

# Female Sterilization in Nepal: A Comparison Of Two Types of Service Delivery

By Shyam Thapa and Matthew Friedman

**Context:** During the last 30 years, outreach camps have played an increasingly important role in Nepal's family planning program, by bringing sterilization services to mostly rural areas where they otherwise would not have been available. However, some concerns have been raised about differences in the social and demographic characteristics and quality of care between permanent and seasonal or mobile service delivery sites.

**Methods:** From a nationally representative sample of 8,429 ever-married women aged 15–49 who participated in the 1996 Nepal Family Health Survey, samples of 445 women who had been contraceptively sterilized in hospitals and 372 in camps were compared for their social and demographic characteristics, awareness of alternative contraceptive methods, first contraceptive method used and regret over having undergone the procedure.

**Results:** Women who were sterilized in camp settings and those sterilized in hospitals differed in their place and region of residence, although both groups were similar in age and parity at the time of sterilization. Roughly 92% of hospital clients and 95% of camp clients knew about at least one temporary contraceptive method. Four out of five hospital and camp clients reported that female sterilization was the first method they had ever used (80% and 82%, respectively). Nearly 12% of women who were sterilized in hospitals and 10% of women who underwent the procedure in camps expressed regret.

**Conclusions:** Camps do not imply less careful screening of sterilization clients or the provision of inferior quality services, and they represent an important means of meeting couples' demand for sterilization services in areas where hospital- or clinic-based services are not available throughout the year.

International Family Planning Perspectives, 1998, 24(2):78–83

During the early years of Nepal's national family planning program, most services were provided solely through "static," or permanently established, clinics. These sites were limited in number and provided only a few family planning options to potential clients. The early 1970s, however, saw the development of an outreach service delivery system, which was referred to as the family planning *sibir* (or camp). A *sibir* is comparable to other specialized means of service delivery, such as eye camps, vaccination camps or gynecologic camps: Specialized services are brought for a fixed period of time—depending on the local demand for the services—to areas where a static provider, such as a clinic, does not exist or could not be envisioned in the near future. The aim of camps has been to increase the availability and accessibility of services in as many areas of the country as possible.

Over the years, the camp concept has become a unique, important feature of

Nepal's national family planning program. It has often been the only way in which sterilization services could be provided to couples who wanted to stop childbearing but who could not afford to travel to static facilities. Male sterilization services were offered in camps as early as 1970, followed by female sterilization services a few years later.

Laparoscopy was the first technique introduced for female sterilization in Nepal, and early assessments concluded that providing laparoscopic sterilizations in camps was medically safe and acceptable.<sup>1</sup> By the mid-1970s, the number of female sterilizations performed in the country far outnumbered the number of vasectomies, a trend that has continued to the present (Figure 1). During the five-year period between mid-April 1991 and mid-April 1996, there were 196 female sterilizations for every 100 male sterilizations.\*

During the late 1970s, the Ministry of Health began more concentrated efforts to expand the number of static service sites available year round for sterilization and other clinical services. By the early 1980s, 32 operating theaters at district and zone hospitals and several family planning clin-

ics had been established. Additionally, the Family Planning Association of Nepal—the largest private-sector organization there—established sites for sterilization services in three districts.

In 1988–1989, the Ministry of Health began a program of "institutionalizing" family planning services in selected districts of the country. As part of this effort, the ministry developed a long-term plan to make sterilization services available year round through fixed service sites. By 1997, the process of institutionalization—involving facility renovation, equipment provision, and monitoring, supervision and training—had been initiated in 21 of Nepal's 75 districts.

In recent years, sites offering sterilization have been further divided into three categories: static sites, seasonal sites and mobile outreach sites. Static sites provide surgical contraceptive services at a fixed location throughout the year; seasonal sites provide sterilization services for a limited period of time in clinics or hospitals with fully equipped operating theaters; mobile outreach sites provide services in schools, health posts or other locally available facilities that are not generally used for offering clinical services.<sup>†</sup>

All three of these mechanisms are now part of the larger network of service administration and management. Fieldworkers identify eligible couples in their geographic work area and discuss permanent methods as well as temporary methods with them. Fieldworkers also inform couples about sterilization services planned to be made available in a nearby location sometime in the future.

