Fertility Regulation Among Women in Abidjan, Côte d'Ivoire: Contraception, Abortion or Both?

CONTEXT: *In Cote d'Ivoire, where contraceptive prevalence is low, abortion is thought to play an important role in the current fertility decline. However, data on abortion, which is illegal, are scarce.*

METHODS*: A retrospective survey on abortion and contraceptive practices was conducted in 1998 among 2,400 women who attended four general health centers in Abidjan. Multinomial logistic regression was performed to analyze the independent effects of social and demographic variables on the odds that women would adopt one of three fertility regulation behaviors instead of doing nothing at all.*

RESULTS: *Forty percent of women reported controlling their fertility through contraceptive use alone, 30% through reliance on both contraception and abortion and 3% through abortion alone; some 27% did nothing to control fertility. Muslims had consistently lower odds than Christians of adopting any of the three behaviors instead of doing nothing (odds ratios, 0.2–0.5). Being unmarried and better educated were associated with significantly elevated odds of adopting each of the three behaviors (odds ratios, 1.4–33.8). Finally, the odds of using abortion alone were significantly higher among women younger than 25 than among those aged 25–34 (2.0).*

CONCLUSIONS: *The relationship between abortion and contraception is highly complex. Whereas women who do not have access to contraceptives or who experience method failure often resort to abortion, abortion can also trigger subsequent reliance on contraception.*

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The subject of unsafe abortion figured prominently in the international conferences on reproductive health and rights that took place in Cairo in 1994 and in Beijing in 1995. Throughout Africa, where most countries have highly restrictive abortion laws and pregnancies are often terminated under unsafe conditions, clandestine abortion is a growing public health issue[1] and a major cause of maternal mortality and morbidity.[2] Unsafe abortion can result in serious and potentially life-threatening consequences, including hemorrhage, genital lesions and infection from a perforated uterus.[3]

Reliable data on the incidence of induced, clandestine abortion are rare. Researchers studying abortion in North Africa and Sub-Saharan Africa have had to rely on limited, nonrepresentative surveys of women who are willing to talk about their experience and on data from hospitals on patients admitted for treatment of abortion complications.[4] Data for Sub-Saharan Africa are particularly scarce,[5] although several recent small-scale studies suggest that reliance on clandestine abortion in that region is increasing.[6]

In the West African nation of Côte d'Ivoire, fertility has started to fall, particularly in the cities. The country's total fertility rate (TFR) has fallen by two births per woman over the past two decades (i.e., from a TFR of 7.2 in 1980–1981[7] to 5.2 in 1998–1999[8]). Nonetheless, access to family planning services remains limited and even though contraceptive use is rising, overall prevalence remains low. For example, only 6% of women aged 15–49 were using a modern method in 1994, and that proportion still did not exceed 10% in 1998–1999.[9] With so few women practicing contraception overall, the decline in fertility cannot be explained by the increase in contraceptive use alone.

Ivorian women are clearly relying on abortion as well as contraception to limit their family size, despite the fact that the procedure is illegal except when the life of the pregnant women is seriously threatened. Even in that case, the Ivorian Penal Code requires the consent of two doctors in addition to that of the attending physician.[10] Given the country's highly restrictive laws, the limited available abortion data are primarily derived from hospital records of women admitted for treatment of abortion complications[11] and from maternal mortality estimates.[12] Recent studies have found that urban women are more likely than rural women to resort to abortion,[13] and that reliance on abortion explains at least part of the recent rapid fertility decline in the major city of Abidjan.[14]

If the use of abortion is contributing to fertility decline in Côte d'Ivoire, are women resorting to it instead of practicing contraception, or are they practicing abortion and contraception in tandem? How are these two practices related? To better answer these questions, we surveyed 2,400 women in Abidjan retrospectively about their contraceptive and abortion histories. We designed the survey to assess the respective roles of abortion and contraception by asking about four

TABLE 1. Selected measures of contraceptive knowledge, current method use and abortion among 2,400 female health clinic clients, by selected characteristics, Abidjan, 1998

