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*Improving Family Planning Use
and
Quality of Services
in Nepal
through the Entertainment-Education Strategy*

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Preface and Acknowledgments

Nepal's family planning program is increasing its scope to include the Programme of Action adopted at the 1994 Cairo International Conference on Population and Development. At this writing, the National Health Education, Information, Communication Center/Ministry of Health (NHEICC/MOH) of His Majesty's Government (HMG) with funding from the United Nations Population Fund (UNFPA), is in the implementation phase of its first National Reproductive Health/Family Planning Information, Education and Communication Strategy that will guide reproductive health efforts into the next century.

In support of this national effort and on behalf of the MOH, Department of Health Services and NHEICC, the Johns Hopkins University Center for Communication Programs (JHU/CCP) Population Communication Services (PCS), with funding from the United States Agency for International Development (USAID) and field work by Valley Research Group (VaRG), conducted the initial Nepal Family Planning Communication Survey (NFPCS) in four districts in 1994. Preliminary results of this research guided the design and implementation of the Radio Communication Project (RCP). The RCP is an integrated mass media, distance education and interpersonal communication and counseling (IPC/C) training program that features workshops and radio-based health worker training in reproductive health/family planning and a national radio drama series. Together these activities aim to improve the quality of contraceptive services, to empower clients in actively seeking contraceptive information and services, and to promote the concept of the well-planned family.

Special appreciation goes to Mr. Ghananath Ojha, Secretary at the MOH for opening the dissemination workshop on the Key Findings held at NHEICC on July 3, 1996. The time and guidance of the following officials is also much appreciated: Dr. Kalyan Raj Pandey, who was the Director of the Family Health Division (FHD) when the research began and is now the Advisor to the MOH; Dr. K. B. Singh Karki, who was then acting Director-General of the Department of Health Services and chairperson of the Key Findings dissemination workshop; and Dr. Shyam Prasad Bhattarai, former Director of the NHEICC, who oversaw development of the on-going RCP as well as the NFPCS. The authors are also grateful for support from the former directors of NHEICC, Dr. Chhatra Amatya and Dr. Peeyoosh Kumar Rajendra, and the continued support for the RCP from the acting director Mr. L. R. Ban. In addition, appreciation goes to Mrs. Vijaya K.C., former Director, National Health Training Center (NHTC), for her organizational support of the survey and to Dr. Laxmi Raj Pathak, Director of FHD for his active participation.

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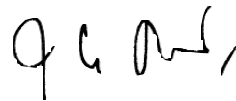
Both Dr. Douglas Storey, formerly of the Research and Evaluation Division of JHU/CCP, and Dr. Yagya B. Karki, former Senior Program Officer in the JHU/PCS office in Kathmandu, participated in all phases of the NFPCS: designing the survey questionnaire, data analysis, and writing this report. Dr. Karen Heckert, former Senior Program Officer at JHU/CCP, participated in designing the research, planning and reviewing the analysis and preparing the results. The JHU/PCS Nepal former Country Representatives, Ms. Marsha McCoskrie and Dr. Pamela Allen, helped shape the direction of the research and guide the project to completion. Dr. Dibya M. Karmacharya and Dr. Karuna Onta, former Senior Program Officers in the JHU/PCS Nepal office, gave valuable input during the process of designing the questionnaire in areas related to the role of health workers and IPC/C. Dr. Suruchi Sood, Program Officer at JHU/CCP, contributed in editing an earlier draft of this

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Abbreviations

AVSC	Association for Voluntary Surgical Contraception
CCP	Center for Communication Programs
CPR	Contraceptive Prevalence Rate
DHS	Demographic and Health Survey
FCHV	Female Community Health Volunteer
FHD	Family Health Division
FHI	Family Health International
FP	Family Planning
FPAN	Family Planning Association of Nepal
HMG	His Majesty's Government
ICHP	Integrated Community Health Project
IEC	Information, Education and Communication
IPC/C	Interpersonal Communication and Counseling
JHPIEGO	Johns Hopkins International Education and Training in Reproductive Health
JHU	Johns Hopkins University
MCH	Maternal and Child Health
MOH	Ministry of Health
MWRA	Married Women of Reproductive Age
NCP	National Commission on Population
NCPS	Nepal Contraceptive Prevalence Study
NFFPHS	Nepal Fertility, Family Planning and Health Survey
NFFS	Nepal Fertility and Family Planning Survey
NFHS	Nepal Family Health Survey
NFPCS	Nepal Family Planning Communication Survey
NFS	Nepal Fertility Study
NGO	Non-Governmental Organization
NHEICC	National Health Education, Information, and Communication Center
NPC	National Planning Commission
PCS	Population Communication Services
RCP	Radio Communication Project
RH	Reproductive Health
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
VaRG	Valley Research Group
VDC	Village Development Committee
VHW	Village Health Worker

Summary

Background

This report presents results from a comprehensive research-based integrated intervention that aimed to improve family planning service utilization and delivery in Nepal. It documents one of the best examples to date of a “push-pull” strategy of family health promotion, in which two different yet closely linked audiences in the health services system—clients and providers—were addressed simultaneously. The project has been extended twice, due in part to its comprehensive evaluation and documented impact. The project is now in its fifth year of operation.

His Majesty’s Government (HMG) of Nepal outlined specific family planning and population goals in its Eighth Five-Year Plan (1992-1997). In 1991, the Nepal Fertility, Family Planning, and Health Survey carried out by the Ministry of Health (MOH) revealed that there was a significant population with “unmet need” for reproductive health and family planning information and services. In 1993, research conducted by the MOH with assistance from the Johns Hopkins University Center for Communication Programs (JHU/CCP) showed that couples with unmet need could be reached most effectively by radio. In addition, research in selected districts indicated that improvements in the knowledge and skills of health service providers could raise the quality of client-provider interactions. Rude and discouraging interactions were often cited as the reason for poor utilization of health services.

JHU/CCP’s mandate during this period was to provide technical assistance in the development of prototype population communication projects. Therefore, at the invitation of HMG and with funding from the United States Agency for International Development (USAID), JHU/CCP provided assistance in:

- development of information, education and communication (IEC) and interpersonal communication and counseling (IPC/C) training curricula;
- expansion of local capacity for communication research and program implementation;
- development of IEC policy;
- message design and production management for mass media products; and
- expansion of the institutional capacity of the MOH, its divisions, and the private sector to carry out family health communication.

The Radio Communication Project (RCP) emerged out of this activity. This field report describes the debut phase of the project from late 1994 to early 1997. The RCP was designed to address two audiences concerned with reproductive health and family planning in Nepal:

- a) Those with unmet need (1.3 million currently married women of reproductive age and their husbands [NFHS, 1996]), and
- b) Health service providers (paid and voluntary).

The RCP consisted of two radio drama serials and three reinforcing components. Of the radio dramas, *Cut Your Coat According to Your Cloth*, was aimed at the general public and was broadcast nationally on Radio Nepal from November 1995 to December 1996, while *Service Brings Reward*, was aimed primarily at rural clinic-based health workers and was broadcast only in the midwestern region of Nepal from January to June 1996. In addition, radio spots and musical jingles were broadcast nationally to promote *Cut Your Coat* and its main themes, especially spousal communication. Formal district-level IPC/C training workshops were geared primarily toward less

isolated clinic-based health service providers in Dang district, which was the designated pilot site. These workshops were conducted during the same period and shared the same objectives and curriculum as the distance education program. Print materials addressing common client concerns about family planning were distributed to health posts and sub-health posts, with particularly systematic distribution efforts in Dang district.

Study Design

An integrated research and evaluation design was developed to match the integrated nature of the intervention. Extensive formative research strengthened the focus and effectiveness of the IEC and IPC/C materials. Improvements in health worker IPC/C knowledge and job performance were monitored with written examinations and field observations of client-provider interactions at intervals during the first year of broadcasting. Pre- and post-intervention interviews with a sample of health workers were also conducted to measure changes in health workers' knowledge, attitudes, motivation, and self-efficacy related to reproductive health counseling. Client response to the RCP was assessed through periodic waves of clinic exit interviews and by a population-based panel survey of clients in four districts. The same women and men were interviewed before and after the radio serials. This technique provided powerful measures of individual behavior change and the strongest possible evidence that the radio serials caused that change. Finally, service statistics were gathered from sentinel service delivery sites to assess trends in client traffic associated with the radio broadcasts and other promotional activities.

Findings

The monitoring and evaluation results show significant gains in provider knowledge, attitudes, and IPC/C skills resulting from exposure to the distance education serial and training workshops. Increases in client traffic during the intervention period were statistically linked to the onset of the radio broadcasts. Active client participation in sessions with health workers also improved and was significantly related to both radio exposure and the type of training health workers had received.

Finally, the panel survey of clients produced unequivocal evidence of campaign effects on both family planning adoption and continuation. Self-reported modern contraceptive use increased by seven percentage points among women and nine percentage points among men during a 27-month period. These increases were directly attributable to ideational change caused by exposure to the radio interventions.

Implications

The RCP was highly effective. Its strength derived from:

- the carefully designed, research-based strategy,
- the quality of the intervention materials, and
- the integrated and reinforcing nature of the intervention components.

In terms of project implementation, the integrated push (service delivery quality) and pull (demand for services) strategies and consistency with which both provider/service delivery and client/service utilization were portrayed in the RCP materials are the main lessons to be learned from this experience. Collaboration and teamwork, most visible in the Design Document Approach, account for much of the successful integration that occurred.

In terms of research and evaluation, and due to the prototypical nature of the RCP, the MOH and USAID strongly supported the research-based approach, vocally and through funding. The intervention would have been weaker had it not built on a strong research base, and the synergy of the project's components would not have been known if the integrated research and evaluation design had not been in place from the beginning of the project.

Chapter I. Introduction: A Profile of Nepal

Demographic Characteristics

Located in one of the most mountainous and inaccessible areas of the world, Nepal shares its northern borders with the Tibetan region of the People's Republic of China, and its eastern, southern and western borders with India. Its population is 22.4 million of whom slightly more than 88 percent live in rural areas (1991 Census).

With a total land area of 147,181 square kilometers, Nepal is divided into three distinct ecological regions: the Mountains, Hills, and Terai (or Gangetic plains). Because of the harsh terrain and limited transportation and communication facilities in the Mountain region, only about 8 percent of the population lives there. The Hill region, where transportation and communication facilities are much more developed, is home to about 45 percent of the population. The Terai region, an extension of the relatively flat plains along the border with India, is the most fertile part of the country. Although it constitutes only 23 percent of the total land area, 47 percent of the population lives there.

For administrative purposes, Nepal is divided into five development regions and 75 districts. The districts and some of the urban municipalities are further divided into Village Development Committees. Each Village Development Committee consists of nine wards, while the number of wards in a municipality varies, depending on the size and population of the area.

Nepal is a multi-ethnic and multi-lingual society. The 1991 census identified 60 caste or ethnic groups and subgroups in the population. The major groups include Chhetri and Thakuri (18 percent), Brahmins (14 percent), Magar (7 percent), and Tharu and Rajbanshi (7 percent). According to the Central Bureau of Statistics (1995), at least 20 different languages and dialects are spoken in Nepal. Nepali is the official language of the country and is the mother tongue of over 50 percent of the population; it is spoken and understood at least to a limited extent by most of the population.

A summary of the basic demographic indicators for Nepal from census data for 1971, 1981, and 1991 (Central Bureau of Statistics, 1995), is provided in Table 1. Over that 20-year period, there was a 59 percent increase in the population. The annual population growth rate increased from 2.1 percent in 1971 to 2.6 percent in 1981 and then declined again to 2.1 percent in 1991.

The total fertility rate continues to be high—4.6 in 1996—although it has declined significantly

Table 1.
Selected demographic indicators for Nepal, 1971-1991

Indicator	Year		
	1971	1981	1991
Population (millions)	11.6	15.0	18.5
Age (percent distribution)			
0-14	40.5	41.4	42.4
15-64	56.4	55.4	54.1
65+	3.1	3.2	3.5
Urban residence (percent)	4.0	10.2	12.6
Crude birth rate	42	44	42
Crude death rate	19.5 ¹	16.1 ²	13.3
Total fertility rate (number of lifetime births)	6.3	6.3	5.6
Infant mortality rate (per 1000)	172	117	97
Life expectancy (years)			
Male	42.0	50.9	55.0
Female	40.0	48.1	53.5
Mean age at marriage (years)			
Male	20.8	20.7	21.4
Female	16.8	17.2	18.2

Source: Central Bureau of Statistics, 1995

Notes: ¹1974-75, ²1986-87

from a total fertility rate of 6.3 in 1976 (National Family Health Survey, 1996). The mean age at marriage has risen a little over the past two decades, increasing by 0.6 years for males and 1.4 years for females. Two of five persons are below the age of 15.

Mortality has also declined over the last 25 years. The infant mortality rate dropped by 44 percent, from 172 in 1971 to 97 in 1991, but is still high by South Asian standards. Both male and female life expectancy are on the rise. These trends suggest a demographic transition taking place in Nepal with ample room for both fertility and mortality to decline further.

Family Planning Programs in Nepal

Family planning emerged as a major component of Nepal's planned development activities only with its Third Five-Year Development Plan (1965-1970). Before 1965, family planning programs mostly aimed to raise awareness of the need for family planning, even though few services were available. In 1968, the public sector Family Planning and Maternal and Child Health Project (FP/MCH) was launched by the MOH. Under the FP/MCH, family planning services were still fairly limited and offered mainly through existing maternal and child health clinics. The Fifth Five-Year Development Plan (1975-1980) extended family planning services through a system of outreach workers.

As multi-sectoral activities in population and reproductive health evolved, a population policy coordinating board was established in 1975 under the National Planning Commission. In 1978 this board was upgraded, becoming the National Commission on Population (NCP), and was vested with the tasks of planning, monitoring, and coordinating population activities in both public and private sectors. In 1990, the NCP was dissolved and its role was given to the population division of the National Planning Commission. In 1996, a National Population Committee was established, composed of ministers from relevant ministries and chaired by the prime minister. Its function was to provide strong political leadership and guidance in formulating policies and coordinating, implementing, monitoring, and evaluating population activities.

Overall, the 20-year trend of the Nepal population program has favored integrated programs. For example, the dual focus on short-term gains in family planning adoption and longer term change in social values surrounding family size, support for education and employment programs that raise women's status and lower infant mortality, and the launching of population-related programs through agriculture, forestry, urbanization, manpower and employment, education, women's development, and community development agencies all illustrate this trend.

The integrated strategy appears to be paying off. Table 2 illustrates the steady progress Nepal has achieved in modern family planning use since the mid-1970s.

Table 2.
Percentage of currently married non-pregnant women age 15-49 who are currently using modern contraceptive methods, Nepal 1976-1996

Methods	Source of Data				
	1976 NFS	1981 NCPS	1986 NFFS	1991 NFHS	1996 NFHS
Any modern method ¹	2.9	7.6	15.1	24.1	28.8
Female sterilization	0.1	2.6	6.8	12.1	13.3
Male sterilization	1.9	3.2	6.2	7.5	6.0
Pill	0.5	1.2	0.9	1.1	1.5
Injectables	0.0	0.1	0.5	2.3	5.0
Condom	0.3	0.4	0.6	0.6	2.1
Norplant	NA	NA	NA	0.3	0.5
IUD	0.1	0.1	0.1	0.2	0.3

Source: NFHS, 1996

Note: NA=method not available

¹Includes users of vaginal methods (diaphragm, foam, jelly)

Although progress has been steady, there remains a lag between the growth in demand for family planning services and the use of these services, the situation known as unmet need. Unmet need describes the condition of fecund women of reproductive age who say they want to delay or limit childbirth but are not using contraception. Although the percentage of women using a modern contraceptive method increased by 19 percent between 1991 and 1996, rising from 24 percent to 29 percent, the unmet need for family planning actually increased from 28 percent to 31 percent during this period.

