

REPORTS

Emergency Contraception in Honduras: Knowledge, Attitudes, and Practice Among Urban Family Planning Clients

Sandra G. García, Diana Lara, Sarah H. Landis, Eileen A. Yam, and Suyapa Pavón

Emergency contraception (EC) has the potential to improve women's reproductive health significantly. In Honduras, where nearly one-fourth of pregnancies are unplanned, the need for EC is substantial. To increase awareness of this option, nongovernmental organizations launched countrywide EC outreach activities in 2001–03. We conducted pre- and postintervention cross-sectional surveys among a total of 2,693 family planning clinic clients to assess EC knowledge, attitudes, and practice at baseline and at two years postintroduction. EC awareness increased over time, but remained at just 20 percent at follow-up. Respondents generally demonstrated a positive attitude and low rates of concern about EC. Awareness of and willingness to use EC were strongly associated with age, educational status, and city of residence. Public-sector acceptance of the method is essential to increase awareness of and access to EC. This study is intended to fill an information gap regarding EC in Latin America and the Caribbean and to be useful in determining educational messages and target audiences for future awareness campaigns in Honduras. (STUDIES IN FAMILY PLANNING 2006; 37[3]: 187–196)

In the Latin American and Caribbean (LAC) region, a combination of cultural and political factors—including the powerful influence of the Catholic Church, highly restrictive abortion laws, and high rates of unintended pregnancy (ASHONPLAFA 2002; CRR 2005)—highlight the need for acceptable and available contraceptive choices, including emergency contraception (EC). Despite this need, little is known regarding people's attitudes about or experiences using EC in this geographic area. The geographic distribution and breadth of literature about EC

in the LAC region are strikingly narrow, with the majority of research focused on Mexico. We identified only a handful of studies that investigated EC knowledge, attitudes, and practices in the LAC region: a survey among Jamaican university students (Sorhaindo et al. 2004); a qualitative study of health-care providers, patients, and decisionmakers in Brazil, Chile, and Mexico (Díaz et al. 2003); and studies of Mexican family planning clients (Langer et al. 1999; Heimburger et al. 2002) and high-school students (Walker et al. 2004). Central American countries are notably absent from the EC literature, a knowledge gap that we hope to begin to fill with this study on Honduran EC knowledge, attitudes, and practice among urban family planning clients.

Honduras is one of the poorest countries in the Western hemisphere and is home to the fastest-growing population in the LAC region (PRB 2005a). Although the total fertility rate in Honduras has declined sharply in recent decades, from 7.5 children per woman in 1972 to 4.1 children per woman in 2001, the current rate remains nearly double that of the LAC region as a whole (2.6 children) (UN 2004a; PRB 2005a). Fifty-one percent of married Honduran women use a modern contraceptive method, and among these women the most commonly used methods

Sandra G. García is Director, Diana Lara is Regional Staff Assistant, and Eileen A. Yam is Regional Program Associate, Reproductive Health, Population Council, Latin America and the Caribbean Regional Office, Escondida 110, Col. Villa Coyoacán, Mexico City, Mexico. E-mail: sgarcia@popcouncil.org.mx. Sarah H. Landis is a doctoral candidate, Department of Epidemiology, School of Public Health, The University of North Carolina at Chapel Hill. Suyapa Pavón is Director of Research, Evaluation, and Statistics, Asociación Hondureña de Planificación de la Familia, Tegucigalpa, Honduras.

are female sterilization (29 percent), oral contraceptives (17 percent), injectables (16 percent), and the intrauterine device (IUD) (16 percent) (ASHONPLAFA 2002; PRB 2005b). Urban Honduran women have relatively ready access to family planning information and services at public and private family planning clinics, but rural women living in areas with sparse health-care services often must bear substantial burdens of cost and time for transport to a facility and must wait long periods to receive care (Speizer et al. 2005). The gap between Honduran women's reproductive intentions and their actual family sizes is substantial; 26 percent of births are the result of unwanted pregnancies (ASHONPLAFA 2002; UN 2004b). The financial and health burden of unwanted pregnancies in Honduras exists within the context of some of the most restrictive abortion laws in the world; abortion is illegal under all circumstances, including rape and incest, even to save the life of the woman (CRR 2005). Unsafe abortion is the third most common cause of maternal deaths in Honduras and is a frequent reason for hospitalization (PAHO 1996). Given the high prevalence of unwanted pregnancies and the hazards of unsafe abortion, broadening the contraceptive method mix through increased awareness of and access to EC could improve the sexual and reproductive health of Honduran women dramatically.

In 1999, the Honduran Ministry of Health (MOH) added emergency contraception to the National Family Planning Norms, setting the stage for a broader introduction of this underused contraceptive method (Secretaría de Salud 1999). Nevertheless, a substantial knowledge gap persisted among the general population. Despite EC's incorporation into the official family planning norms two years earlier, the 2001 Honduras National Demographic and Health Survey revealed that only 3.3 percent of Honduran women aged 15–49 had knowledge of EC (ASHONPLAFA 2002).

