

# Spousal Communication and Family Planning Adoption: Effects of a Radio Drama Serial in Nepal

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**CONTEXT:** Spousal communication and family planning use are closely linked, but the pathways of influence, especially within the context of exposure to a mass media campaign promoting family planning, are unclear.

**METHODS:** Panel data from a population-based survey in Nepal were collected over three waves, from 1994 to 1999, to evaluate the impact of a radio drama serial among couples of reproductive age. Data from 1,442 women were used to assess changes in couples' family planning decision-making, identify predictors of spousal communication and family planning use in relation to program exposure, and clarify temporal relationships among these variables.

**RESULTS:** Women exposed to the program had significantly elevated odds of believing that their spouse approved of family planning and of having discussed family planning with their spouse (odds ratios, 1.8–1.9). Those who communicated with their spouse had elevated odds of using family planning (10.2). Spousal communication at baseline was associated with subsequent family planning use, independent of campaign exposure. In addition, among couples who had not already been discussing family planning, exposure led to communication, which in turn led to family planning use. Over time, husbands' dominance in making family planning decisions gave way to joint decision-making and an increase in women's decision-making power.

**CONCLUSIONS:** New indicators are needed to capture campaign effects on individuals who are predisposed to use family planning. Couples' joint decision-making should be promoted as a strategy for increasing family planning use. Interventions are needed to improve women's autonomy and strengthen their negotiating capacity for family planning use.

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The importance of spousal communication is often emphasized in family planning programs and research. In some analysts' view, it is the first step in a rational fertility decision-making process.<sup>1</sup> Numerous studies show that the amount of communication that occurs between partners is positively associated with contraceptive use.<sup>2</sup> Spousal communication concerning contraception, especially in developing countries, remains rare.<sup>3</sup> Thus, communication interventions have been developed and implemented to encourage couples to talk about the number of children to have, birthspacing and contraceptive use. Since relatively little is known about reproductive decision-making, studies on the process and its outcomes are important for both programmatic and theoretical reasons.<sup>4</sup>

Our objective is to examine whether exposure to a mass media program in Nepal influenced spousal communication and whether that communication was associated with family planning use. Specifically, we aim to clarify the links between spousal communication and family planning adoption by examining these concepts in a five-year panel study.

## BACKGROUND

### Nature of the Relationship

While the association of spousal communication with family planning use is widely recognized, the sequence of the relationship—whether spousal communication precedes

or follows adoption of contraception—is unclear.<sup>5</sup> A common assumption is that communication leads to family planning use, but the reverse could also be true. For example, one study suggests that use of natural family planning methods leads to greater communication, because couples need to talk about the reproductive cycle.<sup>6</sup> If communication follows the adoption of a method, then it would be unnecessary for programs to focus on facilitating communication; they could, instead, invest in other strategies for enhancing clients' acceptance and use of family planning services.

Part of the difficulty in drawing inferences about the direction of the relationship is that most research on spousal communication is based on cross-sectional data. Researchers who have studied spousal views about and attitudes toward contraception and communication in various settings have acknowledged this limitation of their work.<sup>7</sup> Thus, the use of panel data would be necessary to clarify this relationship.

### Causes and Effects of Communication

It is also unclear why communication occurs and what causes it. Lack of communication about family planning may be associated with misperceptions about a spouse's views on family planning, which, in turn, may inhibit mutual decision-making. In a Zambian study, the odds that women used a method covertly, rather than using no method, were about four times as high among those who were not com-

fortable talking to their spouse about family planning as among others; furthermore, husbands' disapproval of contraception appeared to work through spousal communication, rather than having a direct influence on covert use.<sup>8</sup> Men and women who do not communicate with their spouse about family planning may not be aware that their spouse views contraceptive use positively.<sup>9</sup> In settings where family planning use is a sensitive issue and overt spousal communication is uncommon, men and women perceive such exchanges differently, and their underlying motivations and these perceptions guide their negotiation strategies with their partner.<sup>10</sup> Other factors that may inhibit spousal communication are household crowding,<sup>11</sup> fatalism and perceived worthlessness of such discussions,<sup>12</sup> dominance of other relatives (such as mothers-in-law) in reproductive decisions<sup>13</sup> and embarrassment about discussing family planning.<sup>14</sup>

Behavior change interventions like mass media campaigns intended to promote family planning may influence psychosocial factors associated with spousal communication, which in turn leads to family planning use. For example, in studies in Tanzania and Nepal, those who were exposed to a media program and communicated with their spouses held more accurate perceptions of their spouse's attitude toward family planning than those who were not exposed.<sup>15</sup>

Furthermore, partners in couples who communicate may perceive their spouses to be more supportive, feel less fatalistic about childbearing and more in control of their reproductive decisions, and be less embarrassed about discussing these issues with their spouses than partners in couples who do not communicate. By encouraging couples to discuss family planning issues, these perceptions indirectly lead to family planning adoption. In Tanzania, spousal communication about family planning, which was stimulated by exposure to a radio soap opera, played an important role in contraceptive adoption.<sup>16</sup> However, spousal communication may be independent of media exposure. Women who discuss family planning with their partner may be more likely than others to use contraceptives, not because they have been exposed to mass media messages on family planning but because they want fewer children.<sup>17</sup> These questions are explored in this study.