Characteristic	Knowledge		Current use		Ever had an abortion
	Any method	Modern method	Any method	Modern method	
All women	96.4	94.6	28.1	11.6	33.5
Age					
<25	94.8***	93.3***	28.6	11.9	27.8***
25–34	98.6	96.8	27.2	11.4	41.0
≥35	96.5	93.1	29.0	10.8	35.5
Education					
None	92.4***	88.9***	15.4***	5.5***	18.0***
Primary	97.9	96.4	29.5	10.9	36.3
≥secondary	100.0	100.0	43.4	20.3	51.0
Religion					
Christian	98.9***	97.8***	38.0***	15.7***	46.5***
Muslim	93.6	91.4	18.5	8.0	13.6
Other	96.2	93.9	25.4	9.7	41.3
Marital status					
Unmarried†	98.0***	96.8***	43.2***	17.9***	41.9***
Married	95.6	93.6	21.3	8.8	29.8
Occupation					
Trader	95.9***	94.0***	24.4***	9.3***	30.1***
Student	99.4	99.4	50.0	27.1	34.7
Office worker	98.3	97.2	40.6	16.7	58.3
Housewife	94.6	91.8	22.7	8.3	26.5
Artisan	94.6	98.3	34.0	15.3	46.3

***Differences were statistically significant at p<.001 (chi-square tests). †Includes women who never married and those who were separated, widowed or divorced.

fertility regulation behaviors: whether women practiced no fertility control whatsoever (neither abortion nor contraception); used contraceptives only; relied on abortion only; or relied on both contraception and abortion.

DATA AND METHODS

Designing research to elicit data on the sensitive subject of abortion is very difficult and requires a specialized approach. Because women might be especially reluctant to answer questions on such intimate topics in their homes, we chose to interview women in a medical services environment where confidentiality would be assured and where women would feel more comfortable recalling their contraceptive and abortion choices.

We conducted the survey with women who visited any one of four health centers in the two largest and most densely populated districts of Abidjan. These visits could have been motivated by any reason and were not necessarily related to reproductive health care. Just 1% of the women were seeking family planning, whereas 28% went for care for their child; 17%, for medical care for themselves; 26%, for prenatal care; 15%, for another family member's general health care; 1%, for postnatal care (i.e., to weigh or immunize a newborn), and the remaining 13% attended the center for other health needs, such as to deliver a baby or to receive health counseling and nutrition advice.

Women were invited to be interviewed, but were not pressured to participate. We interviewed women sequentially until we reached a cutoff of 600 women aged 15–49 at each center, to yield a total sample for analysis of 2,400. The women were interviewed in July and August of 1998. They responded to a closed-item questionnaire that asked for the following information: basic demographic data; a complete pregnancy and maternity history (live births, miscarriages, abortions and stillbirths); knowledge about and experience with contraception; and an in-depth history of abortion (knowledge about the procedure, past experience of abortion, reasons for having had an abortion, contraceptive use before and after an abortion and perceptions of the procedure). We also held in-depth discussions with 15 individuals (seven female clients and eight health workers) to provide a qualitative context for the survey data.

The majority of women in the sample were younger than 25 (52%) and poorly educated (39% had never gone to school and 32% had completed no more than primary school). The sample was made up primarily of Christians (41%) and Muslims (36%), and 69% were married at the time of the interview. The respondents were predominantly traders (46%), housewives (27%) and artisans (12%).

We performed bivariate and multivariate (multinomial logistic regression) analyses to determine the relationships between women's social and demographic characteristics (age, education, religion, marital status and occupation) and their contraceptive and abortion practices.

RESULTS

Contraceptive Knowledge and Use

Levels of knowledge about contraception were very high in this sample of Abidjan women—96% knew of any method of contraception* and 95% were familiar with at least one modern method (Table 1). Contraceptive knowledge was generally higher among women in the middle age-group (25–34), Christians and married women. Knowledge about contraception also increased with parity (not shown).