Inspired by EC-introduction activities conducted in Mexico and Kenya in the late 1990s (Muia et al. 1999 and 2002; Heimburger et al. 2002), local and international nongovernmental organizations (NGOs) working in Honduras launched countrywide introduction and outreach activities in 2001. Collaborating organizations included the Population Council's Regional Office for Latin America and the Caribbean, Marie Stopes International (MSI), and ASHONPLAFA (Asociación Hondureña de Planificación de la Familia), the local affiliate of International Planned Parenthood Federation (IPPF).

Specific activities were adapted to the Honduran sociopolitical and cultural context, and the campaign was focused on urban areas, relying on the Yuzpe regimen for EC in the absence of a registered dedicated product.

In 2002, project staff developed a specially packaged emergency contraception kit that contained three condoms, instructions, and a four-pill + four-pill Yuzpe regimen. The Yuzpe regimen consisted of the pill Perla™, a popular, low-dose, combined oral contraceptive. Between March 2003 and February 2004, ASHONPLAFA clinics sold 2,569 EC kits at low cost (30 lempiras, roughly equivalent to US\$1.75 in March 2003). The majority of the EC kits were sold in Tegucigalpa, the capital city. MSI clinics working in 18 factories in northern Honduras also distributed the EC kits.

ASHONPLAFA and other local and international NGOs also developed Honduras-specific EC educational materials and conducted EC workshops for health professionals, journalists, pharmacy personnel, NGO staff, and factory workers in various cities. ASHONPLAFA materials included pamphlets for adults and adolescents, posters, postcards, and flyers, which were distributed in clinics in 14 cities and in strategic public locations (bars, universities, high schools, supermarkets, football stadiums, pharmacies, and Internet cafes). In addition, MSI produced and distributed EC brochures specifically targeting female factory workers at the workplace and at other places frequented by factory workers, and a tailored EC radio spot was aired on internal factory speakers. Additional EC radio spots were broadcast on 14 popular radio stations over the course of 45 days to large audiences across the country. At the end of the campaign, ASHONPLAFA and Population Council staff produced an EC video targeting adolescents and young people, and a subsequent workshop introduced and promoted the video to other Honduran NGOs working with adolescents. Key messages disseminated in the materials focused on the purpose and effectiveness of EC, how and when to use it, brands and dosages of oral contraceptives that can be used for EC, side effects, and promotion of the availability of EC kits in the ASHONPLAFA clinics. The materials also emphasized that EC does not protect users from acquiring sexually transmitted infections (STIs) including HIV, and that male condoms must be used to prevent HIV/STI transmission.

In the second half of the project, Honduran antiabortion groups and the Catholic Church began a campaign against EC, provoked by Honduran media coverage of the Mexican Ministry of Health's deliberations over whether to introduce EC into the Mexican Family Planning Norms.¹ Outraged by the widely publicized news that such an influential Latin American country was considering recognizing EC officially as a legitimate contraceptive method, Honduran antiabortion advocates launched aggressive campaigns rife with anti-EC messages, alleging that the method was an abortifacient,

overstating or fabricating its side effects and health risks, understating its effectiveness, and arguing that EC promotes promiscuity among adolescents (Vida Humana Internacional 2002).

Officials of the Catholic Church issued a statement claiming that the Church would excommunicate those who used or promoted EC. ASHONPLAFA and other women's health NGOs took measures to defend EC, calling a press conference to debunk blatant misinformation about EC and participating in several interviews and programs on the radio, on television, and in newspapers. Despite this firestorm of controversy, EC remained in the Honduran Family Planning Norms, and ASHONPLAFA and MSI facilities continued to dispense EC.

In this analysis, we seek to document the EC knowledge, attitudes, and practices of family planning clients in urban Honduras before and after two years of outreach activities that were conducted shortly after the method's inclusion in the National Family Planning Norms. We carried out our investigation in ASHONPLAFA clinics in Tegucigalpa and San Pedro Sula. Because the Honduran MOH had planned to carry out its own EC activities separately in public health-care facilities, we did not include public clinics in our project. Nevertheless, MOH officials were active participants in our dissemination and outreach activities throughout the process. Our findings may assist future efforts to develop programs and activities that promote EC awareness in Honduras, particularly in light of the 2005 introduction of a dedicated levonorgestrel-only EC product. Although the availability of a dedicated product does not, in itself, guarantee greater EC access or use, it presents a valuable opportunity to develop educational messages to promote recognition of a brand name, which is preferable to explaining the cumbersome and potentially confusing instructions for using cut-up oral contraceptive packets for EC.

Materials and Methods

For this study, we conducted pre- and postintervention cross-sectional surveys at the ASHONPLAFA clinic in Tegucigalpa and in another large city, San Pedro Sula. Both of these clinics serve a primarily lower-middle-class clientele and offer a wide range of medical services, including general medical care, family planning and gynecological services, laboratory services, dental care, and optometry. We calculated and obtained an adequate sample size to detect with 90 percent power an expected 10 percent difference in EC awareness between baseline and follow-up, assuming proportions of 0.1 at baseline and 0.2 at follow-up. Informed consent and recruitment

procedures were reviewed and approved in accordance with the requirements of the Population Council's Institutional Review Board. Teams of trained interviewers conducted the baseline survey in September 2001 and the follow-up survey in October 2003. For both surveys, we recruited a convenience sample of adult (older than 15) clinic patients or people accompanying a patient. The interviewers systematically approached every fifth client in the clinic waiting area for the baseline survey and every second client for the follow-up survey (at which time patient flow was lighter). Before obtaining informed consent, interviewers explained the purpose of the study and assured each potential participant that this anonymous and confidential study would in no way affect the health care that they received.