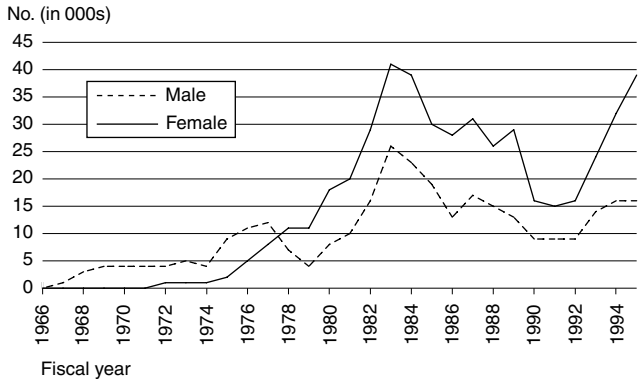
A number of workers involved in organizing and providing services share a nominal amount of money, depending on the service being offered, that is paid by

Shyam Thapa is a senior scientist at Family Health International, Research Triangle Park, NC, USA, and is presently technical advisor with the Family Health Division, Ministry of Health, Kathmandu, Nepal. Matthew Friedman is an advisor in the Office of Health and Family Planning, U.S. Agency for International Development (USAID) mission, Kathmandu, Nepal. This research was supported by USAID; the interpretation of the data and the views expressed are, however, solely those of the authors, and do not necessarily represent those of the funding agency or of the authors' affiliated organizations.

\*The first month of the Nepalese calendar corresponds to the period between mid-April and mid-May.

†The last two are new subcategories. Until recently, no distinction was made between seasonal and mobile outreach sites.

**Figure 1. Annual number of male and female sterilization acceptors, FY 1966–1995, Nepal**



Note: The Nepalese fiscal year begins approximately April 15. For example, fiscal year 1966 ran from mid-April 1966 to mid-April 1967. Source: Service statistics, Ministry of Health, Kathmandu, Nepal.

the Ministry of Health. The amount per client served—Rs 68, or about U.S. \$1.10 as of early 1998—has not changed since the payment's introduction in 1979. The money is distributed among most categories of service providers, including fieldworkers, nurses and doctors. In addition to paying providers, each client receives a total of Rs 100 each, about US \$1.60, as partial compensation for time lost from work and for out-of-pocket expenses, such as transport.\* Both provider and client payments are covered by the Ministry of Health's annual operating budget.

Monetary compensation to providers and acceptors does not vary based on where sterilization services are provided. In this regard, it is expected that the types of clients will be of similar age and parity, whether they are served through static, seasonal or mobile outreach service delivery sites. The main difference among clients is probably that those receiving services through mobile outreach mechanisms are more likely than are clients receiving services at hospitals to live in remote, rural areas of the country, because hospitals are typically located closer to urban and semiurban areas.

Although monetary compensation policy does not vary by the location of sterilization services, there are some differences in the manner in which services are provided. First, services provided through seasonal and mobile outreach delivery tend to be more concentrated and intensive, because these services are offered only when reasonable numbers of clients have been identified. Second, most seasonal and mobile outreach services are organized only during Nepal's cooler months (usually mid-September through mid-March).<sup>†</sup> Third, clients served at hospitals or static

those receiving services from static clinics? Furthermore, are clients who are not appropriate candidates for sterilization being motivated to accept this method at the temporary settings? These questions have important policy and programmatic implications for the availability and expansion of sterilization services in Nepal. We examine some of these issues in this article, using data from a 1996 national survey.

## Data and Methods

The data analyzed are from the Nepal Family Health Survey, part of the worldwide Demographic and Health Survey (DHS) project. The fieldwork for the nationally representative survey, which was administered to ever-married women aged 15–49, occurred during mid-January through mid-June 1996. A total of 8,429 women were successfully interviewed, a response rate of 98%.<sup>2</sup> Among the 7,982 currently married women surveyed, 1,396 (18%) were contraceptively protected by sterilization (69% by female sterilization and 31% by male sterilization).

In this analysis, we define permanent or "static" facilities as public hospitals or, in some cases, district-level family planning clinics, which may not necessarily be located within hospital premises. Although static clinics may include other types of facilities, such as health posts, we adopted a narrow definition in order to differentiate more clearly between static and camp-based services.