Despite the generalized awareness of contraception, however, just 28% of the women were using any method of contraception at the time of the survey and only 12% were using a modern method. These prevalence levels were about the same as those among married Abidjan women interviewed in the 1998–1999 Demographic and Health Survey (27% for any method and 12% for a modern method).[15]

Levels of contraceptive prevalence were closely associated with women's social and demographic characteristics. Use of a method rose linearly with education, with even a small amount of schooling contributing to a considerable increase in contraceptive use. For example, method use was almost twice as high among women who had completed primary school as it was among those with no schooling

*Any method includes both modern methods (pills, injectables, IUDs, male and female condoms, the implant and spermicides); natural nonsupply methods (rhythm, withdrawal and abstinence); and popular traditional methods (herbal remedies and *juju*—a type of magic).

(30% vs. 15% for use of any method and 11% vs. 6% for use of a modern method). This finding is consistent with those from other studies conducted in Ghana, Kenya, Senegal and the Sudan.[16]

Contraceptive use was also associated with religion, marital status and occupation. For example, Christian women were twice as likely as Muslim women to currently use a modern method (16% vs. 8%), and unmarried women were twice as likely as married women to do so (18% vs. 9%). Finally, students were more likely than housewives or working women to be using a modern method (27% vs. 8–17%). There was no difference, however, in the proportions practicing contraception by age.

Abortion Prevalence

Despite abortion's illegality in Côte d'Ivoire, women nonetheless resort to it frequently to resolve unwanted pregnancies. Thirty-four percent of all women surveyed had ever had an induced abortion.

Reliance on abortion varied significantly by women's social and demographic characteristics. For example, the proportion who had had an abortion rose with education (from 18% of uneducated women to 36% of women who had gone to primary school and 51% of those who had attended secondary school). Nineteen percent of women who had had an abortion cited their desire to pursue their education as the reason for doing so (not shown); other studies conducted in Sub-Saharan Africa have similarly found that young women consider pregnancy and childrearing expenses to be incompatible with schooling.[17] Some of the other reasons Ivorian women gave for why they resorted to abortion (they could cite more than one) were that they feared their parents' reaction (19%), that they had economic problems (15%), that their partner demanded they do so (12%), that they wanted to space births or limit them altogether (12%), that they were unmarried (11%) and that their partner said he would not recognize a child (10%).

The abortion rate was higher among unmarried than married women (42% vs. 30%), an unsurprising finding given that pregnancy and childbearing outside of marriage is socially unacceptable in Ivorian society.[18] Finally, Christian women were more likely than Muslim women to have ever had an abortion (47% vs. 14%).

Overall, 39% of the sampled women who had ever been pregnant had had an abortion; 21% had had one, and 18% had had more than one (not shown). Eight percent of the whole sample had terminated all of their pregnancies through induced abortion; the proportions who had resorted to abortion for every pregnancy were 10% for women who had been pregnant twice, 4% for those who had been pregnant three times and 3% for those who had been pregnant four times.

Younger women were more likely than older women to have ever terminated a pregnancy and to have done so at a young age. For example, among women who had ever been pregnant, 32% of those younger than 25 had had an abortion at age 20 or younger, whereas the corresponding proportions among 25–34-year-olds and women aged 35 or older were 21% and 14%, respectively.*

TABLE 2. Percentage distribution of women in each fertility regulation subgroup, by selected characteristics

Characteristic	No fertility regulation (N=646)	Contraception alone (N=949)	Contraception and abortion (N=729)	Abortion alone (N=76)
No. of pregnancies				
0	22.9	19.7	na	na
1	24.1	26.3	11.9	13.2
2–3	27.7	28.8	40.6	40.8
4–5	14.1	14.8	27.8	22.4
6–7	6.3	6.2	11.8	10.5
≥8	4.8	4.2	7.8	13.2
Age				
<25	60.7	53.3	42.0	51.3
25–34	28.8	36.2	46.6	36.8
≥35	10.5	10.4	11.4	11.8
Education				
None	70.3	32.6	17.1	55.3
Primary	22.8	35.5	35.0	27.6
≥secondary	7.0	31.9	47.9	17.1
Religion				
Christian	20.7	41.5	58.6	42.1
Muslim	61.5	36.2	14.0	19.7
Other	17.8	22.2	27.4	38.2
Marital status				
Unmarried†	20.1	31.9	39.1	35.5
Married	79.9	68.1	60.9	64.5
Occupation				
Trader	51.7	46.5	39.2	61.8
Student	3.7	9.2	7.7	3.9
Office worker	2.9	5.9	14.0	3.9
Housewife	36.1	25.6	21.3	22.4
Artisan	5.6	12.9	17.8	7.9
Total	100.0	100.0	100.0	100.0