The interviewers conducted face-to-face interviews using a standardized, pretested questionnaire adapted from previous EC knowledge, attitudes, and practice surveys conducted in Kenya (Muia 1999), Mexico (Langer et al. 1999), and the United States (Harper and Ellertson 1995). The initial portion of the survey addressed clients' demographic characteristics, sexual behavior and contraceptive practices, pregnancy history, and use of ASHONPLAFA clinic services. The second section began by assessing each participant's awareness of emergency contraception. The subpopulation of participants who demonstrated some awareness of EC were asked additional questions to assess their knowledge of how and when EC should be used and to obtain information about their past personal use and their reasons for use of the method. All participants, including those with no awareness of EC, responded to the final section of the survey, for which the interviewer read a brief informational paragraph² about EC followed by a series of questions to assess respondents' attitudes about the method, willingness to use EC, and opinions about how and where it should be distributed and what its role in family planning programs in Honduras should be.

Analytic Methods

Version 10 of the SPSS statistical software program was used for data entry and validation. For demographic characteristics, sexual history variables, and selected awareness, knowledge, and attitude outcomes, we calculated frequencies and applied chi-square tests to determine statistically significant differences between baseline and follow-up surveys. A p-value of less than 0.05 was considered statistically significant for all analyses. We ran multivariate logistic regression models to determine the independent effects of selected demographic and sexual history variables on the following dichoto-

mous outcomes: (1) had heard of emergency contraception, (2) would use EC, and (3) had concerns about EC. All models contained the same set of demographic and sexual history variables and an indicator variable to denote the follow-up period so that we could assess whether significant differences had developed in knowledge and attitudes regarding EC between the baseline and follow-up surveys. To account for the possibility that respondents who had prior knowledge of EC may have different attitudes about the product from those who learned of EC only during the survey process, we included the variable “had heard of EC” in the multivariate models for the “would use EC” and “had concerns about EC” outcomes. We also explored the alternative of creating separate models for the latter outcomes stratified by prior knowledge of EC, but this option resulted in poor model fit due to small samples sizes for these outcomes. We used model chi-square values to determine model fit. All data analysis was conducted using SAS Statistical Software, Version 8.2.

Results

A sample of 1,406 clients (96 percent response rate) were surveyed at baseline and 1,287 (92 percent response rate) at follow-up. Sociodemographic and sexual history characteristics of the baseline and follow-up clients are presented in Table 1. The follow-up survey included a significantly higher proportion than the baseline survey of male respondents and respondents with a high-school or higher education. Three-fourths of follow-up respondents were either married or in common-law unions.³ Although a similar proportion of baseline and follow-up clients had ever been sexually active, significantly more baseline clients reported being currently sexually active at the time of the survey. A higher proportion of follow-up than baseline clients reported never having been pregnant, and fewer were currently using a contraceptive at the time of the survey. The majority of current contraceptive users were using modern and effective contraceptive methods; however, a small proportion was using less effective “traditional” methods, defined as withdrawal, rhythm, and/or the Billings method.

Awareness of Emergency Contraception

Overall, the proportion of respondents who had heard of emergency contraception increased from 5 percent at baseline to 20 percent at follow-up. As shown in Table 2, awareness of EC increased between the baseline and follow-up surveys in all demographic groups and re-

Table 1 Percentage distribution of clinic clients who were surveyed, by selected demographic characteristics, sexual history, and awareness and attitudes about emergency contraception (EC) at baseline and follow-up, Honduras, 2001 and 2003

Characteristic	Baseline	Follow-up
City of residence		
San Pedro Sula	43.0	41.8
Tegucigalpa	57.0	58.2
Age (years)		
15–19	7.8	7.3
20–24	20.1	21.3
25–29	21.9	22.1
30–34	17.7	18.6
35–39	14.0	11.0
40+	18.5	19.7
Sex**		
Female	84.5	80.7
Male	15.5	19.4
Education**		
<High school	56.0	50.2
High school	24.2	26.6
High school+	19.8	23.3
Sexual history		
Ever sexually active	94.0	93.8
Currently sexually active*	86.5	83.4
Pregnancy history ^{a**}		
Previously pregnant	84.6	84.6
Currently pregnant	6.1	3.6
Never pregnant	9.3	11.8
Currently using a contraceptive***	83.9	71.5
Method used (by those currently using a contraceptive) ^b		
Oral contraceptives	9.1	8.4
Intrauterine device	21.4	20.3
Injectable/Norplant®	11.3	12.1
Female sterilization	18.6	20.7
Condom*	11.2	14.1
Withdrawal/rhythm/Billings	14.5	15.7
Other ^c	0.2	0.1
Knowledge, attitudes, and use of EC		
Heard about EC***	5.3	19.7
Would use EC***	79.9	70.8
Has concerns about EC**	26.1	19.9
Has used EC ^d	8.1	6.3
(N)	(1,406)	(1,287)

*Difference between baseline and follow-up significant at $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.