### Mediation by Individual-Level Factors

While media campaigns attempt to change behavior patterns, they may not universally lead to family planning adoption, as these decisions are likely influenced by individual-level factors. The effect of spousal communication upon family planning use may also be mediated by the relative power of each spouse in the decision-making process. A study in Uganda suggests that women's social and economic vulnerability inhibits their ability to express and argue for their own interests with their partner, and recommends an explicit consideration of gender inequality as an important component of the study of reproductive outcomes.<sup>18</sup> A study in India found that husbands were the principal decision-

makers and initiators of discussions about family planning use.<sup>19</sup> As one group of researchers has noted, power imbalances in marriages favor men, and the husband's opposition to contraception may be sufficient to block use in many cases, but the reverse—the wife's opposition preventing use if the husband is favorably inclined—will occur less often. The researchers conclude, "This asymmetry means that when spouses disagree, women's family planning aspirations will more often be frustrated than men's."<sup>20</sup>

Recent literature supports the view that couples' joint decision-making forms the basis of family planning use. "Programs aimed exclusively either at men or at women may fail in their purpose, because most sexual, family planning, and childbearing decisions are made or may potentially (and perhaps ideally) be made by both partners of a couple."<sup>21</sup> It is instructive to distinguish between contraceptive use resulting from a joint planning process and use by either spouse alone without consultation. A study in the Philippines, however, failed to show that joint decision-making was more strongly associated with contraceptive use than individual decision-making—presumably, as the researchers pointed out, because the index of decision-making used could have been faulty, and husbands' tendency to consider family planning women's concern may have muted the differences.<sup>22</sup> It remains to be conclusively shown, therefore, whether couples' joint decision-making is more strongly associated with family planning use than is decision-making by either spouse alone. Of particular interest are the dynamic of the decision-making process and whether and how spousal communication affects this dynamic.<sup>23</sup>

### The Nepali Context

Nepal, a small country located in the foothills of the Himalayas, shares boundaries with India and the Tibetan region of China. Nepal has a rich cultural heritage, and its society comprises a diverse mix of ethnic groups, each maintaining its own ancient cultural legacy. The predominant religion is Hinduism, though Buddhism is also widely practiced. Matters related to family life, especially marriage and childbearing, are for the most part dictated by traditions and norms, even as the country's development progresses.

Fertility has gradually decreased over the years in Nepal, with the total fertility rate falling from 6.0 births per woman in the mid-1970s to 4.6 in 1996. Though use of family planning shows a corresponding increase, it is still low. In 1996, only 29% of currently married women were using a contraceptive method, including 26% who were using a modern method. Female sterilization was the most widely used method (12%), followed by male sterilization (6%), injectables (5%), condoms (2%) and pills (1%).<sup>24</sup>

Fertility decline has been considered a priority in the country, and many programs to increase knowledge and use of family planning have been implemented over the past couple of decades. High levels of unmet need for family planning were identified in the country in the early 1990s; in 1996, 31% of currently married women in Nepal had an

**TABLE 1. Percentage distribution of panel survey respondents, by selected characteristics, Nepal, 1994**

Characteristic	% (N=1,442)
<b>Ever attended school</b>	
Yes	21.8
No	78.2
<b>Occupation</b>	
Agricultural	75.4
Nonagricultural/unemployed	24.6
<b>Monthly household expenditure (rupees)†</b>	
≤1,500	26.9
1,501–3,000	54.9
3,001–4,500	9.2
≥4,501	9.0
<b>Age</b>	
≤20	10.5
21–25	19.7
26–30	24.5
31–35	18.7
36–40	17.1
≥41	9.5
<b>Ethnic group</b>	
Brahmin	14.8
Chhetri	18.2
Tharu	20.0
Terai groups	9.6
Tibetan-Burmese groups	18.4
Newar	4.6
Muslim	5.0
Other	9.4
Total	100.0

†Percentages are based on responses from 1,367 women. In 2001, 75 rupees=US \$1.

unmet need for services.<sup>25</sup> (Unmet need refers to a discrepancy between an expressed preference to limit or space births and the absence of contraceptive use.<sup>26</sup>)

This substantial level of unmet need led to the development of the Radio Communication Project, an intervention consisting of two entertainment-education<sup>27</sup> radio serials, supplemented with radio spots, national-level orientation workshops, district-level training workshops and print materials. The radio serials are *Cut Your Coat According to Your Cloth*, directed at couples of reproductive age, and *Service Brings Rewards*, a distance education program for family planning service providers. The programs were developed to work synergistically, by improving the demand for and the supply of family planning services. Other field-level monitoring and supervision activities, as well as periodic evaluation of health workers through pretests and posttests, have helped strengthen the project's impact.