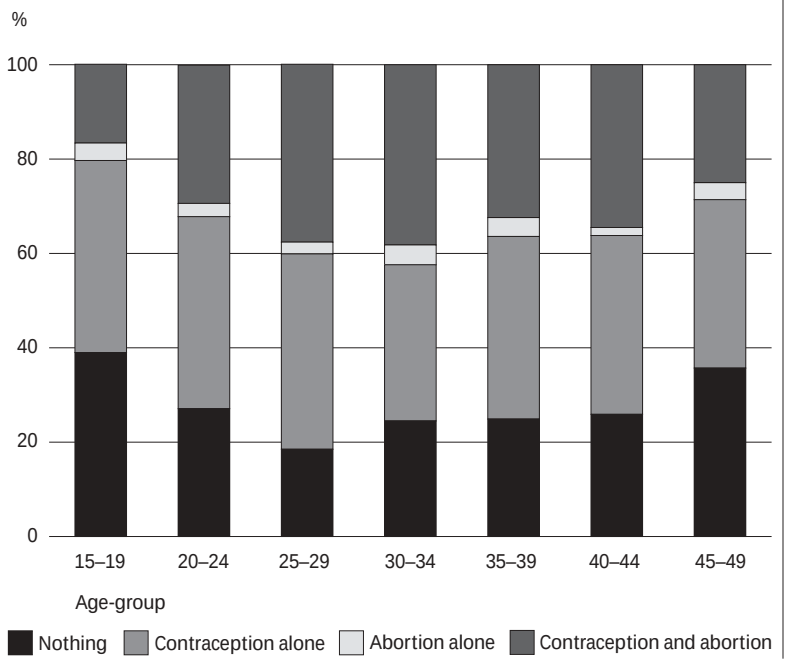
†Includes women who never married and those who were separated, widowed or divorced. *Note:* na=not applicable.

Methods of Abortion

• *Knowledge*. When all 2,400 women were asked which methods of abortion they knew about, 53% were familiar with surgical abortion (usually dilatation and curettage), 40% cited douches, 16% mentioned using plant stems and 15%, herbal teas. Another 15% cited modern, self-administered medications, whose deliberate overdose to achieve abortion can endanger women's health; these medicines included the malaria tablet nivaquine, aspirin and hormonal formulations (such as crinex and synergon). Five percent of women also asserted that drinking an excessive amount of cola with sugar could bring on an abortion. Last, 28% of women specified knowing of still other methods of abortion; these included vaginally inserting laundry detergent, bicarbonate, bleach or ground glass (which women also mentioned could be gulped down in a powder), and drinking an excessive amount of alcohol (i.e., wine or the locally made liquor known as *koutoukou*) with added sugar, or

*For more detailed information on the changes in abortion practice over time, see: Guillaume A and Desgrées du Loû A, 2002, reference 25.

FIGURE 1. Percentage distribution of women in seven age-groups by fertility regulation subgroup



highly acidic mixtures of lemon with honey or sugar.

• *Use.* Although African women have used a wide range of abortion methods to control their fertility for generations,[19] the 805 Ivorian women in our study who had had an abortion resorted primarily to nontraditional methods (and some had used more than one method to induce their most recent abortion). Sixty-two percent of these women had last had a surgical abortion. In Côte d'Ivoire, surgical abortion is generally provided by medically trained personnel (i.e., gynecologists, general practitioners and nurses) under varying sanitary conditions, depending on the facility (i.e., a public hospital or a private clinic or surgical facility). Although women most often resorted to this technique first, 3% of abortion patients whose original method had failed or caused complications relied on surgical abortion to complete the procedure (not shown). (Overall, 27% of respondents who had had an abortion suffered complications—mainly infection and hemorrhage—following their procedure.)