In Nepal, some of the reasons for unmet need include:

- the impersonal and hierarchical systems of interaction between clients and providers (Schuler, et al., 1985);
- perceptions that husbands disapprove of family planning (Stash, 1995);
- perceptions that social norms oppose the use of family planning (Stash, 1995);
- culturally defined gender roles that emphasize the importance of sons to the family and limit women's participation in decisions related to their fertility (Stash, 1996);
- concerns about the side effects of contraception among both users and non-users of family planning (Shrestha, Stoeckel, and Tuladhar, 1991; Stash, 1995; Storey, et al. [RCP Baseline Report], 1996); and
- lack of access to quality information about contraceptive options and benefits (Rimon & Lediard, 1993).

By 1993, the implications of these research findings for family planning information, education and communication (IEC) were clear. An efficient way to increase access to contraceptive information among health workers and their clients was needed. In addition, health workers needed to develop more skill at relating to their clients, explaining the variety of contraceptive methods to them, helping couples to make informed decisions, and responding to client concerns about the use of contraceptives, including negative experiences with or apprehensions about side effects.

Radio appeared to be an appropriate vehicle for this new initiative because it had the most potential for reaching rural families and health workers with the health information they need. Only 5 percent of women read a newspaper or magazine at least once a week, and 12 percent watch television at least once a week, but 36 percent listen to the radio daily (Appendix A). Furthermore, the reach of radio is consistent across all age groups of women and is the most likely to reach isolated, poorer, less educated women.

Chapter 2. The Radio Communication Project

A New IEC Initiative

In 1993, a review of family planning and reproductive health IEC in Nepal was conducted by JHU/PCS on behalf of the Nepal MOH and USAID (Rimon & Lediard, 1993). This review revealed a decline in IEC activities since the early 1980s owing to erosion of manpower and morale associated with a series of political changes in the government. Most importantly, the review suggested that the IEC sector, which had historically played a peripheral role, needed to be integrated into the MOH as a key component of scientifically sound health and family planning promotion efforts aimed at addressing unmet need. The “Redline Strategy,” which refers to breaking through the barriers of unmet need, developed from this review process. In 1993, the MOH created the National Health Education, Information, and Communication Center (NHEICC) within its Family Health Division (FHD) to coordinate health communication activities.

Also beginning in 1993, a task force of USAID, the Association for Voluntary and Safe Contraception and John Snow International, undertook to develop national quality guidelines for Nepal covering a full range of clinical and non-clinical aspects of service delivery. One component was an IPC/C module (HMG, MOH, 1995). They were helped by input from JHPIEGO’s Comprehensive Family Planning Course curriculum and training expertise, and from several of JHU/CCP’s IPC/C curricula from projects in Kenya and Ghana.

The first draft of the guidelines was used in a series of national Contraceptive Technology Update workshops in early 1995 conducted by the Nepal Society of Obstetricians and Gynecologists, the Nepal Medical Association, and the MOH, with assistance from Family Health International (FHI) and JHPIEGO. Subsequently, these guidelines were incorporated into training curricula for the National Health Training Center and into programs and materials for the NHEICC.

Concurrent with this process, the Population Communication Services of JHU (JHU/PCS) worked with the MOH and the NHEICC to develop public communication programs in support of efforts to increase demand for and improve the quality of family planning service delivery. A Plan of Action, which was developed in January 1994 by the MOH, JHU/PCS, and USAID, called for a pilot distance education radio program for clinic-based health workers and a complementary radio program on reproductive health for the general public. From this Plan of Action, the Radio Communication Project (RCP) was developed to extend the reach of IPC/C training into remote areas of the country, to educate the public about reproductive health, and to help bring together higher service delivery quality and increased demand for those services.

Radio Communication Project

The RCP was designed to be an ongoing, multimedia reproductive health campaign aimed at:

- increasing demand for quality reproductive health and family planning services,
- improving the quality of client-provider interactions, and
- enhancing the image of service providers and reproductive health and family planning services.

Four districts were chosen as project sites: Dang in the midwestern region, Chitwan in the central region, and Sunsari and Dhankuta in the eastern region. These sites were selected by the MOH and USAID because they are fairly representative of Nepal in terms of the range of ethnicity, distance from Kathmandu, developmental status, and contraceptive prevalence rates. Originally, all

four sites were to receive the full intervention. However, the Nepal MOH later decided that Dang would be the main site of project interventions because it had the lowest family planning and literacy indicators of the four districts.

Elements of the Radio Communication Project

Cut Your Coat According to Your Cloth was broadcast nationally on Radio Nepal from December 1995 to December 1996. This Entertainment Education (Enter-Educate) radio drama serial aimed at improving public perceptions of health service providers and repositioning contraception away from its historical focus on sterilization toward a broader notion of “the well-planned family.” It also modeled men and women actively seeking better health conditions for themselves and their village with the help of a community health worker who represented a new generation of client-oriented service providers. It was broadcast once a week (57 episodes) in the Nepali language.

Messages about well-planned families were woven into a story in which the people of “Salghari” village struggled to reconcile traditional values and contemporary concerns. In *Cut Your Coat*, a well-planned family was depicted as one that thinks ahead to ensure adequate food, shelter, health, and education for all its members. In addition, the well-planned family was positioned as a community issue, not just a personal one, with local health workers playing a central and mediating role in the life and well-being of the village and its families. Interpersonal communication between husbands and wives and among members of the community was portrayed as an important step toward achieving family well-being. Ideal health worker skills (both clinical and interpersonal) were modeled by the character of Meera in the drama series *Cut Your Coat According to Your Cloth*.

The narrative drew on theories of reasoned action (Ajzen & Fishbein, 1980), planned behavior (Ajzen, 1991), and observational learning (Bandura, 1986) to frame the attitudes, beliefs, subjective norms, environmental constraints and feelings of efficacy that facilitate or hamper family health behaviors.

Service Brings Reward was broadcast in the midwestern region of Nepal, including the Dang district study site. This distance education radio program aimed at improving health service providers’ IPC/C skills and family planning technical knowledge by providing factual information and behavioral modeling, again using the Enter-Educate approach. The technical content of the serial was based on the Nepal Medical Standards Guide, an official MOH consensus document, which contains modules on family planning technical issues, as well as IPC/C.

The story of *Service Brings Reward* followed the lives of two health workers in “Pipaltar” village: Ram Krishna Chaudary, head of the local health post, and Kamala Gurung, the home visit health worker. Ram Krishna and Kamala modeled open-mindedness and client-oriented service as they tried to help the people of Pipaltar cope with the social and environmental changes happening around them and the problems that rapid population growth had created. In the course of the narrative, Ram Krishna and Kamala demonstrated the new concept of counseling, namely communication focused on determining the personal needs and desires of clients and helping them to make their own decisions. Along the way, the health workers talked about technical aspects of contraception, human reproduction, sexually transmitted diseases, birth spacing, and health service management. Most importantly, they continually demonstrated the value of effective two-way interpersonal communication in their professional and personal lives.

Each episode had “interactive” segments in which listeners were encouraged to think and talk about specific issues in the program. Accompanying print materials such as discussion guides and pre-printed feedback aerograms (pre-stamped, airmail letter-writing paper) were provided to the health workers who had registered with the project. It was broadcast twice a week (54 episodes) at

the end of the service day so that clinic staff could listen together at their health post and discuss it before going home for the day. Every health post and sub-health post in Dang district was provided with a working radio to ensure that participants could listen to the distance education serial.

Radio spots and musical jingles were also broadcast nationally. These short spots promoted *Cut Your Coat According to Your Cloth* and reinforced themes from the drama, particularly the importance of spousal communication. They aired from January to April 1995 and again from January to June 1996.

Formal district-level IEC and IPC/C advocacy training workshops, entitled “The Well-Planned Family: Reaching Our Goals Through IEC and IPC/C,” were conducted for District and Public Health Officers and Regional Health Administrators in all five development regions of the country. These workshops occurred during the same period and shared the same objectives as the distance education program. Like the distance education serial, the content of these training workshops was based on the Nepal Medical Standards Guide. Four workshops were held in Dang district during the first year of the RCP.

Print materials, including posters, were designed and distributed. Posters, designed separately for men and women, addressed the common misbelief that sterilization causes physical weakness and encouraged men to play a greater role in contraceptive decisions. These posters were distributed to health posts and sub-health posts nationally, but distribution was particularly systematic in Dang district. Additionally, leaflets and wall hangings were developed for clients and flipcharts were developed for service providers.

A guiding principle of the IEC initiative was message consistency across the various communication channels and audiences. To ensure that appropriate, accurate, and consistent content was incorporated into both radio drama serials, as well as the IPC/C and print components, the Design Document Approach was introduced. This approach is an internationally proven methodology for systematic and collaborative program development, production, implementation and evaluation. (For a detailed description of the Design Approach, refer to Esta de Fossard’s *How to Write a Radio Serial Drama for Social Development: A Script Writer’s Manual [1996]*, and *How to Design and Produce Radio Serial Drama for Social Development: A Program Manager’s Guide [1998]*, JHU/CCP.) Representatives of all of the stakeholders in the project met to produce the Design Document, which spelled out in detail the content of each radio program episode, responsibilities for different aspects of the project, a production and implementation schedule, and an evaluation strategy. This Design Document became the project blueprint. Private sector producers wrote and produced both of the drama serials according to that blueprint. A private research firm was contracted to carry out the evaluation activities.

Chapter 3. Impact Evaluation Design

The integrated RCP strategy required an equally integrated impact evaluation design to assess how the project components worked separately and together to create desired behavior changes.

Evaluation activities were designed to assess the following:

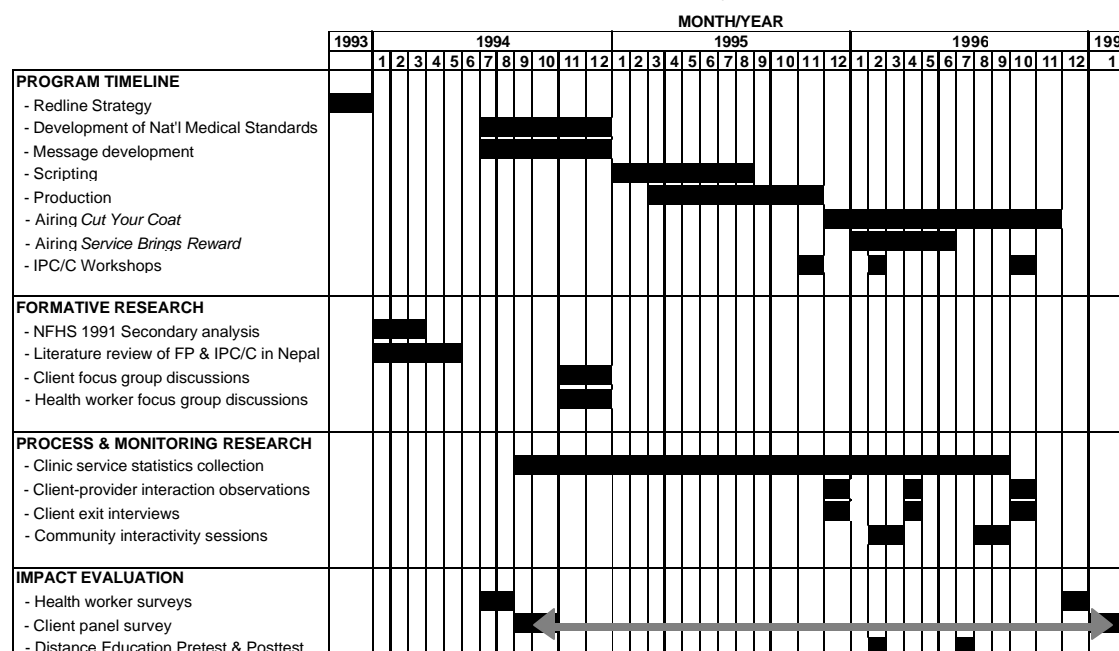
- exposure to the RCP intervention activities within the study districts;
- improved perceptions of health service providers among potential clients exposed to the RCP, including beliefs about their empathy, availability, and helpfulness, and perception of access to facilities, supplies, reproductive health information, and family planning materials;
- increased knowledge about contraceptives and attitudes toward family planning practices, including birth spacing, among potential clients exposed to the project;
- effect of changes in client beliefs and attitudes regarding unmet need and family planning;
- increased technical knowledge and counseling skills of providers in the health service training programs; and
- increased quality of client-provider interactions resulting from provider participation in the health service providers' training programs.

Sources of impact data for the first phase of the RCP included:

- baseline and follow-up surveys of clients and health workers in the four study districts,
- clinic-based observation of client-provider interactions,
- exit interviews with clients following their interactions with providers,
- written tests given to health service providers before and after their participation in the distance education and IPC/C training programs, and
- service statistics from two sentinel health posts in Dang district.

The chart below demonstrates the flow of program and evaluation activities:

Chart 1. Timeline of the radio communication project in Nepal – phase one



Client Survey Design

The client survey used a population-based pre-post survey design, with a nested panel of female and male respondents.

Baseline Survey. The baseline survey was conducted in September 1994. The total sample size was 3403, including 2716 women (currently married, aged 15-49 years) and 687 men. The husband of every fifth woman was selected to obtain a sample of couples.

Sampling followed a multi-stage cluster with replacement design. Village Development Committees and municipalities were first randomly selected, then wards were randomly selected within the Village Development Committees. Households were enumerated by the survey team, then selected at defined intervals from a random start to achieve a sample that was distributed proportionally to the population of the Village Development Committee. The resulting sample was representative at the district level.

Follow-up Survey. The follow-up survey was conducted in January 1997, at the conclusion of the year-long intervention program. The total sample size was 3621, including 2950 women (currently married, aged 15-49 years) and 671 men. An attempt was made to recontact all baseline survey respondents. A total of 1905 women were successfully interviewed for both baseline and follow-up surveys, constituting a re-contact rate of 70.1 percent. The male panel consisted of 149 men who were interviewed during both surveys, constituting a re-contact rate of 21.7 percent. An additional random sample was drawn to substitute for baseline respondents who could not be re-contacted.

The following table summarizes the client panel survey design.

Table 3.
Baseline and follow-up survey samples, overall and by study district

District	Baseline Survey (September 1994)			Follow-Up Survey (January 1997)		
	Women	Men	Total	Women	Men	Total
Chitwan	695	154	849	791	162	953
Dang	697	148	845	800	168	968
Dhankuta	632	196	828	648	172	820
Sunsari	692	189	881	711	169	880
Total	2716	687	3403	2950	671	3621

Source: MOH, JHU/PCS, VaRG Baseline & Impact Surveys, 1994-1997

Characteristics of Study Sample. Because socio-demographic characteristics are known to influence family planning and reproductive health behaviors, characteristics of the baseline and follow-up samples were examined to verify that they were comparable (Table 4).

The female follow-up sample was approximately two years older and had more living children, on average, than the baseline sample. The ethnic composition of the two female samples was not significantly different. There were no significant differences between the two male samples. Most differences can be attributed to the passage of time, rather than to systematic differences between the composition of the samples.

A similar comparison of the panel respondents and non-panel respondents (not shown in a table), revealed similar patterns of sample maturation. Women who were interviewed at two points in time (panel women) tended to be slightly older than women who were interviewed only once. The panel women also had more living sons and more children in general. Again, these differences can be attributed to the passage of time. Panel respondents were more likely than baseline respondents to be from the minority Tharu ethnic group and less likely to belong to the majority Parbatiya (Brahmin-Chhetri) hill tribes. A greater proportion of respondents from Dang and Chitwan districts was successfully re-contacted. There were no significant differences between the male panel and non-panel respondents.

