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Determining an effective and replicable communication-based mechanisms for improving young couples' access to and use of reproductive health information and services in Nepal—An operations research study

Center for Research on Environment Health and Population Activities (CREHPA)

Determining an Effective and Replicable Communication-Based Mechanism for Improving Young Couples' Access to and Use of Reproductive Health Information and Services in Nepal - An Operations Research Study

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EXECUTIVE SUMMARY

Background

This operations research (OR) study sought to determine an effective and replicable communication-based model for increasing the involvement of community-based groups in improving access to and use of reproductive health services and information by young married couples, ages 24 and under. The study employed a quasi-experimental design with two experimental and two non-equivalent control groups in the Udaypur district of Nepal where the Nepal Red Cross Society (NRCS) had been implementing its Reaching and Enabling Women to Act on Reproductive Health Decision (REWARD) project with support from the United States Agency for International Development (USAID) and the Center for Development and Population Activities (CEDPA). The two experimental models were the Youth Communication Action Group (YCAG) and the Mother's Group (MG). Researchers from the Center for Research on Environment, Health, and Population Activities (CREHPA) administered pre- and post-test surveys of young married women, ages 24 and under. The baseline survey, conducted in October 2000, covered a total sample of 1,000 respondents from the two experimental sites and 800 from the two control sites. The endline survey, conducted in October - November 2002, covered 744 respondents in the two experimental sites and 268 from one control site. A separate survey of 237 YCAG members was also conducted as a part of the endline study to assess the effectiveness of this model in enhancing the reproductive health knowledge and behavior of group members.

Results

Background Characteristics of the Study Population

There were no significant differences in the socio-demographic characteristics of the young married female respondents (age, caste, and ethnicity) between the baseline and endline samples or between the experimental and the control samples. However, the endline study sample represented a higher proportion of literate respondents than did the baseline survey.

Contraceptive Knowledge and Practice

At the baseline survey there was almost universal awareness of at least one family planning method. The endline survey recorded an increase in all three study sites in the number of family planning methods that respondents were aware of. The increase was greater in the two experimental sites (YCAG, 7.5% and MG, 6.4%) as compared to the control site (5.9%). Likewise, the proportion of those who were able to cite all three temporary family planning methods (condom, pills, and the injectible DMPA) increased significantly in the YCAG (96%) and the MG (94%) areas as compared to the control area (83%).

Respondents' knowledge about the correct use of pills, DMPA, and awareness about sources of information on family planning in the village increased significantly in both experimental sites as compared with the control site. The contraceptive prevalence rate (CPR) among young

married women increased in all three study areas. The increase has been sharp in the MG area (19% in the baseline survey compared to 37% in the endline survey) and modest in the YCAG area and the control site. The contraceptive method mix suggests the growing popularity of condoms among young couples in the YCAG (37%) and MG areas (38%). However, DMPA was the most popular method in the MG area (49%) and in the control site (52%).

The respondent's exposure to unplanned pregnancies (current pregnancy being unintended) declined in the YCAG area from 52 percent at baseline to 30 percent at endline. However, exposure to unplanned pregnancy increased in both the MG area (47% to 59%) and in the control site (42% to 74%).

Safe Motherhood Knowledge and Practice

There was near universal awareness of the need for antenatal checkups (ANC) during pregnancy in all three study sites. However, the proportion of respondents who knew that a pregnant woman should have at least four ANC visits increased in the experimental sites only, and knowledge remains low overall (below 40%). The proportion of respondents who were able to cite at least three danger signs during pregnancy, labor, and delivery also increased significantly among the respondents in both of the experimental sites but remained low in the control site.

The increase in safe motherhood practices has been greater in the YCAG area than in the MG site or the control site. The proportion of deliveries assisted by trained birth attendants (TBAs) increased threefold (from 14% to 43%) in the YCAG area while remaining modest in the other two sites.

Awareness of HIV/AIDS

At endline awareness of HIV/AIDS among young married women in the YCAG area was almost universal (97%). Awareness increased sharply in the MG area (45% to 71%) but recorded only a modest growth in the control site (50% to 63%). The proportion of respondents who cited at least two high-risk behaviors for HIV/AIDS increased dramatically in the YCAG area (21% to 89%). In the control area, the proportion of such respondents remained at less than one quarter. The knowledge that "condom use prevents HIV/AIDS" is quite high in both of the experimental areas (72% in the MG area and 94% in the YCAG area). In contrast, knowledge is low in the control site (46%).

Knowledge About and Participation in Community-Based Groups

At endline over two-thirds (68%) of respondents in the YCAG area were aware of the presence of Communication Action Groups (CAG) and Youth Communication Action Groups (YCAG) in their villages, as compared to only 15 percent at baseline. Likewise, awareness among the respondents in the MG area about the presence of mother's groups (MG) in their villages increased sharply from 21 percent at the baseline to 89 percent in the endline survey. In contrast, fewer than 30 percent of the respondents in the control site are aware of mother's groups (MG) in their villages.

Roughly one-third of the respondents in the YCAG area mentioned that they are enrolled as members of CAG and YCAG. Likewise, one in five respondents in the MG area mentioned that they are members of a mother's group in their village. In the baseline survey, respondents' membership in these groups was negligible (2% or less). Respondents' knowledge about group activities in the village increased sharply (from 16% to 77% in the YCAG area and from 27% to 83% in the MG area) while less than half (46%) of the respondents in the control site know about group activities in their villages. Young married women's participation in the-group activities of the YCAG, the CAG, and the MG has increased in all three sites. The increase in participation among those women has been noteworthy in the experimental sites (20% and 34%) as compared to the control site (12%).

The results of the YCAG survey are encouraging. Members of the YCAG demonstrate a very high level of awareness about different family planning methods, and almost all of them (98%) had received family planning information from the leaders and fellow members of the group. One third of the members are currently using a method.

Nearly all of the YCAG members (95%) thought that they benefited by enrolling as members. Most of them (79% to 97%) discussed a wide range of topics related to sexual and reproductive health, including the right age for marriage (65%), abortion (48%), and infertility (41%). Members shared information that they gained with their friends and neighbors (79%), husbands (76%), and to some extent, within the group (39%) and among other family members and relatives (36%). It is encouraging to find a very high percentage of YCAG members (70%) who have correct knowledge about how many times pregnant women should have ANC visits (four or more). Moreover, awareness about HIV/AIDS (97%) and some of the preventive measures against HIV/AIDS are nearly universal among YCAG members.

Usually, husbands of YCAG members (92%) and their mothers-in-law (79%) are the two family members who know about YCAG membership. Communication with husbands about family planning methods is nearly universal (97%), but less than half of the YCAG members had discussed other sexual and reproductive health topics with their husbands.

Conclusions and Lessons Learned

This OR study clearly demonstrates the effectiveness of communication-based models such as the formation and reactivation of Youth Communication Action Groups (YCAG) and Mother's groups (MG), basic and refresher training, group interaction and mobilization, and social events in creating an enabling environment for young married couples to learn and interact about sexual and reproductive health issues. The increase in reproductive health-related knowledge and practice among young married women has been remarkably high in both experimental areas. However, changes in the practice of family planning and ANC have not shown consistent trends probably because of the conflict situation in the project sites during the implementation phase.

Both the YCAG and MG models would have performed better (i.e., timely implementation of interventions and regular monitoring and evaluation of the project) had the sociopolitical

situation in the project sites been normal during the intervention phase. Nevertheless, this OR study has shown how these two models can be effective in reaching young couples with reproductive health information and services. The YCAG model has proven relatively more effective in enhancing knowledge among young married women about family planning and safe motherhood issues. It has helped build confidence among YCAG members, improved members' reproductive health knowledge and behavior, as well as their ability to share and communicate about sexual and reproductive health issues with their spouses, friends, and neighbors.

The MG model has been more effective among young married women in improving acceptance of family planning, enhancing awareness about MG group activities related to family planning and reproductive health, and encouraging their participation in these activities.

Both of the models tested can be replicated in Nepal. Replicating the YCAG model is possible in areas where nongovernmental organizations are already engaged in reproductive health programs. The MG model is easy to replicate as the mother's group concept is not new and exists in most of the country's districts. Reactivating mother's groups, inducting young members into the group, and having local bodies provide training and regular monitoring of their activities can make a difference in their performance.

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ABBREVIATIONS

AHW	Auxiliary Health Worker
AIDS	Acquired Immune Deficiency Syndrome
CAG	Communication Action Groups
CBS	Central Bureau of Statistics
CEB	Children Ever Born
CEDPA	Center for Development and Population Activities
CHDK	Clean Health Delivery Kit
CPR	Contraceptive Prevalence Rate
CREHPA	Center for Research on Environment, Health, and Population Activities
CSW	Commercial Sex Worker
DHO	District Health Officials
DHS	Demographic and Health Survey
DMPA	Depomedroxyprogesterone Acetate
FCHV	Female Community Health Volunteer
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HMG	His Majesty's Government
HP	Health Post
IEC	Information, Education, and Communication
IUD	Intrauterine Device
MCHW	Maternal Child Health Worker
MG	Mother's Groups
MWRA	Married Women of Reproductive Age
NFHS	Nepal Family and Health Survey
NGO	Nongovernmental Organization
NRCS	Nepal Red Cross Society
OR	Operations Research
REWARD	Reaching and Enabling Women to Act on Reproductive Health Decision
RTI	Reproductive Tract Infection
SWC	Social Welfare Council
TBA	Traditional Birth Attendant
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
VARG	Valley Research Group
USAID	United States Agency for International Development
VDC	Village Development Committee
YCAG	Youth Communication Action Groups

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STUDY TEAM

The Core Team

Anand Tamang	Principal Investigator
Binod Nepal	Associate Investigator
Devendra Prasad Shrestha	Associate Investigator
Ramesh Adhikari	Research Officer

Field Coordinators and Trainers

Kajal Maskey
Mala Shrestha

Field Supervisors

Anu Bista
Bhadra Ghale
Prabina Joshi
Sabita Mahaju
Madhu Thapa
Kamala Karki

Field Researchers

Bishnu Neupane	Sheela Shrestha
Ganga Limbu	Sunita Sainju
Pawan Shrestha	Sunita Subedi
Shobha Shrestha	Saraswoti Karki
Indira Siwakoti	Rashmi Karanjit
Banika Shrestha	Nitmala Mainali
Laxmi Shova Maharjan	Kalpana Bhandari
Rubina Khatri	Anju Dhungana

Project Support Unit

Sabina Tamang	Administration and Finance
Sangita Tamang	Administration and Finance
Radhika Singh	Word Processor

I. INTRODUCTION

1.1 Background

Nepal is a small landlocked country in the foothills of the Himalayas. It shares its northern border with the Autonomous Tibetan Region of the People's Republic of China, and its eastern, southern, and western borders with India. The total geographical area of the country is 147,181 kilometers and its population, according to the 1991 Census, was 18.5 million, which rose to 23.2 million in 2001.

Nepal is a country facing many challenges. The majority of the population lives below the poverty line. More than 80 percent of Nepalese are engaged in agriculture, the greater part of which is subsistence. The per capita gross national product (GNP) of US$ 200 reflects the relative wealth of a small, primarily urban, minority. The national human development index (HDI) for Nepal is 0.378 with an absolute value of 45 percent of the global HDI, indicating the low level of human development in the country (UNDP 1998). Nepal's slow social and economic development is a result of endemic poverty exacerbated by rapidly increasing population, insufficient cultivable land, and severe environmental degradation.

Because of high fertility, the country's population is characterized by a young age structure. Approximately 58 percent of the total population of Nepal is age 25 and under. Adolescents (ages 10 to 19) comprise more than one-fifth (22%) of the total population. Fertility levels are still high (TFR 4.1) and age at first marriage continues to be low for girls despite the law governing age of marriage. Over one-third (36%) of young married women are already mothers by age 19 (Ministry of Health 2001). Owing to high fertility and the young age distribution of the population, the proportion of young people in the total population is likely to increase in the coming years (Central Bureau of Statistics 1995).

Basic reproductive health services are grossly underused by most young couples (ages 10 to 24) in the country. Less than one quarter (23%) of the married women ages 20 to 24 years and only 12 percent of those ages 19 and under practice family planning (MOH 2001). This leaves a large majority of married women exposed to unintended pregnancies and unsafe abortions. The 1996 Nepal Family and Health Survey (NFHS) data showed that the unmet need for contraception is highest among young people ages 15 to 19 (41%) followed by those ages 20 to 24 (38%). A recently completed study on adolescents in seven districts of the country revealed that 15 percent of girls are married before the age of 14 (Choe et al. 2001). One in four women of adolescent age (ages 15 to 19) are already mothers or pregnant with their first child. Clinic-based studies showed that one in five women that are admitted to government hospitals with complications of abortion are ages 15 to 19. A significant proportion of married women in the villages also suffer from problems associated with urinary tract infections and other forms of reproductive tract infections (RTIs) (CREHPA 1996; 1997; 2000).

There are several major contributing factors for reproductive "ill health" among young Nepalese couples. They are early marriage, early and frequent childbearing, lack of adequate knowledge

among young couples about the health risks involved in teenage pregnancies and closely spaced births, poor inter-spousal communication, social barriers, and lack of supportive environment for increased involvement of young couples, particularly young married women, in family planning and reproductive health decisions. Despite this fact, programs aimed at increasing access to reproductive health and family planning information and services to youth and young married couples are grossly inadequate in Nepal.

The present OR study sought to bridge this important gap in services and programs. It aimed to find an effective and replicable communication-based model to help increase the involvement of young couples, particularly young married women in family planning and reproductive health decisions.

The interventions were tested in the Udaypur district of Nepal, one of the project districts of the NRCS. For the past seven years, NRCS has been implementing integrated family planning and reproductive health programs with the technical support of CEDPA, a U.S.-based international nongovernmental organization. NRCS has established communication action groups (CAG) at the village level in three project districts where seasonal migration of adult males and youth is high. In each village development committee (VDC) in these three districts, between three to nine CAGs were formed, each consisting of 18 female members. Members of the group are usually spouses of migrant men. They are empowered with communication skills to negotiate condom use with their spouse when they return home and to openly discuss with their friends the dual advantage of condoms in preventing HIV/AIDS and providing birth spacing. The project field worker for each VDC is assigned the responsibility of forming the CAG and holding monthly meetings of the group. The CAG members select leaders of the group. The group receives information, education, and communication (IEC) materials about sexually transmitted infections (STIs), including HIV/AIDS and the use of condoms to encourage safer sex practices and birth spacing. The CAG members are also encouraged to discuss issues regarding HIV/AIDS and other STIs with non-CAG members who live in the neighborhood.

Under the government's health system, *Aama Samuha* or Mother's Groups (MG) are formed at the ward (sub-village) level throughout the country. Members of these groups are married women and they interact with outreach health workers and health volunteers at their monthly meetings about antenatal care, childhood immunization, and various social problems in the village. Female community health volunteers (FCHVs) are present in each ward of the VDC-facilitated group meetings. In several districts of the country, MGs have been quite effective in launching movements against social crimes such as the trafficking of girls and a ban on the manufacture, sale, and consumption of alcohol. Table 1.1 presents the basic characteristics of the CAGs and MGs.

