considered education level for self and mother; professional situation; and importance of religion. Sexual and reproductive health characteristics were assessed through age at first heterosexual intercourse, and total number of pregnancies. In addition, we explored the circumstances for each pregnancy through a set of time varying variables. These included age at pregnancy; pregnancy order; pregnancy outcome; partner's pregnancy intentions; the financial and relationship situation at time of conception; and whether pregnancy interfered with work or education, as these variables have been shown to be related to the reporting of unintended pregnancies among women (13).

Contraceptive circumstances associated with pregnancy intentions

For each pregnancy, men were asked if they (or their partner) were "doing something to avoid a pregnancy" in the month of conception. In case any method was used, respondents described the specific method used and the reasons why they thought the pregnancy occurred. In addition, they were asked if they thought the pregnancy occurred "because the method didn't work" or because "they didn't use their method consistently". If they were not using a method and reported the pregnancy was unintended, men were asked about the reasons why they were not using contraception at the time of conception. Response items included: "you did not expect to have sexual intercourse", "you thought you were not at risk of pregnancy", "you had no method off hand", "you had never used contraception", "you thought your

partner was using contraception".

Statistical Analysis

We first summarized descriptive data and used Pearson's corrected Chi-Square statistic to explore demographic, social and sexual and reproductive health characteristics associated with having experienced a recent unintended pregnancy (in the last 5 years). Associations were assessed both among all respondents, and among those who experienced a recent pregnancy. We also examined the relationship between reporting a recent unintended pregnancy and current use of contraceptive methods among men who were in need of contraception at the time of the survey (defined as having a non pregnant female partner, being sexually active in the last 3 months, non sterile, and not trying to conceive).

In the second part of the analysis, we investigated the contribution of time varying characteristics related to pregnancy intentions beyond the relatively constant individual attributes of respondents (migration status, mother's education, educational attainment, religiosity, age at first sex). Specifically, because of the relative frequency of the outcome (19.6% of all recent pregnancies were reported as unintended) we used Poisson regression models to estimate the relative risk of unintended pregnancy by individual attributes and by time varying contextual factors present at the time of conception .After specifying the best fitted model for the mean (using goodness of fit and AIC criteria), we fitted a generalized estimated equation regression model (xtgee command in stata) to account for the correlation structure between pregnancies reported by the same individual. This generalized model characterizes the population average response (pregnancy intentions) for correlated data (in our sample, the mean number of pregnancies per respondent reported in the last 5 years was 2.3). We selected an exchangeable correlation structure, which was found to best fit the data based on exploratory analyses of the working correlation and by using the qic criteria (similar to the AIC criteria in the context of correlated data with binary outcomes (14, 15). Pregnancy outcome was not considered in the model since the resolution of a pregnancy is a consequence rather than a predictor of pregnancy intentions.

Finally, we examined the contraceptive circumstances surrounding each pregnancy and

pursued the analysis using a generalized estimated equation Poisson regression model with unstructured correlation to explore the social and demographic characteristics associated the use of contraception at the time of conception of an unintended pregnancy (n=176).

All analyses were weighted to account for the complex survey design and for sampling distortion due to non-response. Specifically, weights were created to account for the probability of being selected in the sample and post-stratification techniques were applied to align the sample characteristics with the distribution of socio-demographic characteristics of the male population in France based on Census data.

Results

The description of the study population (n=2997) according to whether or not they reported an unintended pregnancy in the last 5 years is provided in Table 1. We also present the same results among respondents who reported a pregnancy in the last 5 years (n=664). Five percent of men who ever had heterosexual intercourse experienced an unintended pregnancy in the last 5 years. This proportion rose to 22% among those who reported a pregnancy in the same time period. Men who experienced a recent unintended pregnancy tended to be younger, more likely to be in a non-cohabitating relationship at the time of the survey and reported more lifetime sexual partners, than those who had not. Men's level of education seemed to have little effect while their mother's higher educational attainment was significantly associated with the probability of a recent unintended pregnancy. Men in very difficult financial situations were more likely than those of better economic conditions to report a recent unintended pregnancy. This association was no longer significant when restricting the analysis to those who reported a pregnancy in the last 5 years. Conversely, while a man's professional situation was not related to reporting an unintended pregnancy overall, unemployment was significantly related to having experienced a recent unintended pregnancy among those who reported a pregnancy in the last 5 years. All associations remained significant in the multivariate analysis (data not shown).