We use the term "camp" to encompass seasonal and mobile outreach service delivery sites where sterilization services are provided for a fixed period of time rather than on a routine basis. Occasionally, camps are organized at district hospitals where sterilization services are not ordi-

narily provided, either because of a lack of availability of trained surgeons and nurses or a lack of functioning operating theaters. The sterilizations performed there are generally referred to as having been performed at camps if the services were on a temporary basis. Sibir dates for participating districts are widely advertised, both nationally (over the radio) and locally (through pamphlets and posters).

Because of these differences, concerns have sometimes been raised about whether the quality of care is the same in the various service delivery settings. Is quality of care compromised in seasonal and mobile outreach settings? Are men and women who receive services in temporary settings similar with respect to age and parity to

those receiving services from static clinics? Are men and women who receive services in temporary settings similar with respect to age and parity to

those receiving services from static clinics? Are men and women who receive services in temporary settings similar with respect to age and parity to

those receiving services from static clinics? Are men and women who receive services in temporary settings similar with respect to age and parity to

those receiving services from static clinics? Are men and women who receive services in temporary settings similar with respect to age and parity to

\*Compensatory payments were stopped on an experimental basis in 1991 in the "institutionalizing" districts, but they were reintroduced in 1994.

†During this period, the demand for agricultural labor is low, so the rural population has relatively more free time. Additionally, the Nepalese generally prefer cooler seasons for elective surgery, because they believe there is less potential for infection then.

**Table 1. Percentage distribution of sterilization clients, by type of service delivery, according to sex, 1991 and 1996**

Type of service delivery	Male		Female	
	1991 (N=1,645)	1996 (N=433)	1991 (N=2,676)	1996 (N=963)
<b>Public sector</b>	<b>93.1</b>	<b>81.6</b>	<b>97.5</b>	<b>87.3</b>
Hospital	35.9	29.2	62.3	46.3
Camp	50.1	49.8	31.0	38.7
Other	7.1	2.6	4.2	2.3
<b>Private sector</b>	<b>2.3</b>	<b>10.6</b>	<b>2.4</b>	<b>9.1</b>
<b>Unspecified</b>	<b>4.6</b>	<b>7.8</b>	<b>0.1</b>	<b>3.6</b>
Total	100.0	100.0	100.0	100.0

Note: For 1996, public-sector hospital also includes district-level family planning and health clinics. For 1991, camp includes health posts, since sterilizations are performed at a health post only when a camp is organized. Unspecified includes "don't know" and missing responses.

Given the binary nature of the dependent variable—services obtained from hospital vs. camp settings—we have used odds ratios, based on logistic regression, to test the statistical significance of variables in both the bivariate and multivariate analyses. The odds ratio represents the gross effect of a variable in a bivariate analysis and the net effect in a multivariate analysis.<sup>5</sup> In the binary dependent variable, women who received services from a camp were coded as one and those who received services from a hospital were coded as zero. Weighted data were used for computing means and percentages of the variables and estimating regression coefficients; unweighted data were used for testing statistical significance in both bivariate and multivariate analyses.

## Results

Table 1 shows the percentage share of all male and female sterilization services received by the clients from major service delivery sources. For comparison, we also include data from a similar survey carried out in 1991.<sup>6</sup> Three main points emerge from the data.

First, camps continue to be a major source of services in Nepal's family planning program. As of 1996, about two out of five (42%) of all sterilization clients (50% of males and 39% of females) received services from camps.

In addition, the private sector is becoming an important source of services. Between 1991 and 1996, its share increased by 4.6 times for vasectomy and by 3.8 times for female sterilization clients. This emerging private-sector role may reflect the government's overall economic policy toward liberalization and privatization, which was initiated in 1991.

Finally, while the relative share of vasectomies performed in camp settings appears

to have remained about the same, the proportion of female sterilizations done in camps increased by nearly eight percentage points over the five-year period. This apparent increase may reflect the government's recent policy to promote mini-laparotomy for female sterilizations, because it requires less equipment, less sophisticated facilities and less skilled surgeons than laparoscopy.

The remainder of our analysis is based on the

817 women who were contraceptively sterilized at either a hospital (N=445) or a camp (N=372). (These two sources of services constituted 85% of all female sterilization clients.) Among all clients who received services in either of these two settings, 24% received services less than two years before the survey, another 30% received services 2–5 years before the survey and the remaining 45% did so more than five years prior to the survey.