Ten percent of women who had terminated a pregnancy had used modern pharmaceutical products to induce their most recent abortion. Women who had relied on traditional, nonmedical abortifacients reported primarily using douches made with plant-based substances (cited by 18% of women who had had an abortion), followed by traditional vaginal inserts of plant material mixed with kaolin (9%), herbal teas (5%) and blunt plant stems inserted into the uterus (4%). Two percent of women claimed they induced their most recent abortion by drinking an excessive amount of cola with sugar.

The use of such traditional methods entails a high risk of severe complications, which can sometimes lead to death. For example, the introduction of sharp objects into the uterus frequently causes ruptures or perforations, which can lead to potentially fatal infections. According to a recent study conducted in an Abidjan obstetrics department, complications from abortions induced using traditional plants accounted for 47% of maternal deaths in that hospital.[20]

Forms of Fertility Regulation

What is behind the high incidence of abortion among these women? Do women use abortion to replace contraception or to complement it? We sought to answer these questions by establishing four overall fertility regulation behaviors that describe the relationship between abortion and contraception over women's reproductive lifetimes:

• *Use of neither contraception or abortion.* Women who fell into this category, who accounted for 27% of the sample, either did not regulate their fertility at all or relied only on traditional spacing methods, such as breastfeeding and postpartum abstinence.

• *Use of both contraception and abortion.* These women, who accounted for 30% of the sample, considered abortion and contraception as alternative or complementary practices. Although 52% of women in this category had had only one abortion, roughly 20% had terminated all of their pregnancies by abortion; the latter women appear to have used abortion to delay starting a family. After their abortion, however, many women adopted a contraceptive method, so the experience appears to have triggered subsequent contraceptive use. For example, when we asked women about their contraceptive use in the period surrounding their most recent abortion, the highest proportion—38%—had used a method only after the abortion had taken place. The other proportions using a method were 33% for method use both before and after the abortion and 11% for contraceptive use only in the period immediately preceding the abortion. In addition, 20% had not used any method of contraception around the time that the pregnancy occurred.

• *Contraceptive use only.* The women in this group, who accounted for 40% of the sample, had never had an abortion and were either especially effective users of contraception or were unwilling to use abortion as a backup in the case of contraceptive failure.

• *Use of abortion only.* Very few women—3% of the sample—relied on abortion alone to regulate their fertility. Instead of using contraceptives to prevent unplanned conceptions, these women aborted unplanned pregnancies when they occurred.

The characteristics of women who had resorted to each of the four behaviors are presented in Table 2 (page 161). Women who did nothing to control their fertility were predominantly Muslim (62%) and were especially likely to be married (80%) and to be poorly educated (70% had never been to school). Those who controlled their fertility through contraception alone were roughly equally divided among the three educational groups and were generally young (53% were younger than age 25). Among those who had used both abortion and contraception, a relatively high proportion were well educated (48% had at least a secondary education), and a majority were Christian (59%) and

younger than 35 (89%). Finally, the few women who relied on abortion alone were primarily younger than 25 (51%), Christian (42%) and unschooled (55%).

Figure 1 illustrates how the four fertility-regulation practices are distributed within each of seven age-groups. The least prevalent practice by far—that of resorting to abortion alone to regulate fertility—represents no more than 4% of women in any age-group. The youngest women (15–19-year-olds) and the oldest (45–49-year-olds) were more likely than others to have practiced no fertility regulation at all. Women in their middle reproductive years, on the other hand, were more likely than others to rely on both abortion and contraception. In each age-group, 35–40% of women had regulated their fertility by using contraceptives alone.

Multivariate Analysis

We used multinomial logistic regression techniques to assess which social and demographic characteristics would independently affect whether women would adopt one of the three specific fertility regulation practices rather than do nothing at all.

• *Relying on contraception alone.* Once all social and demographic characteristics had been controlled for, Muslim women had only one-half the odds of Christian women of relying on contraceptives alone instead of doing nothing to regulate their fertility (odds ratio, 0.5, Table 3). On the other hand, the odds of relying on contraception alone rather than doing nothing were significantly higher among unmarried than married women (1.4). Finally, having attended primary school was associated with increased odds of controlling fertility through contraception alone rather than doing nothing (2.7), and having attended secondary school increased those odds even more (10.1).