Table 4.
Percent distribution for selected demographic characteristics among men and women interviewed in the four study districts

	Women		Men	
	Baseline (n=2716)	Follow-Up (n=2950)	Baseline (n=687)	Follow-Up (n=671)
Age	Percent		Percent	
15-19	8.6	7.3	-	-
20-24	19.1	17.6	12.7	8.8
25-29	21.7	20.9	13.8	13.3
30-34	16.5	17.4	16.8	17.1
35-39	14.7	14.5	16.7	18.5
40-44	11.5	12.0	16.2	14.0
45-49	7.9	10.3	11.1	12.8
50+	-	-	12.7	15.5
Mean¹	30.5	31.3	36.6	38.1
Education	Percent		Percent	
None	77.4	73.3	36	32.8
Primary	10.1	12.7	29.5	32.5
Secondary	7.4	8.1	17.4	14.6
SLC or more	5.1	5.9	17.1	20.1
Parity	Percent		Percent	
0	9.9	7.8	7.2	4.6
1	14.7	12.6	11.5	8.5
2	20.0	21.1	15.8	15.8
3	20.5	21.6	20.5	22.1
4+	34.9	36.9	45.0	49.0
Mean¹	3.3	3.8	3.3	3.8
Ethnicity	Percent		Percent	
Brahmin-Chhetri	33.0	32.7	32.9	32.3
Tibeto-Burman	26.7	26.4	29.5	29.1
Tharu	17.0	17.1	15.6	17.0
Other	23.3	23.8	22.0	21.6

Source: MOH, JHU/PCS, VaRG Baseline & Impact Surveys, 1994-1997

Note: ¹ Baseline and Follow-up means for the women's sample are significantly different at p<.05

Distance Education Evaluation Design

The impact of the distance education program among health service providers in Dang district was evaluated in three ways:

Pre-post written exam. Prior to the beginning of the distance education program, participants were required to report to the District Health Office to register for the training program, to receive a packet of course materials including a listening guide and feedback forms, and to take a pre-training examination. Of the 140 MOH service providers in Dang district, 134 registered for the program and took the initial examination. At the end of the training period, six months later, 102 of the registered providers (76 percent) returned to the District Health Office to take the required post-training written examination.

The pre-post training examinations assessed three types of learning:

- **Technical knowledge.** Participants were asked to respond to short-answer questions assessing their knowledge of specific contraceptive methods and counseling techniques.
- **Attitudes toward family planning.** Participants were asked to indicate on a five-point scale their agreement with a series of statements concerning family planning use and health worker behaviors.
- **Counseling scenarios.** To assess their applied knowledge of counseling techniques, participants were presented with four hypothetical counseling scenarios and were asked to provide a written description of their response to each scenario. The responses to each scenario were graded on a scale of 0 to 6 points by a trained evaluator.

Structured Observations of Client-Provider Interactions. Structured observations of client-provider interactions were conducted at six health posts. Four of these sites were located in Dang district (site of the distance education program); two additional sites were located in Sunsari district and served as control sites because the distance education radio signal did not reach that area. Data were collected in three waves: 1) prior to the distance education program in November 1995, 2) four months after the start of the distance education program in April 1996, and 3) four months after the completion of the distance education program in October 1996.

Data collection during Wave 1 was limited to interactions involving female clients. In the second and third waves, data collection was expanded to include interactions involving male clients. Table 5 shows the number of health service providers and clients observed.

Table 5.
Number of clients and service providers observed by wave

Clients and Providers	Wave 1 (11/95)	Wave 2 (4/96)	Wave 3 (10/96)	Totals
Female clients	240	240	240	720
Male clients	0	60	60	120
Total clients	240	300	300	840
Service providers	24	20	24	68

Source: MOH, JHU/PCS, VaRG Monitoring Study, 1995-1996

During each client-provider interaction, observers used a checklist to record the occurrence of 24 provider behaviors and 12 client behaviors (Appendix B). The observation checklist for provider behaviors reflected the content of the curriculum used in the distance education program and ICP/C workshops. The instrument itself was adapted from Kim & Lettenmaier (1995) and Roter (1997). The client behavior checklist was intended to identify those behaviors considered to reflect an active and discriminating client.

Client Exit Interviews. Immediately after their session with a provider, clients were interviewed about their impressions of the provider and the interaction, as well as about other family planning IEC issues. During the exit interview, clients were asked to provide their assessment of the provider's behaviors (10 factors) and their overall experience at the health post (6 factors) (Appendix C). Data were also collected on a client's exposure to other components of the RCP and their knowledge, attitude, and practices regarding family planning.

Other Sources of Impact Data

Interactivity sessions with community. At least one "interactivity session" was conducted in each Village Development Committee in Dang district either in February-March or August-September 1996. During these sessions, a field researcher, an RCP program officer, and a recording technician convened a village meeting, played portions of the radio drama, recorded village discussions about the series and its content, and promoted listenership. Excerpts from these tapes were then incorporated into periodic review segments of the radio serial.

Feedback letters. Feedback letters from listeners of the two radio serials provided another source of impact data. As noted above, pre-addressed aerograms were given to health service providers who were registered for the distance education program to facilitate feedback to the project. Many service providers wrote additional letters, as well. To engage the public's interest in providing written feedback, the *Cut Your Coat* serial wove listeners' segments into the program. In these segments, listeners were encouraged to write to Radio Nepal and their letters were periodically read on the air.

Clinic service statistics. Two of the four health post sites where interaction observations were conducted in Dang district were also enlisted to collect daily client flow statistics beginning in

September 1994 (approximately one year prior to the start of project broadcasting) and continuing until September 1996 (just before the end of project broadcasting).

The purpose of gathering service statistics was to determine if the RCP interventions affected the flow of family planning and maternal and child health clients over time. Besides family planning clients, maternal and child health clients were included in the analysis for three reasons: 1) evaluators were interested in the effects of the radio interventions on the image of health workers in general, 2) the radio interventions modeled desirable provider interpersonal interaction skills that should have been practiced with all types of clients, not just family planning clients, and 3) many maternal and child health clients, especially those who come for postnatal care, are potential family planning clients.

Separately, these sources of evaluation data shed light on different aspects of the project's impact; together, they provide a consistent overall picture of success.

Chapter 4. Evaluation Results

The RCP evaluation was designed to provide the strongest possible test of project impact. This included measuring changes in key reproductive health indicators that occurred during the period of the intervention and analyzing reasons for observed changes.

The evaluation methodology literature (Finkel, 1995) identifies several main criteria for causal inference:

- Is there evidence that exposure to the intervention occurred before the observed change in the outcome measure? (Time Order)
- Was there change in the outcome measure during the time period in question? (Change Over Time)
- Is there correlation between exposure to the intervention and the intended outcome? (Correlation between Exposure and Change)
- Can the effect of confounding variables be ruled out? (Control for Alternative Explanations)

Time Order

The first RCP components (posters and radio spots) began to circulate in January 1995, about three months after the baseline survey. The other radio components began in December 1995 (drama serial) and January 1996 (distance education). Impact measures were collected in January 1997, roughly six months after the end of the distance education serial and one month after the end of the year-long drama serial. Therefore, all of the intervention activities that were intended to cause changes in attitudes and behavior among clients and health workers occurred after the baseline measures and before the follow-up measures were taken. This means that baseline measures are uncontaminated by exposure to the RCP messages and that differences between the baseline and follow-up measures should be attributable, at least in part, to reproductive health communication that occurred between those two points in time.

The panel survey design added strength to the time order criterion. By interviewing the same people at two points in time it could be determined which respondents were using family planning or had positive attitudes or other predisposing factors (such as greater use of mass media or previous exposure to family planning information) prior to the intervention and how those characteristics changed after the intervention. Unlike pre-post surveys with independent samples, the panel design permitted us to identify the chronological order of respondent characteristics, intervention activities, and changes in respondent characteristics.

Therefore, the RCP impact study satisfies the time order criterion for causal inference.

Change Over Time

The Steps to Behavior Change model (Piotrow, et al., 1997) identifies five stages in the adoption of a new behavior: 1) knowledge, 2) approval, 3) intentions, 4) use, and 5) advocacy. Individuals are believed to progress from one stage to the next as they adopt and then commit themselves to a new behavior. One aspect of an effective communication campaign is its ability to help people move through these stages.

The following subsections describe the baseline and follow-up samples at each of the five steps to family planning use. They offer an overview of some of the changes that occurred during the RCP that may have increased the use of family planning (Table 6).

Table 6
Knowledge, attitudes, and practices related to FP among women and men interviewed in the study districts at baseline and follow-up

Steps to Behavior Change	Women		Men	
	Baseline (n=2716)	Follow-up (n=2950)	Baseline (n=654)	Follow-up (n=671)
KNOWLEDGE				
Mean number of FP methods known ¹	5.3	6.1***	5.7	6.1***
Percent who know a FP methods ¹ source	84.2	93.8***	90.2	95.5***
APPROVAL				
Percent who approve of FP ²	91.7	95.0***	92.4	90.5
Percent with unmet need				
To limit pregnancies	30.0	27.0	25.0	22.0
To space pregnancies	3.0	6.0	4.0	3.0
Total unmet need ^{1,2}	33.0	33.0	29.0	25.0
INTENTION				
Percent of non-users who intend to use FP in the future ¹	57.7	67.5***	65.7	68.7
USE				
Percent currently using a modern FP method ^{1,2}	36.0	43.0***	44.0	53.0***
ADVOCACY				
Percent of current users who had advocated their method to others ^{1, 2}	83.6	88.5***	89.6	93.7*

Source: MOH, JHU/PCS, VaRG Baseline & Impact Surveys, 1994-1997

Notes: Within gender differences: Chi-square $p < .05^*$, $p < .01^{**}$, $p < .001^{***}$

Across gender differences: Men vs. women baseline score difference $p < .01^1$

Men vs women follow-up score difference $p < .01^2$

Change in knowledge

Number of methods known. Most women and men in the survey know at least one method of family planning. However, sustained use of family planning requires awareness of alternatives. Couples who know of more methods are better able to select a method that is right for them and are in a better position to change methods if unsatisfied with their first choice or their situation changes.

Between 1994 and 1997, the average number of methods known to both men and women increased. At the time of the baseline survey, women knew significantly fewer methods than men on average. But after 1994 women's awareness of family planning methods increased more than men's so that by the time of the follow-up survey there was no longer any difference between them: both men and women knew about an average of six methods.

Family planning method source. People cannot act on their awareness of family planning methods if they do not know where to get the method they want. In 1994, women were significantly less likely than men to know a source of contraception. By 1997, awareness of a source of family planning methods had increased significantly for both men and women, becoming nearly universal for both groups. Furthermore, the gender gap had decreased such that men were no longer significantly more likely than women to know of a source.

Change in Approval

Personal Approval. Personal approval of family planning was high in 1994 with over 90 percent of both men and women saying that they approved of couples using contraception. The difference between men and women was not significant. By 1997, approval among men was statistically unchanged, but the percentage of women approving of family planning had risen to 95 percent, making them more likely than men to approve of couples using contraception.

Unmet Need. Another form of approval is self-reported unmet need for family planning. People are said to have an unmet need for family planning if they are not currently doing anything to prevent pregnancy but meet at least one of the following criteria:

- they report that their last or current pregnancy was mistimed or unwanted,
- they want to wait at least two years to have their next child, or
- they want no more children.

People who want to wait to have children or whose last or current pregnancy was mistimed but are not using contraception are said to have an unmet need for spacing. Those who want no more children or who say their last or current pregnancy was unwanted but are not using contraception are said to have an unmet need for limiting.

In both surveys, women were more likely than men to report an unmet need for contraception, but overall unmet need did not change significantly for either men or women over time. The evidence in Table 6 suggests that demand for spacing is on the rise among women, but the increase in women's unmet need to space from 3 percent to 6 percent was not statistically significant. A three percent decline in men's self-reported unmet need to limit was not statistically significant either.

Change in Intention

Among non-users, intention to use family planning represents the stage at which individuals—having developed positive attitudes toward family planning—make a decision to act. Individuals with positive intentions may still experience uncertainty regarding their personal use of family planning and, therefore, do not initiate that behavior immediately. Nevertheless, research shows that self-reported intention to use family planning is the strongest predictor of eventual adoption and that people expressing positive intentions are candidates for change.

In 1994, female non-users were much less likely than male non-users to say they intended to adopt family planning in the future. By 1997, the percentage of female non-users who said they intended to adopt family planning had increased by 10 percentage points. Male change in intention was non-significant. Therefore, by 1997 the gender gap in intention had also closed so that the difference between male and female intention to adopt family planning was non-significant.

Change in Use

The percentage of both women and men using a modern family planning method increased significantly between 1994 and 1997: the percentage of women using a modern method increased 7 percentage points from 36 to 43 percent, while the percentage of men using a modern method increased 9 percentage points from 44 to 53 percent. Men were more likely than women to report that they were using a modern method at both points in time.

Several explanations for these differing reports from husbands and wives are possible. Women may be less likely than men to report the method their partner uses. To the extent that males report use of condoms in extramarital relations, this use would go unreported by their wives. It is also possible that men are more likely than women to exaggerate their use of contraception to an interviewer. Whatever the reasons, they are likely to be consistent over time. Therefore, the increased percentage of modern method use from 1994 to 1997 probably represents a real growth in contraceptive prevalence rate.

Change in Advocacy

Individuals may use a family planning method on a conditional basis until they are satisfied with it and commit to the decision to use it or until they experience problems and discontinue use. The

willingness to recommend one's family planning method to friends is considered to represent a successful completion of this trial period and a strong commitment by the user to the method and the concept of family planning.

Advocacy of family planning methods to others increased among both men and women from 1994 to 1997. Men were more likely than women to recommend their method to others at both points in time, although the gap narrowed slightly.

To summarize the observed changes over time from 1994 to 1997, both women and men became more knowledgeable about modern family planning methods and the sources of these methods, more likely to use these methods, and more likely to tell their friends about their experiences with these methods. Women's approval of family planning and their intention to adopt contraception increased over time, but men's did not. In every respect, except current use, gender gaps between men and women that existed in 1994 decreased by the end of the campaign period.

While these changes over time indicate that the RCP impact evaluation meets the second criteria for causal inference and suggests that the RCP intervention made a difference, additional criteria must be met before one can draw that conclusion with confidence.

Correlation between Exposure and Change

As described in Chapter 2, the RCP consisted of five components: 1) *Cut Your Coat According to Your Cloth* - a radio serial drama intended for the general public; 2) radio jingles promoting the serial; 3) radio spots promoting spousal communication about family planning; 4) *Service Brings Reward* - a radio serial drama intended as a distance education program for health care providers; and 5) supplementary print materials, some for men and some for women, addressing prevalent concerns about the health side effects associated with sterilization.