[Insert Table 1 about here]

Beyond the respondent's socio-demographic characteristics, contextual factors at the time of conception were also related to men's pregnancy intentions as shown in Table 2. Based on the analysis of repeated pregnancies in the last 5 years (n=229), unintended pregnancies seemed to cluster; 68% of pregnancies that followed a previous unintended pregnancy were themselves unintended (data not shown). Overall, one in five pregnancies (19.6%) were identified as unintended in the last 5 years. Results from the multivariate analysis among all pregnancies in the last 5 years showed that the relative risk of a pregnancy to be unintended was higher if reported by younger men rather than peers aged 25 and above (IRR=2.3, 95% CI 1.5, 3.5); among those to whom religion was not important rather than important (IRR 2.1, 95% CI 1.3, 3.5); and among men who were more educated compared to peers with no diploma (IRR for college or more=2.8, 95% CI 1.7, 4.6).

In terms of contextual factors at time of conception, the relative risk of pregnancies being unintended was twofold among men who, at the time, were in very difficult financial circumstances compared to peers who were not (IRR=2.1, 95% CI 1.5, 3.0). So too, the risk of pregnancies being unintended was higher if the male reported that the pregnancy interfered with education (IRR=1.6, 95% CI 1.1, 2.2). Pregnancies occurring in non-stable relations were substantially more likely to be unintended (IRR=2.6, 95% CI 1.5, 3.0).

Partner's perceived intentions were highly correlated to the respondent's intentions (only 8% of unintended pregnancies were perceived as intended by the partner). The same factors related to pregnancy intention status were found when restricting the analysis to pregnancies ending in births (data not shown).

[Insert Table 2 about here]

Almost three quarters of recent unintended pregnancies (72%) started in a month the respondent or his partner was using contraception (n=128), versus 4% in case the pregnancy was intended. As can be seen in Figure 1, half of men who experienced an unintended pregnancy were using condoms or had partners who were using user-dependent hormonal methods in the month of conception (mostly the pill); almost one third were not using any contraception in the month of conception (Figure 1). More than half (58%) of contraceptive

users who experienced an unintended pregnancy considered that the pregnancy was due to inconsistent or incorrect use of the method while 39% reported that the pregnancy resulted from a method failure (data not shown). Altogether, user-dependent hormonal methods accounted for half of unintended pregnancies due to inconsistent use, followed by condoms. Pregnancies resulting from method failure were also mostly due to user dependent hormonal method use (Figure 2). Most men who reported that their partner was on the pill in the month of conception considered that the pregnancy was due to missed pills (58%). A third of men using condoms at the time of conception confessed to having not used a condom that particular time, and 44% described a problem (slippage or breakage) with the condom (data not shown).

[Insert Figure 1-2 about here]

Turning to unintended pregnancies resulting from non-use of contraception (n=48), results showed that half of men in that situation thought that their partner was using a family planning method at the time of conception when they were not. This proportion varied substantially by relationship status in that it was higher when the relationship was instable or breaking at the time of conception ($p<.05$) (Figure 3). Almost half of all men reporting unintended pregnancies resulting from non-use of contraception indicated they had not used contraception because no method was suitable for them, while about one third had never used a method before, and one in four had not perceived any pregnancy risk (respondents could give more than one reason for not using contraception) (data not shown).

[Insert Figure 3 about here]

Further analysis showed that the time varying social and relationship circumstances were strongly associated with non-use of contraception at the time of conception of an unintended pregnancy (Table 3). The relative risk of not using contraceptives was higher among men for whom the pregnancy interfered with education (IRR=1.8, 95% CI 1.0, 3.1) or work (IRR=1.9, 95% CI 1.1, 3.6) compared to men for whom this was not the case. Conversely, the risk of non-use was lower if reported by men in very difficult rather than better financial situations at time of conception (IRR=0.5, 95% CI 0.3, 1.0). Although marginally significant, men in

breaking relationships had higher risk of not using contraceptives (p=0.065), while those in unstable relations had *lower* risk (p=0.082) compared to peers in stable relations. Non-use was almost three times higher if reported by men without a high school compared to higher educated peers (IRR=2.9, 95% CI 1.6, 5.2) (Table 3).