*Cut Your Coat According to Your Cloth* has been broadcast nationally on Radio Nepal once a week since December 1995. The story revolves around the lives of families in a fictional village in rural Nepal. The serial aims to improve perceptions of health workers, reposition contraception away from its historically narrow association with sterilization and toward a broader notion of the well-planned family, and model men and women from two generations of families actively seeking better health conditions for themselves and

their village.<sup>28</sup> It provides information on specific contraceptives, pregnancy and birthspacing, and deals with broader issues that influence family planning use, such as gender bias, family planning decision-making and improving perceptions of family planning users. Stories and characters introduce new ideas and attitudes related to planning a family, counteract negative stereotypes and beliefs, and use culturally relevant life experiences and Nepali proverbs to project a positive attitude toward family planning.<sup>29</sup>

Spousal communication is a major theme of the serial. It is interwoven into the story, and several episodes have been dedicated to the topic. Positive spousal communication behaviors are promoted through role models such as the *vibeki logne*, the responsible and concerned husband who cares for his wife's health. The *vibeki logne* communicates with his wife on family planning use, listens to her concerns, asks for her suggestions and values her opinions.

*Service Brings Rewards* aims to improve health workers' knowledge and skills for family planning service delivery. The program covers a range of topics, including family planning counseling techniques and technical information on various contraceptive methods.

## STUDY DESIGN

### Methods

A population-based panel survey was carried out in three waves to assess the impact of the Radio Communication Project. Interviews were conducted with households to determine the reach and effectiveness of the radio campaign. The surveys collected data on program exposure as well as demographic and reproductive health information.

The survey used a multistage cluster with replacement sampling design. The survey was conducted in four districts, representing three diverse regions, so as to be representative of the range of ethnic groups and levels of development and family planning use. The districts chosen were Dang in the midwestern region, Chitwan in the central region, and Sunsari and Dhankuta in the eastern region. Within each district, village development committees and municipalities were randomly selected, and within village development committees, wards were randomly selected. The survey team enumerated households and selected them at defined intervals from a random start to obtain a sample that was distributed proportionally to the population of the village development committee.

The baseline survey was conducted in September–October 1994 among a sample of 3,403 respondents—2,716 women and 687 men, who were predominantly husbands of a subsample of women. A follow-up survey took place in January 1997. The total sample size was 3,621—2,950 women and 671 men. In all, 1,905 women and 149 men were interviewed on both occasions. A third survey was carried out in March 1999 among a sample of 3,152 women and 665 men. Some 1,442 women were interviewed at all three waves; we used this panel to analyze the impact of *Cut Your Coat According to Your Cloth*.

Women who responded to all three surveys differed in

a number of ways from those who did not (see appendix, page 23). The findings may be somewhat influenced by these biases. However, the study design largely depended on the use of panel data.

## Measures

Five spousal communication questionnaire items were included in all three waves of the survey: whether couples had ever discussed family planning, whether they had discussed it in the past 12 months and whether they intended to discuss it; whether women believed their spouse approved of family planning; and whether they were aware of the number of children their spouse wanted.

The spousal communication items were treated individually and combined into an index, because factor analysis showed that they covaried on one factor. The index was calculated as follows: For each item, a positive response was given a score of one, and a negative response was scored zero. The scores for the five items were added together, and the sum was divided by five to obtain the index value, which thus may range from zero to one. Reliability coefficients (Cronbach's alpha) for the index were within acceptable limits: 0.75 (wave one), 0.73 (wave two) and 0.64 (wave three).

Exposure to the campaign was measured by a questionnaire item that asked respondents whether they had ever listened to *Cut Your Coat According to Your Cloth*. Family planning use was measured by a question asking women if they were currently using any contraceptive method (traditional or modern).

Hypotheses were tested with bivariate analyses of the relationship between spousal communication and campaign exposure, demographic factors and psychosocial factors. Psychosocial factors reflect the implicit power structure within a couple's relationship and are measured by an item that asked the respondent who makes decisions about family planning—her husband, she herself or the two jointly.

We used multivariate models to determine if spousal communication was associated with campaign exposure after demographic variables (age, education, occupation and number of children) were controlled for. Logistic regression models were computed separately for each spousal communication item. Spousal communication items at wave three were modeled as the dependent variables, and lagged variables for those items from the previous two waves were included as independent variables.

Similarly, both bivariate and multivariate analyses were conducted to identify determinants of family planning use. We used bivariate analyses to assess the relationship between family planning use and psychosocial variables. We employed multivariate techniques to determine whether family planning use was associated with exposure to the drama serial, once we had controlled for spousal communication, family planning use at previous time periods, desire to stop childbearing prior to radio program exposure and demographic variables.

Finally, to clarify the association of family planning use

with spousal communication and radio drama exposure across the three waves, we used structural equation modeling, a statistical technique that identifies the simultaneous influences of multiple independent and dependent variables. These analyses assess how exposure to the radio drama serial and previously held attitudes influenced spousal communication about family planning and suggest pathways through which contraceptive use may have been affected.