Table 1.1 Characteristics of Community-based Groups Identified for Interventions

Characteristics	Communication Action Group (CAG)	Mother's Group (MG)
Group composition	MWRA (ages 15 to 49) Group members are MWRA from identified communities	MWRA (ages 15 to 49)
Responsibility for group formation and monitoring	NRCS: health volunteers and project staff	Government health workers and VDC leaders. FCHV in charge of monitoring MG activities
Selection of group leader	Group members	Group members and formation of executive committee
Job description and activities	Conduct monthly meeting to discuss reproductive health and other social issues. Work in coalition to mobilize communities to participate in group activities including observation and celebration of reproductive health events.	Conduct monthly meeting to discuss reproductive health and other social issues, including fund raising, trafficking, the prohibition of the manufacture, sale and consumption of alcohol, etc.
Training for group leaders	Leadership skills, health knowledge, communication, condom negotiation skills, meeting skills, use of IEC materials	In support of the delivery of reproductive health information and services
Geographical coverage	Settlement clusters in village	Population basis (one FCHV/400 people in *terai*, 250 in hill and 150 in mountain) or on ward basis (one FCHV/ward)

MWRA = married women of reproductive age VDC = village development committee
FCHV = female community health volunteer Udaypur has 44 VDCs and one urban municipality

1.2 Relevance of the OR Study

Young married couples in the villages are a difficult group to motivate to accept reproductive health services, including family planning. Nepal lacks suitable community–based intervention packages to create a supportive environment and communication channels for responding to the needs of couples and to encourage their increased participation reproductive health decisions.

Young married couples need a supportive environment and opportunities where they can discuss reproductive health issues, gain knowledge about the health implications of early and frequent childbearing, understand the advantages of routine antenatal check-ups during pregnancy, learn the risk factors associated with pregnancy and childbirth, and find out about where to obtain services. They need to be informed about the contraceptive options available to them and to feel empowered to communicate effectively with their spouses and friends about using contraceptives

to prevent unintended pregnancies. Thus, this OR study aimed to contribute extensively to bridging these program or communication gaps and helping increase young couples' access to, and effective use of, reproductive health use information and services in the villages. The results of the OR study will be used to help the government and nongovernmental agencies in Nepal improve the effectiveness of mother's groups, which exist at the ward level throughout the country, to provide young married couples with reproductive health information and services.

1.3 Objectives of the OR Study

The main objective of the OR study was to determine an effective and replicable communication-based model for increasing the involvement of community-based groups in improving young married couples' access to and use of use of reproductive health services and information. CEDPA provides support to NRCS to implement this comprehensive community-based reproductive health program.

The OR study has four specific objectives:

- Examine the extent to which CAGs and MGs have an impact on health and social behavior within the groups and in the general community. Members of the two groups regularly discuss health issues affecting them, their family and community, and young married couples in their villages. They also undertake initiatives to improve the status of women by developing income generation and fundraising activities.

- Introduce reproductive health information, IEC materials and training into the existing CAG and MG and study their impact on the knowledge and behavior of young married couples (ages 10 to 24). Participation in reproductive health training and information and IEC materials will enhance CAG and MG members' knowledge and their ability to motivate young couples in their villages in reproductive health decision making, including the use of reversible contraceptives.

- Form youth communication action groups (YCAGs) and assess their effectiveness regarding youth behavior and youth-to-youth communication on reproductive health issues, including family planning. Interaction among youth is key to helping young couples make correct reproductive health decisions. YCAGs can facilitate youth-to-youth communication through an entertainment and education approach about reproductive health issues and help them share experiences during group meetings. Membership in YCAGs will also provide opportunities for young married women to gain reproductive health knowledge and contraceptive negotiation skills.

- Make the groups more effective in communicating health information to young married couples and make them an effective advocate for quality youth-friendly reproductive health services in the community. CAGs, MGs, and YCAGs will create a supportive environment and information for inter-personal or group communication with young couples about family planning and reproductive health issues and empower them to take appropriate reproductive

health decisions. These groups will further couples' access to the village's community-based health services.

- Determine composition of young couples in the population of the OR project areas. There is no precise information available about the number of young married couples ages 25 and under in the two study sites. If one makes the assumption that there are 0.30 young married couples per household (based on the 1991 Population Census), there should be about 7,577 (25,255 x 0.30) young married couples under age 25 in the study areas: 4,781 in the experimental areas and 2,796 in the control areas.

1.4 The Interventions

The OR interventions were carried out in the Udaypur district where NRCS is implementing its project with technical assistance from CEDPA. They included group formation, basic and refresher training, group interaction and mobilization, and networking young couples with the community-based health care delivery system**.**

NRCS project staff trained and involved existing CAG and MG members from their program areas and formed YCAGs among young couples in the ward's 10 VDCs. Members of each YCAG and MG selected a leader and a deputy leader who were trained in communicating reproductive health information and messages, particularly about family planning, maternal health, and STIs and HIV/AIDS, to their respective group members. Both basic and refresher training about reproductive health were given during the intervention phase. The FCHVs in each ward were also trained to facilitate group meetings of MGs in their respective wards.

CREPHA, NCRS, and CEDPA organized periodic training of trainers about communication skills, group counseling, and referral for reproductive health for the district-based NRCS project staff (program officers, area supervisors, and field workers) and outreach health service providers from the government (health assistants, auxiliary nurse midwives, auxiliary health workers, and maternal and child health workers). Likewise, participants of the trainers' training conducted basic refresher, and communication training about reproductive health for CAG, MG, and YCAG leaders.

All YCAG and MG group members were encouraged to collectively organize special events such as health fairs, Condom Day, Safe Motherhood Day, World AIDS Day, National Vitamin A Day, and talk programs (once a month) in the village weekly market place to gain community support for the intervention. A tea party for spouses of YCAG members was also arranged to sensitize them about the activities of the group members. The NRCS project staff were responsible for facilitating these special events. Locally available IEC materials and media channels were used to disseminate knowledge and information about reproductive health, including family planning, among the village community and youth groups.

Focus groups had between 18 to 25 members. Members of each group (YCAG and MG) met at least once a month to share knowledge about family planning, maternal health, STIs, and

HIV/AIDS. The group members also prepared outlines for future group activities, including how to motivate youth and young married couples from their village. The type, subject matter, coverage, and scope of the intervention was finalized based upon the pre-intervention or baseline survey results and recommendations from a two-day interactive workshop and consultative meetings organized by CREHPA in December 2000. Table 1.2 outlines the intervention.

Table 1.2. Framework of Intervention Strategy

Step	Intervention	Intermediate Output
1	Form YCAG and select group leaders	Functional YCAG at village clusters of the study VDCs (four YCAG per VDC) Selected leaders from the group members to facilitate the group
2	Provide basic, refresher, and communication training of trainers for NRCS staff, government health providers, and FCHVs	Prepared Master Trainers to provide training to the group leaders
3	Provide basic, refresher, and communication training for CAG, MG, and YCAG leaders	Increased group leaders' reproductive health knowledge and become capable of communicating reproductive health messages to other group members and youth
4	Encourage positive reproductive health behavior by group members by linking health providers with MG, CAG, and YCAG	Increased use of reproductive health services by young married couples
5	Support group members to promote family members to practice positive reproductive health behavior	Increased knowledge and acceptance of reproductive health information and services by young married couples and increased use of reproductive health services
6	Interactions: a. Hold group meetings	Shared knowledge, development of communication skills, preparation of outlines for future activities
	b. Use locally available appropriate IEC media to disseminate reproductive health messages	Increased knowledge about reproductive health, the need to practice positive reproductive health behaviors among community people, and youth
	c. Encourage discussion by family members	Changed attitudes and perceptions of family members in reproductive health care; young couples encouraged to practice positive reproductive health behavior
	d. Encourage discussion with peers in informal settings and organize tea party for husbands	Encouraged group members and non-members to interact about reproductive health issues concerning themselves and their families; shared knowledge with husbands and peers leading to practice positive reproductive health behavior
	e. Organize, mobilize, and participate in special events like Condom Day, Safe Motherhood Day, World AIDS Day, National Immunization Day, Vitamin A Day	Provided wider dissemination of the program and community support and participation in the program.

1.5 Implementation of the OR

The OR study had three broad phases:

- Phase I: Problem Identification and Selection of Strategies (Solutions) Phase
- Phase II: Strategy Design and Experimentation Phase
- Phase III: Strategy Validation and Information Dissemination Phase

Phase I: Problem Identification of Problem and Selection of Strategies (Solutions) Phase

During Phase I researchers conducted a pre-intervention baseline survey of knowledge, attitudes, and practices (KAP) of young people (ages 25 and under) in both experimental and control sites to assess factors that lead to poor use of reproductive health services by young couples, including low use of contraceptives. In addition researchers implemented a situation analysis of reproductive health services and information available for young couples and the roles, responsibilities, and performance of CAGs and MGs in order to identify program gaps and shortcomings.

The results of the pre-intervention baseline KAP survey and situation analysis of reproductive health services of CAG and MG were used to finalize the intervention strategies for the OR project. Accordingly, the study team organized a two-day interactive solution development workshop in Kathmandu in December 2000. This workshop was followed by a series of consultative meetings with the district-based NRCS project staff and government line agencies (district health officials, primary health centers, health post staff). Project officials of NRCS, the Ministry of Health, CEDPA, and concerned NGOs participated in the workshop. Table 1.3 presents the objectives and measurable indicators of Phase I.

Table 1.3. Objectives and Measurable Indicators for Phase I

Activities	Objective	Indicators (Percentages)
a) Problem Identification		
Baseline KAP survey of young couples in experimental and control areas	Examine young couples' knowledge and attitude towards reproductive health care and family planning Find sources of information and services for reproductive health and family planning	▪ % couples who know various aspects of family planning and reproductive health ▪ % of young couples who think reproductive health care is essential and prevents risks ▪ % of young couples who are exposed to the various sources of knowledge about family planning and reproductive health
	Examine reproductive health care and family planning practice among young couples	▪ % of young couples who use reproductive health services and information ▪ % of young couples who practice family planning
	Examine use of family planning and reproductive health services by young couples and reasons for non-use	▪ % of young couples visiting service points for family planning and reproductive health problems ▪ % of young couples ever and currently using family planning methods ▪ % of young couples attending antenatal ad prenatal care ▪ Types of inhibiting factors and coping strategy of young couples
	Determine incidence of pregnancy complications, unintended pregnancies, and unsafe delivery practices among young couples	▪ % of young married women experiencing pregnancy-related complications ▪ % of young married women with unintended pregnancies ▪ % of young married women with safe birthing practices
	Determine differences in indicators between experimental and control sites	

Situation analysis of family planning and reproductive health services and information for young couples	Examine the nature, extent, and methods of family planning and reproductive health service delivery and IEC	▪ Involvement of NGOs in providing family planning and reproductive health information and services for young couples ▪ Nature and methods of services being provided and IEC used ▪ Quality of care
Review of existing family planning and reproductive health information under CAGs and MGs	Examine the current activities of CAGs and MGs in relation to providing family planning and reproductive health information for young couples, and nature, extent and methods of IEC	▪ Involvement of CAGs and MGs in providing family planning and reproductive health information for young couples ▪ Nature and extent of IEC use
b) Selection of Strategies (Solutions)		
Strategy development workshop (interactive workshop) and consultative meeting with various relevant agencies	Identify the program gaps and select suitable strategies to bridge the gap. Select levels of training required for project personnel and CAGs and MGs	

Phase II: Strategy Design and Experimentation Phase

Phase II focused on designing suitable intervention strategies and testing them in the experimental sites. The intervention strategies were finalized based upon the recommendations of the interactive workshop and a series of consultative meetings held during Phase I.

The major components of Phase II included developing training manuals, collecting IEC materials, conducting training of NRCS project staff and government outreach health workers, providing basic and refresher training for group leaders of MG and YCAG, coordinating of project staff with district health officials and frontline health workers, and completing periodic supervision and monitoring of the intervention.

Although preparations for Phase II began on time (January 2001), there were some delays in launching the actual field-based activity (July 2001 – September 2002) due to the requirement by NRCS to recruit four additional project staff for this project. Moreover, the years from 2001 to 2002 have been difficult ones for Nepal and for the project district in particular, because the Maoist insurgency was most severe during this period. The insurgency affected the ability of NRCS and CREHPA to organize training programs at desired venues and to monitor group activities. Phasing out of the CEDPA-funded REWARD project in Nepal in July 2002 also affected the OR project although most of the intervention strategies had been implemented by that time. Table 1.4 presents the objectives and measurable indicators for Phase II.

Table 1. 4. Objectives and Measurable Indicators for Phase II

Activities	Objectives	Indicators
a) Design of Strategies (Solutions)		
Strategies (solution) development	Design suitable OR intervention strategies, group formation, curricula for training and IEC manuals Create MIS format and monitoring and supervision strategies	▪ OR intervention strategies developed per workshop recommendations ▪ MIS format and checklists for monitoring and supervision developed.
b) Experimentation (Testing of Solution)		
Preparation, training, logistics	Form youth CAG at cluster level Publish IEC reference materials and manuals Impart basic, refresher, and IEC training to CAG, MG, and YCAG and NRCS project staff	▪ Formation of functional youth CAG at each cluster (4 per VDC) ▪ CAG/MG are trained in reproductive health and family planning ▪ They use IEC materials during motivation & counseling ▪ Project staff of NRCS coordinates with district health officials and health workers
Implementation of OR intervention in program sites	Experiment with intervention strategies aimed at improving young couples access to and use of reproductive health services	▪ NRCS project staff are actively involved in implementation of OR strategies in coordination with district health officials, primary health centers, health post staff, and CAG, MG, and YCAG leaders
Monitoring and Supervision	Provide regular and on-the-spot feedback and orientation about reproductive health and family planning interventions to CAG, MG, YCAG Monitor program performance and progress and update and strengthen the MIS	▪ Monthly submission of MIS sheet by CAG, MG, YCAG leaders to NRCS staff ▪ Increase in number of young couples motivated and referred by CAG and MG for reproductive health and family planning services ▪ Refresher and follow-up training for CAG, MG, YCAG, and educational programs held in villages as per schedule

Phase III: Strategy Validation and Information Dissemination Phase

The two main components of Phase III activity were: 1) Conduct endline survey to validate the solution tested in the experimental sites and 2) Disseminate the intervention results

In October – November 2002, the endline survey to assess the knowledge, attitudes, and behavior change among young married women was conducted in the two experimental sites, but only in one of the two control sites. The results were compared with the baseline survey results to measure the effectiveness of the interventions. The endline survey followed the same sampling procedures that were adopted in the baseline survey. The activities and performance of the YCAG and MG models were assessed and compared with the baseline survey data to determine if CAGs have been effective in improving young couples' access to and use of reproductive health services and information, and the extent to which these interventions can be replicated in Nepal by using the mother's group concept.

A separate YCAG assessment study was also conducted at the time of the survey. Its purpose was to complement the results of the OR intervention in measuring the effectiveness of the group formation and to study the extent to which the YCAG had an impact on reproductive health and social behavior within the group. This special study covered 237 YCAG members from six out of 10 YCAG VDCs in Experimental Area I. The VDCs were sampled randomly. Since there is one YCAG in each of the nine wards of the VDCs, three wards were randomly selected in order to interview 12 to 14 YCAG members in each group. A separate research team was assigned to interview the YCAG members.

The Phase III activity was launched 18 months after the initiation of Phase II. The endline survey was delayed because of difficulties conducting fieldwork in areas affected by the Maoist insurgency. Fieldwork was postponed twice on the advice of the district administration. Efforts to conduct fieldwork in Control II area (Khotang district) were abandoned since it was not possible for researchers to walk two to three days through the Maoist-infiltrated zone. Therefore, the present post-test measurement of the MG model excludes data from the MG Control II area.