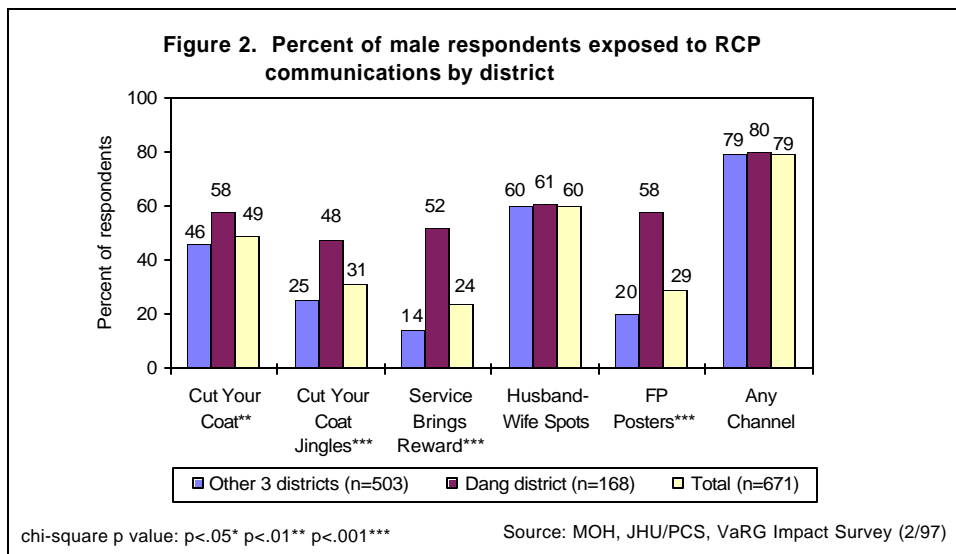
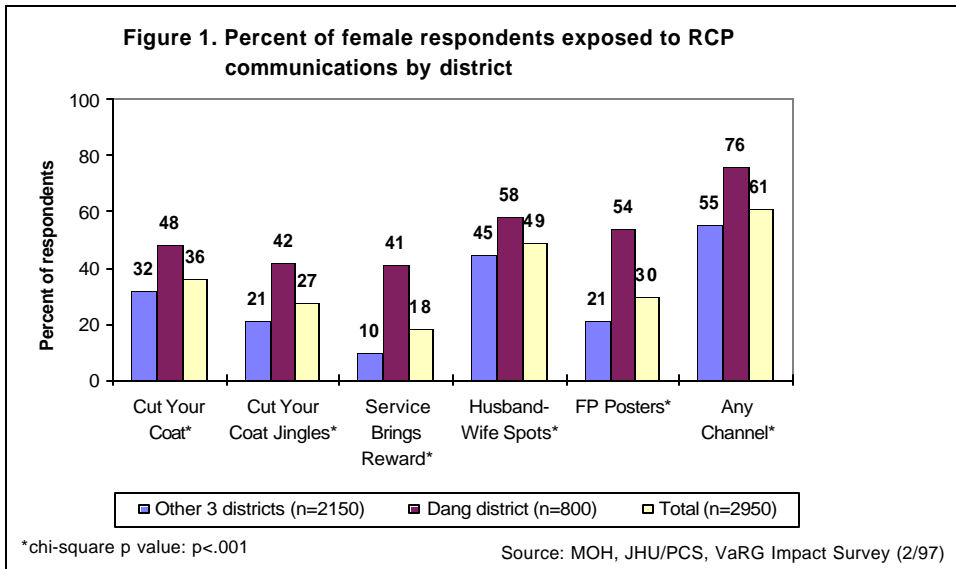
Broadcast components were spread over two distinct time periods. The spousal communication radio spots started broadcasting nationally during the first half of 1995 prior to the radio serials. Other components started broadcasting in November 1995. The *Cut Your Coat* serial and its promotional jingle were broadcast nationally but the distance education serial, *Service Brings Reward*, the distribution of supplementary print materials, and the interactivity sessions were limited to the midwestern region (including Dang district). As noted in Chapter 2, service sites in Dang district were provided with working radios to ensure that health workers could access the distance education program.

Because there were multiple ways to receive project communications, exposure was not a simple yes or no issue. Respondents could be exposed to none of the components or to as many as five, with exposure to more components representing a greater level or intensity of exposure.

Percent of Women and Men Exposed to RCP Communications by District

Overall, 61 percent of women reported exposure to at least one component of the RCP (Figure 1). Exposure for each component was significantly higher in Dang district. For some components, such as the *Service Brings Reward*, this reflects the limited opportunity for exposure outside of Dang. For the nationally broadcast *Cut Your Coat* serial, higher exposure in Dang may be due to the greater use of promotional activities, such as interactivity sessions, in that area. For men, overall exposure to the RCP communications did not differ by district (Figure 2). This reflects the high level of exposure among men in all districts to the spousal communication radio spots. For the other RCP components, exposure among men and women was significantly greater in Dang.

Among both men and women, exposure was greatest for the short radio spots promoting spousal communication, probably because they were broadcast in the first quarter of 1995, before the radio serials were on the air, and again concurrently with airing *Cut Your Coat*.



One of the most unexpected findings was that exposure to the *Service Brings Reward* distance education serial among clients was nearly as high as exposure to *Cut Your Coat*: 41 percent versus 48 percent for women and 52 percent versus 58 percent for men in Dang district. This suggests that clients have considerable interest in knowing what their service providers do. The fact that the distance education serial used a dramatized format, rather than a technical format, made it more accessible and appealing to clients and health workers alike.

Exposure to RCP components was generally higher among men than women. Men in both study and non-study districts were more likely to report hearing the two serial dramas and seeing the campaign posters. Men were somewhat more likely to report exposure to the jingle. The greater exposure to the campaign among men probably reflects the fact that men often control the use of a household's radio.

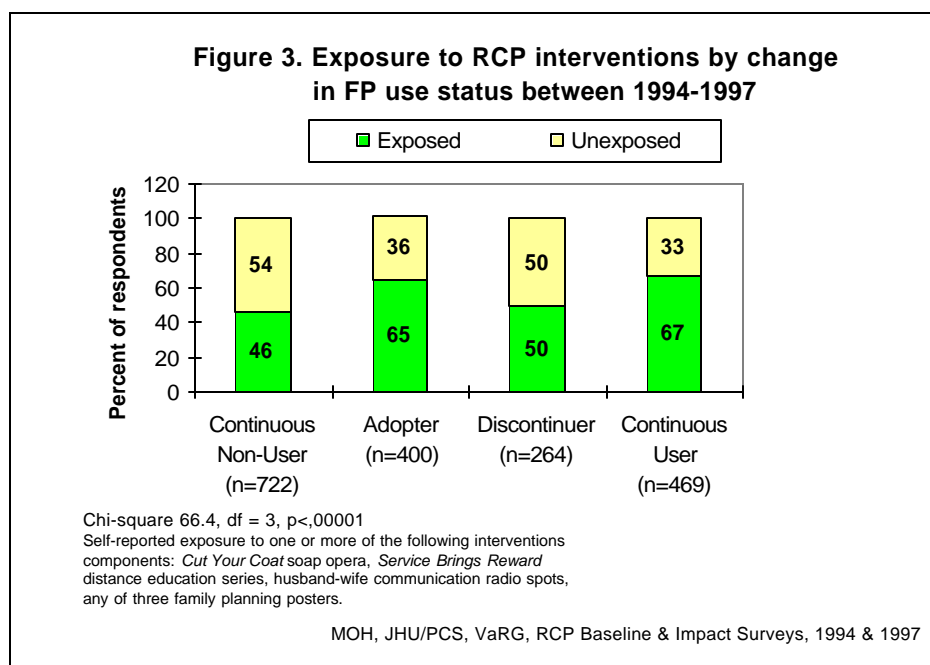
Change in Family Planning Use Status between 1994 and 1997 among Women

One indication of program impact is change in family planning use status between 1994 and 1997 among the female panel. At both points in the evaluation design, 1994 and 1997, women in the

panel were categorized by their family planning use status: a) continuous non-users were those women who were not using a modern family planning method at either point in time; b) discontinuers were those women who were using a modern method in 1994 but were not in 1997; c) adopters were using a modern method in 1997 but were not in 1994; and d) continuous users were using a method at both times.

Overall, 21 percent of women in the panel adopted a modern family planning method between 1994 and 1997. These women represent one-third of all women who were not using a modern family planning method in 1994. During the same period, 14 percent of women discontinued their use of family planning (36 percent of whom were using a modern family planning method in 1994). Forty percent of all women were not using at either time period and 25 percent of the panel were using at both points in time.

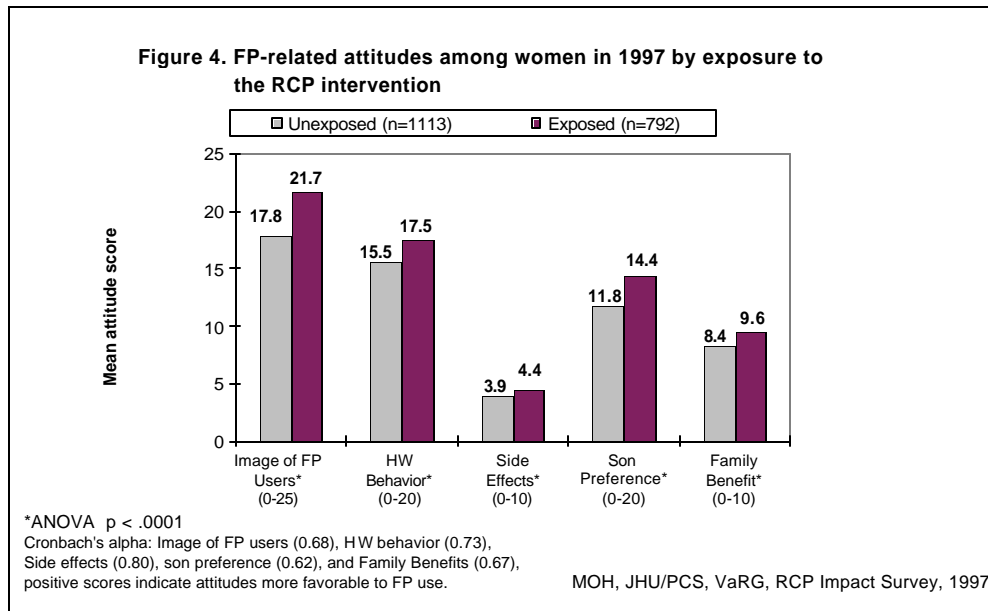
Figure 3 shows the association between exposure to RCP and the adoption of family planning among non-users in 1994, and the continuation of use among users in 1994. Among women who were not using a family planning method in 1994 (continuous non-users and adopters), those who began using a method were more likely to have been exposed to the RCP. Of women who were using a family planning method in 1994, those who continued using a method were more likely to have been exposed to the RCP than women who discontinued their method use. In the case of both adopters and continuous users, roughly two-thirds were exposed to the RCP. On the other hand, half of the users who discontinued and more than half of those who continued to be non-users were not exposed to the interventions. The differences in percent exposure between adopters and continual users or between continual non-users and discontinuers were not significant.



The high percentages of new adopters and continuous users of family planning who reported exposure to at least one of the RCP mass media components suggest the effectiveness of the project in reaching its intended audiences—non-users by persuading them to begin using family planning, and current users by motivating them to continue their practice.

Change in Family Planning-Related Attitudes between 1994 and 1997

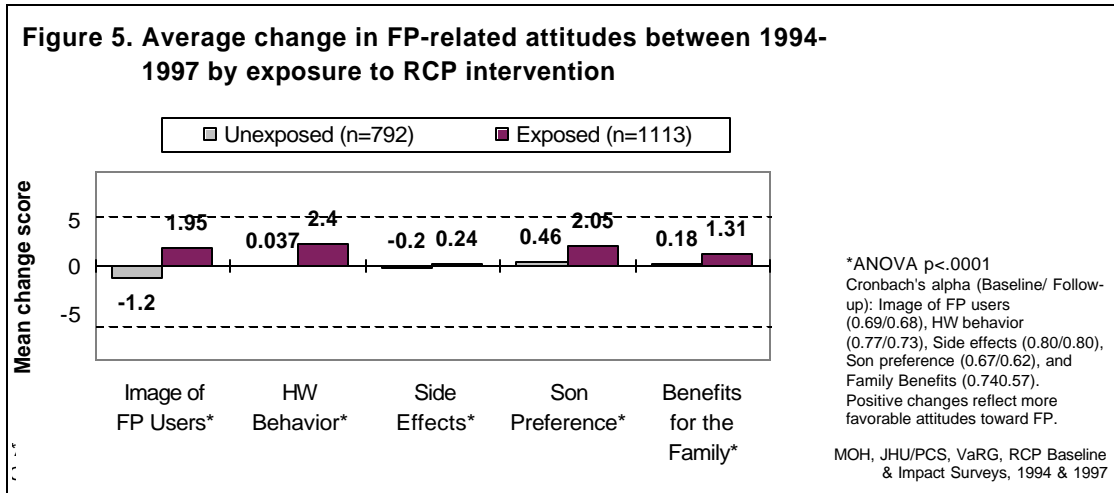
In both the baseline and follow-up surveys, respondents were asked to indicate their level of agreement (on a five-point scale) with 48 statements related to family planning. Using factor analysis, these items were used to create five summative attitudinal scales regarding: 1) the image of family planning users; 2) attitudes toward health worker behavior, 3) perceptions of side effects associated with contraceptive use; 4) a preference for sons; and 5) the perceived benefit to the family of using family planning. Higher scores indicate a more positive attitude toward family planning (Figure 4).



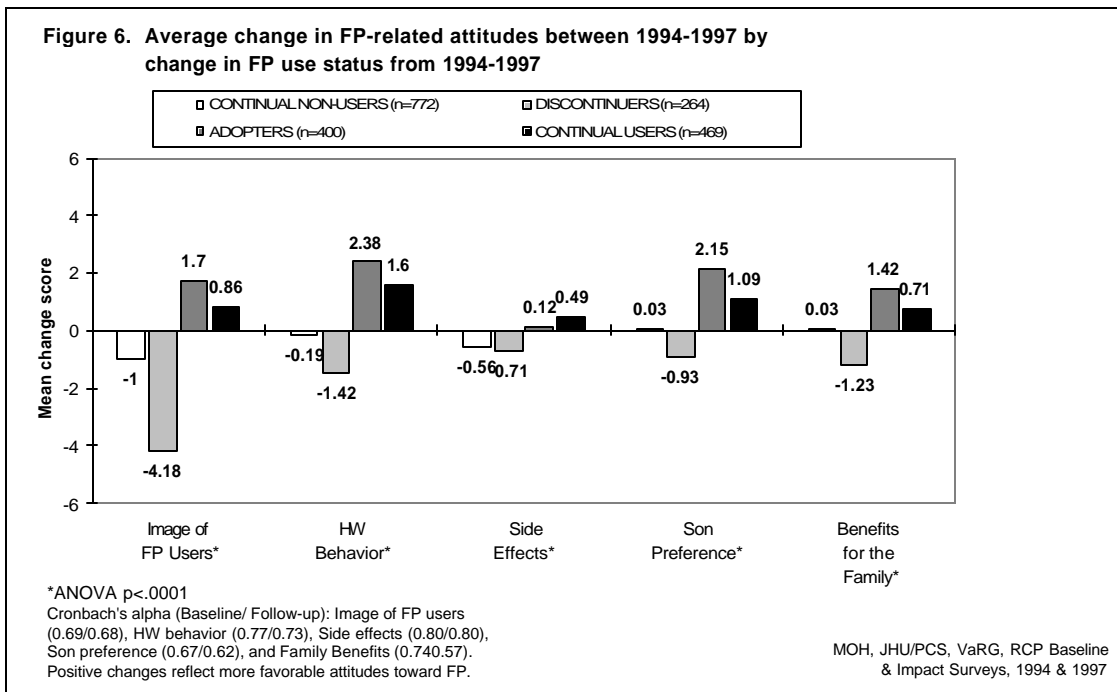
For each of the five attitudinal scales, women who were exposed to the RCP had significantly more favorable attitudes. Women who were exposed to the RCP had more positive attitudes regarding the image of family planning users and more favorable perceptions of health service providers, were less inclined to believe in side effects associated with contraceptive use, indicated less of a preference for sons, and had more favorable perceptions regarding the benefits of family planning to the family. That women who were exposed to the RCP interventions developed favorable perceptions regarding family planning users and health service providers more than the other attitudinal dimensions is important because it corroborates the primary goals of the RCP project: to enhance the cultural norm of family planning practice and the image of health service providers.

It is often difficult to attribute the difference in attitudes between exposed and unexposed groups to the effects of a mass media campaign since individuals with more positive attitudes may also be more inclined to pay attention to the campaign materials. However, the use of a panel design is able to account for potential selective exposure by allowing for a comparison between attitudes of the same people before and after exposure to the campaign.

Figure 5 shows how women's attitudes changed from 1994 to 1997. Our panel data provide strong evidence regarding the RCP's positive impact on an individual's attitudes. Women who were exposed to the RCP readjusted their attitudes in favor of family planning use, while women who were not exposed made little change in their attitudes. There was little difference in attitude scores between these two groups prior to the campaign, thereby eliminating predisposition to exposure or ceiling effects as alternative explanations to these changes.