## RESULTS

### Sample Characteristics

Overall, only 22% of women in the sample had ever attended school (Table 1). About three-quarters of women reported agriculture as their occupation. Twenty-five percent reported either not being employed or working in nonagricultural activities, such as in small industries and service-related occupations. Eight in 10 reported a monthly household expenditure of 3,000 rupees (US \$40) or less. About 30% of respondents were 25 or younger, and 25% were aged 26–30. On average, respondents had had 3.8 children (SD=2.11; not shown). The sample was ethnically diverse.

### Spousal Communication

At their first interview, 80% of women said that they had ever discussed family planning with their spouse; 54% had done so within the past year and 52% intended to do so (Table 2). The vast majority reported that their husband approved of family planning (81%) and that they knew how many children he wanted (83%). In the subsequent surveys, the proportion reporting having had a family planning discussion in the past year were lower, while all other indicators of communication were higher; by 1999, nearly all women said that they knew their husband's desired number of children.

In bivariate analyses, respondents who were exposed to the drama serial showed a significantly greater increase in the spousal communication index from baseline to the 1997 follow-up interview than those not exposed (0.15 vs. 0.09;  $p < .001$ ). No significant differences were evident between 1997 and 1999, however. This pattern may have methodological and programmatic explanations: First, when the level of communication is already high, the potential for further gains is limited. Second, the radio spots were aired

**TABLE 2. Percentage of respondents reporting various types of spousal communication, by survey wave**

Communication indicator	Wave one	Wave two	Wave three
Ever discussed family planning	80.1	83.6	86.3
Discussed family planning in the past year	54.4	38.6	46.8
Intends to discuss family planning†	51.7	68.7	61.5
Spouse approves of family planning	80.9	82.4	86.9
Knows no. of children spouse wants	83.1	91.9	96.3

†Percentages are based on responses from 1,442 women in wave one, 716 in wave two and 569 in wave three. The decline in the N over time presumably reflects that some women who intended to discuss family planning did so and therefore did not answer the question in later waves. Note: Wave one=1994; wave two=1997; wave three=1999.

**TABLE 3. Odds ratios from logistic regression examining the effect of selected characteristics on spousal communication at wave three**

Characteristic	Ever discussed family planning	Discussed family planning in past year	Intends to discuss family planning	Spouse approves of family planning	Knows no. of children spouse wants
Communication index					
Wave one	2.16***	1.49***	1.74	2.77***	2.95***
Wave two	1.40	1.20	1.50	1.62**	1.61
Occupation	0.64*	0.77	0.78	0.90	1.10
Education	2.07*	0.87	1.44	1.63	2.59
Age	0.92***	0.90***	0.80***	0.99	0.95*
No. of children	0.98	1.04	1.18	0.89*	1.04
Campaign exposure					
Wave two	0.86	0.92	1.03	0.98	0.80
Wave three	1.86***	0.98	0.99	1.82***	1.79

\*p<.05. \*\*p<.01. \*\*\*p<.001. Note: Wave one=1994; wave two=1997; wave three=1999.

between the first and second interviews, but not between the second and third; the cessation in the broadcast of these spots may partly explain the lack of change in the last wave.

Spousal communication varied by certain demographic characteristics of the sample. Results from an analysis of variance using the combined spousal communication index show that young respondents—those in their prime reproductive years—had significantly more positive attitudes toward spousal communication than older respondents. For example, at wave one, the average score ranged from 0.60 to 0.77 among those aged 35 or younger, whereas it was 0.59 among those in their late 30s and 0.52 among those in their early 40s. At each wave, scores increased for most age-groups, but the same pattern of significant differences remained ( $p<.001$ ).

Similar analyses revealed no differences in spousal communication attitudes by household expenditure but significant variations among ethnic groups. At wave one, average scores ranged from more than 0.70 among the Tibetan-Burmese groups, Chhetris and Brahmins to 0.43 among Muslims. By wave two, the gap had narrowed, with scores ranging from 0.84 among Brahmins and Tharus to 0.73–0.75 among Terai groups, Newars, Tibetan-Burmese and Muslims. However, at wave three, Muslims had the highest score (0.89). Ethnic differences were significant at  $p<.001$  in the first two waves and at  $p<.01$  at the final interview.

A final analysis of variance indicated that spousal communication significantly differed by who makes decisions about family planning use (as reported by the woman). In 1994, couples who made joint decisions about family planning scored higher on the spousal communication index (0.78) than did those in which the husband alone made decisions (0.73), the wife alone made decisions (0.71) or the wife did not know who made decisions (0.23). Again, scores increased for all groups in subsequent waves, but the overall pattern remained the same, with differences by who made decisions statistically significant at  $p<.001$  in all three time periods.