• *Relying on abortion alone.* The odds of regulating fertility through abortion alone were elevated among women younger than 25 (2.0) and were reduced among those aged 35 and older (0.1), compared with the odds among women aged 25–34. In addition, Muslim women had significantly lower odds than Christian women of regulating their fertility using abortion alone instead of doing nothing at all (0.2). Unmarried women and secondary school–educated women had significantly elevated odds of resolving unplanned pregnancies through abortion instead of doing nothing at all (3.0 and 4.0, respectively).

• *Relying on both abortion and contraception.* The odds of depending on both contraception and abortion instead of not regulating fertility at all were 3.1 times as high among unmarried women as among married women. Educational attainment also significantly affected the odds of exercising full fertility control: Women with either a primary or secondary school education had significantly higher odds than uneducated women of using both contraception and abortion instead of doing nothing at all (odds ratios, 4.5 and 33.8, respectively). Finally, religion also played a significant role, as Muslim women had reduced odds of relying on a combination of contraception and abortion compared with Christian women (0.2).

TABLE 3. Odds ratios (and 95% confidence intervals) from multinomial regression analyses predicting women's reliance on contraception alone, abortion alone or both contraception and abortion to regulate fertility vs. doing nothing

Characteristic	Contraception alone (N=949)	Abortion alone (N=76)	Both contraception and abortion (N=729)
No. of pregnancies	1.07 (1.00–1.15)	1.75 (1.52–2.02)**	1.85 (1.69–2.02)**
Religion			
Christian (ref)	1.00	1.00	1.00
Muslim	0.52 (0.39–0.68)**	0.16 (0.08–0.32)**	0.17 (0.12–0.24)**
Other	0.87 (0.63–1.20)	1.13 (0.63–2.02)	0.80 (0.57–1.14)
Age			
<25	0.68 (0.52–0.90)**	1.95 (1.00–3.76)*	0.98 (0.70–1.38)
25–34 (ref)	1.00	1.00	1.00
≥35	0.65 (0.42–0.99)*	0.11 (0.04–0.30)**	0.09 (0.05–0.16)**
Occupation			
Trader (ref)	1.00	1.00	1.00
Student	0.48 (0.26–0.90)*	0.24 (0.06–1.01)	0.36 (0.18–0.72)**
Office worker	1.14 (0.63–2.09)	0.71 (0.19–2.64)	2.51 (1.33–4.74)**
Housewife	0.70 (0.54–0.90)**	0.45 (0.24–0.83)*	0.66 (0.47–0.91)*
Artisan	1.64 (1.07–2.52)*	0.86 (0.33–2.23)	2.80 (1.75–4.47)**
Marital status			
Unmarried†	1.40 (1.06–1.86)**	2.96 (1.65–5.34)**	3.13 (2.25–4.36)**
Married (ref)	1.00	1.00	1.00
Education			
None (ref)	1.00	1.00	1.00
Primary	2.71 (2.09–3.52)**	1.02 (0.56–1.86)	4.48 (3.19–6.29)**
≥secondary	10.07 (6.54–15.49)**	4.04 (1.77–9.20)**	33.81 (20.8–54.9)**

*p≤.05. **p≤.01. †Includes women who never married and those who were separated, widowed or divorced.
Notes: The group doing nothing to regulate fertility included 646 women. ref=reference category.

DISCUSSION

Our sample is not representative of the general population of Abidjan; by definition, we had to exclude women who did not visit a health center during the two months of data collection. To increase the reliability of our findings, however, we deliberately chose health centers with large client loads located in the two largest and most densely populated districts of Abidjan. The cost of treatment in these centers is reasonable and accessible to the large majority of the population. Although the level of abortion among women in our survey is not necessarily indicative of the population as a whole, the findings on abortion and contraceptive use help fill an important gap in our understanding of a poorly documented but growing phenomenon.