^aReflects a female respondent’s pregnancy history or the pregnancy history of a male respondent’s partner(s). ^bWomen who had undergone a hysterectomy were excluded from this question. ^c“Other” contraceptive methods include EC, lactational amenorrhea, and spermicide. ^dOnly respondents who reported having heard of EC ($n = 74$ at baseline and $n = 253$ at follow-up) were asked the question about previous use. Percentages shown here refer to this subpopulation.

gardless of past or current sexual activity, current contraceptive use, and pregnancy history. At both baseline and follow-up, clients in the San Pedro Sula clinic were less likely to have heard of EC than those receiving care in Tegucigalpa. Awareness of EC remained fairly low among respondents in the oldest age group (12 percent)

Table 2 Percentage of clinic clients indicating awareness of and willingness to use emergency contraception (EC) at baseline and follow-up surveys, by selected demographic characteristics and sexual history, Honduras, 2001 and 2003

Characteristic	Had heard of EC		Would use EC	
	Baseline	Follow-up	Baseline	Follow-up
City of residence				
San Pedro Sula	1.8	8.7*	90.4	68.3*
Tegucigalpa	7.9	27.6*	72.0	72.6
Age (years)				
15–19	4.6	29.8*	80.9	83.9
20–24	8.5	28.2*	85.8	77.7*
25–29	4.9	18.6*	84.7	78.2*
30–34	3.2	16.7*	83.1	72.8*
35–39	5.6	16.9*	76.1	66.7
40+	4.2	12.4*	67.2	50.6*
Sex				
Female	5.6	19.2*	79.5	70.1*
Male	3.2	21.7*	82.1	73.5*
Education				
<High school	1.9	11.1*	83.9	70.8*
High school	4.1	16.8*	77.2	68.1*
High school+	15.9	41.8*	71.8	73.8
Sexual history				
Ever sexually active				
Yes	5.1	18.8*	80.7	70.5*
No	8.3	33.8*	67.9	75.0
Currently sexually active				
Yes	5.2	18.8*	80.7	71.6*
No	4.5	18.4*	80.3	65.0*
Pregnancy history				
Previously pregnant	3.9	15.6*	80.6	69.4*
Currently pregnant	12.4	25.6	81.5	81.0
Never pregnant	10.7	37.3*	80.3	74.5
Currently using a contraceptive				
Yes	5.3	19.4*	80.6	71.2*
No	4.3	20.5*	81.0	69.6*
Method used ^a				
Long-term or permanent	3.0	14.6*	78.5	68.2*
Temporary	8.7	30.0*	86.4	78.4*
(N)	(1,406)	(1,287)	(1,406)	(1,287)

* Difference between baseline and follow-up significant at $p \leq 0.05$.

^a Among those who were currently using a method, sterilization, the IUD, injectables, and Norplant[®] were designated long-term or permanent methods; oral contraceptives, the condom, and withdrawal/rhythm/Billings were designated temporary methods.

and among those with the least education (11 percent). Respondents using temporary methods such as condoms, oral contraceptives, or withdrawal/rhythm/Billings methods were more than two times more likely than participants using long-term or permanent methods such as the IUD or sterilization to have heard of EC. After controlling for differences in the population's demographic and sexual characteristics using multivariate logistic regression (see Table 3), follow-up clients were found to be nearly five times more likely than baseline clients to have heard of EC. A pattern of lower awareness of EC among older respondents and higher awareness among more educated respondents persisted after adjusting for

Table 3 Odds ratios for the relationship between demographic and sexual characteristics and client's awareness of, willingness to use, and concerns about emergency contraception (EC), pooled baseline and follow-up sample, Honduras, 2001 and 2003

Characteristic	Odds ratios		
	Had heard of EC	Would use EC	Has concerns about EC
City of residence			
San Pedro Sula	0.38*	1.43	0.75*
Tegucigalpa (r)	1.00	1.00	1.00
Age			
15–19 (r)	1.00	1.00	1.00
20–24	0.79	0.65	0.93
25–29	0.54	0.60	1.10
30–34	0.54	0.45*	0.78
35–39	0.68	0.31*	0.98
40+	0.48*	0.18*	0.90
Sex			
Male (r)	1.00	1.00	1.00
Female	1.15	0.76*	0.91
Education			
<High school (r)	1.00	1.00	1.00
High school	1.66*	0.83	2.10*
High school+	5.05*	0.80	3.12*
Sexual history			
Currently sexually active			
No (r)	1.00	1.00	1.00
Yes	0.92	1.02	1.00
Pregnancy history			
Never pregnant (r)	1.00	1.00	1.00
Previously pregnant	0.54	1.30	0.87
Currently pregnant	1.04	1.21	1.05
Currently using a contraceptive			
No (r)	1.00	1.00	1.00
Yes	1.54*	1.02	1.51*
Heard about EC			
No (r)	—	1.00	1.00
Yes	—	1.28	1.57
Survey			
Baseline (r)	1.00	1.00	1.00
Follow-up	4.87*	0.54*	0.62*
Model chi-square (df)	365.18 (14)	177.90 (15)	178.67 (15)
(N)	(2,489)	(2,485)	(2,391)

* Significant at $p \leq 0.05$. — = Not applicable. (r) = Reference category.

sexual history, city of residence, sex, and survey time period. No significant differences were found between sexes. Clients who reported currently using a contraceptive were approximately one and a half times more likely than nonusers to be aware of EC.