We conducted multivariate analyses to clarify the association between campaign exposure and spousal communication, taking into account the confounding effects of spousal communication that occurred prior to program

broadcast. Results show that spousal communication at wave three was positively associated with communication at baseline. Specifically, for those who reported communication at wave one, the odds of communication were significantly elevated (odds ratios, 1.5–3.0) for all measures except the intention to discuss family planning (Table 3). Hence, a certain amount of communication existed prior to the program broadcast and is associated with current levels of communication. This finding indicates a selectivity among respondents, such that many—possibly as a result of their socioeconomic status or other demographic characteristics—are positively disposed toward family planning issues and consequently may pay selective attention to a family planning campaign. It is, therefore, possible that the radio program did not initiate spousal communication in this group.

However, inclusion of campaign exposure variables in the model indicates that, with spousal communication at previous time periods taken into account, those who had been exposed to the program at wave three had significantly higher odds than those who had not been exposed of having discussed family planning with their spouse and of believing that he approved of family planning (odds ratios, 1.9 and 1.8, respectively). Thus, contemporaneous exposure, but not previous exposure, is a significant predictor of spousal communication. Program exposure was only marginally related to women's awareness of the number of children their spouse wanted at wave three (odds ratio, 1.8;  $p=.06$ ).

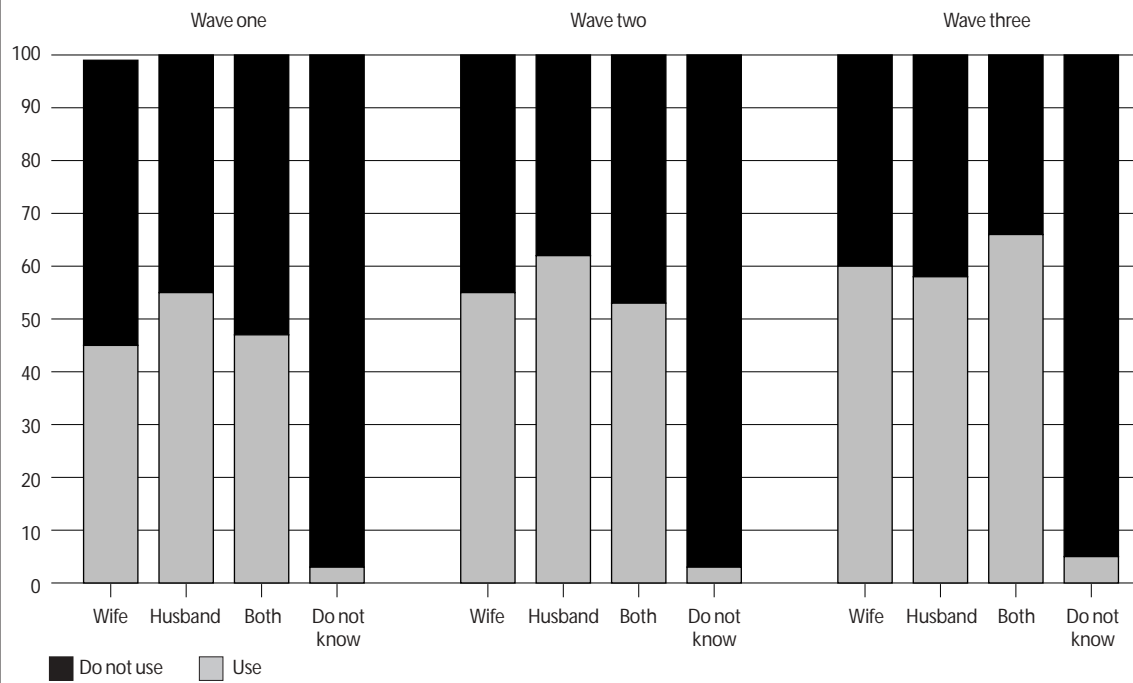
### Family Planning Use

Although achieving the objective of increasing spousal communication through a communication campaign is noteworthy, of more crucial importance is whether the campaign led to spousal communication that translated into contraceptive use.

Results of chi-square tests (Figure 1) indicate that in 1994, use was highest among couples in which the husband made family planning decisions (55%); it was somewhat lower among those who made family planning decisions jointly (47%) and lowest if the woman made decisions herself (45%). In 1997, use was still most common among cou-



**FIGURE 1. Percentage distribution of respondents, by use of family planning at each survey wave, according to who makes family planning decisions**



Notes: At each wave, differences according to who makes family planning decisions were statistically significant at  $p < .001$ . Wave one=1994, wave two=1997, wave three=1999.

ples in which the husband made family planning decisions (62%), but couples in which the wife made decisions had a slightly higher level of use than those who made decisions jointly (55% and 53%, respectively). Interestingly, in 1999, those who reported joint decision-making had the highest level of use (66%), followed by couples in which the wife made family planning decisions (60%) and those in which the husband made decisions (58%). In each year, the level of use was negligible (3–5%) among couples in which the woman reported not knowing who made these decisions. Differences according to who made decisions were statistically significant for each year.