[Insert Table 3 about here]

Discussion

This study highlights men's common experiences of unintended pregnancies, 45% of which resulted in an abortion according to their reports over the 5 years preceding the survey. Adding to the current literature, which has mostly focused on unintended births (see for example Lindberg et al., 2013) (8), our study provides new information on male pregnancy intentions as we consider all pregnancy outcomes, an important addition since births only contributed to 38% of all recent unintended pregnancies in our study. The use of self-reported data on abortion is always a limitation due to under-reporting (16-18) and may be further impaired in the case of men who are not always informed about these pregnancies. This later phenomenon may be limited as the percentage of unintended pregnancies ending in abortion (45%) in our survey was higher than the 32% reported by women in the 2000 national survey in France (19). Post-rationalization of birth intentions, although not studied in men, is also a well-documented phenomenon in retrospective studies of pregnancy intentions (20, 21), which may have resulted in the misclassification of unintended births. However, the similarities in factors associated with unintended births and other unintended pregnancy outcomes, partially elevates these concerns. Nonetheless, we acknowledge the possibility of an underestimation of male unintended pregnancy rates due to the combination of abortion underreporting and post-rationalization of birth intentions. Beyond the issue of under-reporting, the use of a dichotomous measure of pregnancy intentions has been called into question in recent research supporting the use of more nuanced measures that capture the multidimensional construct of pregnancy intentions (22-24). This body of work, focused on women, draws attention to the complexity of intentions, sometimes ambivalent, or undetermined, or fluid depending on relationship context (23, 25). Similar observations are

reported by Edin and Nelson's in their qualitative study among low income fathers in the US, revealing the complexities of men's pregnancy intentions and the hidden relational meanings of contraceptive behaviors for men (26).

While such fluidity is not addressed in the current analysis, our results support the importance of contextual factors in determining fertility intentions. Thus, this study provides new information to comprehend the social and contextual factors that are associated with men's pregnancy intentions and their use of contraception at the time of conception. Respondent's socio- demographic background had some connection to their experience of a recent unintended pregnancy; however, the contextual circumstances such as financial constraints and relationship characteristics at the time of conception were strongly associated with pregnancy intentions and contraceptive behaviors. Previous research has shown that contraceptive failures are more likely to occur when starting a method (27, 28), which is likely the case when one engages in a new relationship. Likewise, abortions commonly occur as a result of short gaps in contraceptive use (29) a situation that is common in case of infrequent sexual activity and partnership instability. As previously reported in a qualitative study of unwanted pregnancies in France (30) our analysis provides further evidence for the importance of relationship status, associated with both pregnancy intentions and patterns of contraceptive use at the time of conception of an unintended pregnancy. While the use of contraception by relationship status needs further exploration in light of the diverging results according to relationship stability (greater non-use at time of conception for breaking relationships but lower non-use for unstable relationships, although these associations were marginally significant), a more consistent pattern emerged when considering the reasons for non-use of contraception. In contrast to those in stable relationships, a vast majority of men in non-stable relations who experienced an unintended pregnancy had assumed their partner was using contraception when they were not. These differences mirror previous findings from Catallozzi et al. (2013) who indicated that men aged 16 to 36 years in casual relationships were less likely to know about their partner's use of birth control than others (31). Based on the national Longitudinal Study of Adolescent health in the US, Manlove et al. (2011) also

reported greater odds of contraceptive use among adolescent males in relationships they considered as "intimate" (32). These results call for gender-inclusive family planning programs, which fully engage men as active participants in pregnancy prevention in their own rights. In this respect, particular efforts should address the needs of men who are in dissolving or unstable relationships, who seem less likely to be in control of their reproductive goals.

A vast majority of unintended pregnancies however started in a month respondents were using contraception, a figure that is consistent with the reports of women in France who have experienced an unintended pregnancy (30) or an abortion (33). Men identified inconsistent or incorrect use rather than method failure as the major contributor to these pregnancies, reflecting the significant gap between typical use and perfect use failure rates (28) (34). Efforts to promote non-user dependent methods (LARC or sterilization) are important in reducing unintended pregnancy rates (35). However, additional male oriented strategies are also needed to help men take control over their reproductive goals while lifting some of the burden of contraceptive responsibilities carried by women, who also suffer the greatest health consequences of unintended pregnancies.