Participants who had previously heard of EC were asked to specify their source of information for the method (not shown). Leading sources of EC information were: friends/family, television/videos, radio, printed materials such as posters/brochures, and ASHONPLAFA. Between baseline and follow-up, we observed a significant increase in the proportion of respondents who cited friends/family (15 percent at baseline, 27 percent at fol-

low-up; $p = 0.04$) and radio (7 percent at baseline, 16 percent at follow-up; $p = 0.04$). We also saw an increase in the proportion who reported that they learned of EC through printed materials (8 percent at baseline, 13 percent at follow-up) and through ASHONPLAFA (10 percent at baseline, 14 percent at follow-up), although these changes were not significant. A small minority of respondents reported that they had learned of EC in school, from a clinic or physician, or via the Internet.

Willingness to Use Emergency Contraception

In contrast with the trend of increased awareness, follow-up clients were less likely than baseline clients to report that they would use EC, given the need ($p < 0.001$) (see Table 1). Decreased willingness to use the product was observed in all age groups except the youngest and in all educational groups except the most educated (see Table 2). Willingness to use EC also declined significantly regardless of the respondent's sex, current sexual activity, current contraceptive use, or type of contraceptive used, and among those reporting ever being sexually active and those reporting a previous pregnancy. At baseline, San Pedro Sula clients indicated greater willingness than Tegucigalpa clients to use EC (90 percent versus 72 percent); this relationship was reversed at follow-up, however, because of a marked decrease in willingness to use EC over time among the San Pedro Sula population, paired with rates that remained constant among Tegucigalpa clients. The multivariate results shown in Table 3 also indicate decreased willingness to use EC among follow-up clients and confirm the univariate findings that older respondents were less willing than others to use EC. The effect of higher education was no longer significant after adjusting for demographic and sexual history variables; however, a significant difference by sex emerged: females were less likely than males to indicate that they would use or encourage a partner to use EC. Having heard of EC prior to participating in the survey was not significantly associated with willingness to use the product.

When we asked participants whether they felt that Honduran women would be more willing to use EC if a dedicated EC product were available, at both baseline and follow-up the vast majority agreed that they would (93 percent at baseline, 90 percent at follow-up; not shown).

Concerns about Emergency Contraception

All participants were asked whether they had any concerns about emergency contraception. We asked those

who stated that they had concerns ($n = 353$ at baseline, $n = 243$ at follow-up) an open-ended question requesting that they state their specific concerns. Baseline clients were significantly more likely than follow-up clients to report having concerns about this method (see Table 1). This relationship held after adjustment for demographic and sexual history variables (see Table 3). Additionally, we found that participants having a high-school or higher education were significantly more likely than less educated respondents to express concerns about EC. Respondents who were currently using a contraceptive method were more likely than nonusers to state concerns about EC. This relationship appears to be driven mainly, however, by the high proportion of concerns reported by those using traditional methods, including withdrawal/rhythm/Billings and condoms (not shown). No significant differences were found between sexes, by age group, or by current sexual activity. Participants with prior knowledge of EC were significantly more likely than those who first learned of EC during the survey process to report having concerns about the method.

Among those who stated that they had concerns about EC, the most commonly expressed concerns were that the method may: (1) cause side effects, (2) act as an abortifacient, (3) have a high failure rate/be ineffective, (4) harm the fetus if not effective, and (5) cause future fertility problems. Less commonly cited concerns included worries that women might begin to rely upon the method as routine birth control, that it does not protect against HIV/AIDS transmission, and that men may encourage or force women to use it if they are informed about this means of contraception. Despite an overall decline over time in the proportion of respondents with concerns about EC, among the subpopulation of participants with concerns, follow-up participants were significantly more likely to express two of the most commonly cited concerns: that EC may cause side effects (35 percent at baseline, 48 percent at follow-up) or that it may cause future fertility problems (5 percent at baseline, 12 percent at follow-up). We also performed analyses to investigate differences in these specific concerns between sexes in both time periods, but found no significant differences.

Use of Emergency Contraception

The subset of clients who reported having heard of EC before being read the informational paragraph ($n = 74$ at baseline, $n = 253$ at follow-up) were asked whether they or their partner had used EC in the past year (not shown). Six of the baseline respondents (8 percent of the

subset) and 16 of the follow-up respondents (6 percent of the subset) reported previous use. At baseline, the users were all young (aged 20–29) and educated at the high-school level or higher. Sixty-seven percent cited having engaged in unprotected intercourse as their reason for using EC, whereas 33 percent cited failure of their chosen method. Like the baseline group, the majority of users at follow-up were educated; however, these respondents represented a wider age range (50 percent aged 15–24, 18 percent aged 25–29, and 13 percent aged 30–34). Fifty percent of the follow-up EC users were single, and 75 percent cited having unprotected sex as their reason for using the method.