We conducted multivariate logistic regression analyses to determine associations between family planning use and program exposure, controlling for prior family planning use, the respondent's desire to have no more children (as expressed in the baseline survey) and, in one set of calculations, demographic variables (Table 4). Results show that family planning use at wave three was not significantly associated with exposure to the radio program after all of these factors were controlled for. In both models, family planning use at wave three was significantly associated with contemporaneous spousal communication (odds ratios, 10.2 and 6.8) and with family planning use at baseline (7.4 and 7.7) and wave two (2.0 in each model). It was also significantly associated with spousal communication at wave one in the analysis that did not include demographic controls (1.9).

Given that the odds of family planning use associated with spousal communication were so much higher at wave three than at earlier times, the question arises as to what caused the effect of spousal communication to increase over

the years. An explanation could be that the increased effect resulted from exposure to the radio program, a finding that is echoed in other studies.<sup>30</sup>

The finding that spousal communication existed at baseline and was associated with the practice of family planning at wave three suggests that two groups of audience members adopt family planning through different pathways: Couples who communicate about family planning tend to adopt a contraceptive method. Those who do not communicate may begin doing so as a result of exposure to a mass media campaign.

Our structural equation model assessed how spousal communication relates to contraceptive use over time, controlling for the influence of these variables at earlier times,

**TABLE 4. Odds ratios from two logistic regression models examining the effect of selected characteristics on contraceptive use at wave three**

Characteristic	Model one	Model two
Contraceptive use		
Wave two	2.03***	2.00***
Wave one	7.35***	7.67***
Communication index		
Wave three	10.24***	6.83***
Wave two	1.31	1.24
Wave one	1.85**	1.44
Campaign exposure		
Wave three	1.22	1.19
Wave two	1.06	1.07
Wants no more children	2.24***	3.20***
Education	na	1.57*
Age	na	0.96***

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . Notes: Wave one=1994; wave two=1997; wave three=1999. na=not applicable.

as well as for education, age, income, ethnicity and the desire for more children. Being a family planning user at baseline was strongly associated with being a user at wave three ( $\beta=0.37$ ;  $p<.01$ ); it also was associated with having exposure to the radio program at wave three ( $\beta=0.13$ ;  $p<.01$ ). These results indicate campaign selectivity effects: The campaign may have its greatest appeal among individuals who practice family planning. Once campaign selectivity was controlled for, exposure was associated with spousal communication at wave three ( $\beta=0.10$ ;  $p<.01$ ), but not with family planning use. Thus, a certain group of audience members are selectively exposed to the campaign; for those who are not selectively exposed, program exposure influences family planning use by facilitating spousal communication.

## DISCUSSION

Radio program exposure, spousal communication and family planning use variables were strongly correlated in this study, so a definitive test of whether spousal communication precedes or follows family planning use may not be possible. Spousal communication clearly is associated with use, and this association is influenced by exposure to the radio program. It is also likely that for many, spousal communication precedes family planning use.

Broadly, the results suggest two pathways to family planning adoption. Couples who view family planning favorably tend to communicate about the number and spacing of their children, and tend to adopt contraceptive methods. For these individuals, communication campaigns are useful in that they provide information that can promote further informed discussion. A campaign also can keep family planning on the couple's agenda. Additionally, for this group, it could be a means of obtaining information on family planning services, such as availability, costs or information about particular methods. Methodologies to capture this impact are underdeveloped, since most evaluation surveys do not measure the quality and content of interpersonal communication.

For other couples, media exposure prompted the gradual initiation of spousal communication about family planning. Methodologies for capturing this level of impact of a campaign are well-known, but are underappreciated when the change in an already highly prevalent behavior is small, as we have seen here.

Not surprisingly, young couples are more likely than older ones to talk about family planning, probably because child-bearing decisions are more relevant to them. Spousal communication scores changed more among younger than among older age-groups over the five-year period covered by the three survey waves. This attests to the notion that younger people tend to have a greater capacity to change than older people. The radio program, therefore, was appropriately more effective in altering the attitudes of the younger age segment, whose reproductive decisions will contribute most to future fertility growth.

Household expenditure, used as a proxy for socioeco-

omic status in this study, is generally considered an important determinant of health-seeking behavior; in this case, however, it did not account for a significant amount of variance in spousal communication. While socioeconomic status influences access to media, radio ownership is high in Nepal. Therefore, the association between socioeconomic status and program exposure is not confounded by media access.

By contrast, ethnic background is an important determinant of spousal communication. These findings are supported by prior research in Nepal that shows that ethnicity accounts for more differentials in reproductive behavior than do socioeconomic variables.<sup>31</sup> (Ethnic differentials in early child mortality have also been observed in Nepal.<sup>32</sup>) However, no consistent patterns of differentials among ethnic communities have emerged in studies conducted so far, and the reason why ethnic background should account for differentials in reproductive outcomes or behavior, including spousal communication, is not clear. One possibility is that as the pace of modernization increases in Nepal, socioeconomic factors will play a growing role in influencing reproductive behavior, and this will reduce the differentials by ethnicity.<sup>33</sup>

In 1994, couples in which the husband made family planning decisions were the most likely to be using family planning, followed by joint decision-makers. Couples in which the wife made family planning decisions reported the lowest use. These findings suggest the dominance of husbands in family planning decision-making and the low levels of autonomy of women in Nepal. The balance of power shifted over time, however, and by 1999, couples in which the husband made family planning decisions alone reported the lowest levels of use. The radio program may have helped this shift in the power dynamics within marital relationships, contributed to greater female autonomy and, in so doing, better enabled women to negotiate family planning use with their husbands.