In conclusion, our study echoes the growing emphasis on men's individual fertility intentions and sexual reproductive practices. While couple perspectives in family planning studies is essential (7, 11, 36) the challenge in future research lies not only in recognizing men's fertility intentions in their own rights, but in further understanding the factors that shape their individual trajectories as well as the outcomes that follow. In a time where sexual trajectories are more diversified and the timing of parenthood is increasingly delayed (37), more research is needed on factors that shape and promote men's sexual and reproductive health and well-being. Our results indicate that the need for family planning services might thus be greatest among socially and economically disadvantaged young men outside of stable relationships. Part of our agenda for future work will be to further explore the circumstances surrounding men's contraceptive perspectives and experiences as it relates to their pregnancy intentions in the presence or absence of a pregnancy.

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Table 1: Characteristics of respondents according to whether they had at least one recent unintended pregnancy (in prior 5 years)

	All men who are heterosexually active *N=2997*			**Men with pregnancy in last 5 years** *N=664*		
Variable	Recent unintended pregnancy (past 5 years)			Recent unintended pregnancy (past 5 years)		
	No	Yes		No	Yes	
	W %	W %	P>|t|*	W %	W %	P>|t|*
Total	95.0 (2846/2997)	5.0 (151/2997)		77.5 (513/664)	22.5 (151/664)	
Age			0.002			<0.001
15-19	96.1 (268/279)	3.9 (11/279)		8.3 (1/12)	91.7 (11/12)	
20-24	92.5 (412/446)	7.5 (34/446)		26.6 (14/48)	73.4 (34/48)	
25-29	92.7 (402/431)	7.3 (29/431)		69.9 (75/104)	30.1 (29/104)	
30-34	92.8 (390/418)	7.2 (28/418)		82.8 (156/184)	17.2 (28/184)	
35-39	96.3 (466/483)	3.7 (17/483)		90.3 (164/181)	9.7 (17/181)	
40-44	95.4 (462/483)	4.6 (21/483)		78.4 (79/100)	21.6 (21/100)	
45-49	98.3 (446/457)	1.7 (11/457)		74.0 (24/35)	26.0 (11/35)	
Education			0.976			0.264
<High school	94.9 (1128/1187)	5.1 (59/1187)		75.1 (179/238)	24.9 (59/238)	
High school	94.8 (659/695)	5.2 (36/695)		75.9 (105/141)	24.1 (36/141)	
Some college	95.4 (565/596)	4.6 (31/596)		79.2 (108/139)	20.8 (31/139)	
Graduate school	95.1 (484/509)	4.9 (25/509)		83.4 (119/144)	16.6 (25/144)	
Mothers education			0.043			0.001
No diploma	96.8 (721/745)	3.2 (24/745)		87.2 (164/188)	12.8 (24/188)	
<High school	94.6 (1064/1124)	5.4 (60/1124)		76.4 (199/259)	23.6 (60/259)	
High school	93.0 (392/420)	7.0 (28/420)		69.8 (72/100)	30.0 (28/100)	
College	95.1 (550/577)	4.9 (27/577)		69.3 (62/89)	30.7 (27/89)	
Don't know	91.4 (119/131)	8.6 (12/131)		59.7 (16/28)	40.2 (12/28)	
Profession			0.138			<0.001
Works	95.0 (2183/2298)	5.0 (115/2298)		80.0 (474/589)	19.7 (115/589)	
Student	96.2 (360/377)	3.8 (17/377)		31.3 (5/22)	68.7 (17/22)	
Unemployed	92.5 (257/276)	7.5 (19/276)		57.5 (31/50)	42.5 (19/50)	
Other	100.0 (42/42)	0.0 (0/42)		100.0 (3/3)	0.0 (0/3)	