A one-day dissemination seminar to share the results of the OR study was successfully organized on June 20, 2003 in Kathmandu. Program managers, policymakers, academics, journalists, and representatives of NGOs were invited to attend the workshop. Plans are underway to publish the results of the study in relevant national and international journals. Table 1.5 presents objectives and measurable indicators of Phase III.

Table 1.5. Objectives and Measurable Indicators for Phase III

Activities	Objective	Indicators (Percentage)
Validation of Strategies (Solutions)		
Endline KAP survey of young couples in experimental and control areas	Examine young couples' knowledge and attitude towards reproductive health care and family planning Provide sources of information and services for reproductive health and family planning.	▪ % of couples who know elements of family planning ad reproductive health % of young couples who think reproductive health care is essential and prevents risks ▪ % of young couples exposed to the various sources of knowledge about family planning and reproductive health
	Examine reproductive health care and family planning practice among young couples	▪ % of young couples who use reproductive health services and information ▪ % of young couples who practice family planning
	Examine use of family planning and reproductive health services by young couples and reasons for non-use	▪ % of young couples who visit service points for family planning and reproductive health ▪ % of young couples ever and currently using family planning methods and attending antenatal and prenatal care ▪ % of immunized children ▪ Types of inhibiting factors and coping strategies of young couples
	Determine incidence of pregnancy complications, unintended pregnancies, and unsafe delivery practices among young couples	▪ % of young married women who experience pregnancy-related complications ▪ % of young married women with unintended pregnancies ▪ % of young married women with safe birthing practices
	Determine differences in indicators between experimental and control sites	

Activities	Objective	Indicators (Percentage)
Assessment of family planning and reproductive health information and services accessible for young couples	Examine the nature, extent and methods of family planning and reproductive health service delivery and IEC	▪ Involvement of NGOs in providing family planning and reproductive health information and services for young couples ▪ Nature and methods of services being provided and IEC used ▪ Quality of care
Use of family planning and reproductive health information by CAG and MG	Examine the activities of CAGs and MGs in relation to providing family planning and reproductive health information for young couples, and nature, extent and methods of IEC	▪ Involvement of CAGs and MGs in providing family planning and reproductive health information for young couples ▪ Nature, extent, and methods of IEC adopted for communication
Dissemination of Results		
Dissemination seminar Publication of key results in journals	▪ Share the results of the OR intervention and the extent to which the intervention has been effective in reaching the target audience (young couples) ▪ Incorporate feedback and mechanisms that will help to build policy recommendations for program sustainability and replicability.	

1.6 The Partners in the OR Study

The Center for Development and Population Activities (CEDPA) has been working in partnership with NGOs in Nepal since 1988. The mission of CEDPA is to empower women at all levels of society to be full partners in development. In Nepal, CEDPA is working towards achieving its mission by helping women acquire the knowledge and skills to make informed decisions and to take appropriate actions to address their educational, social, and reproductive health needs. CEDPA works with, and on behalf of, women and girls in partnership with a variety of NGOs that work at national and grassroots levels. CEDPA's support aims to contribute to achieving national goals as outlined in the government policy and planning documents.

Center for Research on Environment, Health, and Population Activities (CREHPA) is a private nonprofit, non-governmental research organization registered under Nepal's Society Act 2034. It is

also registered with the Social Welfare Council. Since 1995 CREHPA has conducted a series of policy research, consultancy assignments, and training activities in the field of population, reproductive and sexual health and rights, community development, and public health. It has also undertaken public education and advocacy activities to create enabling environments for women to make informed decisions about their fertility and reproductive rights through district-level NGOs in the country.

Nepal Red Cross Society (NRCS) is a humanitarian and social service organization that responds to challenges the country faces from natural disasters and implements planned development strategies based upon the principle of "from disaster to development". To date, NRCS has implemented a variety of community-based service programs on topics including sexual and reproductive health, in cooperation with several participating national societies (e.g., Sister Societies of Red Cross), international NGOs, and donor agencies.

1.6.1 Organizations Responsible for Intervention

CREHPA, NRCS, and CEDPA were directly involved in the study and testing the two intervention strategies. The interventions were carried out by NRCS under the technical assistance of CREHPA and CEDPA/Nepal. CREHPA conducted pre-and post-intervention surveys, organized interactive workshops and meeting, met with government agencies (i.e., the Ministry of Health at the central and district levels), prepared and conducted trainings, monitored the implementation programs, and disseminated the results.

NRCS trained its project staff, as well as CAG and MG group leaders, and executed the interventions in the two experimental sites. CEDPA extended the necessary technical assistance to NRCS, including maintaining MIS.

II. Study Methodology

2.1 The Research Protocol

This study employed a quasi-experimental design with two experimental and two non-equivalent control groups. The basic logic of the design is to compare results between experimental and control groups before and after the intervention (independent variable) has been introduced, i.e., effective treatment (x) is compared with no treatment (see Figure 2.1). If the observed change from pre- and post-test measurement for both groups is similar, then the treatment did not influence the behavior being measured. On the other hand, if the difference in the magnitude of change between the two groups is observed, the independent variable may have affected the behavior.

The two experimental groups where YCAG and MG models were tested included:

- YCAG Model: Ten program Village Development Committees (VDCs) in the eastern and southeastern part of the Udaypur District of NRCS that have CAG

- MG Model: Ten program VDCs in the northwestern part of the same district that have CAG and MGs

The two control groups (for pre- and post-test comparison) were:

- YCAG Control: Six VDCs in the western part of the same district that are covered by the NRCS program and have CAG activities

- MG Control: Six VDCs of the Khotang District (adjoining district of Udapypur) with MGs at the community level.

Figure 2.1. Diagram of the Non-Equivalent Control Group Design for the Present Study

	Time →		
Experimental Group 1: Ten VDCs with CAG and YCAG Activities, (Udaypur)	**O_1** Pre-test measurement	**X** Introduction of intervention	**O_2** Post-test measurement
Experimental Group 2: Ten VDCs with MG activities, (Udaypur)	**P_1** Pre-test measurement	**X** Introduction of intervention	**P_2** Post test measurement
Control Group 1: Six VDCs with CAG activities (Udaypur)	**O_3** Pre-test measurement		**O_4** Post-test measurement
Control Group 2: Six VDCs with MG activities (Khotang)	**P_3** Pre-test measurement		**P_4** Post-test measurement

Experimental designs are often recommended and adopted in health and family planning operation research studies that attempt to determine the effect of a program intervention. Use of experimental designs in OR has several advantages over non-experimental designs since the former provide the best available evidence just in time so that it can be utilized by policy-makers, program mangers and others for both program planning and evaluation. The experimental design incorporates evaluation plan as an integral component of program management whereas the non-experimental designs are used in piecemeal fashion in determining evidence of program effects. The uncertainties and ambiguities remain after even the most careful application of the non-experimental approaches. Therefore, researchers generally agree that the most acceptable approach to the determination of cause-and-effect relationships is through the experimental method.

However, the present OR design differs from that of true experimental design. Application of true experimental designs has been viewed problematic mainly because of its two features, i.e., random selection of study units and maintaining full manipulative control over the timing, intensity, and duration of the experimental intervention variables. Probably, no true experimental design has ever been conducted in OR program because of these two difficulties (Reynolds 1991).

It is asserted that the quasi-experimental designs have greater practical values over true experimental designs. Quasi-experimental designs are said to be "simple and relatively easy to understand (Fisher and Miller 1991: 372). The quasi-experimental design with non-equivalent control group is considered good to use when a program intervention is introduced in one area and compare the program effects of that area against a similar, but not necessarily equivalent comparison groups (Fisher and Miller 1991). Use of this design has some advantages over others since "this design reduces the chance of observed outcomes being a function of extraneous events since extraneous events would affect members of the control group as well as of the experimental group" (Craig and Metze 1986:155). Likewise, applications of statistical tests are possible to the data from quasi-experimental design. The statistical tests applied to the data obtained from quasi-experimental designs are same as those applied to data in true experimental designs (Broota 1992).

2.2 The Study Sites and the Subject Population

The OR study was undertaken in the Udaypur and Khotang districts, located in the Sagarmatha Zone of the Eastern Development Region of Nepal. Udaypur is one of the CEDPA-supported reproductive health and family planning program districts of NRCS where CAGs are formed to empower rural women with communication skills. Group members of CAGs are married women of reproductive age and they represent a cluster of 18 to 20 households in one ward.

The Khotang district was chosen as the control site for MG as it is the neighboring district of Udaypur and similar in terms of topography (hilly region), ethnicity, and socioeconomic status (life expectancy indices are 58.3 and 61.3 for Khotang and Udaypur, respectively). Moreover, this district is not exposed to any reproductive health interventions from the NGOs.

Table 2.1 shows the Village Development Committees (VDCs) selected for Experimental Area I and Experimental Area II (all within Udaypur District) and Control Area I (within Udyapur District) and Control Area II (in Khotang District). When selecting the experimental and control sites, utmost care was given to maintaining reasonable geographical distance between the two groups to minimize the possible effects of contamination during the course of the intervention.

2.3 Methods of Pre- and Post-test Measurement

Information for pre- and post-test measurement was obtained through quantitative surveys. The records kept by field-based project staff from NRCS, the CAG, MG, and YCAG leaders and government outreach health workers form a significant part of the quantitative information to

monitor the interventions during Phase II. Qualitative information was gathered through focus group discussions, clinic observation, and in-depth interviews of service providers.

Table 2.1. Proposed VDCs and expected target population for the OR study

Description	Proposed VDCs	District	# of VDC	Total HH*	# of Young Couples **
Experimental Groups					
Group 1 (for CAG)	Basaha, Beltar, Chaudandi, Hadiya, Jogidaha, Katunjebawala, Sidhdipur, Sundarpur, Tapeswori, Thoksila	Udayapur	10	11,422	3,427
Group 2 (for MG)	Balamtar, Baraha, Basabote, Iname, Jante, Laphagau, Nametar, Rupatar, Tamlicha, Thanagau	Udayapur	10	4,513	1,354
Control Groups					
Group 1 (for CAG)	Katari, Limpatar, Panchawati, Risku, Tawashree, Tribeni	Udayapur	6	7,018	2,105
Group 2 (for MG)	Chisapani, Damarkhu Shivalaya, Diplung, Kaule, Mauwabote, Sawanechaur	Khotang	6	2,302	691
	Total		**32**	**25,255**	**7,577**

*HH refers to household data adopted from the 1991 population census of Nepal.
** Expected number of young couples

2.4 The Sample Survey

Sample surveys of households were conducted for quantitative measurement of pre- and post-treatment situation using similar sampling design, sample size, and sample selection techniques in both phases. The sample survey focused on young married women under the age of 25. The main purpose of the sample survey was to generate quantitative information about knowledge, attitudes, and behavior change among young couples in the study areas before and after the intervention.

2.4.1 The Design

The survey used a two-stage cluster sample design where a cluster is equivalent to one ward of the VDC. A ward is the smallest administrative unit where a VCD consists of nine wards. Per the 1991 population census, the average number of households per ward for the study areas is between 80 and 90.

2.4.2 Sample Size

The target sample for the pre- and post-test surveys was 500 young married couples under the age of 25 from each experimental group and 400 from each control group. Thus, the total target sample size of young married couples combined for both Experimental I and Experimental II groups is 1,000, and 800 for the two control sites combined.

Assuming 0.30 young married couples per household (based on the 1991 Population Census), it was estimated that a total of 3,334 households (1,000/0.30) need to be surveyed to obtain the targeted sample size of 1,000 young married couples for the experimental areas (1,667 households from each experimental group). A total of 2,666 households (800/0.30) need to be surveyed to achieve the targeted sample size of 800 for the control areas (1,333 households from each control group).

When the total sample size is fixed in advance, the total number of sample clusters to be selected depends upon the cluster size, i.e. the number of households to be selected from each cluster. The cluster size in the presence of intra-class correlation[1] jointly produces an effect on the efficiency of the sample design, known as the design or cluster effect. Therefore, one cannot select too many or too small a number of households from each cluster.

Sampling statisticians usually want to design surveys that have a clustering effect in the range of 1.5 - 3.0, and certainly no greater than 4.0. This suggests a cluster size of 20 to 33 if intra-class correlation is 0.05. Evidence from the 1996 Nepal Family Health suggests that clustering effects for family planning knowledge and practice, reproductive health, and STI-related variables lie between 1.5 to 2.5 if 25 completed interviews per PSU are taken in rural areas. The selection of 20 to 33 households per cluster would result in an acceptable level of clustering effect for major variables in the study. Therefore, it was decided to take the mid-point figure of the given range, i.e., 27 ([20+33]/2) households from each selected sample cluster of experimental and control groups.

Using this information, the total number of clusters to be sampled from each experimental group is 62 (1,667/27) and 50 (1,333/27) for each control group. The total sample of households is 1,674 (62 x 27) for each experimental group and 1,350 (50 x 27) households for each control area. With this, the expected number of young married couples in the sample for each experimental group is 502 (1,674 x 0.30) and 405 (1,350 x 0.30) for each control area.

[1] It is the degree to which an element in the same cluster is likely to have the same characteristic compared to another element selected at random in the population.

2.5 Sample Selection Procedure

2.5.1 First Stage Selection

In the first stage of selection, sample clusters were selected by CREHPA. The probability proportionate to size (PPS) technique was employed at this stage of selection. With the application of this technique, every sample cluster (ward) has an equal chance of being selected. A total number of 62 clusters from each experimental group and 50 clusters from each control group were selected in this stage. The ward-wise household counts of the 1991 Census served as the sampling frame for selecting clusters.

2.5.2 Second Stage Selection

In this stage, sample households were selected from the sample clusters. The survey team completed this stage of selection in the field. Before selection an up-to-date list of households was prepared with the help of the most knowledgeable person(s) of the cluster. The list served as a sampling frame. Systematic random sampling was then applied to the list to select the predetermined number of sample households from each cluster, i.e., 27 households per cluster.

2.6 Operational Procedure

A set of structured questionnaires was administered to solicit reproductive-health related information. The questionnaire had both Household and Individual sections. The Household section was administered to the head of the households to solicit household-level information such as age, sex, occupation, education, and marital status of each member of the household. It also contained questions about health and sanitation issues, dwelling, and economic conditions of the households. Eligible respondents for individual interviews were screened and identified in the Household section of the questionnaire.

The Individual section of the questionnaire was administered to young married women under the age of 25 to solicit information about their knowledge of, attitude towards, and decision-making in family planning and reproductive health problems. The questionnaire also contained some questions regarding current use of family planning and reproductive health services, including impressions about the effectiveness of the intervention. Before administering the interview questionnaire, researchers sought oral informed consent from the respondents. Interviews were done in private, and respondents were assured that their responses would be confidential.
A six-day intensive orientation training was provided to research assistants who administered the questionnaire. In the training, the research assistants learned about the objectives of the survey, techniques of household selection, methods of completing questionnaires, updating sampling frames, and other relevant topics. To facilitate the task of identifying the sample clusters, survey teams were provided with maps of the sampled clusters and wards. They were also given a list of sample clusters that were assigned to them.

The field supervisors and research assistants were asked to make up to three visits to the sample households. If the third visit also failed to register the sample household, supervisors and

research assistants decided not to substitute for any case but to record the household as "no response".

2.7 Analytical Scheme

The group comparison method was adopted for the analysis. The results from the pre- and post-test measurement for experimental and control areas have been compared. The group comparisons adopted the following scheme as shown below in Figure 2.1.