Although there is a shift in the power balance between men and women at wave three, joint decision-making shows the strongest association with spousal communication as well as family planning use. This finding confirms that mutual decision-making about reproductive matters is more conducive to family planning acceptance and that power imbalances within a relationship do not favor family planning communication or adoption of services.

## CONCLUSION

Instead of offering simple explanations, this study highlights the complex mechanisms by which mass media exposure and spousal communication influence family planning use. Another study using wave one and wave two data from the Nepal Radio Communication Project also found exposure and spousal communication to be tightly intertwined, but emphasized the importance of taking such relationships into account when interpreting the dynamics of communication effects.<sup>34</sup>

Our findings have implications for family planning com-

munication programs and research. Traditional impact assessment indicators tend to overlook the segment of the population who may already be inclined to practice the behavior being promoted. Therefore, new indicators need to be developed that can measure the impact of an intervention on this group. In this study, couples who were already communicating with each other at baseline may have been influenced in different ways to adopt family planning than those who were not communicating. However, given current methodological limitations, these influences cannot be adequately measured. Conventional knowledge, attitude and practice surveys might not capture qualitative changes in behavior. For example, a couple may discuss family planning, then be exposed to a campaign and discuss family planning again. The campaign may have provided new ideas and information that improved the quality of the discussion and its outcomes, but a variable measuring simply whether the couple talked in the past would miss this impact. Programmatically, interventions need to be tailored to meet the specific needs of this group, which would be different from the needs of couples whose attitudes have to be changed. This group is likely to need information on availability, cost and use of services or products being promoted and maintenance of positive beliefs, an aspect that is often neglected.

The observed shift in power balance within couples' relationships can be used to support the linking of family planning programs with interventions that empower women to better negotiate family planning decision-making with their husbands. If programs such as those that provide women with skills and opportunities for financial autonomy and increased mobility are linked to family planning efforts, women are likely to acquire greater confidence and bargaining power in marital relationships. Such programs could also offer opportunities for individual- or group-level counseling to improve women's negotiation skills in family planning decision-making.

Future research efforts can be strengthened by data that provide better insights into the predictors of spousal communication and family planning use. Lasee and Becker indicate that data on duration, extent, intensity and result of discussion between spouses on family planning are needed to further inform this area of study.<sup>35</sup> They recommend that the definition of communication be expanded to include discussions in areas other than family planning, such

as child schooling, property acquisition and food purchases. In addition, data on discussions about reproductive health issues other than family planning can be useful indicators for spousal communication.

Research on the role of ethnicity and an identification of cultural factors that restrict or facilitate spousal communication can further enrich this area of study. Differences in reproductive behavior among ethnic groups in Nepal are believed to emerge from their different cultural backgrounds, social relations and family systems.<sup>36</sup> Similarly, differentials in spousal communication by ethnic group observed in this study could result from cultural differences in the nature of family structure and marital relationships among communities. The prevalence of spousal communication prior to exposure to the radio program and its link with family planning adoption at later time periods suggest that certain factors predispose individuals to practice family planning. Whether these factors are linked to ethnicity warrants further exploration. An in-depth examination—particularly one that uses qualitative research techniques—can provide useful insights into whether any sociocultural factors linked with ethnicity influence spousal communication and family planning adoption, and how these concepts can be integrated into programs for increased effectiveness.

#### APPENDIX

We conducted analyses of variance to compare the women who dropped out after each of the first two waves with the panel of 1,442 women who were interviewed in all three waves. Results are displayed in Appendix Table 1. Some demographic differences were observed between those who stayed in the panel and those who dropped out. Dropouts after baseline tended to be significantly better educated, have fewer children and report a higher household expenditure than those who remained in the panel.

The table reveals a selectivity bias, in that women from the panel had had the highest mean spousal communication score at baseline. Thus, the campaign may be of greatest interest and most relevant to couples already favorably disposed toward communicating about family planning, and it might have done better if it had addressed their needs instead of aiming to get couples to start communicating.

Finally, the table shows that panel respondents were more likely than dropouts at either time to be using family planning. Like the spousal communication results, this shows selectivity. Thus, the campaign might have done better if it had catered to the needs of users, with a focus on maintaining positively held attitudes toward family planning and providing information on matters such as service availability and cost.