Income			0.044			0.233
No problem	96.3 (1048/1087)	3.7 (39/1087)		79.8 (165/204)	20.2 (39/204)	
Tight	94.9 (1301/1371)	5.1 (70/1371)		78.9 (259/329)	21.1 (70/329)	
Very difficult	93.1 (491/532)	6.9 (41/532)		71.5 (87/128)	28.5 (41/128)	
Medical insurance			0.796			0.600
Social security (SS)	94.2 (226/246)	5.8 (20/246)		71.4 (24/44)	28.6 (20/44)	
SS & private	95.1 (2489/2612)	4.9 (123/2612)		78.3 (469/592)	21.7 (123/592)	
Low income government	94.2 (96/102)	5.8 (6/102)		76.3 (19/25)	23.7 (6/25)	
Migration			0.658			0.590
Born in France	95.3 (2378/2502)	4.7 (124/2502)		77.3 (407/531)	22.7 (124/531)	
Second generation immigrant	94.0 (268/282)	6.0 (14/282)		73.2 (50/64)	26.8 (14/64)	
First generation immigrant	94.1 (198/210)	5.9 (12/210)		81.8 (56/68)	18.2 (12/68)	
Importance of religion			0.252			0.012
Very important	96.0 (517/542)	4.0 (25/542)		85.5 (125/150)	14.5 (25/150)	
Not very important	95.7 (789/822)	4.3 (33/822)		79.9 (138/171)	20.1 (33/171)	
Not at all important	94.3 (1540/1633)	5.7 (93/1633)		72.3 (250/343)	27.7 (93/343)	
Relationship			0.005			<0.001
No partner	96.9 (707/733)	3.1 (26/733)		54.1 (22/48)	45.9 (26/48)	
Non-cohabitating partner	92.2 (503/541)	7.8 (38/541)		26.1 (15/53)	73.9 (38/53)	
Cohabitating partner	95.0 (1634/1721)	5.0 (87/1721)		83.9 (476/563)	16.1 (87/563)	
Age at first sex – mean (SD) §	17.1 (2.6)	16.2 (2.3)	<0.001	17.4 (3.0)	16.2 (2.3)	<0.001
Used contraception at first sex			0.013			0.294
Yes	94.3 (1015/1079)	5.7 (64/1079)		56.2 (80/144)	43.8 (64/144)	
No	83.0 (49/56)	17.0 (7/56)		40.0 (8/15)	60.0 (7/15)	
Nr of different methods ever used			<0.001			<0.001
Never used any method	100.0 (34/34)	0.0 (0/34)		100.0 (7/7)	0.0 (0/7)	
1-4 methods	96.7 (2104/2172)	3.3 (68/2172)		85.0 (393/461)	15.0 (68/461)	
≥ 5 methods	89.5 (708/791)	10.5 (83/791)		56.3 (113/196)	43.7 (83/196)	
Nr of births given by partner(s)			0.005			<0.001
0 births	96.5 (1570/1631)	3.5 (61/1631)		34.2 (24/85)	65.8 (61/85)	
1 birth	93.7 (401/427)	6.3 (26/427)		87.2 (190/216)	12.8 (26/216)	
>1 births	93.3 (875/939)	6.7 (64/939)		81.6 (299/363(	18.4 (64/363)	
Number of lifetime female partners			<0.001			<0.001
1	95.3 (319/332)	4.7 (13/332)		80.5 (66/79)	19.5 (13/79)	

2 to 4	97.9 (832/852)	2.1 (20/852)		89.6 (147/167)	10.5 (20/167)	
5 to 9	95.6 (628/655)	4.4 (27/655)		79.5 (10.6/133)	20.6 (27/133)	
10 or more	91.9 (938/1021)	8.1 83/1021		66.8 (174/257)	33.2 (83/257)	
STI in last 5 years						
Yes	95.1 (2710/2848)	4.9 (138/2848)	0.166	78.0 (489/627)	22.0 (138/627)	0.157
No	92.5 (136/149)	7.5 (13/149)		67.3 (24/37)	32.7 (13/37)	

* Displaying unweighted n and weighted percent (%). Pearson's corrected Chi Square test used to compare the proportion with unintended pregnancy by covariates (row percent).
§ Age at first heterosexual sex

Table 2. Socio-demographic and contextual circumstances associated with an unintended pregnancy: pregnancy based analysis among all pregnancies reported in the last 5 years.