Discussion

Overall, awareness of emergency contraception increased in this population following the introduction activities. Knowledge still remained fairly low, however; at follow-up, fewer than one-fifth of respondents indicated that they had ever heard of this method. EC awareness in Honduras was comparable to that of Kenya (20 percent) and Mexico (32 percent) following introduction activities in those countries (Muia et al. 2002; Heimbürger et al. 2002). The study population generally demonstrated a positive attitude toward EC. More than 70 percent of respondents indicated that they would be willing to use the method, and a significant reduction occurred over time in the proportion of people reporting that they had concerns with the method. Despite this overall favorable attitude, levels of use and willingness to use EC did not increase over time. Interestingly, this paradoxical relationship was demonstrated in a similar study conducted among family planning clinic attendees in Mexico City (Heimbürger et al. 2002). One potential explanation for this trend, suggested by Heimbürger and her colleagues, that may also apply here is the heavy anti-EC media coverage that coincided with the follow-up surveys in late 2003. Because this coverage often aimed to influence potential users' religious and moral values, the study population may have exhibited relatively few concerns about the physical and behavioral consequences of EC that were the focus of our survey while harboring increased moral reservations about the method. These reservations may have manifested themselves as a decreased willingness to use EC. Future EC studies should take care to consider the impact of religious and moral values on attitudes toward use of the method by collecting data on participants' religiosity (as demonstrated, for example, by regularity of attendance at church) and the impact of their exposure to specific anti-EC propaganda.

Another possible explanation for the overall low rates of EC use may be that a high proportion of the study participants were married or living in union, a population that may be more likely to choose to carry a pregnancy to term than attempt to avert it with EC. In fact, in the 2001 Honduras National Demographic and Health Survey, 66 percent of single women expressed willingness to use EC compared with 46 percent of married women and 40 percent of women living in union (ASHONPLAFA 2002). Because we did not ask participants about their marital status at baseline—a considerable limitation—we cannot attribute decreased willingness to use EC over time to a greater proportion of married or cohabitating respondents at follow-up. Nevertheless, the large proportion of respondents who were married or living in union at follow-up may shed light on why, despite extensive EC information and education activities, levels of EC use remained low. Lastly, the survey question addressing willingness to use EC may not be the best means of measuring attitudes about the method. A person who responds negatively to the question about personal use may not disapprove of EC, but simply may not view himself or herself as someone who would ever need to use it. The majority of the study sample was married, older than 20, and currently using some form of contraception. Unlike a predominantly young or single population that, presumably, is concerned about preventing pregnancy, individuals in this population may not view themselves as potential users of EC, and their survey responses would reflect this attitude.

Despite the lack of increase in reported use over time, the observed prevalence of EC use among those with knowledge of the method (6 percent) fell within the range expected in the Honduran context among the study population. As a point of comparison, among the few studies that have reported data on EC use, 10 percent of urban Jamaican college students (Sorhaindo et al. 2002), 16 percent of Mexican high-school students (Walker et al. 2004), zero percent of urban Indian family planning clinic clients (Arora et al. 2005), and 16 percent of urban Kenyan family planning clients (Muia et al. 2002) reported ever having used the method. Rates found in the present study may have been slightly lower than those of these previous studies because we asked our participants about use "in the past year" rather than "ever." Given that an overwhelming majority of participants felt that a dedicated product would increase Hondurans' willingness to use the method, willingness to use and actual use may, in fact, increase as awareness of this dedicated product increases. However, because such a dedicated product was not available until after we had conducted the follow-up survey, our findings would not have captured this increase.

The lower proportion of respondents in the San Pedro Sula population than in the capital city population expressing willingness to use EC may be a result of the less intense outreach activities conducted there compared with those introduced in Tegucigalpa. As a result of administrative challenges, we began our campaign in San Pedro Sula four months after we began it in the capital city. The negative messages of the anti-EC propaganda may have overshadowed our educational messages in San Pedro Sula, leading respondents to report decreased willingness to use EC at follow-up.

Repeated cross-sectional surveys represent a serial “snapshot” of knowledge, attitudes, and behaviors among a target population, and are an effective and widely accepted method for measuring the effect of nationwide awareness and prevention campaigns (Figueroa et al. 2001; Hornik 2002). This cross-sectional design has some limitations, however. The lack of a control group requires that we use caution in inferring causal effects of the awareness campaign on these findings. Nevertheless, by using multivariate analyses, we have attempted to control for differences in demographic and sexual history characteristics between the baseline and follow-up populations in order to obtain a reasonably good measurement of the influence of the campaign on the change in knowledge and attitudes pre- to postintervention. Moreover, we are aware of no educational campaigns other than our own that used these media to disseminate EC information during the intervention period, and are thus encouraged by the increase over time in the proportion of respondents who had heard of EC through the radio, postcards/brochures, and ASHONPLAFA.