Sterilization timing varied sharply by season. Among camp clients, 93% obtained services between mid-December and mid-March, which are winter months following the observance of important festivals in Nepal. Between mid-March and mid-June, fewer than 1% of camp clients were sterilized, while 6% obtained services between mid-June and mid-December.

A slightly different picture emerged among hospital clients. Nearly 78% obtained sterilization services between mid-December and mid-March, while 6% were sterilized between mid-March and mid-June and 16% between mid-June and mid-December. Differences in timing between the two settings were highly significant ( $p < .001$ ). These differences may exist because having services available on a regular basis tends to minimize the seasonal concentration of obtaining services. It may also indicate that hospital services are typically available in more developed areas, where there is less of a social and cultural preference for undergoing elective surgery only during winter months. Nevertheless, it is evident from these data that winter is the peak season for sterilization services in Nepal.

The overwhelming majority of sterilization clients lived in the *Terai*, a plains region in the south stretching east to west. There were, however, significant differences between the two service delivery set-

ting (Table 2): Proportionately more clients served at camps lived in the Terai than those sterilized at a hospital (79% vs. 70%). In addition, the majority of sterilization clients were from rural areas. There were significant differences between the two service delivery settings, however: Only 6% of those receiving services from camps were from urban areas, compared with 14% of those receiving hospital services.

Bivariate odds ratios for ecological region of residence and for urban-rural residence were both statistically significant (Table 2), indicating that sterilization clients were more likely to be from the Terai and less likely to be from urban

**Table 2. Percentage distribution of sterilized women, by social and demographic characteristics, according to type of service delivery, 1996**

Characteristic	Total (N=817)	Hospital (N=445)	Camp (N=372)
<b>Ecological region*</b>			
Mountain/hill	26.0	29.7	21.5
Terai (plain)	74.0	70.3	78.5
<b>Residence†</b>			
Urban	10.5	14.0	6.4
Rural	89.5	86.0	93.6
<b>Education‡</b>			
None	79.2	79.0	79.4
Primary	13.2	13.7	12.5
Secondary and higher	7.6	7.3	8.1
<b>Age at sterilization§</b>			
15–24	24.6	24.9	24.1
25–29	35.9	33.5	38.9
30–34	20.5	24.7	15.5
35–39	14.2	14.2	14.2
40–49	4.8	2.7	7.3
<b>No. of living children at sterilization**</b>			
1	0.4	0.6	0.3
2	11.0	10.8	11.1
3	26.0	25.2	26.9
4	23.2	22.8	23.7
≥5	39.4	40.6	38.0
<b>No. and gender composition of living children at time of survey††</b>			
2 children			
2 sons	10.3	9.2	11.5
1 son/1 daughter	4.4	4.5	4.3
3 children			
3 sons	6.1	5.6	6.6
2 sons/1 daughter	20.5	18.9	22.4
1 son/2 daughters	5.9	6.5	5.1
4 children			
3 sons/1 daughter	9.6	8.1	11.5
2 sons/2 daughters	12.7	14.1	11.1
5 children			
3 sons, 2 daughters	5.0	6.1	3.8
All other combinations	25.5	27.0	23.7
Total	100.0	100.0	100.0

\*Mountain/hill regions were coded as 0 and Terai as 1. The bivariate odds ratio was 1.54 ( $p < .05$ ). †Rural was coded as 0 and urban as 1. The bivariate odds ratio was 0.42 ( $p < .001$ ). ‡No education was coded as 0 and primary or higher education as 1. The bivariate odds ratio was 0.97 (not significant). §Ages 15–29 were coded as 0 and ages 30–49 were coded as 1. The bivariate odds ratio was 0.82 (not significant). \*\*Parity 1 and parity 2 were coded as 0. Parity 3 or higher were coded as 1. The bivariate odds ratio was 1.01 (not significant). ††Two sons, two sons and one daughter, or two sons and two daughters were coded as 1. All others were coded as 0. The bivariate odds ratio was 1.12 (not significant).

areas. Multivariate logistic regression analyses to examine the joint effects of ecological and residential variables on the probability of receiving services from a camp as opposed to a hospital showed that both of these variables had significant independent effects ( $p < .001$  for residence and  $p < .05$  for region), and that the relative strength of each variable remained essentially intact (odds ratios of 0.43 for residence and 1.48 for region). This suggests that the two variables represent different program dimensions, and that ecological region is not a substitute for urban-rural residence and vice versa.