	Total n=893	Intended n=717	Unintended n=176	P>|t|	Adjusted IRR*	95% CI	P>|t|
	%	%	%				
Total		80.4	19.6				
Mother's education							
No diploma	33.9	37.0	20.3	0.003	Ref		
No high school degree	39.3	38.0	44.7		1.8	1.1, 2.8	0.011
High school degree	14.6	13.9	17.7		2.0	1.2, 3.3	0.006
College or more	12.2	11.0	17.3		2.8	1.7, 4.6	<0.0001
Immigration				0.237			
Native	74.7	72.3	75.3		Ref		
Second generation	10.3	14.7	9.3		1.3	0.8, 2.1	0.351
First generation	15.0	13.0	15.4		1.2	0.7, 2.2	0.494
Importance of religion							
Very important	25.9	18.8	27.6	0.0369	Ref		
Not important	74.1	81.2	72.4		2.1	1.3, 3.5	0.002
Age at pregnancy							
≥ 25 years	88.3	94.0	64.8	<0.0001	Ref		
< 25 years	11.7	6.0	35.2		2.3	1.5, 3.5	<0.0001
Pregnancy order							
First	33.8	33.3	36.1	0.095	Ref		
Second	30.8	32.5	24.0		1.8	1.1, 2.7	0.010
Third	20.0	20.3	18.8		3.0	1.9, 4.6	<0.0001
Fourth or more	15.4	13.9	21.1		2.3	1.5, 3.5	<0.0001
Financial situation at time of conception							
Not very difficult	86.3	91.9	63.3	<0.0001	Ref		
Very difficult	13.7	8.1	36.7		2.1	1.5, 3.0	<0.0001
Pregnancy interfered with education							
No	94.4	97.5	81.5	<0.0001	Ref		
Yes	5.6	2.5	18.5		1..6	1.1, 2.2	0.008
Pregnancy interfered with work							
No	93.9	96.9	81.7	<0.0001	Ref		
Yes	6.1	3.1	18.3		1.4	0.9, 2.3	0.102
Relationship situation at time of conception							
Stable	89.6	65.4	95.5	<0.0001	Ref		
Other (instable/starting/breaking)	10.4	34.6	4.5		2.6	1.9, 3.6	<0.0001
Partner pregnancy intentions							
Intended	73.5	88.8	9.4	<0.0001			
Unintended	26.5	11.2	90.6				
Pregnancy outcome							
Birth	745	83.5	38.1	<0.0001			
Elective abortion	10.4	1.8	45.8				
Miscarriage	12.4	13.0	9.9				
Ectopic	0.9	0.4	3.2				
Therapeutic abortion	1.1	0.7	2.7				
Stillbirth	0.7	0.8	0.2				

* Incidence Rate Ratio calculated using Poisson marginal population-averaged effects accounting for correlations between multiple pregnancies. The model adjusted for mother's education, immigration, religiosity, age at pregnancy, financial and relationship situation at time of pregnancy, pregnancy interfered with work or education. Partner pregnancy intentions were

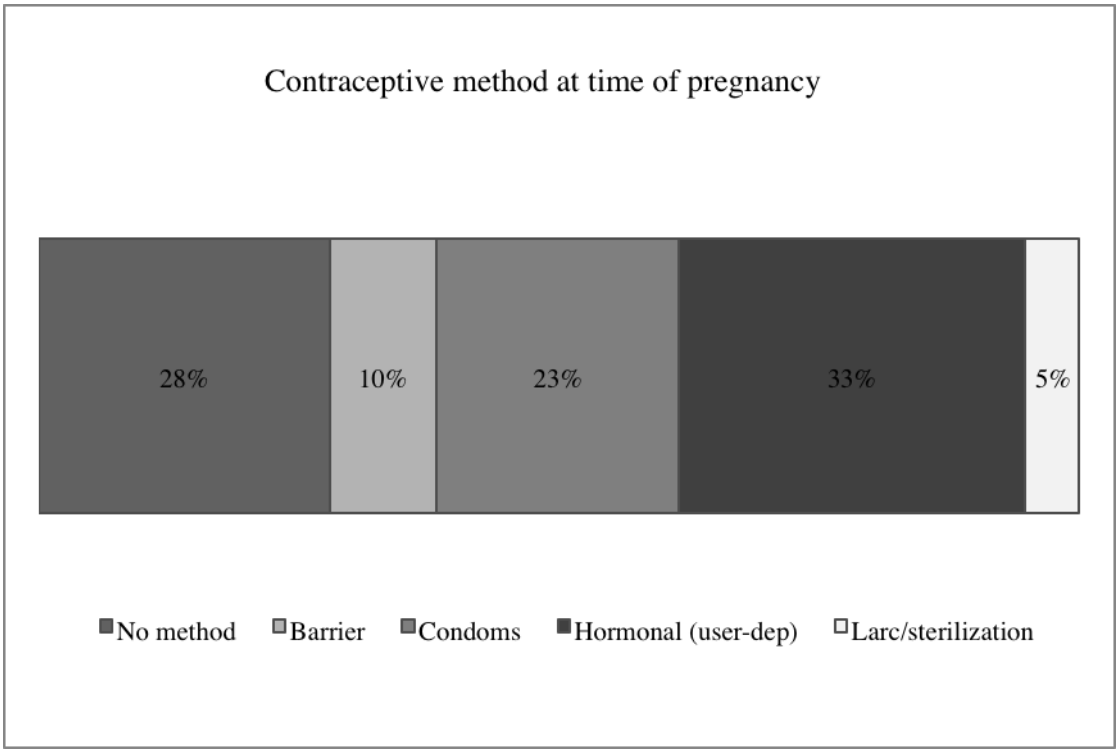
not included in the multivariate model because they are too closely related to the respondents' intentions. Pregnancy outcomes are a consequence of pregnancy intentions and were therefore not included as predictors either.