According to our multinomial analysis, women's age, marital status and religion significantly affected their modes of fertility regulation, findings similar to those from studies conducted in other Sub-Saharan African countries.[21] The women who did nothing at all to control their fertility—those who formed the reference category for our analysis—adhere to a natural fertility regime; their reliance on postpartum abstinence and breastfeeding alone might stem from a lack of access to family planning services, or from opposition to contraception and abortion in general.

A small proportion of women in our sample regulated their fertility solely through abortion; many probably did so as a substitute for family planning, which was not readily available. During our interviews with midwives we found that few had been trained in family planning and that they

offered only prenatal and postpartum counseling on the importance of birthspacing (although some referred women to specialized family planning clinics). In the health centers that had trained midwives on staff, these health professionals offered the pill, the injectable and condoms, but not the IUD. At all the study health centers, however, staff midwives noted that women, and especially young women, were increasingly requesting family planning. The midwives also commented that women's unmet need for postpartum contraception was especially high, since breastfeeding women—especially those who do so only partially—are not adequately protected against early repeat pregnancy.

The variables that significantly predicted the odds of relying on abortion alone were being young, unmarried and highly educated. In the Sub-Saharan African context, where pregnancy often leads to dropping out of school, young women who experience an unwanted pregnancy often use abortion as a form of emergency contraception.[22] (A Tanzanian study also found that adolescents, who lacked both knowledge about modern contraception and access to it, resorted to abortion as emergency contraception.[23])

The predominant behavior among women in our sample was contraception alone, followed by a combination of contraception and abortion. Although most of the women in our study had used a contraceptive method at least once, current use was low. In the highly complex relationship between these two fertility regulation practices, abortion can be a substitute for contraception or a complement to it. (Research conducted in Northern Europe has shown that women often combine these two behaviors rather than viewing them as distinct alternatives.[24]) Although many women resorted to abortion in the case of a contraceptive failure, our study suggests a possible reverse scenario in which having experienced an abortion led women to subsequently adopt a contraceptive method.

Abortion is playing an important role in the fertility transition currently under way in Côte d'Ivoire. We used Toulemon and Leridon's method to quantify the contribution of abortion to fertility decline;[25] our data suggest that reliance on abortion was responsible for a decline of 10% in the total fertility rate among women in our sample. Other studies have similarly demonstrated abortion's important contribution to fertility decline in developing countries where restricted access and negative cultural values limit contraceptive use.[26]

CONCLUSIONS

Our study points to a need for better fertility regulation in Abidjan, Côte d'Ivoire, where inadequate supplies of modern methods contribute to a low prevalence of contraceptive use.[27] Also, some of the youngest women in our sample probably lack knowledge both about their risk of pregnancy and how contraceptive methods work.

There are many reasons why women (or couples) fail to use contraceptive methods or use them ineffectively. According to research conducted in Brazil, for example, some of these reasons are fear of side effects, lack of confidence in methods' effectiveness, poor-quality counseling, and ignorance about a method's mechanism of action and about the reproductive process in general.[28] Moreover, research on Mauritius suggests that men's negative attitudes toward family planning or specific modern methods also contribute to low overall prevalence and subsequent reliance on abortion.[29]

The gap between contraceptive needs and use remains large throughout the developing world, and Côte d'Ivoire is no exception. In 1997, the country adopted a population policy to increase contraceptive prevalence. Improved access to contraception, however, can never cause abortion to completely disappear. More effective contraceptive use, in fact, often raises expectations of being able to fully control reproduction—and thus leads to an even greater need for fertility regulation methods. A French study, for example, found that women whose unwanted pregnancy resulted from a modern method failure were especially likely to abort the pregnancy.[30]

Even countries with solid family planning programs can have high rates of induced abortion. On Mauritius, for example, which has both a high prevalence of illegal abortion and a successful family planning program, some women's personal and social situations lead them to resort to abortion if the service delivery system is inadequate or a specific method fails.[31] In developing countries where the procedure is legal, high rates of abortion can coexist with high rates of contraceptive prevalence.[32] In Cuba, for example, three-quarters of recent abortion patients had been using a modern method at the time they became pregnant, which suggests that levels of inconsistent use, method failure and discontinuation are all high.[33]

Our results confirm the complexity of the relationship between contraception and abortion, and of how women make choices about fertility regulation.[34] Even if levels of modern contraceptive use rise substantially in Côte d'Ivoire, women may continue to resort to clandestine, unsafe abortion—with its attendant risks of maternal morbidity and mortality—when contraceptive methods fail.[35] Given this scenario, postabortion counseling is essential, both to avoid repeat abortion and to educate women about how to prevent unwanted pregnancy in the first place.