As many as 79% of clients had no formal schooling, and only 7–8% had a secondary or higher education. Clients of the two service delivery settings did not vary significantly by their educational attainment, however. The largest percentage of clients were aged 25–29, in both service delivery settings; however, camps had proportionately more women aged 25–29 and fewer women aged 30–34. Differences in age distribution between the two groups were not significant (Table 2).\*

The distribution of clients by parity at the time of sterilization was similar between the two groups. In particular, the proportions with 1–2 children at the time of sterilization did not differ significantly. In addition, the two groups did not vary significantly by the gender composition of living children, although the data revealed a strong effect of gender composition on sterilization acceptance overall: The most common family composition among sterilized women was two sons and one daughter (21% overall), followed by two sons and two daughters (13%), two sons only (10%) and three sons and one daughter (10%). These four groups together represented more than half (53%) of all clients. The data in Table 2 clearly indicate that while the majority of sterilized women with more than two children preferred to

have at least one daughter before becoming sterilized, they had proportionately more sons than daughters. Among those with only two children, however, the preferred composition was sons only (70%). Gender composition preferences were also therefore affected by parity.

Table 3 shows that among both groups of clients, vasectomy was the most widely known contraceptive method (recognized by about 92%), but that more than 90% of the women in each group knew about at least one of four temporary methods (the pill, injectables, the implant and the IUD). Among these, long-term methods, such as implants and IUDs, were the least well-known. The percentages of women who were aware of each of the methods did not differ significantly between the two groups of clients.

The survey included two questions regarding sterilization regret. The first question was: "Do you regret that (you/your husband) had the operation not to have any (more) children?" Those who expressed regret were then asked: "Why do you regret the operation?" Altogether, 12% of those sterilized in hospitals and 10% of those sterilized in camps expressed regret, a difference that was not statistically significant.<sup>†</sup>

Among women who expressed regret, reasons for regret differed significantly, with 77% of those sterilized in a hospital citing side effects as the reason, compared with only about 50% of women who received services from camps.<sup>‡</sup> Among camp clients, the death of a child was proportionately more common (not shown).

To identify possible nonclinical factors that accounted for regret, we carried out a bivariate analysis for each of the variables included in Table 2. None of the odds ratios for these variables were significant at  $p < .05$ ; the variable that was closest to being significant was total number of living sons at the time of the survey ( $p = .09$ ). Overall, the results lead us to conclude that an expression of regret was not significantly associated with any particular geographic area or socioeconomic group, and that the prevalence of regret appeared to be randomly distributed among sterilized clients.

Four of five women sterilized in either hospitals or camps (80% and 82%, respectively) reported that female sterilization was the first method they ever used (Table 4). The pill and injectable were the most commonly mentioned methods among women who had used other methods. Patterns of first method use were similar between the two groups of women, and there were no statistically significant differences

**Table 4. Percentage distribution of sterilized women, by first contraceptive method used, according to type of service delivery**

Method	Total (N=817)	Hospital (N=445)	Camp (N=372)
Female sterilization	80.8	79.7	82.1
Pill	6.9	7.6	6.1
Injectables	4.8	5.3	4.1
Condom	2.9	2.0	4.1
Other	4.6	5.4	3.6
Total	100.0	100.0	100.0

Notes: All modern spacing methods were coded as 0 and female sterilization as 1. The bivariate odds ratio was 1.16 (not significant).

with respect to the women's contraceptive practice before choosing sterilization.

## Discussion and Conclusion

About half of all vasectomies and nearly 40% of female sterilizations in Nepal take place through outreach programs—commonly referred to as camps. The camp has been an important modality for sterilization service delivery, particularly for rural women in the country's Terai region.

The largest percentage of sterilizations occurred during midwinter. This may be related to several factors, such as relatively more free time from agricultural activities, a cool travel season for providers as well as clients, and the cultural perception that surgeries performed during the winter have less potential for infection. This seasonal preference for services is likely to continue as a unique feature of the family planning program, and has implications for the management and mobilization of both personnel and resources, such as finding an adequate number of doctors and other service providers for a specific time period, the seasonal management of logistics and funding.