Finally, another limitation of our study’s methodology is that we conducted our survey only in family planning clinics in urban centers, where the majority of introduction activities took place. As a result, our findings likely do not represent awareness or knowledge of or attitudes about EC in Honduras overall, and they may suggest that the intervention had a larger impact than would result from a probability sample of Hondurans. For example, whereas 80 percent of our baseline participants said that they would be willing to use EC, a national survey conducted earlier that same year found that only 48 percent of women would consider using the method (ASHONPLAFA 2002). Nevertheless, we decided to focus our investigation on this population because ASHONPLAFA is a major provider of Honduran family planning services. In fact, ASHONPLAFA is second only to the Ministry of Health in terms of contraceptive provision; 29 percent of current users report that they obtain their contraceptive method at an ASHONPLAFA facility (ASHONPLAFA 2002). Furthermore, previous

studies have shown that survey administration in family planning clinics is logistically simple and yields high response rates (Ellertson et al. 2000).

Despite these limitations, the results of these surveys can be used to guide future EC-awareness activities in Honduras, including identification of key elements for educational messages and potential delivery channels and target audiences for focused implementation. Future educational efforts should be aimed at increasing specific knowledge about EC, its proper use, and its effectiveness. These messages should address specifically the concerns expressed by respondents, such as those resulting from the misinformation they may have acquired, including the idea that EC is an abortifacient or harmful to the fetus, that it is not highly effective, and that use of the method causes fertility problems. Although EC is now available throughout much of the Latin American and Caribbean region, the method is constantly under attack by conservative activists and the Catholic Church (Martin 2004). EC proponents must be vigilant about anti-EC messages disseminated by detractors and must develop timely and strategic counterresponses.

Data from the univariate and multivariate analyses presented here are helpful in identifying those who will benefit from and react favorably to EC-awareness campaigns. For example, both awareness of and attitudes about EC were consistently associated with a respondent’s age; those in the youngest age group (15–19 years) demonstrated the greatest increase over time in awareness of and willingness to use EC. Efforts to disseminate information to this age group through schools and youth-focused campaigns should continue because this population is at especially high risk for unwanted pregnancy. Only 9 percent of Hondurans aged 15–24 use a contraceptive method at first intercourse, and half of the women in this age group have been pregnant at least once (ASHONPLAFA 2002). We also found that level of education was associated with awareness; only 11 percent of Honduran respondents having less than a high-school education reported having heard of EC. These findings highlight the need to create awareness strategies to reach populations with low educational levels by using alternative dissemination channels such as factories, rural community centers, schools, or bars and by using attractive, easy-to-understand messages. Only a small proportion of respondents reported learning about EC from a clinic or physician, indicating a need to incorporate EC information into family planning counseling offered by these underused yet highly credible sources of medical information. Nonclinical health-care personnel such as pharmacists should be trained in appropriate dispensing practices for EC in order to

reach populations who do not have access to routine health care.

Experience from other countries has shown that successful introduction of emergency contraception requires a coordinated effort (Ellertson et al. 2002; Muia et al. 2002). To date, the Population Council, ASHONPLAFA, and other NGOs such as Marie Stopes International have played the leading roles in EC awareness campaigns in Honduras. The involvement of governmental officials, such as the Minister of Health, as well as NGOs and women's groups, is essential, however, to enhance Hondurans' access to EC. These groups can play an active role in defending the method against the opposition of antiabortion groups, preserving the inclusion of EC in the National Family Planning Norms by attesting to its safety and efficacy, and promoting the recently registered dedicated EC product to avoid confusion and lend the method legitimacy among potential users.

Notes

- 1 The Mexican Ministry of Health subsequently approved the inclusion of emergency contraception in the Mexican Family Planning Norms in January 2004, and in July 2005 the method was included on the Ministry's essential drug list for public health-care facilities.
- 2 The paragraph was as follows: "Let me briefly describe emergency contraceptive pills. They are regular daily oral contraceptives, but they are taken at a higher dose for a shorter period of time. Women can use them after unprotected sex to avoid unwanted pregnancy. Emergency contraceptive pills should be used within 72 hours of unprotected sex; when they are taken in time and in the correct dose, they can prevent three out of four pregnancies that would have occurred if no method were used. Some women experience nausea or vomiting when they take the pills, but these side effects disappear after 24 hours. This method is to be used in cases of emergency and is not recommended for routine use. Emergency contraceptive pills are a method of contraception, not abortion. If a woman is already pregnant, emergency contraceptive pills will not cause bleeding or interrupt a pregnancy." This statement, and all educational materials produced during the project period, recommended that EC be used within 72 hours after unprotected intercourse, rather than within 120 hours. ASHONPLAFA and MSI clinicians felt strongly that after having promoted a consistent "72-hour" message for years, they did not want to risk sending the erroneous message that EC is equally effective at 120 hours as it is at 72 hours (or earlier).
- 3 Data concerning marital status were not collected at baseline.

References

Arora, N. and S. Mittal. 2005. "Emergency contraception and prevention of induced abortion in India." *Journal of Family Planning and Reproductive Health Care* 31(4): 294–296.