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RESUMEN

Contexto: *En Côte d'Ivoire, donde es baja la prevalencia del uso de anticonceptivos, se considera que el aborto juega un papel importante en la reducción actual de la fecundidad. Sin embargo, son escasos los datos disponibles sobre este procedimiento, el cual es ilegal.*

Métodos: *En 1998, se realizó una encuesta sobre el aborto y las prácticas anticonceptivas en la que participaron 2.400 mujeres que asistieron a cuatro centros de salud general en Abidjan. Se realizaron análisis de regresión logística multinominal para analizar los efectos independientes de las variables sociales y demográficas sobre las probabilidades de que las mujeres adoptaran una de las tres conductas para regular la fecundidad en vez de no hacer nada al respecto.*

Resultados: *El 40% de las mujeres indicaron que controlaban su fecundidad solamente a través del uso de anticonceptivos; el 30% recurrían a ambos, anticonceptivos y abortos; y el 3% dependían del aborto solo. Aproximadamente el 27% no hacía nada para controlar su fecundidad. Las musulmanes presentaron en forma congruente menores razones de momios que las cristianas de adoptar alguna de las tres conductas en vez de no hacer nada (razones de momios, 0,2–0,5). No estar casada y tener un mejor nivel educativo fueron dos variables relacionadas con mayores probabilidades de adoptar alguna de las tres conductas (razo-*

nes de momios, 1,4–33,8). Finalmente, las probabilidades de recurrir al aborto como la única conducta para controlar la fecundidad fueron significativamente más elevadas entre las mujeres menores de 25 años que entre aquellas de 25–34 años (2,0).
Conclusiones: *La relación entre el aborto y la anticoncepción es muy compleja. Si bien las circunstancias fuerzan a las mujeres a recurrir al aborto como un sustituto de la anticoncepción, someterse a este procedimiento también puede impulsar a que luego recurran a la anticoncepción.*

RÉSUMÉ
Contexte: *En Côte d'Ivoire, où la prévalence contraceptive est faible, l'avortement semble jouer un rôle important dans le déclin actuel de la fécondité. Les données relatives à l'avortement, illicite dans le pays, sont toutefois rares.*
Méthodes: *Une enquête rétrospective sur l'avortement et les pratiques contraceptives a été menée en 1998 parmi 2.400 femmes fréquentant quatre centres de santé générale à Abidjan. Les effets indépendants des variables sociodémographiques sur la probabilité pour une femme d'adopter l'un de trois comportements de limitation des naissances plutôt que de ne rien y faire sont analysés par régression logistique multinomiale.*
Résultats: *Quarante pour cent des femmes ont déclaré limiter leur fécondité par le recours à la contraception seule; 30%, par le recours à la contraception et à l'avortement, et 3%, par le recours à l'avortement seul. Environ 27% ne faisaient rien pour limiter leur fécondité. Les musulmanes présentaient invariablement une probabilité inférieure, par rapport aux chrétiennes, d'adopter l'un quelconque des trois comportements plutôt que de ne rien faire (rapports de probabilités de 0,2 à 0,5). Le célibat et les niveaux d'éducation plus élevés sont associés à une probabilité significativement élevée d'adoption de chacun des trois comportements (1,4 à 33,8). Enfin, la probabilité de recours à l'avortement seul s'est révélée significativement plus élevée parmi les femmes de moins de 25 ans, par rapport à celles de 25 à 34 ans (2,0).*
Conclusions: *Le rapport entre avortement et contraception est extrêmement complexe. Si les circonstances forcent souvent les femmes à recourir à l'avortement plutôt qu'à la contraception, l'avortement peut aussi stimuler un recours à la contraception.*

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