Table 3: Factors associated with non-use of a contraceptive method at the time of conception of an unintended pregnancy in the last 5 years (n=176)

	Adjusted IRR*	95% CI	P>|t|
Financial situation			
No problem or tight	Ref		
Very difficult	0.5	0.3, 1.0	0.042
Pregnancy interfered with education			
No	Ref		
Yes	1.8	1.0, 3.1	0.038
Pregnancy interfered with work			
No	Ref		
Yes	1.9	1.1, 3.6	0.030
Relationship situation at time of conception			
Stable	Ref		
Instable	0.3	0.1, 1.1	0.082
Starting	1.2	0.5, 3.0	0.669
Breaking	1.8	1.0, 3.4	0.065
Education (highest diploma)			
High school degree or more	Ref		
No high school degree	2.9	1.6, 5.2	<0.001

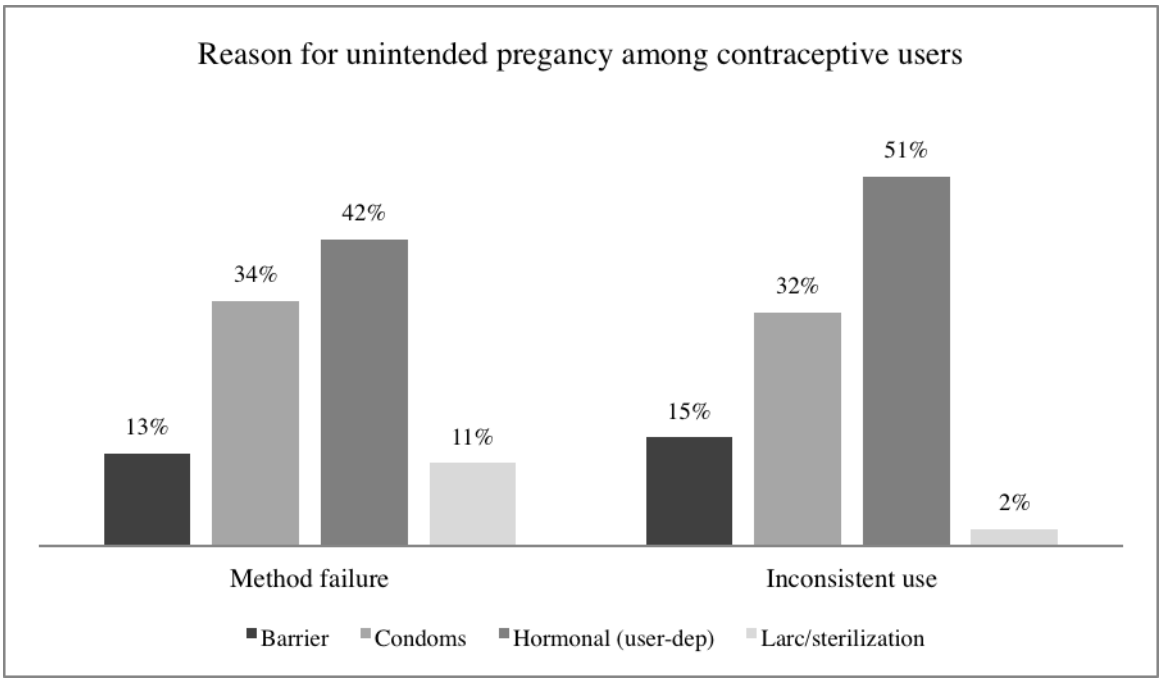
* Adjusting for age and educational attainment, and the financial, educational, work and relationship situation at time of conception.