- Asociación Hondureña de Planificación de la Familia (ASHONPLAFA). 2002. *Encuesta Nacional de Epidemiología y Salud Familiar ENESF-2001*. Tegucigalpa: ASHONPLAFA.
- Center for Reproductive Rights (CRR). 2005. *World's Abortion Laws 2005*. Washington, DC: CRR.
- Díaz, Soledad, Ellen Hardy, Gloria Alvarado, and Enrique Ezcurra. 2003. "Acceptability of emergency contraception in Brazil, Chile and Mexico. 1—Perceptions of emergency oral contraceptives." *Cadernos de Saúde Pública* 19(5): 1,507–1,517.
- Ellertson, Charlotte, Angela Heimbürger, Dolores Acevedo-García, Rafaela Schiavon, Guillermina Mejía, Georgina Corona, Eduardo del Castillo, and Ana Langer. 2002. "Information campaign and advocacy efforts to promote access to emergency contraception in Mexico." *Contraception* 66(5): 331–337.
- Ellertson, Charlotte, Tara Shochet, Kelly Blanchard, and James Trussell. 2000. "Emergency contraception: A review of the programmatic and social science literature." *Contraception* 61(3): 145–186.
- Figuroa, Mary Ellen, Jane T. Bertrand, and D.L. Kincaid. 2001. *Evaluating the Impact of Communication Programs*. Elkridge, MD: MEASURE Evaluation Project, the Johns Hopkins University Center for Communication Programs.
- Harper, Cynthia C. and Charlotte Ellertson. 1995. "The emergency contraceptive pill: A survey of knowledge and attitudes among students at Princeton University." *American Journal of Obstetrics and Gynecology* 173(5): 1,438–1,445.
- Heimbürger, Angela, Dolores Acevedo-García, Rafaela Schiavon, Ana Langer, Guillermina Mejía, Georgina Corona, Eduardo del Castillo, and Charlotte Ellertson. 2002. "Emergency contraception in Mexico City: Knowledge, attitudes, and practices among providers and potential clients after a 3-year introduction effort." *Contraception* 66(5): 321–329.
- Hornik, Robert C. 2002. "Public health communication: Making sense of contradictory evidence." In *Public Health Communication: Evidence for Behavior Change*. Ed. Robert C. Hornik. Mahwah, NJ: Lawrence Erlbaum Associates. Pp. 1–19.
- Langer, Ana, Cynthia Harper, Cecelia García-Barrios, Rafaela Schiavon, Angela Heimbürger, Batya Elul, Sofia Renoso Delgado, and Charlotte Ellertson. 1999. "Emergency contraception in Mexico City: What do health care providers and potential users know and think about it?" *Contraception* 60(4): 233–241.
- Martin, A. 2004. "La anticoncepción de emergencia en América Latina y el Caribe." *Revista Panamericana Salud Pública* 16(6): 424–431.
- Muia, Esther, Kelly Blanchard, Moses Lukhando, Joyce Olenja, and Wilson Liambila. 2002. "Evaluation of an emergency contraception introduction project in Kenya." *Contraception* 60(4): 255–260.
- Muia, Esther, Charlotte Ellertson, Moses Lukhando, Batya Elul, Shelley Clark, and Joyce Olenja. 1999. "Emergency contraception in Nairobi, Kenya: Knowledge, attitudes, and practices among policymakers, family planning providers and clients, and university students." *Contraception* 60(4): 223–232.
- Pan American Health Organization (PAHO). 1996. *Evaluación del plan de acción regional para la reducción de la mortalidad materna*. Washington, DC: PAHO.
- Population Reference Bureau (PRB). 2005a. *2005 World Population Data Sheet*. Washington, DC: PRB.
- . 2005b. *2005 Women of Our World*. Washington, DC: PRB.
- Secretaría de Salud. 1999. *Manual de normas y procedimientos de atención integral a la mujer*. Tegucigalpa: Secretaría de Salud.

- Sorhaindo, Annik, Davida Becker, Horace Fletcher, and Sandra García. 2002. "Emergency contraception among university students in Kingston, Jamaica: A survey of knowledge, attitudes, and practices." *Contraception* 66(4): 261–268.
- Speizer, Ilene S., Lisa Whittle, and Marion Carter. 2005. "Gender relations and reproductive decision making in Honduras." *International Family Planning Perspectives* 31(3): 131–139.
- United Nations (UN). 2004a. *World Fertility Report 2003*. New York: UN.
- . 2004b. *World Population Policies 2003*. New York: UN.
- Vida Humana Internacional. 2002. "Honduras: Promueven la 'anti-concepción de emergencia' = aborto." *Boletín Electrónico de Vida Humana Internacional* 6(15). <<http://www.vidahumana.org/news/27NOV02.html#5>>. Accessed 5 May 2006.
- Walker, D.M., P. Torres, J.P. Gutierrez, K. Flemming, and S.M. Bertozzi. 2004. "Emergency contraception use is correlated with increased condom use among adolescents: Results from Mexico." *Journal of Adolescent Health* 35(4): 329–334.

Acknowledgments

This study was made possible by the generous support of the Summit Charitable Foundation and the William and Flora Hewlett Foundation. We are grateful to the clients who participated in this survey and to the following organizations and individuals: Asociación Hondureña de Planificación de la Familia (ASHONPLAFA), Asociación Hondureña Mujer y Familia/Marie Stopes Honduras, Terco Producciones, the Ministerio de Salud de Honduras, Marielos Barahona, Davida Becker, Concepción Cáceres, Camille Collins, Lesbia Espinoza, Javier Hernández, Guillermina Mejía, Patricia Merlo, Carlos Morlacchi, Richard Monteith, Ricardo Reyes, Karla Reynaud, and Manuel Sandoval.