If attitude change was associated with exposure, was it also associated with behavior change? Figure 6 shows that attitude change in favor of family planning was indeed associated with the adoption and continuation of family planning use. Women who either adopted family planning between 1994 and 1997 or continued using during the period had significantly more positive attitudes in 1997 compared to 1994. Attitudes toward side effects did not change during this period.



In contrast, women who discontinued use between 1994 and 1997 had significantly less favorable attitudes in 1997 compared to their attitudes in 1994. Women not using family planning at either period had either less favorable or equivalent attitudes in 1997 compared to 1994.

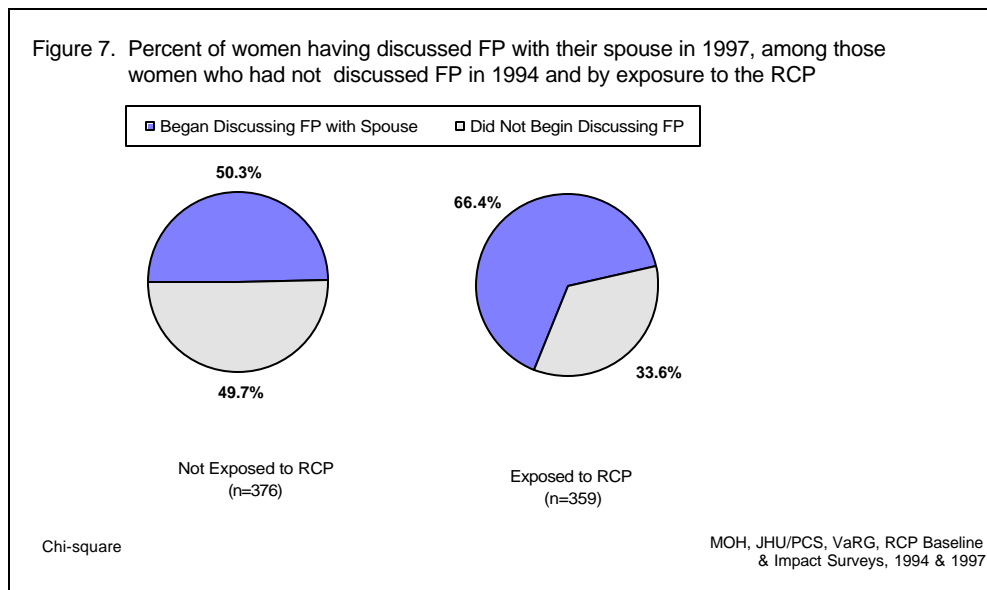
Spousal Communication about Family Planning and Perceived Spousal Approval of Family Planning

Studies around the world consistently show that one of the strongest predictors of family planning use by women is their subjective perception of their husband’s attitude toward family planning. Women who believe that their husbands approve of family planning are more likely to use family planning (Piotrow et al., 1997). Furthermore, discussion of family planning with one’s spouse is usually related to perceived spousal approval: women who do not talk to their spouse about family planning often assume that their husbands disapprove of family planning. A major objective of the RCP was to promote spousal communication about family planning.

Overall, a large proportion of women believed that their husband approved of family planning. However, women exposed to the RCP were significantly more likely to have discussed family planning with their spouse and were likely to believe that their spouse approved of family planning. Of those women who discussed family planning with their spouse and did not perceive their approval, those exposed to the RCP were a much smaller percentage compared to those not exposed to the intervention. Were women initiating discussions about family planning but being resisted? How? Are these among those women with unmet need?

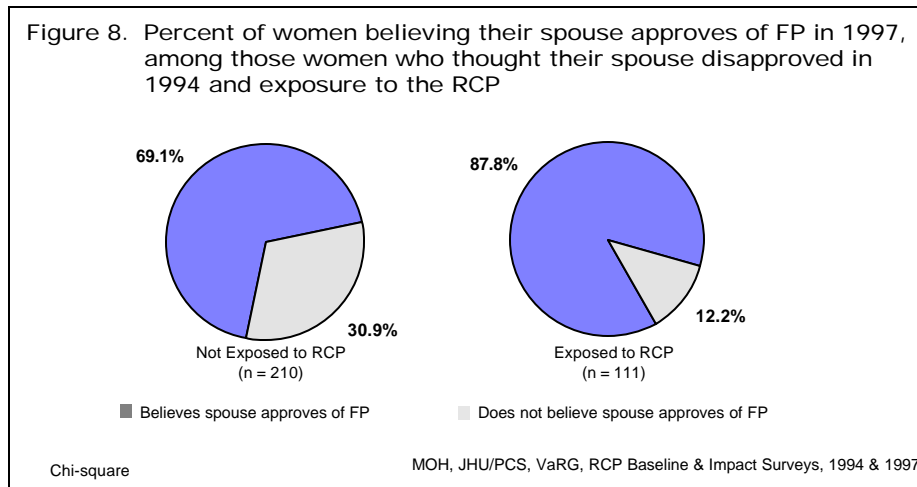
Start of Family Planning Discussions with Spouse since 1994

Over half of all women in the baseline survey had not discussed family planning with their spouse. Among these women, exposure to the RCP was associated with spousal communication about family planning in the follow-up survey. Sixty-six percent of women who had not discussed family planning with their spouse in 1994 and were exposed to the RCP had discussed family planning with their spouse in 1997. Only 50 percent of these women not exposed to the RCP had discussed family planning at follow-up (Figure 7).



Changes in Perceptions of Spousal Approval of Family Planning

Twenty percent of women in the baseline survey did not believe that their spouse approved of family planning. Exposure to the RCP among these women was associated with perceived spousal approval in 1997. Figure 8 shows that nearly 90 percent of women who had not thought their spouse approved of family planning in 1994 and were exposed to the RCP believed that their spouse approved of family planning in 1997. Less than 70 percent of the women not exposed to the RCP believed that their spouse approved of family planning.



Perceived Social Norms about Family Planning

Exposure to the RCP was also associated with the perception of normative support for family planning in one's village. Among women not exposed to the RCP, 20 percent believed that no one in their village was using family planning and 50 percent believed that fewer than 25 percent of the couples in their village were using family planning.

Among women exposed to the RCP, fewer than 10 percent believed that no one in their village used a contraceptive method and over 40 percent believed that more than 50 percent of the couples in their village were using family planning. This suggests that exposure to the RCP fosters the perception that social norms are favorable to family planning use.

Likelihood of Attitude and Behavior Change

Putting all the foregoing factors together (exposure to the RCP, positive attitudes toward family planning, interpersonal discussion about family planning, and perceived normative support from one's spouse and the community), one can begin to see how decisions to adopt contraception are made. People clearly weigh various factors, some of which are more important than others. Table 7 shows how these various factors are related to one another and to the use of modern contraception for the women in the RCP panel survey. The table shows the likelihood of women being a modern family planning user (column 5) associated with five IEC factors (at far left). The strongest predictor of family planning use is spousal communication and approval. Women who talked to their spouse and whose spouse approved were almost three times as likely to be family planning users. Other significant predictors of family planning adoption were positive attitudes and perceived normative

support. Discussion with a health worker and exposure to the radio serials were not directly related to family planning adoption.

However, exposure to the radio serials was a strong predictor of the other IEC factors (columns 1-4). This indicates that the radio serial had a direct effect on attitudes, discussion of family planning with one's spouse and others, the perception of spouse approval, and the perception of support in the community. All of these factors directly affect family planning use.

Table 7.
Likelihood of attitude and behavior change associated with five IEC factors between 1994 and 1997 in Nepal

	Odds Ratios for Five Models				
	Positive Attitudes	Discussion of FP with HW	Spouse Comm & Approval	Perceived Normative Support	Modern FP Use
1997 IEC Factors	1	2	3	4	5
Exposure to serial &/or DE	1.6***	1.6***	1.8***	1.3*	1.0
Positive Attitudes toward FP	--	1.1	3.1***	1.4**	1.3*
FP Discussion with HW	1.1	--	2.1***	1.1	1.0
Spouse Comm & approval	3.1***	2.1***	--	2.5***	2.9***
Perceived Normative Support	1.4**	1.1	2.5***	--	1.8***
Number of observations	1771	1771	1771	1771	1771
Chi-Square value	236.3	110.8	266.8	127.1	333.0
d.f.	16	16	16	16	16
p-level of model	.0001	.0001	.0001	.0001	.0001
Pseudo R-squared	0.097	0.047	0.139	0.059	0.136

*p<.04, **p<.001, ***p<.0001

MOH, JHU/PCS, VaRG, RCP Baseline & Impact Surveys, 1994 & 1997

Correlation Between Contraceptive Prevalence Rate and Exposure to RCP

Considering the impact survey data only (there was no exposure to RCP interventions at baseline) and comparing contraceptive prevalence rates among those unexposed to contraceptive prevalence rates among those exposed to any of the RCP components (radio serial drama, radio distance education serial, radio spots, radio jingle, and three varieties of posters), the data show a contraceptive prevalence rate of 37.3 percent (plus or minus 2.3 percent) among the unexposed group versus 50.0 percent (plus or minus 1.8 percent) among the exposed group. This would seem to be a convincing exposure effect, but it is still possible that the exposed group contained more family planning users to begin with.

To test that possibility, the relationship between change in use status and exposure was tested. The panel design made it possible to identify which members of the survey sample changed their family planning behaviors between November 1994 and January 1997 and in what direction, i.e., who adopted, who discontinued, who was using family planning continuously, and who remained a non-user throughout. Table 8 summarizes this analysis, using only those men and women who were interviewed at two points in time. For simplicity's sake the percents are rounded to the nearest whole number.

The table shows the percentage of unexposed respondents in each category of use status and the percentage of exposed respondents in each category (reading down the columns). The effect of exposure is seen most clearly by comparing the percent exposed versus unexposed within each category of use status (reading across the rows). For example, the percentage of unexposed respondents who were continuous non-users was 48 percent while the percentage of exposed respondents who were continuous non-users was significantly lower, 35 percent. In contrast, the percentage of unexposed respondents who were adopters was 18 percent while the percentage of

exposed respondents who adopted was significantly higher, 22 percent, indicating that adoption was positively related to exposure.

Table 8.
Percent exposure to one or more of the RCP components between December 1994 and January 1997

Change in FP use status between 1994-1997	Unexposed (n=791)	Exposed (n=1263)	Row totals (n=2054)
Continuous non-users	48	35	40
Discontinuers	14	13	13
Adopters	18	22	21
Continuous users	20	30	26
Column totals	100	100	100

Source: MOH, JHU/PCS, VaRG Baseline and Impact Surveys, 1994-1997

Note: Significance test: Chi-square=40.69, p<.0001

It is worth noting that the percentages for discontinuers in the exposed versus unexposed columns is virtually identical (14 percent vs. 13 percent), indicating that discontinuation is not associated with exposure. It is also noteworthy that the percentage of continuous users is significantly higher in the exposed column. This suggests that exposure to RCP was positively associated not only with adoption but with continuation as well, which would contribute to maintaining gains in family planning adoption.

Adding the column percentages of adopters and continuous users in Table 8 there is a contraceptive prevalence rate of 38 percent among men and women not exposed to the RCP compared to a contraceptive prevalence rate of 52 percent for men and women who were exposed. This is a more accurate measure of exposure effects on contraceptive prevalence rates than the one in the first paragraph of this section because it makes time order explicit at the individual level and takes discontinuation into account.

But this analysis still does not control for the possible effect of other factors, such as exposure to other sources of family planning information and other predispositions toward change.

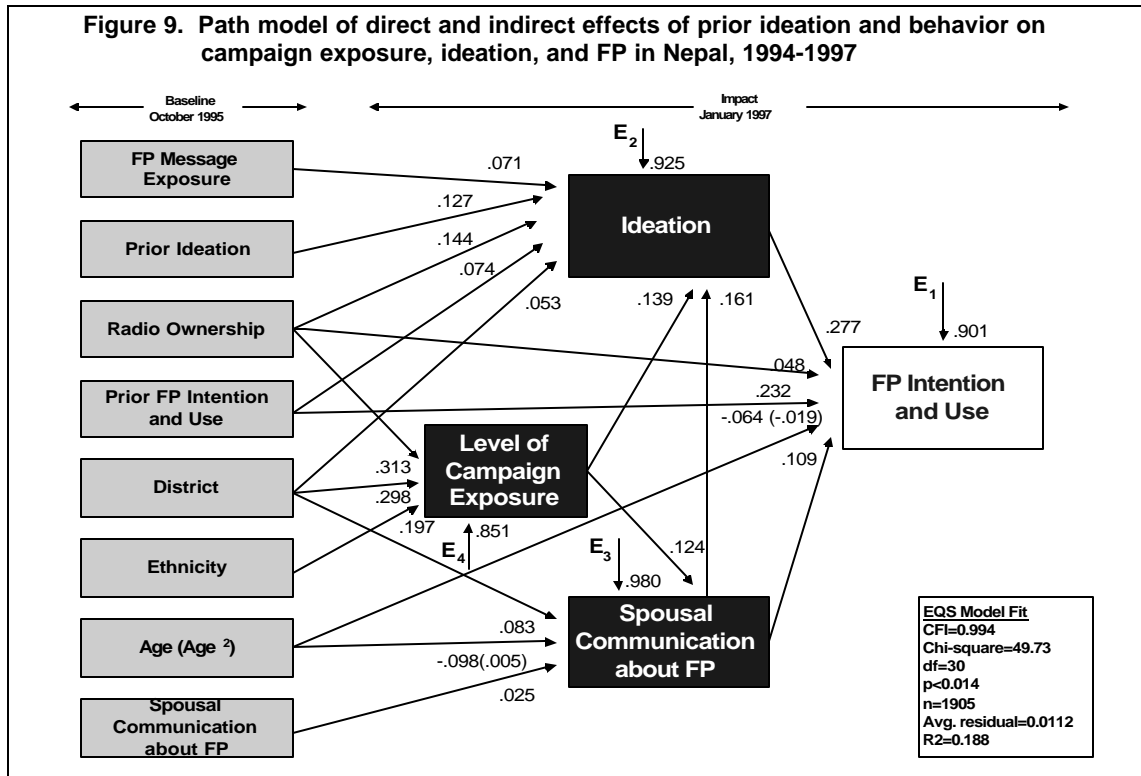
Control for Alternative Explanations

Meeting the final criterion for causal inference requires that factors other than exposure to the RCP be taken into account and controlled for, either through the design of the study itself (e.g., the use of a panel design) or statistically (e.g., by including such factors or variables in tested models of effects). Variables typically associated with family planning use or adoption include age, education, parity, number of sons, radio ownership, number of modern media ever used, ethnicity, residence, prior contact with health services, prior exposure to family planning information in the media, prior use of contraception or intention to use contraception, and prior positive attitudes toward family planning. Any one of these, and certainly some combination of them, could explain some of the behavior change observed in Nepal. The important question from an evaluation standpoint is: if these variables are taken into account, does exposure to the RCP intervention still explain behavior change? If not, one would have to conclude that the radio project itself contributes little or nothing to observed changes and that people change for reasons having nothing to do with the campaign.

To test this possibility, the likelihood of post-intervention family planning intention and use as a function of campaign exposure, spousal communication, and positive attitudes—the things the RCP was designed to influence—was analyzed while simultaneously controlling for the other potentially confounding variables above. The panel survey design makes this possible because one can measure people’s pre-intervention psychological and behavioral characteristics during the baseline survey and before the RCP began. Then, by going back to those same people, one can compare people with and without predisposing factors and include those factors in the tested models of behavior change. This technique is known as path modeling because it describes the path that people follow in arriving at a

particular outcome, in this case intention or actual use of contraception.

Path models provide a clear picture of the direct and indirect influences on family planning use. Path models are based on structural equation modeling, a statistical procedure that allows one to test multiple direct and indirect causes of behavior change simultaneously. In this instance, background variables in 1994 were used to predict intervening variables (ideations concerning family planning, level of campaign exposure, spousal communication) and family planning use in 1997, while the three intervening variables were also used to predict each other and family planning use (Figure 9). Simultaneously fitting each of these models provides more precise estimates of the strength of both the direct and indirect relationships between each of these variables.