Figure 2.2 Before and After Group Comparison Scheme

Description	*Indicator Derived From*	
	Pre-test	Post-test
Experimental Group 1	I_{01}	I_{02}
Experimental Group 2	V_{01}	V_{02}
Control Group 1	I_{11}	I_{12}
Control Group 2	V_{11}	V_{12}

The indicator I_{01} compares with the indicator I_{11} and V_{01} with V_{11} in the pre-test measurement. Likewise, indicator I_{02} compares with I_{12} and V_{02} with V_{12} in the post-test. In addition, the study compares experimental group I_{01} with V_{01} in the pre-test and I_{02} with V_{02} in the post-test to determine the effectiveness of the intervention through NGO and governmental sectors. There is further scope for comparing indicators of the same group from pre- and post-test measurement to assess the level of improvement over time.

2.8 Response Variables

2.8.1 Response Variables

This study has multiple response variables primarily related to the knowledge of and attitude towards family planning and reproductive health care among young married couples. Other major response variables that were measured are related to knowledge, decision-making, care seeking, and use of existing reproductive health and family planning services.

The family planning variables encompass:

- Exposure to the sources of family planning information
- Knowledge about specific family planning methods, including appropriateness of the method used and knowledge about a method's side effects
- Interpersonal and inter-spousal communication about family planning
- Contraceptive use decisions
- Accessibility and time taken to reach service centers
- Unmet need for spacing.

Similarly, the reproductive health variables encompass:

- Exposure to sources of reproductive health information
- Knowledge about reproductive health issues, including recognition of common reproductive health problems and their severity
- Knowledge about risks of early and frequent pregnancies
- Causes of maternal and child morbidity and mortality
- Knowledge about the advantage of antenatal and post-natal care, including safe birthing practices
- Interpersonal and inter-spousal communication in reproductive health decision making
- Reproductive health service accessibility, including time taken to reach reproductive health service centers.

2.9 Data Management and Analysis

All questionnaires were edited and coded. The results from pre- and post-test measurement are presented through descriptive statistics in frequency, cross tabs, and mean tables. Both univariate and bivariate analysis have been performed using SPSS software. Statistical tests, particularly "t-test" for comparing two proportions, were performed wherever required to compare results between experimental and control groups and within the group.

III. CHARACTERISTICS OF THE STUDY POPULATION

The objective of this chapter is to present the demographic and socioeconomic characteristics of the study population. The endline survey covered a sample of 401 and 343 young married women ages 10 to 24 from two experimental areas, i.e., YCAG and MG, respectively. The survey also covered 268 young married women from the YCAG control area. The endline survey could not be carried out in the MG control area due to security reasons, thus is not presented here.

3.1 Age Composition

Table 3.1 provides the background characteristics of the respondents. Approximately half of the respondents in all areas are ages 22 to 24. Adolescents (ages 10 to 19) in all of the study areas constituted about one-fourth of the total sample. The median age of the respondents is 22 both in the YCAG and the MG areas, one year older than in the control area.

Table 3.1. Background Characteristics of Sample

	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	**Endline (n=401)**	**Baseline (n=500)**	**Endline (n=343)**	**Baseline (n=400)**	**Endline (n=268)**
Age						
Less than 17	3.8	3.5	4.2	2.9	5.0	3.7
17-19	20.6	19.2	21.6	19.8	23.8	22.4
20-21	25.2	26.9	24.0	25.1	27.0	24.3
22-24	50.4	50.4	50.2	52.2	44.3	49.6
Median Age	**22.0**	**22.0**	**22.0**	**22.0**	**21.0**	**21.0**
Family Structure						
Nuclear	32.0	29.9	37.4	56.0***	39.0	48.5***
Joint	67.8	70.1	62.6	44.0	61.0	51.5
Education						
Illiterate	42.8	21.2***	60.8	41.7***	56.8	40.3***
Non-formal education	8.2	17.5	9.2	13.7	12.0	22.8
Primary (1-5) incomplete	15.8	14.5	16.6	26.2	14.0	12.7
Primary completed	3.4	4.2	2.0	1.2	5.0	4.1
Secondary (6-10) incomplete	24.4	32.4	9.6	14.6	11.3	16.8
Secondary and higher completed	5.4	10.2	1.8	2.6	1.0	3.4
Occupation						
Farming	87.6	73.8	95.8	74.6	93.0	55.2
Service holder	1.2	0.2	1.0	0.9	-	1.1
Business	0.4	0.7	-	-	1.0	-
Wage Labor	3.8	1.7	0.2	0.3	2.0	3.4
Petty shopkeepers	1.2	2.7	1.2	2.3	1.3	2.6
Housewife	4.0	19.2	0.4	20.4	2.3	36.6
Student	1.4	1.5	1.4	1.2	0.5	1.1
Other *	0.4	-	-	0.3	-	-
Caste/Ethnicity						
Rai	22.4	10.7	33.4	24.8	1.8	31.3
Gurung/Magar	8.8	6.2	11.4	20.7	32.8	13.8
Tamang	4.4	3.2	7.6	8.2	3.3	2.6
Brahmin/Chettri	26.8	36.7	29.8	32.1	35.3	30.6
Tharu	17.4	28.7	0.2	-	6.3	0.4
Damai/Kami/Sarki	15.8	10.7	10.4	9.3	17.0	13.1
Terai caste**	3.8	2.0	-	-	1.3	3.0
Newar	0.6	1.5	7.2	5.0	2.3	2.6
Others	-	0.2		-	0.3	2.6
Age at Marriage						
Less than 17	45.4	38.9	49.0	44.6	52.3	55.6
17-19	42.4	47.1	38.0	43.7	37.5	35.4
20-21	9.8	12.0	10.8	9.9	8.5	7.1
22-24	2.4	2.0	2.2	1.7	1.8	1.9

*Employee in factory, cottage/handicraft, worked in out of country

**Das, Mushahar, Thakur, Marik, Shah, Gupta, Musalman

*** Difference is statistically significant at $p \leq .01$

3.2 Education

In all study areas, the educational attainment of the respondents in the endline survey is greater than at baseline in all of the study areas. The proportion of illiterate respondents is significantly lower in all areas. Likewise, the proportion of respondents who attended secondary and higher education is greater in all areas.

3.3 Family Type

Joint or extended families still are dominant (70%) in the YCAG area, while in the MG area the nuclear family system is more common (56%). In the control area, however, both family types are equally prevalent.

3.4 Caste and Ethnicity

In terms of caste and ethnic groups, Mongolian (Rai/Gurung/Magar/Tamang) is the most common in the MG (54%) and control areas (48%), while Brahmin/Chettri are most common in the YCAG area (37%). Tharu is the second largest group, constituting more than one-fourth (29%) of the respondents in the YCAG area, while Brahmin/Chettri is the second largest caste and ethnic group in the MG and control areas, accounting for about one-third of the total respondents. About one in ten (13%) of the respondents in the control area constituted the low caste Damai/Kami/Sarki population.

3.5 Occupation

Farming is the major occupation in all of the study areas. For three-fourths of the respondents in the YCAG and MG areas, farming is the main source of livelihood. In the control area, however, only 55 percent of the respondents rely on farming to support themselves. Being a housewife is the second major occupation in all of the study areas. There has been an increase in the proportion of respondents in the endline survey who cite “housewife” as their occupation in all of the study areas. This shift has been difficult to explain.

3.6 Age at Marriage

Marriage is universal in the sampled population in all of the study areas. Table 3.1 shows that all of the respondents are married by age 24 and more than 97 percent are married by age 21. The mean age at marriage is lower in the control area as compared to the experimental areas. More than half (56%) of the respondents in the control area are married by age 16, while less than two-fifths (39%) were married by that age in the YCAG area.

A statistical test was carried out to examine if the endline sample is different from the baseline in terms of the major characteristics. Table 3.1 shows that, with respect to the literacy level of the respondents, the sample is significantly different between the baseline and endline surveys in all three study areas. With respect to family structure, the sample is significantly different in the MG and the control area. Caution should be exercised while drawing conclusions about relationships where these variables might confound potential effect.

IV. FERTILITY LEVELS AND PREFERENCES

This chapter analyzes fertility levels and preferences to examine any changes in the fertility behavior among the respondents that may have occurred after the program intervention. Respondents were asked about their pregnancy history, age at first birth, total number of children born, and total children surviving at the time of the survey. The endline survey also solicited information about the desire for additional children, perceptions about the ideal family size, and sex preferences. The information gathered may not be able to portray the full effects of the intervention as the time interval required to measure the changes in the fertility behavior was not adequate. Therefore, the results should be considered as suggestive.

4.1 Age at First Pregnancy

Age at first pregnancy is an important demographic indicator. It has been widely accepted that childbearing at an early age poses serious health risks to both mother and child. Adolescent fertility (i.e. pregnancy before age 20) has been a serious health and social concern in many countries. One of the objectives of the OR is to advocate first pregnancy at an appropriate age.

Table 4.1 presents the distribution of respondents by age at first pregnancy. By the endline survey, in both the experimental and control areas, more than 85 percent of the respondents had ever been pregnant. Among those who had ever been pregnant, close to 95 percent were pregnant for the first time by the time they were age 21. A comparison with the baseline result indicates a tendency to delay first pregnancy among women in both the YCAG and MG areas. The proportion of respondents who were pregnant for the first time before age 17 declined in the YCAG area from 23 percent to 15 percent and in the MG area from 26 percent to 17 percent. By age 19, 70 percent to 78 percent of women had been pregnant in both of the experimental areas, compared to 85 percent in the control area.

Table 4.1. Pregnancy Status and Age at First Pregnancy

	YCAG Area		MG Area		Control Area	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Ever been pregnant						
Yes	85.2	84.3	84.8	86.6	86.0	88.1
No	14.8	15.7	15.2	13.4	14.0	11.9
Age when first became pregnant						
Less than 17	22.5	14.5	26.2	16.8	31.1	31.4
17-19	52.6	55.9	51.4	57.6	48.5	53.8
20-21	18.1	23.4	18.2	20.5	17.2	11.0
22-24	6.8	6.2	4.2	5.1	3.2	3.8
Mean age at first pregnancy	18.1	18.5	18.0	18.3	17.7	17.5

4.2. Children Ever Born and Living

Table 4.2 shows the mean number of children ever born for respondents who ever experienced childbirth by their current age, literacy, and ethnicity. This value (1.5 to 1.6) remained fairly constant in all groups, increasing only marginally in the MG and control areas.

Not surprisingly, average parity increased with age. For women less than age 20, the mean parity is almost one child in all of the three study areas. By age 24, women in the MG and control areas gave birth to two children, while the mean parity in the YCAG area was 1.6 children. As expected, literate women have fewer live births than illiterate women, and the number of births decreases with educational attainment. This is true for both surveys in all three study areas. Endline results showed that medium literate women, as compared to illiterate women, had 0.4 fewer children in the YCAG area, 0.7 in the MG area, and 0.6 fewer children in the control area. This demonstrates the strong association between female education and lower fertility.

Table 4.2. Children Ever Born and Children Surviving, by Mothers' Background Characteristics

Age Group	Children Ever Born		Children Surviving		No of Cases	
YCAG Area	Baseline	Endline	Baseline	Endline	Baseline	Endline
Age						
Less than 15	-	-	-		-	
15-19	0.8	0.9	0.7	0.9	74	59
20-24	1.7	1.6	1.6	1.6	352	279
Total	**1.5**	**1.5**	**1.5**	**1.4**	**426**	**338**
Education						
Illiterate	1.7	1.8	1.6	1.7	195	72
Low Literate	1.5	1.6	1.5	1.5	98	111
Medium Literate	1.3	1.3	1.3	1.3	133	155
Caste/Ethnicity						
Mongolian	1.7	1.5	1.6	1.4	153	68
Brahmin/Chettri	1.4	1.5	1.4	1.5	115	126
Tharu	1.4	1.5	1.3	1.5	77	90
Damai/Kami/Sarki	1.5	1.5	1.4	1.4	65	41
Terai Caste						
Others						
MG Area						
Less than 15		-	-	-		-
15-19	0.8	0.9	0.8	0.9	86	46
20-24	1.8	2.0	1.8	1.9	337	251
Total	**1.6**	**1.8**	**1.6**	**1.7**	**424**	**297**
Education						
Illiterate	1.8	2.1	1.7	2.0	270	132
Low Literate	1.4	1.7	1.3	1.7	103	116
Medium Literate	1.1	1.3	1.1	1.3	51	49
Caste/Ethnicity						
Mongolian	1.6	1.8	1.5	1.8	246	157
Brahmin/Chettri	1.7	1.8	1.6	1.7	135	95
Tharu		-	3.0	-	1	-
Damai/Kami/Sarki	1.4	1.5	1.3	1.4	42	30
Terai Caste	-	-	-	-	-	-
Others	-	2.2	-	2.1	-	15
Control Area						
Less than 15	-	-	-	-	-	-
15-19	0.9	1.0	0.9	1.0	74	50
20-24	1.8	2.1	1.7	2.0	270	186
Total	**1.6**	**1.9**	**1.5**	**1.8**	**344**	**236**
Education						
Illiterate	1.8	2.1	1.7	2.0	203	100
Low Literate	1.5	1.9	1.3	1.6	88	83
Medium Literate	1.3	1.4	1.2	1.4	53	63
Caste/Ethnicity						
Mongolian	1.6	1.9	1.5	1.8	143	111
Brahmin/Chettri	1.7	1.8	1.6	1.7	116	73
Tharu	2.0	2.0	1.8	2.0	21	1
Damai/Kami/Sarki	1.5	2.0	1.4	1.9	59	32
Terai Caste*	1.0	2.7	1.0	1.9	3	7
Others**	2.0	1.2	1.0	1.1	1	12

*Das, Mushahar, Thakur, Marik, Shah, Gupta, Musalman

**Newar and Sannyasi

Note: Data not presented if n<25.

4.3 Desire for Additional Children

In the endline survey, respondents were asked if they wanted an additional child. Results are presented in Table 4.3. The proportion of women who desire additional children has declined in all the study areas but more notably in the control area (from 65% to 47%). In the YCAG area, this proportion declined from 66 percent to 56 percent, while in the MG area the decline is minimal. It should be mentioned, however, that in the endline survey the question pertaining to "desire for additional children" was restricted to only those women who were ever pregnant. In the baseline survey, this question was asked of all women. This limitation must be considered when making comparisons.

Table 4.3. Desire for Additional Children and Number of Surviving Children

	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=338)	Baseline (n=500)	Endline (n=297)	Baseline (n=400)	Endline (n=236)
Desire for additional child (%)						
Yes	65.8	55.9	62.8	60.9	65.0	47.0
No	34.2	44.1	37.2	39.1	35.0	53.0
Number of desired children	1.6	1.2	1.6	1.3	1.6	1.2

4.4 Ideal Family Size

Table 4.4 summarizes the perceptions of ideal family size in the study areas. Respondents in all of the study areas identified the mean ideal family size as being close to two children, with a greater proportion of respondents selecting "two" in the endline survey as compared to the baseline survey. Correspondingly, the concept of a large family norm has declined in all of the study areas and few women viewed three or more children as their ideal.

Table 4.4. Perceptions About Ideal Family Size

Ideal Family Size	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=338)	Baseline (n=500)	Endline (n=297)	Baseline (n=400)	Endline (n=236)
None	-	1.2	-	2.7	-	-
One	2.2	4.7	2.8	0.7	2.3	2.5
Two	73.2	80.5	65.6	70.0	72.0	83.5
Three	21.0	11.8	25.0	20.2	21.5	12.3
Four or more	3.6	1.8	6.6	6.4	4.3	1.7
Mean Ideal Number of Children	2.3	2.1	2.4	2.3	2.3	2.1

4.5 Unintended Pregnancy

The survey asked women who had ever been pregnant if their last or current pregnancy was wanted at that time, wanted later, or not wanted at all. This question was important for examining the reproductive behavior of women and measuring the extent of unwanted, unplanned, or mistimed pregnancies both in the experimental and control areas.