Figure 1. Contraceptive use reported at time of conception, by method



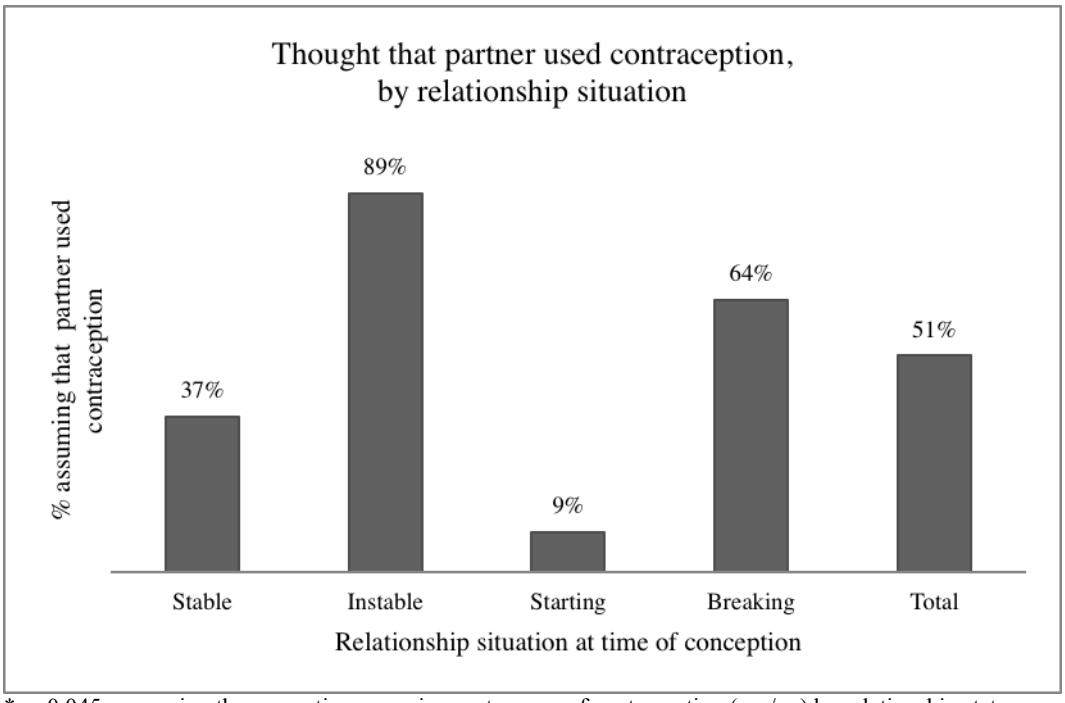
No method	28% (48)
Barrier	10% (21)
Condoms	23% (44)
Hormonal (user-dep)	33% (54)
Larc/sterilization	5% (9)
Total	100% (176)

Figure 2. Reasons for unintended pregnancy among men reporting using contraception in the month of conception



	Method failure n (%)	Inconsistent use	Total
Barrier	13% (8)	15% (12)	14% (21)
Condoms	334% (19)	32% (24)	32% (44)
Hormonal (user-dep)	42% (18)	51% (35)	46% (54)
Larc/sterilization	11% (5)	2% (3)	7% (9)
Total	100% (50)	100% (74)	100% (128)

Figure 3. Proportion of men with unintended pregnancies who did not use contraception at time of conception under the assumption that their partner was



* p=0.045 comparing the proportion assuming partner use of contraception (yes/no) by relationship status

	Stable	Instable	Starting	Breaking	Total
Yes	37% (10)	89,% (3)	9% (4)	64% (4)	51% (21)
No	63% (19)	11% (1)	6% (1)	36% (1)	49% (22)
Total	100% (29)	100% (4)	100% (5)	100% (5)	100% (43)