We found no evidence that women for whom sterilization would be inappropriate were motivated and sterilized through the camp approach. The proportion of clients for whom sterilization was the first contraceptive method they used and the percentage of women who regretted having been sterilized were also similar for hospital and camp patients. Side effects were the main reason given by clients who expressed regret. Although the survey did

**Table 3. Percentage of sterilized women who were aware of various contraceptive methods, by type of service delivery**

Method	Hospital (N=445)	Camp (N=372)
Vasectomy	91.9	92.4
Any spacing method*	92.1	94.7
All four spacing methods	32.8	28.8
Pill	85.1	88.5
Injectables	89.1	86.4
Implants	72.5	66.9
IUD	53.7	41.4

\*The pill, injectables, implants and IUD. Notes: Awareness includes both spontaneous and probed awareness. No awareness was coded as 0 and awareness as 1. The bivariate odds ratios for awareness of vasectomy, any spacing method and all four spacing methods were 1.08, 1.54 and 0.71, respectively (not significant).

\*We were unable to compute the mean ages of the clients because single-year-of-age data were not available in the files. Instead, when we compared the mean current age at the time of survey between the two groups, the mean ages (35.0 among the hospital clients and 34.2 among the camp clients) did not differ significantly.

†No regret was coded as 0 and regret as 1. The bivariate odds ratio was 0.84 (not significant).

‡Side effects were coded as 0 and other reasons as 1. The bivariate odds ratio was 3.27 ( $p < .05$ ).

not collect further information on specific side effects, they most probably include both psychological and physical side effects, such as backache, weakness or related symptoms often perceived to be associated with the operation.

In some DHS surveys, a few additional questions regarding regret have been added.<sup>7</sup> While such information is useful for refining the definition of regret, even these questions are still inadequate to understand the clinical, epidemiologic and psychological and sexual aspects of regret.<sup>8</sup> Such research has almost invariably underscored the need for good counseling before sterilization to minimize the proportion of clients expressing regret. Another important dimension of the concept of regret that needs exploring—at least at the aggregate level—is regret over lack of access to sterilization.<sup>9</sup> Furthermore, even sterilized clients may regret not having undergone the procedure sooner. Because the DHS did not question women's spouses, we do not know their husbands' responses to the questions on regret. The limited information available from the survey analyzed here is inadequate to fully understand the context and consequences of having had regret.

In the absence of camps, many couples would probably not have received desired sterilization services. Most grassroots-level service delivery facilities, such as health posts and sub-health posts, were not designed to provide clinical services. As of 1992, implants and IUDs were available at fewer than 10% of the 961 service delivery outlets, including health posts, hospitals and other clinics supported by nongovernmental organizations.\* Recently, the contraceptive injectable depot medroxyprogesterone acetate has been made available through grassroots-level health workers on an experimental basis. Increased availability of these methods, supported by well-designed information, education and communication inputs, may lead to increased use of these methods prior to sterilization.

What percentage of those who have been sterilized would have preferred using long-term temporary methods? Our data do not permit us to examine this issue, but if the camps also delivered such methods, the number of clients being served there would most likely increase. Presently, the overwhelming majority of camps do not include such contraceptive

methods, for various reasons. Consideration may need to be given to a policy of offering other long-term contraceptive methods, and to the follow-up and referral mechanisms that would be needed.

The use of contraceptive methods for spacing births has been steadily increasing in Nepal: In 1976, less than 1% of currently married, nonpregnant women were using any modern spacing methods, compared with 9% in 1996—indicating an increase of approximately one-half percentage point per year.<sup>10</sup>

Along with a gradual increase in use of spacing methods, however, it is also likely that reliance on sterilizations will increase. The 1996 survey data show that among all currently married, nonsterilized women aged 15–49, 41% expressed a desire not to have any more children. Of these women, 80% were not using any contraceptive method, 17% were using modern methods (predominantly injectables) and 4% were using traditional methods. Among women who wanted more children and were not practicing contraception, 64% expressed an intention to use a method in the future—45% during the next year and 19% at some time further in the future. Female sterilization was the preferred method for 29% of these women, while roughly 8% preferred to be protected by male sterilization.

The continuing role of sterilization should be considered in the context of the country's childbearing patterns. In Nepal, marriage usually occurs at an early age: In the 1996 survey, 47% of all women had married by age 17.<sup>11</sup> Strong pronatalist cultural values put pressure on married couples to have children soon after marriage; nearly 88% of married women were either pregnant with their first child or already had a child by age 21. The average interval between marriage and first birth is 27 months for those who have had a child. Additionally, contraceptive use is negligible in the period between marriage and first birth.