Table 4.5. Desirability of Most Recent Pregnancy

Desirability of Pregnancy	YCAG Area		MG Area		Control Area	
	Baseline (n=113)	Endline (n=60)	Baseline (n=83)	Endline (n=59)	Baseline (n=77)	Endline (n=35)
Wanted then	46.9	70.0	51.8	40.7	54.5	25.7
Wanted later	44.2	26.7	36.1	49.2	40.3	60.0
Not wanted at all	8.8	3.3	12.0	10.2	5.2	14.3

In the YCAG area, the incidence of unintended pregnancy (both mistimed and unwanted) recorded a decline of almost one-half, from 53 percent to 30 percent. On the contrary, the proportion of women who experienced an unintended pregnancy (both mistimed and unwanted), increased both in the MG and the control areas, but the incidence is more severe in the control area (20 percentage points as opposed to an 11 percentage point increase in the MG area). It is also worth noting that the increase in the MG group was entirely among mistimed pregnancies, as unwanted pregnancies actually declined slightly. The finding suggests that young women in the YCAG area tend to better plan their pregnancies. This change in behavior could be attributed to more effective programs in this area.

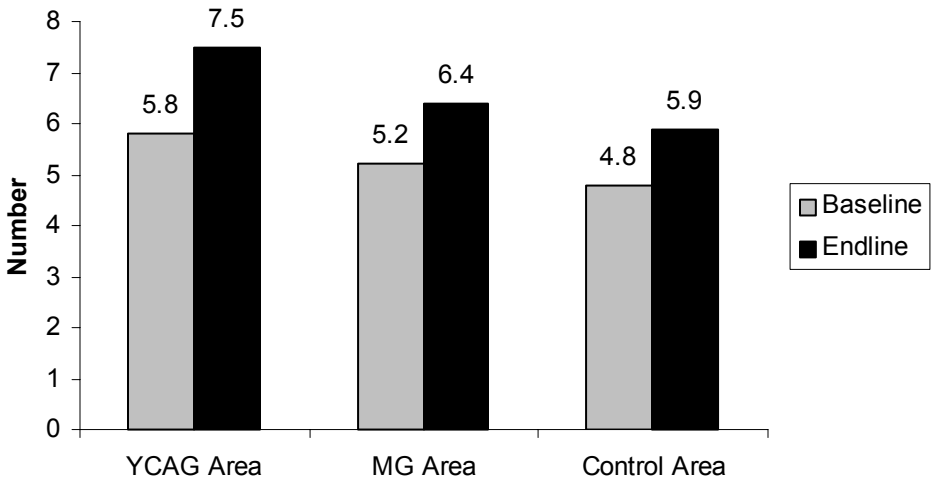
V. FAMILY PLANNING KNOWLEDGE AND PRACTICE

One of the important objectives of this OR study was to assess the effectiveness of the interventions in terms of improving knowledge and practice among youth in health care seeking behavior. The present chapter examines the extent of family planning knowledge and practice and focuses mainly on knowledge of contraceptives and their correct use, and exposure to information and services. Current use of contraception is also analyzed by major background characteristics.

5.1 Knowledge of Contraceptive Methods

Respondents' knowledge about at least one family planning method is nearly universal in the study area. The mean number of family planning methods known increased in all three study areas. But the increase is more pronounced in the YCAG area (1.7) as compared to the MG area (1.2) and the control area (1.1) (see Figure 5.1).

Figure 5.1 Mean number of family planning methods known



The proportion of respondents that have knowledge of three temporary methods (condom, pills, and DMPA) was already high in the baseline survey (at least 4.8%). The endline survey showed a tremendous increase in both experimental areas, as well as in the control area. Comparatively, however, knowledge of three temporary family planning methods has become nearly universal in the YCAG (96%) and the MG (94%) areas as compared to the control area (83%) (see Table 5.1). Similarly, there has been a significant increase in the proportion of respondents who mention both male and female sterilization. The knowledge of IUD (45%) and Norplant® (63%) in the control area and knowledge of Norplant® (58%) in the MG area is low compared to the YCAG area. The statistical results presented in the table show that the differences are significant in all three groups among both types of methods.

Table 5.1. Knowledge of Family Planning Methods

Family Planning Method	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Pills	85.8	96.5	82.0	94.2	71.3	86.6
IUD	54.6	86.3	35.6	64.7	30.8	45.5
DMPA	94.4	99.5	95.0	98.3	88.5	96.6
Norplant®	57.8	90.5	28.4	58.3	32.8	63.1
Condom	92.4	99.0	89.6	98.5	83.5	90.7
Female Sterilization	82.2	99.0	76.6	88.9	68.5	88.1
Male Sterilization	80.8	98.5	81.0	88.3	66.0	82.8
Calendar Method	21.2	41.6	17.2	23.6	24.5	19.0
Withdrawal Method	10.8	42.6	14.4	21.9	18.8	20.9
Three temporary family planning methods known (condom, pills, and DMPA)	82.6	95.5***	77.2	93.6***	67.0	83.2***
Both male and female sterilization known	79.8	98.3***	75.8	87.8***	64.5	82.8***

*** Difference is statistically significant at $p \leq .01$

5.2 Knowledge about the Correct Use of Specific Method

Respondents were asked if they knew how to use pills and DMPA correctly. They were asked questions like "when should a women for the first time start taking pills?" They were further asked, "what should they do if they miss one day?" and "if they miss two consecutive days?" Similar questions were also asked about DMPA.

Table 5.2 shows proportions and results of statistical tests of the significance of changes in both experimental areas. As the table shows, knowledge remained fairly constant in the control group for the first two questions. All three areas, however, showed a dramatic increase in knowledge about what to do if a woman misses taking a pill for two consecutive days. This was particular notable in the MG areas, where knowledge increased from 6 percent to 53 percent.

The correct responses to questions about "when to start DMPA" and "when to go for next injection" increased significantly in both of the experimental areas – almost twofold in the YCAG area. Knowledge about lactating mothers needing to initiate DMPA the earliest time increased, but only moderately, in the YCAG (17%) and MG areas (11%) but declined in the control areas. The proportion of respondents who correctly answered the question about "what to do if a woman is unable to receive the DMPA on the specified date" also increased more than twofold in the experimental areas, with a much smaller and non-significant change in the control area. The proportion of women who demonstrated knowledge about "when to get the next injection" also recorded noticeable increases in both of the experimental areas and a drop in the control area.

Table 5.2. Proportion of Women Having Knowledge of Correct Uses of Family Planning Methods

Correct knowledge about pills	YCAG Area		MG Area		Control Area	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
When to start pill	48.7	73.9***	39.3	58.2***	41.4	44.8
If missed for 1 day	36.8	72.4***	28.5	52.6***	35.8	32.8
If missed for 2 consecutive days	2.8	31.0***	6.3	52.6***	10.2	32.8***
Correct Knowledge about DMPA						
When to start DMPA	49.6	85.2***	48.8	74.8***	54.5	59.8
When to go for next injection	54.7	92.5***	57.9	76.6***	66.4	59.8
If unable to receive the injection on date specified	20.3	45.6***	15.2	47.5***	21.8	24.7
When can a lactating mother initiate DMPA at the earliest	9.5	16.5***	6.5	11.3***	4.2	3.9

*** Difference is statistically significant at $p \leq .01$ ** $p \leq .05$

5.3 Exposure to Sources of Information and Services

Attempts were also made in the survey to assess the exposure of the respondents to various sources of family planning information. Respondents' awareness about sources of family planning information available in their village increased significantly in both of the experimental areas. The proportion of women who cited female community health volunteers and depot holders as sources of information increased both in the YCAG and the MG areas. The proportion of respondents who said that there is no one to provide family planning information in their village drastically declined in the YCAG area from 36 percent to 8 percent and from 36 percent to 10 percent in the MG area. The decline in the control area was marginal from 38 percent to 35 percent (see Table 5.3). In the endline survey in the YCAG area, 54 percent cited YCAG and 52 percent referred to depot holders in their village, while another two-fifths (41%) cited FCHV. In the MG area, two-thirds of the respondents (38%) mentioned FCHV, while another one-third (34%) cited depot holder as the source of information. In the control area, only about one-fourth of the respondents cited FCHV or depot holder as sources of family planning information.

Table 5.3. Sources of Family Planning Information

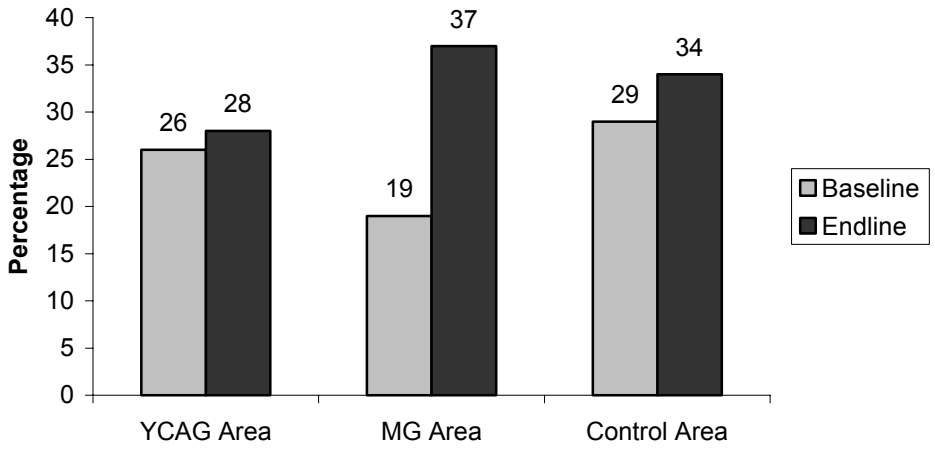
Sources of Family Planning Information	YCAG Area		MG Area		Control Area	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
FCHV	22.2	40.9	14.6	65.3	16.0	24.6
Depot Holder	21.2	51.6	26.6	33.8	31.0	27.2
Field Worker	11.8	13.5	18.8	16.9	8.3	4.1
Health Post	2.6	8.0	3.4	2.6	7.3	1.1
YCAG	-	53.6	-	-	-	-
CAG	0.2	1.5	0.2	15.2	-	-
MG	0.2	6.2	0.2	38.2	-	1.1
No one	35.6	8.0	35.8	9.6	38.0	35.1

5.4 Current Use of Contraception

The contraceptive prevalence rate (CPR) – the proportion of currently married women currently using a contraceptive method – is the single most important indicator of family planning performance. It is one of the proximate determinants of fertility. The 2001 Demographic and Health Survey showed that the CPR of any modern method in Nepal has reached 38.9 percent. The present survey also attempted to measure the CPR of the study areas.

The CPR among young married women has increased in all of the three study areas. Yet it is lower than the national average of 38.9 percent (DHS 2001). The rise in CPR has been sharper in the MG area, from 19 percent in the baseline survey to 37 percent in the endline survey. In the YCAG and control areas, however, the increase has been only modest (see Figure 5.4). The sharp increase in CPR in MG and only a negligible rise in the YCAG area need to be investigated further, given the higher performance of the YCAG on many of the knowledge and attitude indicators.

Figure 5.2 Contraceptive Prevalence Rate



5.5 Current Use of Contraception by Background Characteristics

Socioeconomic and demographic characteristics of the respondents are important determinants of contraceptive use. Various studies have shown that variables such as age, educational attainment, ethnicity, and number of living children largely affect contraceptive use. Table 5.5 analyzes the current use of contraception by major background characteristics. Results show that contraceptive use increases sharply with a rise in age. This pattern is uniform in all of the study areas.

The educational level of the respondent is another factor that is associated with contraceptive use. Use tends to increase with a rise in the educational level of the respondents. Results from this project indicate that use increases along with the increase in educational level up to low literate, and after that it declines, a pattern not consistent with the 2001 Demographic and Health Survey (DHS).

The number of surviving children is another key factor associated with contraceptive use. With the increase in number of surviving children, contraceptive use tends to increase. The use rate increases sharply after one living child: 45 percent in the YCAG area; 42 percent in the MG area, and 41 percent in the control area. It declines in the YCAG and control areas and almost stabilizes in the MG area with three or more living children. The increase in current use in the endline survey is more apparent in the control area where the use rate increases sharply, more than double, from 22 percent with one living child to 56 percent with two living children.

Table 5.4. Current Contraceptive Use by Major Background Characteristics

Background Characteristics	YCAG Area		MG Area		Control Area	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Age						
Less than 20	15.8	22.8	13.4	29.0	16.7	8.8
20-21	25.0	26.1	10.5	36.2	27.1	33.3
22-24	30.4	32.2	25.9	39.9	37.8	45.9
Educational Level						
Illiterate	21.6	14.9	16.6	28.9	23.8	32.3
Low Literate	31.3	33.3	24.3	45.5	38.5	39.5
Medium Literate	26.3	31.5	20.4	35.3	32.7	28.6
No of Surviving Children						
None	7.1	-	-	33.3	36.4	-
1	19.9	26.4	17.4	36.4	23.4	22.0
2	27.5	44.7	30.3	42.4	40.7	55.6
3 or more	49.1	34.3	26.9	43.3	31.8	41.3

5.6 Contraceptive Method Mix

Table 5.6 depicts the contraceptive method mix among current family planning users. Condoms were found to be widely popular among YCAG and MG area users, increasing to 37 and 39 percent of the method mix in the endline survey. However, condom use in the control area declined modestly. DMPA has been found to be more popular in the MG (49%) and the control areas (52%). Among the acceptors, its proportion increased in the endline survey in both areas. It remained the second most used method in the YCAG area at 21 percent.

Table 5.5. Contraceptive Method Mix

Method Currently Used	YCAG Area		MG Area		Control Area	
	Baseline (n=104)	Endline (n=97)	Baseline (n=80)	Endline (n=104)	Baseline (n=97)	Endline (n=79)
Condom	27.9	37.1	20.0	38.5	11.3	8.9
Pills	21.2	11.3	17.5	2.9	13.4	11.4
DMPA	21.2	20.6	33.8	49.0	45.4	51.9
Norplant®	1.9	1.0	1.3	1.9	1.0	-
IUD	1.0	1.0	-	-	-	-
Female sterilization	4.8	10.3	1.3	-	3.1	20.3
Male sterilization	10.6	3.1	7.5	5.8	8.2	5.1
Traditional Methods	11.5	15.5	18.8	2.0	17.5	2.5

*** Difference is statistically significant at $p \leq .01$

5.7 Reasons for Non-Use of Contraception

Respondents who were aware of family planning methods, but who were not using any methods at the time of survey, were asked to specify the reasons for not using contraception. It is evident from Table 5.7 that perceived postpartum amenorrhea and desire for additional children are the two major reasons for not using contraception in the MG and control areas. These two reasons alone account for 58 percent to 62 percent of all the stated reasons for non-use. The response "husband away" appears to be the prime reason for non-use of contraceptives in the YCAG area (42%) followed by postpartum amenorrhea (22%). Other reasons mentioned for not using contraceptives include opposition from husband, fear of side effects, and lack of knowledge about the source of availability. Unlike in the national survey, fear of side effects does not constitute a major reason for not using contraceptives in the study areas. In the 2001 DHS survey, one–fourth of the women stated fear of side effects as the reason for non-use, whereas in the present survey, this reason was cited by less than 5 percent of the respondents in the endline survey.