Ideation refers to a composite score of an individual's approval of family planning, their perceptions of spousal approval of family planning, their attitudes regarding the potential benefits of family planning to the family, their perceptions regarding the image of family planning users, the number of modern methods known, and their knowledge of a source of modern family planning methods.

Campaign exposure was measured as the number of RCP channels to which a woman was exposed. Spousal communication was a dichotomous variable assessing whether a woman had discussed family planning with her spouse in the 12 months prior to the survey. Family planning intentions and use was a four-point variable, ranging from 1) no use/no intention to use to 2) intention to use in the future to 3) intention to use in the next six months to 4) current use.

Exposure to the campaign was primarily due to access issues. The three predictors of exposure to the RCP were radio ownership, district of residence, and ethnicity. Obviously, radio owners are more likely to be exposed to a radio campaign. Women in Dang had greater exposure since there were more campaign activities there, and these were conducted with greater intensity than in the

other three districts. Ethnicity reflects the greater exposure of native Nepali-speaking Brahmin and Chhetri women to the campaign, which was broadcast in Nepali. Women from other ethnic groups, who often speak a local language rather than Nepali, may be less inclined to listen to a program in a language with which they are unfamiliar.

Neither behavioral nor ideational factors in 1994 influenced exposure to the RCP. Skeptics of the impact of mass media programs in promoting behavior change often claim that those individuals most likely to change are also the most likely to listen to a media campaign. Results of the path analysis suggest that individuals predisposed to using family planning were not more likely to listen to the RCP, providing evidence that selectivity effects are not confounding the observed relationships between exposure to the RCP and the adoption of and use of family planning.

Confirming the earlier analysis, exposure to the RCP did not influence family planning intentions and use directly. Rather, exposure to the campaign influenced ideational factors and spousal communication regarding family planning, which in turn, influenced family planning intentions and use. Current use of family planning was also influenced by prior use, which may partly reflect the large proportion of users relying on sterilization. Age and radio ownership also were weakly associated with family planning intentions and use.

Ideation toward family planning, in addition to being influenced by RCP exposure, was also influenced by spousal communication regarding family planning, radio ownership (which may indicate a greater degree of modernity), and prior ideation toward family planning. Exposure to family planning messages prior to the RCP and prior use of family planning also influenced ideations toward family planning in 1997, albeit weakly. Spousal communication regarding family planning was influenced directly by district of residence, age and prior spousal communication regarding family planning.

Summary of Effects of RCP Communications among Female Panel

In 1994, 39 percent of women in the panel were using a family planning method. During the project period, between 1994 and 1997, 34 percent of non-users began using a contraceptive method, while 36 percent of users discontinued their use of family planning. Exposure to the RCP appears to be related to these decisions. Women who began using a family planning method were more likely to report exposure to the RCP than women who did not adopt family planning. Similarly, women who discontinued their use of family planning were less likely to have been exposed to the RCP than women who continued using family planning.

There were three mechanisms by which exposure to the RCP promoted the use of family planning among women. First, exposure to the RCP was observed to promote the development of attitudes favorable to family planning use. Second, exposure to the RCP was seen to promote spousal communication regarding family planning and the perception that one's spouse approves of family planning. Third, exposure to the RCP influenced perceptions regarding social norms toward family planning—women exposed to the RCP were more likely to believe that a large proportion of their community was using family planning. These factors have an additive effect on the probability of adopting, or continuing to use, family planning.

The use of a panel design strengthens claims of a causal relationship between exposure to the RCP and family planning use. This design provided an opportunity to observe the ideational and behavioral changes that occurred in individuals in response to campaign exposure. Panel data addressed the concerns that selective exposure to messages may confound associations between exposure and behavior.

While the path model offers evidence that exposure to a campaign does influence attitudes and behaviors, it also highlights structural constraints, such as radio ownership and language ability, that limit exposure to a campaign. Only 60 percent of women in the follow-up survey owned radios.

Analysis showed that 1997 family planning intention and use was directly and positively related to prior intention and use, but that there was an additional significant and positive effect of (1) positive attitudes toward family planning and (2) spousal communication about family planning.

The effects of the RCP on family planning intention and use occurred by way of its impact on knowledge and attitudes toward family planning (also called ideation) and its impact on spousal communication. At first glance this finding would seem to undermine claims that RCP exposure itself influenced family planning use. However, the claim of RCP effects can still be asserted for the following reasons:

- Although some messages in the RCP interventions directly encouraged people to adopt family planning, the more prominent messages of the serial drama, distance education serial, and radio spots addressed sociocultural attitudes and values that formative research told us inhibits people in Nepal from choosing to adopt family planning (e.g., son preference, fear of side effects, a negative image of family planning users, lack of knowledge about the benefits of family planning for the family, and low expectations about the quality of family planning service delivery). Consistent with theories and common sense, one might expect the RCP messages to have an effect on those attitudes-ideation. A change in these attitudes should in turn directly influence family planning intentions and use. This was precisely the pattern of relationships shown by the impact data.
- Exposure to the RCP interventions was directly and positively related to change in precisely the attitudes described above, which were in turn directly and positively related to family planning intention and use. Exposure to the RCP also was related directly and positively to spousal communication about family planning, which in turn was directly related to family planning intention and use. These relationships were all the more striking because they were significant even after taking prior attitudes, behaviors, and spousal communication into account. How could change in precisely those attitudes and spousal communication have taken place if not as a result of RCP message exposure? Furthermore, the effect of attitudes and spousal communication accounted for roughly 40 percent of the variance in post-intervention family planning intention and use. Attitudes alone accounted for almost 30 percent of that variance.
- Although the analysis in this paper is not framed in terms of impact on contraceptive prevalence rate, we can extrapolate from the results by subtracting the effects of exposure on ideation and spousal communication from the overall model of effects and re-examining the model. Without the changes in attitudes and spousal communication caused by RCP exposure, the contraceptive prevalence rate in the post-intervention panel of respondents would decrease by roughly 13 percent over two years (or 5.9 percentage points from a 45.6 percent contraceptive prevalence rate to a 39.7 percent contraceptive prevalence rate). This would, of course, be an enormous loss of potential over time if the annual contraceptive prevalence rate increase was three points lower each year.

Effects of Exposure to RCP Communications among Male Sample

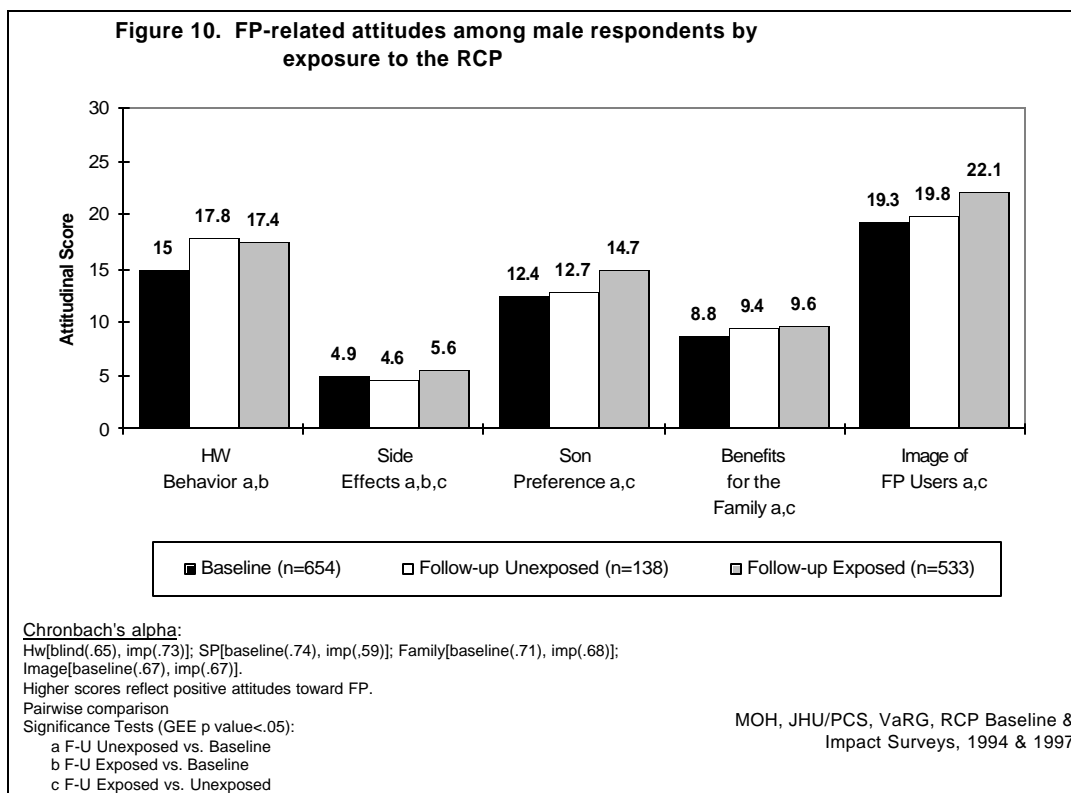
Unlike the female sample, the male panel was too small to be of much value in measuring change during the study period. Compared to 1905 women, 149 men were interviewed in both surveys.

To assess the impact of the RCP in promoting attitudinal and behavioral changes among men, exposed and non-exposed groups in the follow-up survey were compared to the baseline sample.

Earlier analysis suggested that the two samples were comparable for several variables that are believed to moderate family planning use. Since these comparisons include the 149 men that were interviewed in both surveys—observations that are not independent—all analyses used generalized estimating equations (GEE) to account for this lack of independence while testing the significance of observed differences between groups.

Changes in Family Planning-Related Attitudes of Males between 1994 and 1997

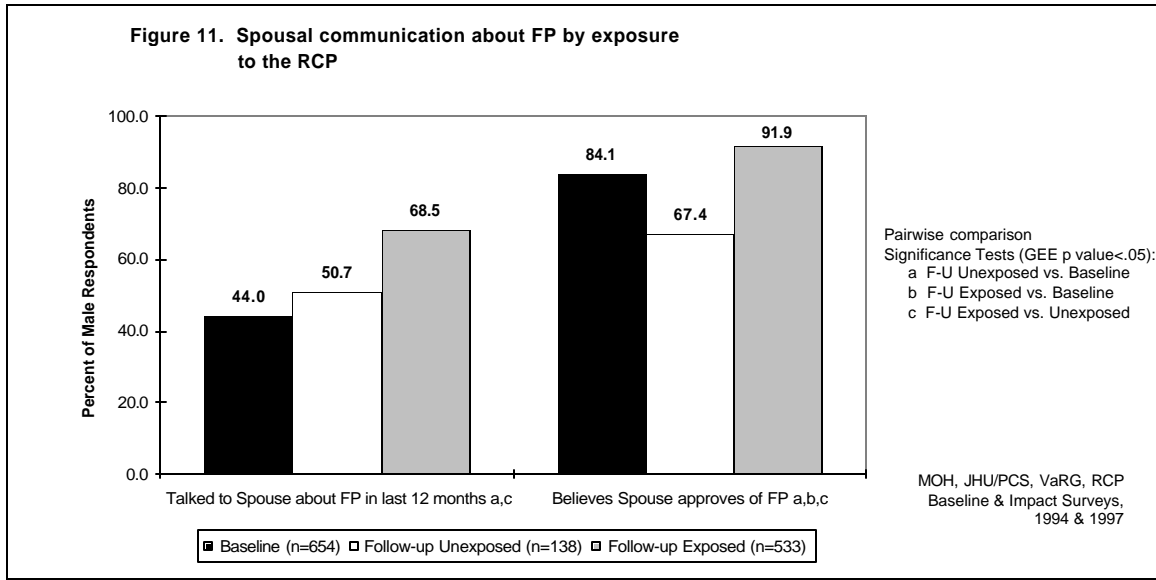
Exposure to the RCP was associated with more favorable attitudes regarding the side effects of family planning, the preference for sons, the benefits of family planning for the family, and the image of family planning users. Men in the follow-up sample who were exposed to the RCP had more positive scores for these attitudinal scales than men in the baseline sample or men in the follow-up sample who were not exposed to the RCP (Figure 10).



Exposure to the RCP does not appear to have had an influence on attitudes toward health service providers. Although men in the follow-up sample had more positive attitudes toward health service providers than men in the baseline sample, this difference was equivalent in both exposed and non-exposed groups. Could this suggest that the men experienced improvements in health service providers' behavior? Perhaps the attitude change occurred as a result of peer reports of positive experiences with family planning services. Again, it is significant that, similar to the female panel, the biggest gains of the RCP were in enhancing the perceptions of family planning practice and the image of health service providers—primary goals of the RCP.

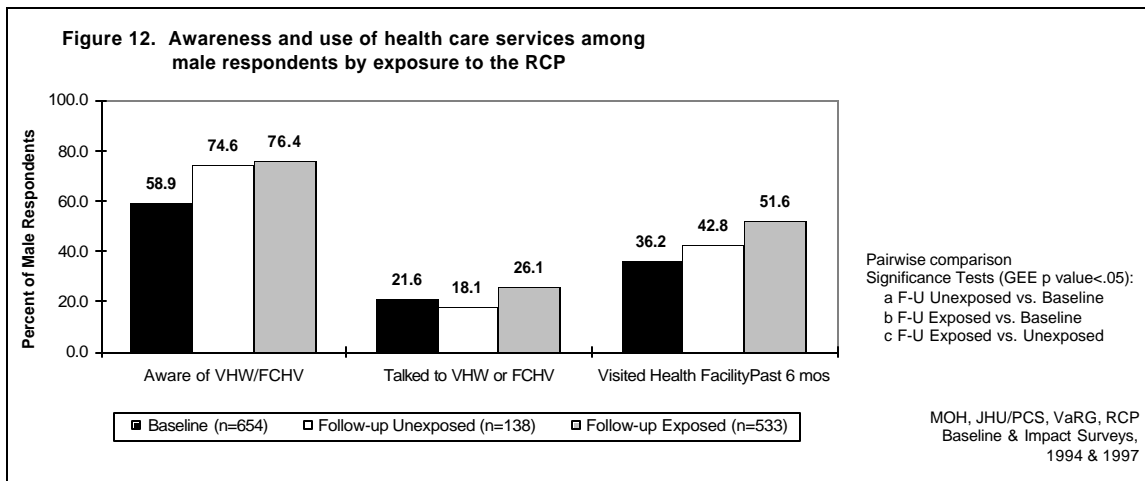
Spousal Communication about Family Planning and Perceived Spousal Approval of Family Planning

Exposure to the RCP was associated with both spousal communication and with perceptions of spousal approval of family planning. Men who were exposed to the RCP were more likely to have talked with their spouse in the 12 months preceding the survey and to believe that their spouse approved of family planning, than men in the baseline sample or men in the follow-up sample who were not exposed to the RCP (Figure 11).



Awareness and Use of Health Care Services

The increase in the awareness of health service providers among men appears to be independent of exposure to the RCP. There was no significant difference in awareness of health service providers between exposed and unexposed groups in the follow-up sample. Both groups had significantly greater awareness of health service providers than did the baseline sample (Figure 12). Following



the RCP interventions, could it be spousal communication that influenced the men? Or perhaps peer reports? Or both? Perhaps it is their personal experience in obtaining family planning services. Exposure to the RCP was also unrelated to interaction with the health service providers; there were no differences based on exposure status or between baseline and follow-up surveys in the percentage of men who had talked to health service providers.

Exposure to the RCP was associated with use by men of clinic-based services. Men who were exposed to the RCP were more likely than men in the baseline to have visited a health care facility in the 6 months preceding the survey. Regarding visits to a health care facility, there was no difference between men in the follow-up sample who were not exposed to the RCP and men in the baseline sample.