**Appendix Table 1. Results of analyses of variance and chi-square tests indicating differences between study dropouts and panel participants, by selected characteristics**

Characteristic	Final panel (N=1,442)	Dropped out after wave one (N=810)	Dropped out after wave two (N=463)	Wave one vs. wave two†	Wave two vs. panel†	Wave one vs. panel†
Education (yrs.)	1.46	1.96	1.22	14.44***	2.22	12.04***
Age	30.31	29.68	32.34	23.44***	22.43***	3.05
No. of children	3.62	3.00	3.76	25.09***	1.18	36.36***
Household expenditure (rupees)	2,531.40	2,749.53	2,525.89	3.66	0.00	7.31**
Mean spousal communication score	0.68	0.63	0.58	6.19*	37.83***	15.34***
% using family planning	41.3	30.8	34.6	1.84	6.71**	30.82***

\*p<.05. \*\*p<.01. \*\*\*p<.001. †F statistic for means,  $\chi^2$  for percentages. Note: Wave one=1994; wave two=1997.



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## RESUMEN

**Contexto:** La comunicación entre esposos y el uso de la planificación familiar están estrechamente vinculados, aunque no resulta clara la forma en que se influyen, especialmente dentro del contexto de la exposición a una campaña que promueve la planificación familiar a través de los medios de difusión.

**Métodos:** Por medio de tres olas de recopilación de datos desde 1994 hasta 1999, se reunieron datos con base en la población para evaluar el impacto de un programa radial "telenovela", entre las parejas en edad reproductiva. Se utilizaron datos de 1.442 mujeres para evaluar los cambios que se producían en el proceso de toma de decisiones de la pareja en cuestiones de planificación familiar, para identificar las variables predictivas de comunicación conyugal y del uso de la planificación familiar,

ambos con relación a la exposición a la campaña, y para aclarar la relación temporal que existe entre estas variables.

**Resultados:** Las mujeres que habían estado expuestas a este programa presentaban unas razones de probabilidad significativamente más elevadas de creer que su cónyuge aprobaba la planificación familiar y de haber mantenido conversaciones con su marido sobre planificación familiar (razones de probabilidad, 1,8–1,9). Además, las que se habían comunicado con su marido presentaban una probabilidad muy elevada de usar la planificación familiar (10,2). La comunicación conyugal indicada en la encuesta de línea base fue relacionada con el uso subsiguiente de la planificación familiar, independientemente de la exposición a la campaña. Además, en el caso de las parejas que aún no habían estado conversando sobre el tema, la exposición a la campaña facilitó la comunicación y, a su vez, el uso de los métodos. A través del tiempo, el dominio del hombre con respecto a las decisiones en materia de planificación familiar se transformó en una nueva modalidad de adoptar decisiones con la mujer en forma conjunta, y en un incremento del poder de decisión de la mujer.

**Conclusiones:** Es necesario disponer de nuevos indicadores para captar los efectos que tiene una campaña sobre las personas que ya tienen una predisposición para practicar la planificación familiar. Se debe promover las decisiones adoptadas en forma conjunta como una estrategia para incrementar el uso. Es necesario tomar medidas para mejorar la autonomía de la mujer y fortalecer su capacidad de negociación para utilizar los métodos de planificación familiar.

## RÉSUMÉ

**Contexte:** La communication entre époux et la pratique du planning familial sont étroitement liés, mais les voies d'influence, surtout dans le contexte de l'exposition à une campagne médiatique de promotion du planning familial, sont peu claires.

**Méthodes:** Des données de panel d'une enquête en population menée au Népal ont été recueillies en trois vagues, de 1994 à 1999, pour évaluer l'incidence d'un feuillet radiophonique parmi les couples en âge de procréer. Les données relatives à 1.442 femmes ont servi à évaluer l'évolution des décisions de

planning familial des couples, à identifier les prédicteurs de la communication conjugale et du planning familial par rapport à l'exposition au programme, et à clarifier les rapports temporels entre ces variables.

**Résultats:** Les femmes exposées au programme étaient significativement plus susceptibles de croire que leur époux approuvait le planning familial et d'avoir discuté la question avec lui (rapport de probabilités, 1,8–1,9). Celles qui avaient abordé la question avec leur époux étaient significativement plus susceptibles de pratiquer le planning familial (10,2). La communication conjugale de base a été associée à la pratique ultérieure du planning familial, indépendamment de l'exposition à la campagne. De plus, parmi les couples qui n'avaient pas discuté le planning familial, l'exposition avait ouvert la communication, qui avait à son tour mené à la pratique du planning. Avec le temps, la prédominance des maris dans les décisions de planning familial avait cédé le pas à un processus conjoint et à la hausse du pouvoir décisionnel des femmes.

**Conclusions:** De nouveaux indicateurs sont nécessaires à la capture des effets de la campagne sur les individus prédisposés à pratiquer le planning familial. Il convient de promouvoir la décision conjointe des époux en tant que stratégie d'accroissement du planning familial. Des interventions sont nécessaires au soutien de l'autonomie des femmes et du renforcement de leur capacité de négociation de la pratique du planning familial.

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