Table 5.6. Reasons for Non-use of Family Planning Method

Reason for Non-use	YCAG Area		MG Area		Control Area	
	Baseline (n=303)	Endline (n=244)	Baseline (n=338)	Endline (n=180)	Baseline (n=235)	Endline (n=154)
Wants a (additional) child	27.4	19.3	31.4	21.1	31.9	30.5
Husband away	17.2	41.8	10.7	23.9	12.8	13.6
Postpartum/breastfeeding	32.0	22.1	44.1	37.2	36.6	37.0
Respondent opposed	3.0	1.6	1.5	-	3.4	1.3
Husband opposed	3.0	2.9	1.5	2.8	2.6	-
Knows no method	5.9	0.4	3.6	5.6	8.9	2.6
Knows no source	2.6	-	1.8	-	3.0	1.3
Health concerns	3.3	2.0	2.7	2.2	1.7	3.9
Fear of side effects	8.3	4.5	3.6	3.9	5.5	3.2
Lack of access	-	-	0.6	-	0.4	1.3
Interferes with body	1.3	-	0.9	0.6	-	1.9
Temporary infertility	-	4.9	-	1.7	-	-

Percentage total may exceed 100 due to multiple responses

5.8 Future Use Intention and Method Preferred

All currently married non-pregnant women who were not using contraception at the time of the survey were asked if they intend to use any method in the future and the type of method that they preferred. The question was not asked of those women who want to have their next child immediately. Table 5.8 presents the proportion of respondents with intention to use contraceptives in the future and their contraceptive choices.

Table 5.7. Desire to Use Contraceptive Method in Future for Birth Spacing (percentage)

Want to space birth by using contraceptives (%)	YCAG Area		MG Area		Control Area	
	Baseline (n=173)	Endline (n=226)	Baseline (n=169)	Endline (n=251)	Baseline (n=147)	Endline (n=199)
Yes	91.3	66.4	89.3	87.3	81.6	73.9
No	8.7	33.6	10.7	127	18.4	26.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

The proportion of respondents who are willing to use contraception in the future declined in the endline survey in all of the study areas when compared to the baseline survey. The decline is more pronounced in the YCAG area (from 91% in the baseline survey to 66% in the endline survey). A relatively higher use intention rate was found in the MG area (87%) compared to the YCAG area (66%). It is not clear why there is a large drop in intended use.

DMPA is the most preferred method for future use among the non-users. Roughly two-thirds of the non-users in the MG area and in the control area would choose DMPA in the future. The proportion of non-users in the YCAG area who prefer DMPA is limited to 43 percent. Condoms are the second method choice in the YCAG (27%) and the MG areas (17%), while in the control area, the pill is the second preferred modern method (13%). The IUD is the least preferred method in the future (see Table 5.9).

Table 5.8. Percentage Distribution of Respondents Who Want to Use Contraceptive Methods in the Future, by Preferred Contraceptive Method

Contraceptive methods preferred in future	YCAG Area		MG Area		Control Area	
	Baseline (n=158)	Endline (n=150)	Baseline (n=151)	Endline (n=219)	Baseline (n=120)	Endline (n=147)
DMPA	41.8	43.3	48.3	65.8	60.0	68.0
Pill	22.8	13.3	21.9	7.3	14.2	12.9
Condom	15.8	26.7	15.2	17.4	18.3	8.8
Norplant®	6.3	10.0	4.0	3.2	1.7	7.5
IUD	3.2	6.7	-	0.9	-	2.0
Withdrawal	-	-	2.6	0.5	0.8	-
Calendar method	1.9	-	-	-	0.8	-
Don't know	8.2	-	7.9	5.0	3.3	0.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

VI. KNOWLEDGE AND PRACTICE OF SAFE MOTHERHOOD

This chapter presents the knowledge, attitudes, and practices among respondents about safe motherhood. It focuses mainly on antenatal and postnatal care, knowledge of risk factors associated with pregnancy, labor and post delivery, safe delivery practices, and knowledge of immunization.

6.1 Knowledge and Perception about Antenatal Care

Table 6.1 presents the knowledge and perception of ANC among the respondents. The knowledge of the need for ANC during pregnancy was already high and increased in the study areas; more than 95 percent of the respondents in all of the study areas thought that ANC is required during pregnancy.

Although knowledge about the importance of ANC is almost universal, understanding the recommended frequency of ANC checkups during pregnancy differs significantly from one study area to another. The proportion of respondents who said that four ANC checkups are required during pregnancy doubled in the YCAG area from 15 percent to 32 percent and from 10 percent to19 percent in the MG area. The difference is statistically significant. In the control area, however, there has been no change in knowledge regarding the recommended frequency of ANC checkups (18%). Still a relative large proportion of respondents in each area believe that five or more visits are required (20% -38%). The proportion of the respondents who stated that they do not know about the number of times ANC checkups were required during pregnancy declined sharply in both of the experimental areas.

Table 6.1. Percentage Distribution of Respondents According to Their Perceived Knowledge of ANC and the Frequency of Checkups Required by Study Areas

	YCAG Area		MG Area		Control Area	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Is ANC required?						
Yes	91.4	98.5	90.4	97.4	89.0	95.1
No	3.8	0.5	4.2	0.6	3.8	1.9
Don't know	4.8	1.0	5.4	2.0	7.3	3.0
n=	**500**	**401**	**500**	**343**	**400**	**268**
If yes, frequency of visits						
Less than 4 times	44.8	29.9	62.0	55.1	41.8	39.2
4 times	14.9	32.4***	9.7	19.2***	18.0	18.0
5 or more times	33.0	37.5	17.9	19.8	30.9	29.8
Don't know	7.2	0.3	11.3	6.0	9.3	12.9
n=	**457**	**395**	**452**	**334**	**356**	**255**

*** Difference is statistically significant at p≤ .01

6.2 Attention Required for Ensuring Safe Pregnancy

Women in both of the experimental areas are increasingly aware of how they should take care of themselves to ensure a safe pregnancy. Baseline results showed that nearly one- third of the respondents did not know about any attention required during pregnancy (see Table 6.2). These proportions declined sharply in both of the experimental areas, but more significantly in the YCAG area. In the control area, the proportions have remained virtually unchanged. The proportion of respondents who stated that routine pregnancy checkups were required for ensuring safe pregnancy has increased almost fourfold in the YCAG area and doubled in the control area. The perception of respondents about the importance of tetanus toxoid injections to ensure a safe pregnancy also increased by almost five times in both of the experimental areas but declined in the control area. Similarly, the perceived need to consume iron and folic acid tablets increased sharply in the YCAG area; however, the change was marginal in the MG and the control areas.

Table 6.2. Percentage Distribution of Respondents Regarding Their Perception of the Care Required To Ensure Safe Pregnancy

Care Required for Safe Pregnancy	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Rest	44.4	53.9	41.2	49.9	31.9	38.1
Special diet/nutritious food	55.6	94.5	53.6	52.5	51.0	53.7
Routine pregnancy check-ups	12.0	43.9	10.0	15.7	9.8	19.8
TT injections	6.4	31.2	7.4	31.2	16.3	10.8
Consumption of iron and folic acid tablets	2.2	24.7	2.4	5.8	4.0	9.0
Avoid hard work	2.0	7.5	6.4	3.5	6.3	3.4
Don't know	31.0	1.2	34.0	14.9	34.5	31.7

Percentage total may exceed 100 due to multiple responses

6.3 Safe Motherhood Practices

Table 6.3 presents the practice of antenatal care in the study areas. There has been an increase in the health care seeking behavior, especially during pregnancy, in all of the study areas. The increase, however, is more remarkable in the MG area where the proportion of respondents who confirm antenatal checkups during the last or current pregnancy increased from 20 percent in the baseline survey to 54 percent in the endline survey.

Comparison of the baseline and endline results revealed significant improvements in the ANC practice during pregnancy. The change is more noticeable in the YCAG (from 52% to 76%) and the MG areas (from 20% to 54%). The prevailing gap between knowledge and practice of ANC has declined significantly.

The major location that respondents visit for ANC checkups continues to be government health posts, followed by hospitals. Very few respondents go to private doctors for ANC checkups.

Table 6.3. Antenatal Care Practice During Most Recent Pregnancy, Among Women Ever Pregnant

	YCAG Area		MG Area		Control Area	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Did you have ANC during your last/current pregnancy?						
Yes	52.1	76.0	19.8	54.2	44.5	58.9
No	47.9	24.0	80.2	45.8	55.5	41.1
n=	**426**	**338**	**424**	**297**	**344**	**236**
If yes, place of check-ups						
Health post (HP/SP)	70.7	75.1	65.5	82.6	71.2	77.0
Hospital	18.5	21.8	26.2	6.8	11.8	16.5
Private doctor	6.3	2.3	1.2	-	3.3	1.4
Traditional Birth Attendant	0.9	-	1.2	1.2	3.9	-
Other	3.6	0.8	6.0	0.8	9.8	5.0
n=	**222**	**257**	**84**	**161**	**153**	**139**

Table 6.4 shows that in the MG and the control area almost all deliveries (between 95% and 99%) are performed at home with the assistance of a trained birth attendant (TBA). In the YCAG area, one in six births (16%) are delivered at the hospital. This is a marked improvement when compared to the baseline situation of six percent.

The practice of seeking the services of trained birth attendants during delivery gradually increased in the study areas and is most common in the YCAG area. The proportion of deliveries assisted by TBAs increased threefold (from 14% to 43%) in the YCAG area and doubled in the remaining two areas. It is unclear if these TBAs qualify as skilled birth attendants as defined by the Safe Motherhood guidelines.

Table 6.4. Percentage Distribution Of Respondent According to the Place of Delivery of Their Last Child and Deliveries Assisted by Trained Birth Attendants

	YCAG Area		MG Area		Control Area	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Place of birth of last child						
Hospital	5.9	16.1	2.8	1.1	2.6	5.3
Home	94.1	83.9	97.2	98.9	97.4	94.7
Did TBA attend the birth?						
Yes	14.4	43.2	10.2	25.7	16.9	31.8
No	85.6	56.8	89.8	74.3	83.1	68.2

As show in Table 6.5, respondents' perceptions about the items to be kept clean during delivery increased remarkably over the period, particularly in the YCAG area. This has been quite noticeable in the YCAG area (89%), with no substantial increase in the MG and the control areas. The proportion of respondents who don't know about the need to keep items clean during delivery has declined drastically in both of the experimental areas, from 20 percent to 1 percent

in the YCAG area, and 30 percent to less than 1 percent in the MG area. The proportion in the control area remains high at 20 percent.

Table 6.5. Respondents' perceptions about items to be kept clean during delivery

Items to be kept clean during delivery	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Cord cutting appliances	62.8	89.0	57.2	60.3	53.0	54.5
Surface /place of delivery	46.4	52.6	36.0	48.7	46.0	39.9
Towel/cloth	35.0	38.2	32.0	19.8	26.8	26.5
Thread	5.8	9.2	3.6	4.4	1.5	11.2
Clean hands of attendant	7.4	37.9	5.6	25.4	8.5	24.6
Water for bath	2.0	0.2	3.0	2.9	1.3	1.9
Don't know	19.6	1.0	29.8	8.7	30.5	20.1

6.3.1 Type of Cord Cutting instrument in Use

More women are following safe delivery practices (see Table 6.6). Very few women reported using a kitchen knife and sickle as the cord cutting instruments. Using razor blades is relatively more popular among women in the YCAG area (91%) than in the MG (69%) and the control areas (71%). The use of a prepackaged Clean Health Delivery Kit (CHDK) is more common in the control area (17%) whereas its use in the experimental area is restricted to less than 10 percent of the women.

Table 6.6. Type of cord cutting instrument used at last home delivery

Cord Cutting Instrument Used	YCAG Area		MG Area		Control Area	
	Baseline (n=354)	Endline (n=266)	Baseline (n=384)	Endline (n=272)	Baseline (n=303)	Endline (n=214)
Razor blade	82.2	91.0	53.6	68.8	80.5	70.6
Kitchen knife	6.2	1.1	35.9	19.1	12.9	9.8
CHDK	6.2	7.5	6.5	9.2	5.0	16.9
Sickle	0.8	-	2.6	2.2	-	2.3
Other *	1.6	-	1.3	-	0.3	-
Don't know	3.1	0.4	-	0.7	1.3	1.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

* Split of bamboo, *khukuri*, scissors

Safe motherhood practices, such as receiving ANC checkups and tetanus toxoid injections, consuming vitamin A and iron tablets, and having deliveries assisted by TBAs, have increased in all of the study areas. The proportion of respondents who receive ANC four or more times during most recent pregnancy has more than doubled (from 25% to 53%), delivery assisted by TBA tripled (from 14% to 43%), and women taking iron tablets tripled in the YCAG area (from 16% to 57%). In other study areas, the increase is more modest for a few indicators.

Statistical tests were carried out to examine the differences in safe motherhood practices between the baseline and endline surveys. Results are presented in Table 6.7. As may be observed, the

increase in safe motherhood practices measured in terms of various indicators is significantly different between the baseline and the endline surveys. Although there has been an increase in the proportion of women who receive four or more ANC visits in all of the study areas, the difference is statistically significant only in the YCAG area.

Table 6.7. Indicators of Safe Motherhood Practices

	YCAG Area		MG Area		Control Area	
Practice	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Received any ANC	52.1	76.0***	19.8	54.2***	44.5	58.9***
Attended four or more ANC visits	24.8	52.9***	15.6	21.1	19.6	27.0
Received 2 TT injections	51.4	74.6***	25.0	43.4***	47.1	67.4***
Deliveries assisted by trained birth attendants	14.4	43.2***	10.2	25.7***	16.9	31.8***
Consumed Vitamin A	41.8	63.1***	15.9	28.4***	33.5	42.4**
Consumed iron tablets	15.7	56.8***	8.7	24.9***	11.9	35.6***

***Difference is statistically significant at $p \leq .01$ ** $p \leq .05$

6.4 Identification of Risk Factors During Pregnancy, Labor, and After Delivery

Table 6.8 compares respondents' knowledge of danger signs during pregnancy, labor and after delivery. The proportion of women who did not know any of the danger signs during three different stages of childbearing consistently declined in both of the experimental areas. In the control area, however, the proportion of women who knew the danger signs during pregnancy and labor declined. There was an increase in knowledge of danger signs after delivery. The decline is sharper in the YCAG and the MG areas. As the endline results show, less than 10 percent of the respondents in the YCAG area are unaware of danger signs during labor whereas the proportion of such women in the control area is as high as 41 percent.

Lower abdominal pain, bleeding and spotting, and swollen hands, feet, and face are some of the commonly cited danger signs during pregnancy in all three study areas. Likewise, prolonged labor pain and excessive bleeding are the most common danger signs recognized during labor. A very high proportion of women in the YCAG area correctly identified retained placenta (71%), excessive bleeding (70%), and prolonged labor pain (71%) as the danger signs during the labor and post-delivery stage. A relatively lower proportion of respondents in the MG and the control areas identified these danger signs.