Perceived Social Norms for Family Planning

Exposure to the RCP was strongly associated with perceptions that use of family planning in one's village is widespread. Among men not exposed to the RCP, 30 percent believed that no one in their village was using family planning and over 70 percent believed that fewer than 25 percent of the couples in their village were using family planning.

Among men exposed to the RCP, 14 percent believed that no one in their village used a contraceptive method and nearly 30 percent believed that more than half of the couples in their village were using family planning.

Change in Family Planning-Related Attitudes and Family Planning Use Status

Attitude change in favor of family planning was not clearly associated with the adoption and continued practice of family planning. Those men who discontinued use of family planning in 1997 appeared to have developed negative attitudes toward the issue of side effects, benefits of family planning to the family, and the overall image of the family planning user. Among adopters and continuous users, there appear to have been marked positive changes in attitudes particularly with regard to the issue of son preference. Those men who adopted in 1997 developed more positive attitudes than all other groups. Both continuous non-users and discontinuers appeared to dominate with less favorable or unchanged attitudes in 1997 than that held in 1994. Noticeably, regardless of contraceptive use status in 1994 and 1997, attitudes toward the side effects associated with contraceptive methods did not change much between the two survey periods.

Summary of Effects of Exposure to the RCP among Male Sample

Similar to the panel data of female respondents, exposure to the RCP among men was associated with ideational factors in favor of family planning use. With the exception of attitudes toward health service providers, exposure to the campaign was associated with more favorable attitudes regarding the benefits of family planning to the family and the image of family planning users, a decrease in son preference, and less severe side effects associated with family planning methods. Exposure to the RCP was also associated with perceptions that social norms favor the use of family planning.

Attitudes toward health service providers in the follow-up survey were more positive than in the baseline survey, regardless of RCP exposure, suggesting that additional factors (e.g., improvements in health worker counseling due to the distance education program) were also influencing these attitudes. Men in the follow-up survey were more likely to have visited a health clinic; their subsequent positive attitudes toward health service providers may be based more on their actual experience with health service providers than on rumors heard in their social circles.

Exposure to the RCP was also related to some behaviors considered to facilitate the use of family planning. Men exposed to the RCP were more likely to have discussed family planning with their wives and were more likely to believe that their spouse approves of family planning. Awareness of health service providers also increased between baseline and follow-up, although this increase does not appear to be related to RCP exposure. Despite this greater awareness of community-based health service providers among men, few men have reported talking to a village health worker or a female community health volunteer.

THE MONITORING STUDY

Impact of the RCP on Client-Provider Interaction Quality

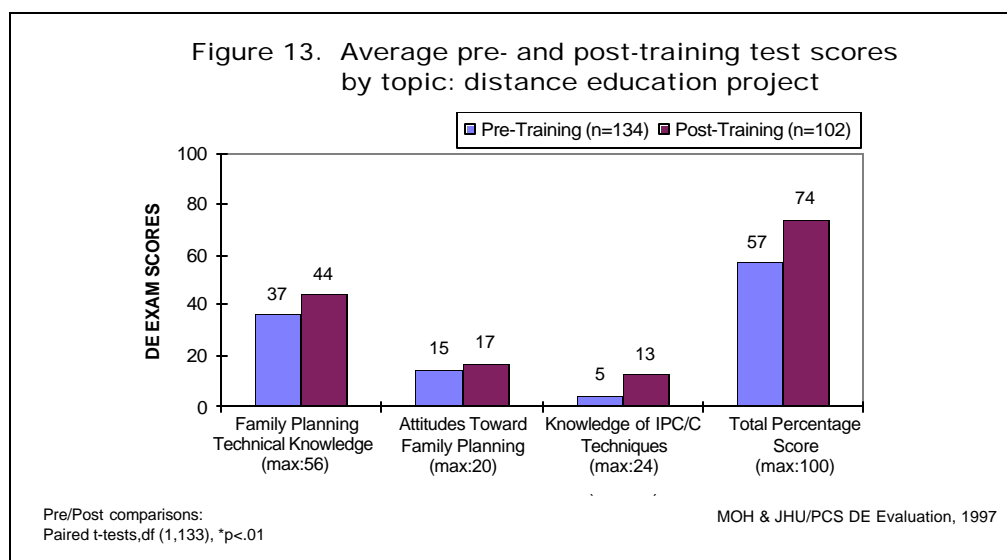
A major objective of the RCP was to improve client-provider interactions regarding family planning. Prior research in Nepal had indicated that women often hesitated to seek out family planning information and methods due to their negative (and often accurate) perceptions of health care providers, especially of their family planning counseling skills.

The identified problems included health care providers lecturing rather than counseling clients, limiting the discussion to the provider's preferred method rather than providing clients with a range of options from which to choose, failing to discuss side effects, and deciding for their clients whether family planning was appropriate for them. The distance education component of the RCP was intended to address the provider-side of contraceptive use, by improving the technical knowledge of service providers and increasing their competence with positive counseling skills.

Improvement in Examination Scores among Participants in the Distance Education Program

Of the 140 health service providers in Dang district, 134 participated in the distance education program. Prior to and after the completion of the distance education radio serial drama, participants were given questionnaires to assess their level of family planning technical knowledge, their attitudes toward family planning, and their responses to specific counseling scenarios. One hundred and two of the participating providers (76 percent) completed both pre- and post-training questionnaires.

Pre- and post-training tests indicate that the distance education program significantly improved health providers' technical knowledge, attitudes toward family planning, and counseling skills (Figure 13). Overall, scores in the post-training test increased by 30 percent over pre-training scores.

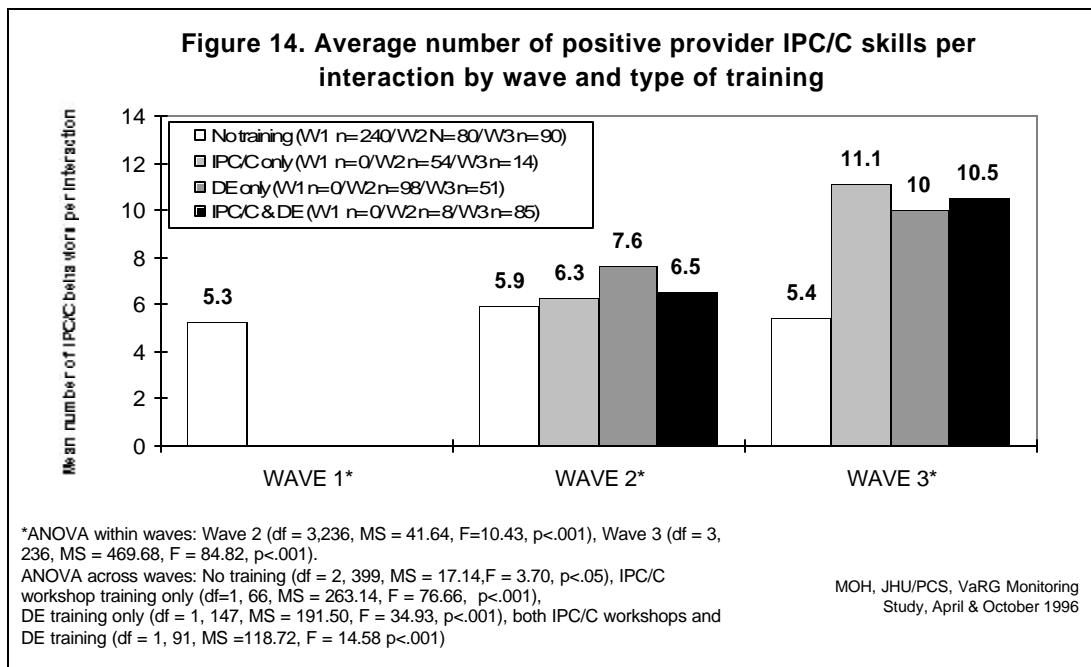


Technical knowledge scores increased by 19 percent, attitudes toward family planning improved by 13 percent, and counseling skills (as measured by responses to counseling scenarios) improved by 161 percent.

Improvement in Client-Provider Interaction

To assess the effect of provider training on actual client-provider interactions, three waves of clinic-based structured observations were conducted at four sites in Dang and two sites in Sunsari. In the final two waves, interactions involving 240 female and 60 male clients were observed. This analysis excluded the first wave, which was limited to observations of female clients. The observations were conducted using a checklist of desirable IPC/C skills and behaviors that were featured in the distance education program and IPC/C curriculum. A behavior score was calculated by adding observed positive behaviors and subtracting observed negative behaviors.

Provider training was associated with more positive behaviors. At both waves, distance education-trained providers had more positive behavior scores than untrained providers (Wave 2 - $p < .001$; Wave 3 - $p < .001$). Behavior scores for IPC/C-trained providers, while only marginally different from untrained providers' scores at Wave 2 ($p = .07$), were significantly different at Wave 3 ($p < .001$). Provider training was also associated with an improvement in counseling behaviors over time. While there was no change in the average behavior scores for untrained providers between Waves 2 and 3, scores increased significantly for each of the trained provider groups. In Wave 3, there was little difference in behavior scores by the type of training the provider had received – distance education, IPC/C, or both (Figure 14).



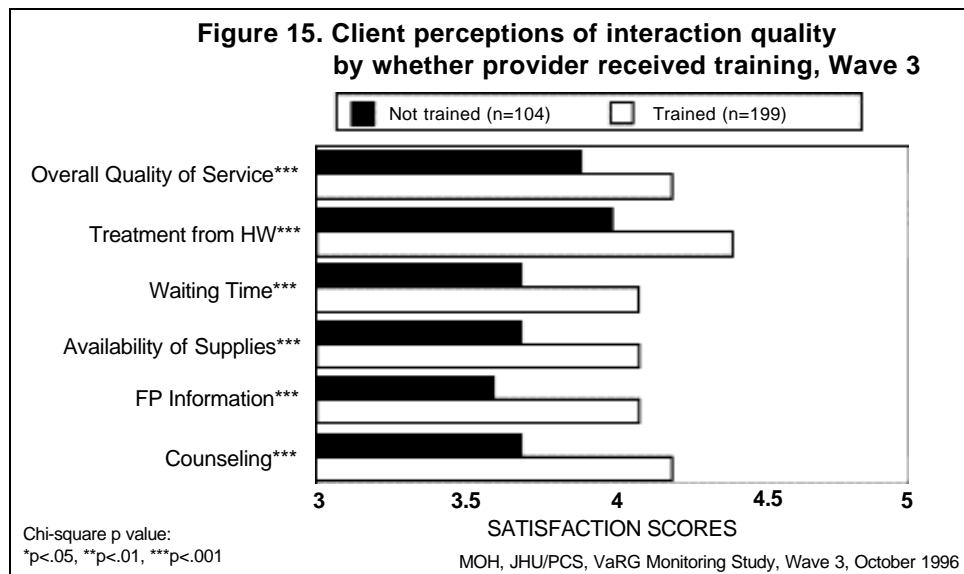
Improvement in Client Behaviors during Client-Provider Interaction

One by-product of improved provider counseling is a supportive environment in which clients may feel comfortable asserting their intentions and asking sensitive questions. In addition to observing provider behaviors, the structured observations included a small checklist of client behaviors. As with the provider behaviors, a client behavior score was developed by adding positive behaviors and subtracting negative ones.

Clients in both waves had significantly more positive behavior scores when they were counseled by a distance education-trained provider, compared to clients of untrained providers (Wave 2 - $p < .001$; Wave 3 - $p < .001$). Unlike provider behaviors, improvement over time in client behaviors was not related to provider training. Client behaviors improved significantly for all groups between Waves 2 and 3, regardless of type of training the provider received or even whether the provider had been trained. This suggests that other factors, in addition to provider training, may influence client behaviors during their interaction with health care providers.

Effects of Provider Training on Client Perceptions of Interaction Quality

Exit interviews with clients were completed following each observed interaction. Clients were asked to comment on the provider's behavior and to provide their assessment of the quality of the interaction and their visit to the health clinic. In total, six quality assessments were made by each client: overall quality of service, their treatment by the provider, the length of time that they had to wait, the availability of family planning supplies, the quality of family planning information given, and the quality of the counseling (Figure 15).



For each category, satisfaction scores were significantly higher among clients who had met with a trained provider. While it is understandable that clients would be more satisfied with the family planning information and counseling received from a trained provider, the association between client satisfaction and provider training is less clear. It is possible that clients, after a pleasant experience with a health provider, gave more positive attributions to other aspects of their health experience (a “halo” effect). It is also possible that providers, once trained, begin to take a greater pride in their health post and its operation.

Summary of Impact of Provider Training on Client-Provider Interaction Quality

After participation in the distance education program, health service providers' knowledge and attitudes regarding family planning methods and client counseling improved significantly from their pre-distance education levels. Based on their pre- and post-training written examinations, after the distance education program, participants had greater technical knowledge of family planning methods and counseling skills, had more favorable attitudes toward family planning, and were better able to describe effective responses to specific counseling scenarios.

Structured observations of actual client-provider interactions were used to measure the extent to which these improvements on paper were translated into more effective counseling in the clinic. Four months after the start of the distance education program (Wave 2), participants in the distance education program had significantly better behavioral scores than did health service providers who had not received any training or who had only participated in the IPC/C workshops. Significantly, these improvements in provider counseling behavior were sustained well past the completion of the distance education program. Four months after the distance education program finished its broadcast schedule (Wave 3), the counseling behavior of distance education participants remained significantly more positive than that of untrained providers. The behavior of distance education-trained providers improved significantly between the mid-point of the program and its end.

These improvements in provider behaviors were paralleled by improvements in the behavior of their clients. At both Wave 2 and Wave 3, clients of trained providers (either distance education or IPC/C) exhibited more positive behaviors than did clients of untrained providers. The behavior of all clients improved significantly between Wave 2 and Wave 3. This suggests that client exposure to the RCP may have had an effect on client behaviors, independent of the training of the provider (a topic explored in the synergy section).

Health provider training was also associated with clients' perceptions of their experience at the health clinic. Clients of distance education-trained health providers were more satisfied with their treatment from their health worker, the waiting time, the availability of supplies at the clinic, the information and counseling they received, and the overall quality of service at the clinic. This suggests that client experiences with a health provider may influence their impressions of other aspects of their visit to the clinic.

Synergistic Effects of RCP Components

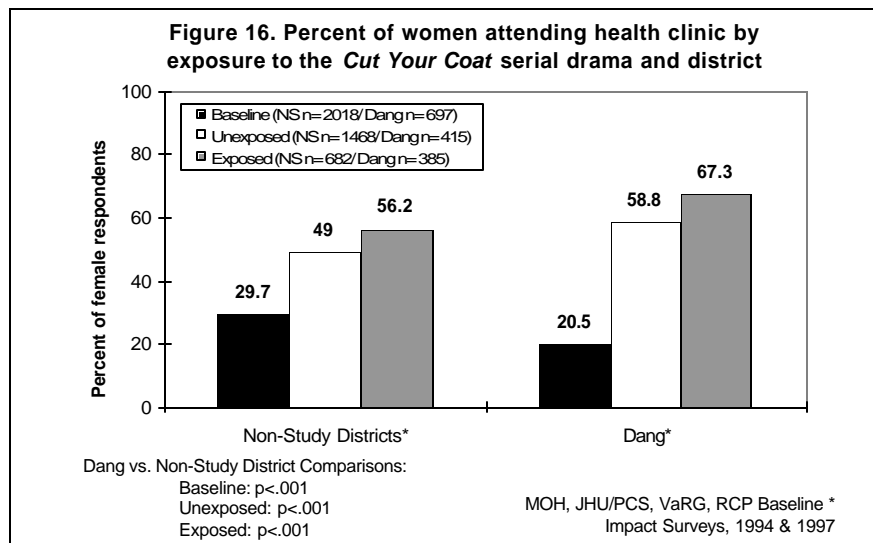
An important element of the RCP design was the integrated nature of its components. The two radio serials, *Cut Your Coat* and the distance education program *Service Brings Reward* were designed to work in concert. Whereas the distance education program was intended to improve the counseling skills of health service providers, *Cut Your Coat* aimed to improve the public's image of health service providers and stimulate a demand for quality family planning services. Since the combined effect of these programs was to address the quality of family planning services at multiple levels, the hypothesized impact of the two programs was believed to be greater than the independent effects of either program. Since the distance education program was a regional broadcast, synergy was expected to be most evident in Dang district, the study site where most activities were centered.