Because of the pattern of early marriage and early motherhood, currently married women have had an average of three children (and average 2.6 living children) before age 30. The proportion of women wanting to stop childbearing then begins to increase rapidly. In this context, contraceptive sterilization offers an easy, safe and effective means to implement this desire, at least among those who are aware of sterilization and have access to services. Unless the use of spacing methods rises significantly among women with no births or few births, sterilization most likely will continue to remain the backbone of Nepal's family planning program, and

demand for sterilization can be expected to continue to increase. The challenge for the program is to meet the existing and future demand for sterilization with good quality services.

The camps will probably continue to be an important means for meeting sterilization demand, as they have played a significant role in expanding the availability and accessibility of sterilization services in Nepal, without seeming to have compromised service quality. While the national survey results are reassuring, periodic evaluations—especially of clinical aspects of the quality of services—are still warranted. By undertaking such evaluations, the family planning program can expand sterilization access and availability yet be assured that the quality of the services offered continues to be maintained.

## References

1. Dali S, Laparoscopic camp in Nepal, *Narayani Health Journal*, 1978, 12:12–17; Giri K, Outpatient laparoscopic sterilization in Nepal, *Journal of the Institute of Medicine*, 1973, 11:180–187; Padhye SM, Experience of laparoscopic sterilization under local anesthesia in camps in Nepal, *Journal of the Institute of Medicine*, 1984, 6:31–36; and Sharma P, The development and experience of laparoscopic tubal sterilization in Nepal, *Journal of the Institute of Medicine*, 1984, 22(1):26–36.
2. Ministry of Health, New ERA and Macro International, *Nepal Family Health Survey 1996*, Kathmandu, Nepal, and Calverton, MD, USA: Ministry of Health, New ERA and Macro International, 1997.
3. *Ibid.*, p. 64.
4. Bruce J, Fundamental elements of the quality of care: a simple framework, *Studies in Family Planning*, 1990, 21(2):61–91; and Jain A, ed., *Managing Quality of Care in Population Programs*, Hartford, CT, USA: Kumarian Press, 1992.
5. Retherford RD and Choe MK, *Statistical Models for Causal Analysis*, New York: John Wiley, 1993, pp. 119–150.
6. Ministry of Health, Family Planning and Maternal/Child Health Division, New ERA, Institute for Integrated Development Studies and Valley Research Group, *Nepal Fertility, Family Planning, and Health Survey 1991*, Kathmandu, Nepal: Ministry of Health, Family Planning and Maternal/Child Health Division, New ERA, Institute for Integrated Development Studies and Valley Research Group, 1993.
7. Loaiza E, Sterilization regret in the Dominican Republic: looking for quality-of-care issues, *Studies in Family Planning*, 1995, 26(1):39–48.
8. Chi IC and Jones DB, Incidence, risk factors, and prevention of poststerilization regret in women: an updated international review from an epidemiological perspective, *Obstetrical and Gynecological Survey*, 1994, 49(10):722–732; Smith EM, Friedrich E and Priboror EF, Psychosocial consequences of sterilization: a review of the literature and preliminary findings, *Comprehensive Psychiatry*, 1994, 35(2):157–163; Chi IC, Petta CA and McPheeters M, A review of safety, efficacy, pros and cons, and issues of puerperal tubal sterilization, *Advances in Contraception*, 1995, 11(3):187–206; Chi IC, Gates D and Thapa S, Performing tubal sterilizations during women's postpartum hospitalization: a review of the United States and international experiences, *Obstetrical and Gynecological Survey*, 1992, 47(2):71–79; and Philliber SG and

\*These data are compiled from the service statistics reported to the Ministry of Health by various family planning outlets throughout Nepal.

Philliber WW, Social and psychological perspectives on voluntary sterilization: a review, *Studies in Family Planning*, 1985, 16(1):1-29.

9. Philliber SG and Philliber WW, 1985, op. cit. (see reference 8).

10. Ministry of Health, New ERA and Macro International, 1997, op. cit. (see reference 2), p. 55.

11. Thapa S, Acharya LB and Aryal RH, Schooling, marriage, work, and childbearing among the youth population of Nepal: emerging insights and challenges, paper presented at the Youth Across Asia Workshop, Kathmandu, Nepal, Sept. 23-25, 1997.