Table 6.8. Perceptions About Danger Signs During Pregnancy, Labor and After Delivery

Perceived Danger Signs	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
During pregnancy						
Lower abdominal pain	12.2	37.7	10.0	28.0	12.5	19.0
Bleeding/spotting	21.2	53.4	9.6	27.1	8.0	21.6
Swollen hands, feet, face	10.6	30.4	11.4	30.3	7.5	8.2
Fever	4.2	7.5	6.2	17.2	7.8	8.2
Breach presentation	2.6	15.5	3.0	2.9	6.3	4.9
Severe headache	6.0	16.0	7.0	23.3	3.0	16.0
Paleness/weakness	12.8	28.7	9.6	14.0	7.0	15.7
Convulsion	1.4	2.7	1.4	8.5	1.3	1.1
Absence of fetal heart sound	3.2	11.5	1.2	2.3	2.3	1.1
Blurred vision	1.8	7.5	0.6	4.1	1.0	3.4
Retarded fungal growth	0.4	1.0	0.6	0.6	0.8	0.4
Dizziness/headache	-	1.0	-	2.3	-	1.1
Other*	4.2	13.4	1.4	11.7	2.3	9.3
Don't know	52.0	10.7	64.2	21.9	65.5	47.8
During labor						
Excessive bleeding	20.0	62.1	15.4	31.2	17.3	19.0
Prolonged labor pain	46.8	71.1	37.8	60.3	30.3	44.8
Fever and chills	2.4	7.2	2.0	14.6	2.3	3.4
Prolapsed	3.4	7.0	1.6	15.5	3.8	6.7
Breach presentation	-	3.7	-	-	-	3.4
Others*	6.6	4.7	3.0	7.6	1.5	6.0
Don't know	39.4	9.5	53.8	18.4	60.8	41.0
After delivery						
Retained placenta (for over 1hr.)	29.8	70.6	42.2	46.4	39.0	24.3
Excessive bleeding	33.2	70.3	21.6	49.6	30.8	31.0
Weakness	13.6	34.9	8.2	46.1	8.8	19.4
Fever and chills	2.8	14.0	2.0	21.6	3.3	10.4
Lower abdominal pain	2.6	3.5	1.0	5.8	1.5	2.2
Swollen body	4.4	10.7	1.2	21.9	1.8	5.2
Paleness	1.2	2.5	0.6	5.0	1.3	0.7
Other*	3.2	13.6	2.8	4.1	0.8	6.0
Don't know	39.4	9.2	44.4	14.9	46.0	49.3
Know at least three danger signs during pregnancy	7.0	43.9***	7.4	23.0***	4.8	11.9***
Know at least three danger signs during labor	1.6	8.5***	0.8	5.8***	0.8	3.7***
Know at least three danger signs after delivery	4.4	18.2***	4.2	13.1***	6.0	5.6

Percentage total may exceed 100 due to multiple responses

*Backache, white discharge, vomiting, heartache, diarrhea, prolapsed uterus

***Difference is statistically significant at p≤ .01

The proportion of respondents who cited at least three danger signs or symptoms during pregnancy increased six fold in the YCAG area (from 7% to 44%) and by more than threefold in the MG area (from 7% to 23%) as compared to a doubling in the control area (from 5% to 12%). Similarly, the proportion of respondents who mentioned at least three danger signs and

symptoms during labor and after delivery also increased in both of the experimental areas, with a greater increase in the YCAG area.

Statistical tests were carried out to examine differences in knowledge among the respondents of at least three danger signs during pregnancy, labor, and after delivery. Results are presented at the bottom of Table 6.8. The increase in the knowledge of danger signs during various stages of childbearing is significantly different among the respondents in the baseline and endline surveys. There was no significant difference in the knowledge of at least three post-delivery danger signs among the respondents in the control area between the baseline and endline surveys.

6.5 Risk Perceptions about Age of Childbearing

It has been widely accepted that reproductive morbidity tends to be higher in the early and late childbearing ages. Morbidity also increases with the rise in the number of pregnancies and births and with short birth intervals. Although the mean age at marriage of girls in Nepal has been rising gradually, early marriage remains prevalent in the society. This type of practice involves serious health risks to women who marry and experience childbearing at an early age.

In the present study, women were asked about the right age of childbearing and about the possible health consequences of early childbearing. Women perceive that childbearing should occur when girls are older (see Table 6.9). The shift is more pronounced in the YCAG area. Both experimental areas showed a drop of five percentage points, from 4 percent and 7 percent, in the proportion who considered age 18 or younger to be the right age for childbearing. A large proportion of women, more than two-thirds (70%) in the YCAG considered age 20 as the right age to start childbearing. The increase is by 20 percentage points between baseline and endline. The increase in the proportion of these women is modest in the MG area, while it remained unchanged in the control area. In the MG area, the shift is towards the higher age, 22 and above, as the right age of childbearing (24%). The proportion of the women who did not respond to the question in the survey decreased significantly in the YCAG and the MG areas but increased (8%) in the control area.

Table 6.9. Perceptions Regarding the Appropriate Age for Childbearing

Perceived Appropriate Age for Childbearing	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Less than 17	2.6	0.2	2.8	2.9	2.3	3.4
17	2.6	0.5	2.0	0.9	2.3	1.9
18	4.6	4.2	6.6	3.5	8.0	9.3
19	2.2	0.7	1.6	1.5	1.0	1.9
20	50.8	70.1	54.0	59.8	55.3	55.6
21	8.8	5.5	3.2	6.1	8.0	6.3
22 or more	22.4	18.5	19.8	24.5	18.8	13.4
Don't know	6.0	0.2	10.0	0.9	4.5	8.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Respondents were also asked about their perceptions of the adverse health consequences of early childbearing to potential mothers (see Table 6.10). Women in the YCAG area seemed more knowledgeable as a much larger proportion of the women (72%) could mention the two most common risk factors of "difficult labor" and "risk of prenatal death of mother." The knowledge of these two risk factors increased in the MG area but did not change much in the control area. The percentage of women who knew the health risk in the YCAG area significantly declined, reaching less than one percent. In the control area, however, this proportion has increased moderately from 21 percent in the baseline survey to 26 percent in the endline survey.

Table 6.10. Perceptions of Risk Related to Early Childbearing

Perceived Health Risk	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Difficult labor/birth	41.8	71.8	41.8	67.9	46.5	50.0
Risk of prenatal death of mother	39.8	70.8	27.8	53.6	36.0	30.6
Malnutrition/anemia	3.2	15.7	7.8	11.1	4.5	7.5
Higher risk of pregnancy complications	11.2	17.5	4.0	10.5	11.8	9.0
Adverse effect on health	9.0	4.4	4.2	6.8	6.8	7.5
Don't know	19.2	0.2	28.4	8.7	21.0	25.7

Percentage total may exceed 100 due to multiple responses

VII. KNOWLEDGE AND PERCEPTIONS ABOUT STIS AND HIV/AIDS

The HIV/AIDS epidemic in the country has rapidly progressed in recent years. A total of 533 AIDS cases and 1,564 cases of HIV infection were reported in Nepal in 2001; these numbers may be grossly underestimated. Some have claimed that there are approximately 34,000 cases of HIV/AIDS infection in the country (UNAIDS 2000). Due to their sexual behavior, youth are more at high risk of contracting HIV/AIDS. In the present chapter, an attempt has been made to describe the knowledge of STIs and HIV/AIDS among young women in the study areas. The analyses also focus on risk behaviors, including signs and symptoms and protective measures**.**

7.1 Knowledge about STIs and HIV/AIDS

In order to assess the level of knowledge of STI and HIV/AIDS, women were asked if "they are aware of any disease which is sexually transmitted". The respondents who were aware were also asked to mention the disease that is transmitted through sex.

Awareness of STIs and HIV/AIDS has been almost universal in the YCAG area. In the MG and the control area, increases have been smaller but still significant (see Table 7.1). In the MG area, the proportion of women aware of STIs increased from 27 percent to 54 percent and the proportion aware of HIV/AIDS increased 45 percent to 71 percent. Likewise, in the control area,

the corresponding increases in the knowledge of women are from 33 percent to 41 percent for STIs and from 50 percent to 63 percent for HIV/AIDS.

Table 7.1. Percentage Distribution of Respondents According to Their Knowledge About Sexually Transmitted Infections (STIs)

	YCAG Area		MG Area		Control Area	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Aware of any disease that is sexually transmitted?						
Yes	54.0	96.0***	27.2	53.6***	33.3	41.4**
No	46.0	4.0	72.8	46.4	66.8	58.6
N	**500**	**401**	**500**	**343**	**400**	**268**
If yes, STIs heard of						
Gonorrhea	1.5	10.9	2.2	2.2	-	4.5
Syphilis	25.9	45.7	24.3	50.5	10.5	19.8
HIV/AIDS	54.8	86.8	50.0	37.0	44.4	74.8
Don't Know	17.8	2.6	23.5	21.2	45.1	15.3
N	**270**	**385**	**136**	**184**	**133**	**111**
Aware of HIV/AIDS						
Yes	63.6	97.0***	44.8	71.0***	49.5	63.0***
No	36.4	3.0	55.2	22.0	50.5	37.0
N	**500**	**401**	**500**	**343**	**400**	**268**
What do you know about the disease?						
A disease	57.5	49.9	67.4	49.0	74.7	36.1
Spread sexually	58.8	91.0	66.5	61.7	53.0	76.9
Spread through blood transfusion	11.6	23.9	6.3	7.4	5.1	1.8
Spread through needle/syringe	10.1	39.8	5.4	9.9	2.0	6.5
Incurable disease	16.0	35.2	4.5	29.2	5.1	17.8
n	**318**	**389**	**224**	**243**	**198**	**169**

***Difference is statistically significant at $p \leq .01$

7.2 Perceived Risk Behavior of STIs and HIV/AIDS

Knowledge about the symptoms of STIs has improved in both of the experimental areas. Seven in ten women in the YCAG and four in ten in the MG area could mention white discharge as a symptom of STIs. Other commonly stated symptoms were itching around the genitals (19% in the YCAG and 15% in the MG area) and pain during urination (18% in the YCAG and 9% in the MG area). The proportion of women who don't know the symptoms of STIs has declined significantly from 84 percent to 21 percent in the YCAG area, while in the control area, the proportion has remained high at 76 percent (see Table 7.2).

A relatively higher proportion of the women in the YCAG area as compared to those in the MG and the control areas have knowledge about risk behaviors for contracting STIs. Overwhelmingly, women in the YCAG area stated that having more than one sexual partner (95%) might put women at risk of contracting STIs. The percentage of women who stated this risk factor was 58 percent and 48 percent, respectively, in the MG and the control area, both substantial

improvements. The other two important risk factors "sexual intercourse with prostitutes" and "sexual intercourse with infected persons," were cited by a smaller proportion of respondents in the YCAG (21% and 14% respectively) and the MG area (22% and 12% respectfully). The proportion of women who stated these risk factors was much lower in the control area (8% and 4%). The extent of ignorance about risk behaviors is far lower in the YCAG area (only 5%) as compared to the control (a high of 52%) and the MG (42%) areas. Comparison with the baseline results showed that the increase in the knowledge of risk behaviors is significant in the YCAG area.

The proportion of women who cited a minimum of two high-risk behaviors of contracting STIs has more than doubled in the YCAG area (from 12% to 26%). In the MG area, the improvement has also been quite impressive (from 8% to 14%). While both increases in the experimental area were statistically significant, the control area experienced a decrease that might be explained by further analysis.

Table 7.2. Perceptions About STI Symptoms and Risk Behaviors

	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Symptoms of STIs						
Pain during urination	2.0	18.2	0.8	9.0	1.8	4.5
White discharge	1.0	69.6	2.2	41.4	0.8	17.9
Pain during sexual intercourse	-	8.0	-	2.9	-	-
Fever	2.6	10.2	2.2	7.9	2.3	3.4
Weakness	3.0	11.7	3.2	5.2	8.5	2.2
Itching around genital organs	5.4	19.2	1.8	14.6	1.0	11.2
Lower abdominal pain	-	14.2	-	4.1	-	3.7
Other	1.8	4.0	0.8	2.6	1.0	3.0
Don't know	84.2	21.4	89.0	51.6	84.8	76.1
Perceived Risk Behaviors						
More than one sexual partner	53.8	94.8	26.8	58.0	30.5	48.5
Sexual intercourse with prostitutes	11.2	20.7	9.2	22.2	5.0	7.5
Sexual intercourse with infected person	6.2	13.5	3.8	12.0	9.0	3.7
Sex without condom	5.6	2.0	4.6	0.6	2.0	-
Don't know	46.2	5.2	73.2	42.0	69.5	51.5
Able to cite two or more risk behaviors	12.4	26.2***	7.8	13.7***	10.3	5.3***

Percentage total may exceed 100 due to multiple responses
*** Difference is statistically significant at $p \leq .01$

Table 7.2 presents separate questions that were asked about risk behaviors for HIV/AIDS. Knowledge that HIV/AIDS spreads through the unsafe sexual practice of having more than one partner is widespread among respondents of the YCAG (81%) and the control areas (79%). Knowledge that HIV/AIDS can be transmitted if a condom is not used during sex is quite high in the YCAG area (81%), while it is much lower both in the MG (34%) and the control areas (23%).

Another important risk factor, sexual intercourse with commercial sex workers, has been cited by more than one-fifth (22%) of the respondents in all of the study areas. However, a negligible proportion of respondents, about two percent in the control area, eight percent in the YCAG, and 15 percent in the MG area cited "sex with an infected person" as another risk factor of contracting HIV/AIDS.

Comparison with the baseline results showed that the increase in knowledge of HIV/AIDS risk behaviors is significant in the YCAG area. The proportion of respondents who cited a minimum of two high-risk behaviors increased in both of the experimental areas. The increase has been much sharper, however, in the YCAG area (21% to 89%). In the control area, the proportion of such respondents is less than one quarter. The differences are statistically significant at different levels of confidence.

Table 7.3. Perceptions about HIV/AIDS Risk Behaviors

Type of Risk Behavior	YCAG Area		MG Area		Control Area	
	Baseline (n=318)	Endline (n=389)	Baseline (n=224)	Endline n=243)	Baseline (n=198)	Endline n=169)
Having more than one partner	62.9	81.5	46.0	53.9	79.8	79.3
Sex with commercial sex workers	16.4	22.4	27.7	22.2	15.2	22.5
Sex with infected person	12.6	8.2	8.0	14.8	14.1	2.4
Sex with partner having multiple partners	6.9	15.7	8.5	14.0	4.5	5.9
Drug addicts	0.6	0.8	-	4.9	1.0	0.6
Nonuse of condom during sex	18.6	81.2	18.3	34.2	15.2	23.1
Sharing of syringes	6.0	-	2.7	-	4.0	-
Don't know	13.2	0.8	21.4	8.2	8.6	5.3
Able to cite two or more risk behaviors	20.0	88.6***	12.2	35.2***	16.0	21.3

***Difference is statistically significant at p≤ .01

7.3 Perceived Measures of Prevention

Knowledge of ways of preventing STIs is high, especially in the YCAG area. The proportion of women who know that using condoms and having a single partner can prevent STIs has increased significantly in the YCAG area. The increase in knowledge of these two measures for preventing STIs has been modest in the MG and control areas. The proportion of respondents who don't know of any way of preventing STIs has also declined more sharply in the YCAG area (from 46% to 5% - see Table 7.2). Knowledge of other ways of preventing STIs (e.g., using sterilized syringes, avoiding sex with sex workers, and avoiding sex with a partner that has multiple partners) is quite low in all three study areas.