Attendance at Health Clinic by Exposure to *Cut Your Coat* and District

Prior research had indicated that women were reluctant to visit their local health clinics due to their perceptions that health service providers were rude and unhelpful. The *Cut Your Coat* serial drama aimed to allay those fears by portraying health service providers as helpful and considerate individuals. However, images presented in the media may have less impact if women are confronted by a different reality. Therefore, the effect of the serial drama on clinic attendance was expected to have a

greater impact in Dang district where, concurrent with client-oriented activities, health providers received training in counseling techniques.

As shown in Figure 16, the percentage of women having visited the clinic increased significantly between baseline and follow-up surveys. Women who were exposed to the serial drama were significantly more likely than unexposed women to have gone to a health clinic in the six months prior to the survey. While the women in Dang were less likely to have gone to a clinic prior to the baseline survey, they were more likely than women in other districts to have gone to a clinic prior to the follow-up survey. Women in Dang who were exposed to the serial drama (in many instances both serials) were most likely to have visited a clinic.



Discussion with a Health Worker about Family Planning by Exposure to *Cut Your Cloth* and District

Exposure to the *Cut Your Coat* serial drama was also expected to promote interpersonal communication about family planning with community health service providers. As with clinic attendance, the effect of exposure to the serial drama was expected to be greater in Dang.

Interpersonal communication about family planning with community health service providers was more common in the follow-up survey. Exposure to the serial drama was associated with a further increase in the likelihood of discussing family planning with a village health worker or female community health volunteer in both Dang and non-study districts. However, women in Dang exposed to the serial dramas as well as ancillary activities, particularly community interactivity sessions, were most likely to have discussed family planning with a village health worker.

Provider Counseling Skills by Exposure of Both the Provider and the Client to the RCP

Research revealed that about 45 percent of clients and 72 percent of providers listened to one or both of the RCP radio serials. This figure shows that the quality of provider counseling was better if either the client or the provider had been exposed to the dramas, and best if both provider and client had been exposed.

This suggests that radio programs that address both sides of the client-provider interaction may have a synergistic effect on interaction quality. Exposing health providers to behavioral models of positive counseling behaviors and simultaneously stimulating an appreciation of quality health care services among clients appear to affect provider behaviors to a greater extent than either program would separately.

Summary of Synergistic Effects of the RCP

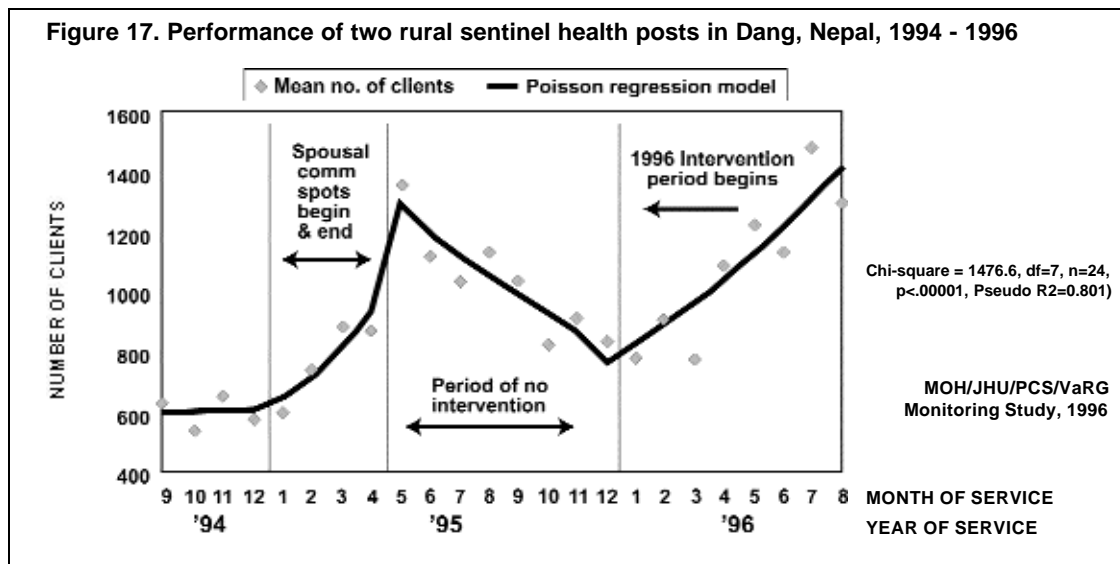
The RCP was designed as an integrated project with the capability to address the barriers to family planning use in Nepal at multiple levels. This integration of project components, addressing both the provider- and the client-side of family planning service delivery and use, was expected to provide a level of synergy to the overall program impact that a campaign focusing on only one aspect would not be able to provide. Synergistic effects were expected to result from the combination of client exposure to the *Cut Your Coat* serial drama and provider exposure to the distance education program.

Synergistic effects of this combination of client and provider exposure to the RCP were observed to promote a greater use of health care services, a greater level of interpersonal communication about family planning with community health service providers, and improved provider behavior during client-provider interactions. Women in Dang (site of the distance education program) who were exposed to the *Cut Your Coat* serial drama were more likely than non-exposed women in their own district and exposed women living in other districts to have attended a health clinic and to have discussed family planning with a village health worker or a female community health volunteer. Providers exhibited more positive behaviors during interactions that involved both a trained provider and a client exposed to the RCP.

TIME SERIES ANALYSIS OF SERVICE STATISTICS

Overall Campaign Effects on Service Use

Client flow was monitored at two rural sentinel sites in the pilot district from September 1994 to August 1996. Figure 17 shows the average number of maternal/child health and family planning clients by month. Periods of activity were superimposed on the figure.



The line represents the poisson regression model that tests the significance of changes in client flow associated with intervention activities. The line takes a significant upward turn at the onset of the radio spots in January 1995, turns significantly downward during the period of no intervention, and turns significantly upward again at the onset of the combined intervention activities (primarily the two radio serials) in December 1996. Seasonal variation in client flow was not significant in the equation.

IPC/C Component for Health Service Providers

Prior to the RCP, client provider interaction in the Nepal family planning program was interpreted only in terms of counseling; even then, counseling was seldom done by the service providers for various reasons. The RCP widened the meaning of client-provider interaction beyond counseling and introduced the concept of “interpersonal communication” skills, which includes counseling.

In addition to showing encouraging quantitative data of client flow and client-provider interaction, JHU/CCP’s IPC/C strategy in family planning services delivery has impacted agencies and institutions working in health and family planning. Nepal’s MOH and the National Health Training Center (NHTC) have incorporated the IPC/C training modules in all levels of their health service providers’ (both paid and unpaid) curriculum. Local NGOs and other donor agencies have been actively participating in IPC/C activities and IEC campaigns. In building a supportive network, JHU/PCS has initiated a process for institutionalizing IPC/C.

Chapter 5. Conclusions, Implications, and Recommendations

The RCP, in its debut phase, was designed with four objectives: 1) to increase service use and contraceptive use by clients; 2) to improve the quality of services and service delivery, especially the IPC/C skills of clinic-based health service providers; 3) to enhance the image of health service providers; and 4) to satisfy a large unmet need for contraception in Nepal, estimated at 28 percent of currently married women of reproductive age (NFFPHS, 1991). This project is the centerpiece of a strategic intervention design—initially called the Redline Strategy—developed by the MOH’s NHEICC, the NHTC, and the FHD, with assistance from JHU/CCP. Given the highly successful Phase I of the RCP, the project was extended and is currently in its fifth year of operation.

A key element of the RCP, and of the intervention strategy as a whole, was the integration of its diverse components in the development, implementation and evaluation designs. Recognizing that barriers to using family planning exist in the household, the community, and the health clinic, the Redline Strategy called for an integrated approach that would address issues related to unmet need and family planning use at each of these levels (Rimon and Lediard, 1993). Integratedness was a yardstick from the planning stage. Every effort was made to ensure that the messages and behaviors modeled were consistent, from conceptualization of the content of the intervention activities, through implementation, and thereafter in summative impact evaluation research.

While direct effects of each component could be anticipated, the measurement of synergistic effects required more complex evaluation designs. For example, improved provider IPC/C skills were expected to increase client participation in the interaction. Within each wave of evaluation, clients of IPC/C-trained or distance education-trained providers exhibited significantly more positive interpersonal communication behaviors per interaction than did clients of untrained providers ($p < .0001$). Improvements in client interpersonal communication behavior over time were also apparent; client behavior scores increased significantly for each group, with trained providers or not, between Wave 2 and Wave 3. The fact that even clients of untrained providers improved suggests that something else may have been influencing client behaviors, such as client exposure to the distance education serial in addition to the client-targeted drama serial. Even though the distance education serial was directed toward health service providers, the impact survey indicated that it was also listened to by about 40 percent of the general public in Dang, where listenership of the client-targeted drama serial was 46 percent.

Main Findings

The results presented in this report provide strong support for the value of an integrated media campaign in promoting contraceptive use and satisfying unmet need for family planning. Program impact was observed among health service providers, women, and men. Importantly, the program impact was greatest when both providers and clients were exposed to the RCP, suggesting that there is a synergistic effect at work when a program addresses both provider- and client-sides of family planning use simultaneously.

Program Impact among Health Service Providers

After participation in the distance education program, health service providers had improved technical knowledge regarding family planning methods, improved attitudes toward family planning, and improved awareness of positive counseling skills. Structured observations demonstrated that

these improvements led to more positive provider behaviors during actual counseling sessions with clients.

Provider behaviors also had a beneficial effect on clients' attitudes and behaviors. Trained providers were better able to elicit active participation by clients in the counseling session. Client behaviors appeared to be positively related to provider behaviors: as provider behaviors improved, so too did those of clients. Clients of trained providers were more satisfied with the counseling they received and with other aspects of their experience at the health clinic.

The improvements in provider behavior were sustained well past the completion of the radio broadcasts of the distance education serial drama. Four months after the distance education program ended, the counseling behaviors of distance education participants remained significantly more positive than that of untrained providers.

Program Impact among Women and Men

Exposure to the RCP was associated with improvements in both ideational and behavioral factors considered to facilitate the adoption and continued use of family planning. These impacts were most clearly seen among those women interviewed both before and after the campaign. Women exposed to the RCP had more favorable attitudes toward family planning after exposure than they had prior to exposure, while women who were not exposed exhibited little change in their attitudes. Women exposed to the RCP were also more likely to believe that a large proportion of couples in their community used a contraceptive method, indicating a belief that social norms favored family planning use. Exposure to the RCP was associated with the initiation of spousal communication regarding family planning among women who had not previously discussed family planning with their spouse.

Similar results were observed among men. Exposure was associated with more positive attitudes toward family planning, with more favorable perceptions of social norms regarding family planning, and with spousal communication about family planning. These factors were, in turn, associated with the adoption and/or the continued use of family planning.

Synergy between Provider and Client Impact

Because of the integrated nature of the RCP a stronger effect was anticipated when both providers were trained and clients were exposed to the RCP. Trained providers were expected to offer a more supportive environment in which clients would feel comfortable seeking information and services. Furthermore, client exposure, in addition to the effects described earlier, would promote a greater demand for quality family planning services, and a greater appreciation of the health service provider's role in assisting with their family planning choices.

Exposure to the RCP among clients was associated with the likelihood of attendance at the health clinic, suggesting that the RCP did influence clients' awareness and perceptions of health care services. Clinic attendance was also associated with the district of residence. Women in Dang district—site of the distance education program—were more likely to have visited a clinic than were women living in the districts that did not have the distance education program, despite lower clinic attendance in Dang at baseline. Attendance was highest among women exposed to the RCP and living in Dang where a series of reinforcements, such as community interactivity sessions, were conducted.

Similarly, exposure to the RCP and residence in Dang was associated with the increased discussion of family planning with a health service provider. As with clinic attendance, the likelihood of having discussed family planning with a health service provider was greatest among

women exposed to the RCP and living in Dang.

The synergy between provider training and client exposure was also evident in client-provider interactions. Providers had more positive counseling behaviors if either the provider was trained or the client was exposed to the RCP, and still more positive behaviors if both sides were exposed. This suggests that provider behaviors may be influenced either by their own internal awareness of proper counseling behaviors or by their clients' demands regarding quality services, or by both factors.

DISCUSSION AND RECOMMENDATIONS

Mass Media Accessibility

The impact evaluation demonstrated the role of exposure in promoting family planning use. It also highlighted the structural constraints that limit access to a mass media campaign, particularly among women. The availability of a radio is an issue since men generally decide its manner of use and most households generally have only one. If the timing of broadcast and some of the content segments can be arranged to encourage group listening, this barrier may be largely overcome. Second, as practiced in other developing countries, regional stations may repeat broadcasts to multiply opportunities of exposure.

Service Use

While the gaps in knowledge between men and women in the baseline survey were largely gone in the follow-up survey, behavioral differences remained suggesting other constraints in the process of behavioral change. Could it be barriers within the household? Could it be the unavailability of services or the inaccessibility of health sub-posts? Inconvenient scheduling of business hours of the health center? Future impact research might probe other possible reasons for current or intended behavior, such as might occur within the individual, the family, or in existent delivery systems.

Knowledge, Attitudes, and Practice vis-à-vis Spousal Communication

The RCP focused on women and unmet need from their own perspective. It also aimed to promote spousal communication and increase method-specific family planning information. Whereas the RCP target group was women primarily, current development research indicates that men need to be included and the spousal relationship studied especially in terms of power and decision-making in the household. Any increase in the prevalence of contraceptive use cannot be anticipated only from women's knowledge of their husbands' approval of family planning. Women's knowledge and ability to act upon that knowledge are both required as is the case with their husbands. The theme of spousal relations in family planning decisions has been expanded in subsequent phases of the RCP.

Professionalism of Health Service Providers

The focus on health service providers to improve client-provider interaction was on target according to formative research on health services and family planning in Nepal as well as in much of the available research and literature on the quality of professionalism in health services. Impact evaluations at various points and consequent to the RCP interventions indicate considerable enhancements in the quality of client-provider interaction.

A notable exception concerns the female sample, both clients and potential clients, who were not exposed to the RCP; their attitude toward health service providers became less favorable between 1994 and 1997. This result begs further consideration of the health service delivery system and personnel in Nepal. Also, it would be appropriate to keep in mind that among the male sample,

there was no difference between exposed and non-exposed groups concerning the image of health service providers—their image improved generally.

A related aspect of client perceptions of provider interaction and quality of services is the quality of peer interaction or collegial professionalism among the providers. Provision of health services for family planning and reproductive health is not an individual-centered activity; rather it involves a lot of coordination and, on many occasions, peer cooperation and support is key. Often remote locations are understaffed or the delivery system might not be as well distributed. For example, a village health worker at a sub-post may not get along well with a female community health volunteer. In critical situations, it is imperative for both persons to cooperate and support their respective tasks for the greater interest of the client. Consequently, team-building was added as a theme in the later phases of the RCP.

Given the generally poor infrastructure throughout Nepal, it might be worthwhile to study the better performing units and showcase them as models. Client satisfaction could be obtained from those sites as part of the evaluation and monitoring design. This step would serve a dual purpose. On the one hand, it would give recognition to deserving health units and individuals; on the other hand, the model unit might serve as an example to other units and future interventions.

Impact Evaluation of Reinforcement Components

Print materials, in particular posters, addressed an important area of need in family planning practice: the influence of superstitions and popular myths regarding family planning practice. Impact evaluation may be enriched by assessing the nature and scope of reinforcing materials in promoting family planning practice. Findings would also be beneficial for programming purposes in addition to tracking cost-effectiveness.

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