## Resumen

**Contexto:** Durante los últimos 30 años, los centros de alcance en el campo han jugado un papel cada vez más importante en el programa de planificación familiar de Nepal, ofreciendo servicios de esterilización a la mayoría de las zonas rurales cuyas poblaciones de otro modo no hubieran podido tener acceso a estos servicios. Sin embargo, han surgido preocupaciones respecto a las diferencias en las características sociodemográficas y en la calidad de atención entre los centros de entrega de servicios permanentes y los periódicos o móviles.

**Métodos:** De una muestra representativa a nivel nacional de 8.429 mujeres casadas alguna vez de edades comprendidas entre 15 y 49 años que participaron en la Encuesta de Salud Familiar de Nepal en 1996, se tomaron muestras de 445 mujeres que habían sido esterilizadas en hospitales y 372 que habían sido esterilizadas en centros de campo, y se compararon en relación con sus características sociodemográficas, conocimiento de la existencia de métodos anticonceptivos alternativos, el primer método anticonceptivo utilizado y arrepentimiento por haberse sometido a este procedimiento.

**Resultados:** Las mujeres que fueron esterilizadas en centros de campo y las esterilizadas en hospitales difirieron en su lugar y región de residencia, aunque ambos grupos fueron similares en edad y paridad en el momento de la esterilización. Aproximadamente el 92% de las clientas de hospitales y el 95% de las clientas de campo conocían al menos la existencia de un método anticonceptivo temporal. Cuatro de cada cinco clientas de hospitales y de campo informaron que la esterilización femenina fue el primer método que habían utilizado (80% y 82%, respectivamente). Alrededor del 12% de las mujeres que fueron esterilizadas en hospitales y el 10% de las mujeres que se sometieron al procedimiento en los centros de campo expresaron arrepentimiento.

**Conclusiones:** Los centros de campo no implican un menor cuidado en la selección de clientas para la esterilización, ni implican la provisión de servicios de calidad inferior, y representan un medio importante de satisfacer la demanda de personas que desean servicios de esterilización en áreas donde los servicios de hospitales o clínicos no están disponibles.

## Résumé

**Contexte:** Les camps de services locaux jouent, depuis une trentaine d'années, un rôle de plus en plus important dans le programme de planification familiale du Népal, par l'apport de services de stérilisation dans les milieux principalement ruraux, où ils ne seraient autrement pas disponibles. Certaines inquiétudes ont cependant été émises quant aux différences sociodémographiques et à la qualité des soins entre les centres de services permanents et les sites saisonniers ou mobiles.

**Méthodes:** Au départ d'un échantillon national représentatif de 8.429 femmes âgées de 15 à 49 ans, mariées ou qui l'avaient jamais été, ayant participé à l'Enquête sur la santé de la famille au Népal en 1996, deux échantillons, de 445 et 372 femmes ayant subi une intervention de stérilisation contraceptive en milieu hospitalier et dans les camps, respectivement, ont été comparés en fonction de leurs caractéristiques sociodémographiques, de leur connaissance d'autres méthodes contraceptives, de la première méthode pratiquée et du regret exprimé pour avoir subi la procédure.

**Résultats:** Les femmes stérilisées dans les camps différaient de celles stérilisées dans les hôpitaux quant à leur lieu et à leur région de résidence, mais les deux groupes étaient comparables en termes d'âge et de parité au moment de la stérilisation. Environ 92% des femmes opérées dans les hôpitaux et 95% de celles opérées dans les camps connaissaient au moins une méthode de contraception temporaire. Dans les hôpitaux comme dans les camps, quatre femmes sur cinq ont déclaré que leur stérilisation avait été la première méthode à laquelle elles avaient jamais eu recours (80% et 82%, respectivement). Près de 12% des femmes stérilisées dans les hôpitaux et 10% de celles qui avaient subi la procédure dans les camps ont exprimé un regret de s'y être soumises.

**Conclusions:** Les camps ne se caractérisent pas par une sélection moins soignée des candidates à la stérilisation ou par une qualité de services inférieure. Ils représentent un moyen de réponse important à la demande de services de stérilisation dans les régions dépourvues de services en milieu hospitalier ou clinique.