Table 7.4 shows that knowledge that using condoms prevents HIV/AIDS is quite high in both of the experimental areas. It is almost universal in the YCAG area (94%) and 72 percent in the MG area. In contrast, knowledge is low in the control area (46%). Equally encouraging is the higher proportion of women in all of the study areas who state that avoiding sex with sex workers is important in preventing HIV/AIDS. There is relatively high knowledge in the YCAG area (an

increase from 9% to 32%) that use of only sterilized syringes prevents HIV/AIDS. Likewise, the proportion of respondents who don't know has also sharply declined from 19 percent to less than one percent. Knowledge of two STI preventive measures (using condoms and avoiding sex with commercial sex workers) has been quite high in comparison to knowledge of other factors (using sterilized syringes and tested blood for transfusions). This could be the case because the intervention focuses more on using condoms and refraining from sex with commercial sex workers as the common measures for preventing HIV/AIDS.

Table 7.4. Knowledge of Measures to Prevent HIV/AIDS

Prevention of HIV/AIDS	YCAG Area		MG Area		Control	
	Baseline (n=318)	Endline (n=389)	Baseline (n=224)	Endline (n=243)	Baseline (n=198)	Endline (n=169)
Avoiding sexual intercourse with prostitutes	54.1	66.3	50.9	50.2	56.6	71.0
Using sterilized syringes or needles	9.1	31.6	3.6	9.9	5.6	6.5
Using tested blood for transfusions	3.1	15.4	2.7	4.5	4.0	2.4
Using condoms	40.6	94.1	48.7	72.0	50.5	45.6
Don't know	19.2	0.8	23.2	10.3	13.6	5.9

Percentage total may exceed 100 due to multiple responses

VIII. GROUP COMMUNICATION

Group communication is one of the most important strategies for increasing the involvement of community-based groups in improving young married couples' access to and use of reproductive services and information. As a part of the intervention, YCAGs were formed in each ward from among young married women under 25 years of age. Mother's groups that had been formed by the government were reactivated.

These groups were engaged in group interaction and in training and communication with young couples in the villages about family planning and reproductive health issues. Groups also collectively organized special events and a series of talks in the villages and involved youth and adolescents. The participation of young couples in these group activities is key for the success of the interventions.

This chapter describes the knowledge of respondents about communication groups like CAG, YCAG, and the MG. Communication activities and the involvement of young couples in these activities are also analyzed to examine the effectiveness of group communication in bringing about behavioral change among young couples.

8.1 Knowledge about CAG, YCAG, and MG

Figures 8.1 and 8.2 portray respondents' knowledge of the presence of communication groups in their village. Over two-thirds of the women in the YCAG area are aware of the presence of CAG and YCAG in their village. Comparison with the baseline survey shows that the percentage increased more than fourfold (from 15% to 68%). Likewise, awareness among the women of the MG area of the presence of mother's groups also increased from 21 percent to 89 percent. In contrast, less than one-third of the women (28%) in the control area are aware of the presence of mother's groups in their village, with even more limited awareness of the presence of CAG and YCAG (less than 1%).

Figure 8.1. Awareness of CAG/YCAG

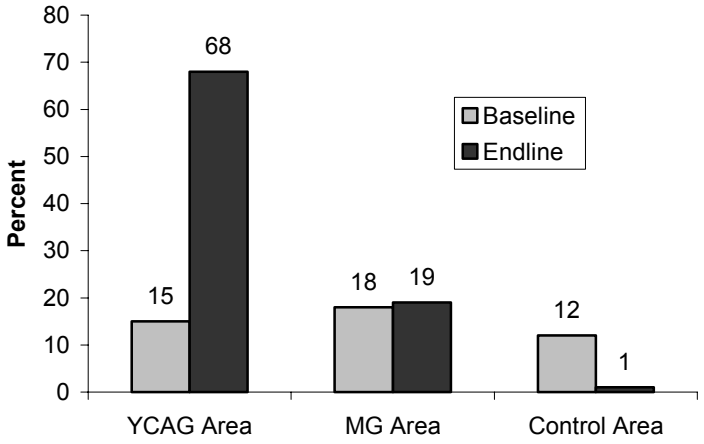
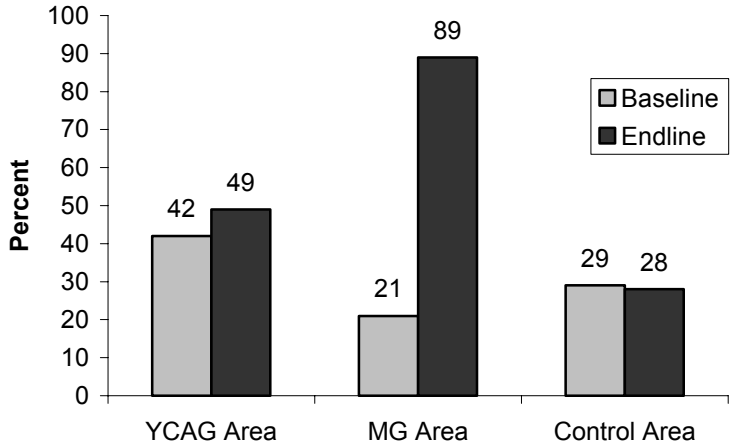


Figure 8.2. Awareness of Mother's Groups



8.2 Knowledge and Participation in Group Activities

Table 8.1 shows that in the YCAG area, the knowledge of respondents about the groups activities in the village regarding family planning and reproductive health information and communication increased sharply (17% to 77%); their participation in such group activities also increased correspondingly by 20 percentage points (from 53% to 73%). In the MG area, awareness and participation both increased appreciably between the baseline and endline surveys. In the control area, however, the increase was more modest.

Table 8.1. Knowledge about Group, Club, and Organization Undertaking Reproductive Health Awareness Activities for Women and Young Couples

	YCAG Area		MG Area		Control Area	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Know of any group						
Yes	16.6	76.8	27.6	83.4	35.3	46.3
No	83.4	23.2	72.4	16.6	64.8	53.7
n	**500**	**401**	**500**	**343**	**400**	**268**
If yes, contacted by group members or participated in group activities						
Yes	53.0	73.1	52.2	86.0	56.0	68.5
No	47.0	26.9	47.8	14.0	44.0	31.5
n	**83**	**308**	**138**	**286**	**141**	**124**

8.3 Counseling and Motivation by Group Members

The endline survey results show an appreciable rise in counseling and motivational activities on various family planning and reproductive health issues by the group members in the YCAG and the MG areas (Table 8.2). The groups seemed to have been relatively more active in the MG area. Between one-half to three-fifths of respondents in the YCAG and MG areas reported that they were counseled and motivated by group members regarding family planning and reproductive health issues such as contraceptive use, tetanus toxoid immunization, and the use of oral rehydration solution. They further mentioned that they were counseled on matters relating to care required during pregnancy, care of the newborn baby, negotiation with husbands on the use of condoms, and participation in income-generating activities. Between one-fourth to one-third of the respondents from the control area reported that group members counseled them about family planning and reproductive health issues of their concern.

Table 8.2. Knowledge of MG and YCAG

Family planning and reproductive health issues	YCAG Area		MG Area		Control Area	
	Baseline (n=500)	Endline (n=401)	Baseline (n=500)	Endline (n=343)	Baseline (n=400)	Endline (n=268)
Family planning ad birth spacing	18.4	54.4	21.4	63.0	26.8	34.0
Spousal communication on family planning	11.0	48.9	15.4	57.4	21.3	31.3
Care during pregnancy	13.8	51.1	16.2	61.8	22.5	35.4
TT Immunization	22.0	55.6	22.0	66.2	31.8	37.7
Use of CHDK during delivery	15.0	49.1	17.8	56.9	23.0	35.4
Care of newborn	13.4	51.4	15.8	63.0	22.0	34.7
Use of ORS	21.8	51.1	16.8	60.9	25.3	36.6
Participation in Condom Day	17.4	41.1	15.6	72.3	18.5	24.6
Condom negotiation with husband	14.4	45.9	13.4	69.7	19.0	27.2
Participation in income-generating activities	14.0	40.1	12.0	70.3	20.5	24.3

IX. REPRODUCTIVE HEALTH KNOWLEDGE AND PRACTICE AMONG YCAG MEMBERS

This chapter presents results from the separate survey conducted among the YCAG members in the experimental area. The main objectives of the survey were to assess the impact of YCAG formation on the social behavior of group members and to examine the effectiveness of CAGs on young couples in enhancing reproductive health knowledge, attitudes, and behavior.

As part of the OR intervention, YCAGs were active in all of the 90 wards of the 10 VDCs of Experimental Area I. The present survey sampled six out of the 10 VDCs randomly. In each VDC, three wards were selected, and 12 to 14 YCAG members per selected ward were contacted for individual interviews (a total of 40 per VDC). The number of completed interviews of YCAG members was 237.

9.1 Background Characteristics

Table 9.1 presents the background characteristics of the 237 YCAG members. Slightly more than one third (35%) of the members were in the age group 22 to 24. Nearly three-fourths (73%) of the YCAG members were literate. One-fourth of the respondents (25%) married before age 16. However, nearly half of the YCAG members (47%) married after age 17.

Three major caste and ethnic groups dominated the sample respondents of YCAG members. For instance, two-fifths of the YCAG members (40%) belonged to the Tharu ethnic group, followed by Brahmin/Chettri (29%), while Mongolian ethnic groups such as Rai, Tamang, Mager comprised 17 percent of the total sample .

Table 9.1. Characteristics of YCAG Members

Background characteristics (n=237)	Percentage
Age Group	
17-19	9.3
20-21	21.9
22-24	35.0
25-26	33.8
Literacy Level	
Illiterate	26.6
Literate	73.4
Age at Marriage	
Less than 16	24.8
16-17	28.2
18-19	29.9
20 or more	17.0
Caste/Ethnicity	
Tharu	39.7
Brahmin/Chettri	28.7
Rai/Tamang/Magar	17.3
Kami/Damai/Sarki	7.6
Other	6.7

9.2 Knowledge and Practice of Family Planning Methods

9.2.1 Knowledge about family planning methods

Information regarding knowledge of family planning methods was collected from YCAG members by first asking them to name different ways or methods for delaying or avoiding pregnancy. Table 9.2 presents the results. Spontaneous knowledge of at least one family planning method is universal among YCAG members (100%). On average, each YCAG members knew five different methods. The most widely known methods were condoms (99%), DMPA (93%), and pills (87%).

Table 9.2. Knowledge of Contraceptive Methods Among YCAG Members

Family planning method known (n=237)	Percentage
Condom	98.7
Pills	86.9
DMPA	93.2
IUD	47.3
Norplant®	58.6
Female sterilization	53.3
Male sterilization	52.3
Calendar method	1.7
Withdrawal	1.7
Aware of at least one method	100.0
Mean number of methods known	4.9

9.2.2 Practice of family planning and method mix

Table 9.3 shows the proportion of YCAG members who were currently using a contraceptive method. The CPR among the respondents was 33 percent. The contraceptive method mix indicates the distribution of contraceptive use across different methods of contraception. Among the current acceptors, the most widely used modern method was the condom (30%), followed by DMPA (29%). Nearly one-fifth (19%) of the respondents were using female sterilization.

9.2.3 Reasons for non-use of family planning method

Those who were not currently using a family planning method were asked to state the reasons for not using any methods. More than two-fifths (45%) of the YCAG members mentioned "husband away" as the reason for not using any method. Similarly, three out of 10 respondents cited "desire for additional children," and more than one-fourth (27%) of the respondents reported that they were breastfeeding their baby. Eight percent of the respondents reported non-use of contraception due to fear of side effects. It is evident from the results that most non-users (87%) had genuine reasons for not using a family planning method, such as "absence of spouse at home", "planning to have a child" and perceived postpartum infecundity (Table 9.3).

Table 9.3. Contraceptive Use Patterns of Non-pregnant YCAG Members

Are you or your spouse using any method to avoid getting pregnant? (n=211)	**Percentage**
Yes	33.2
No	67.8
Among family planning users Method mix (n=79)	
Condom	28.6
Pills	2.9
DMPA	28.6
Norplant®	2.9
Female sterilization	18.6
Male sterilization	2.9
Calendar method	2.9
Withdrawal	1.4
Among non-users of family planning Reason for non-use (n=141)	
Husband away	45.4
Wants additional child	29.1
Postpartum/breastfeeding	27.0
Fear of side effects	7.8
Health concerns	3.5
Husband opposed	1.4
Total	**100.0**

Percentage total may exceed 100 due to multiple responses

9.2.4 Sources of information about family planning

Table 9.4 presents the sources of family planning information for YCAG members. It is evident from the table that the YCAG leader and group member have been reported as a main source of information, as almost all of the respondents (98%) cited this source. This indicates that the YCAGs are active in sharing their knowledge about family planning and reproductive health among their friends.

More than three-fifths (63%) of the respondents mentioned radio or TV as sources of family planning information. Nearly one-fifth of the respondents (19%) mentioned that they knew about contraception through social mobilizers.

Table 9.4. Family Planning Information Sources

Sources of Family Planning Information	Percentage
YCAG leader or group member	97.9
Radio/TV	62.9
Social mobilizers	18.8
Field worker	9.2
Health clinic, health post, hospital staff	6.7
Newspaper, book, health-related book	6.3
Condom days	4.6
Friend	4.6
Field supervisor	3.8
FCHV	2.1
Other*	2.1
Average no. of sources of information	2.2

*Depot holder, husband
Percentage total may exceed 100 due to multiple responses

9.3 Knowledge and Practice of ANC

9.3.1 Knowledge about ANC

Pregnancy and childbearing have a profound effect on a woman's health. Associated with these are their knowledge and practice of safe motherhood. Table 9.5 presents the perceptions of the YCAG members about the number of ANC visits required during pregnancy. Although respondents knowledge about the need for ANC visits is almost universal (99%), opinions varied regarding the number of ANC checkups that pregnant women require. More than a quarter of the respondents thought that a pregnant woman should have at least three ANC visits, while the majority (57%) believed that she should have at least four visits.

There is widespread knowledge about the types of precautions that need to be taken during pregnancy. Almost all YCAG members stressed the importance of having a nutritious diet during pregnancy (96%), and a large majority suggested regular checkups (76%) and receiving tetanus toxoid injections (65%). The respondents cited other precautionary measures such as rest (43%), taking iron and folic acid tablets (35%), and personal hygiene (25%).

The majority of YCAG members know of various risk factors associated with pregnancy. The commonly cited risk factors included bleeding (65%), lower abdominal pain (55%), and weakness (40%). More than one-third (36%) of the YCAG members mentioned swelling hands and legs and slightly fewer (30%) mentioned headaches and giddiness as danger signs during pregnancy.

Table 9.5. Percentage Distribution Of YCAG Members According to Their Perception About Safe Motherhood Practices

How many ANC checkups required?	Percentage
Two	2.5
Three	26.7
Four	57.0
Five	11.4
Six or more	1.7
Don't know	1.3
Precautions to be taken	
Take nutritious food	95.8
Regular check up	76.4
TT immunization	64.6
Take rest	43.0
Intake of iron and folic acid tablets	35.4
Personal hygiene	25.3
Other	4.6
Danger signs during pregnancy	
Bleeding	65.4
Lower abdominal pain	55.3
Weakness	40.1
Swelling on hands and legs	35.9
Headache/giddiness	30.0
Vomiting	15.6
Fever	9.7
Breach presentation	3.8
Anemia	3.4
Other	7.1

9.3.2 Practice of ANC

The frequency of ANC visits by YCAG members during their last or current pregnancy was quite low. As evident from Table 9.6, nearly one-fourth of the respondents (23%) had no ANC checkups during her pregnancy. However, one third of the respondents had four or more ANC visits. The proportion of those receiving at least one tetanus toxoid injection is quite high (83%). Nearly half of the YCAG members said that they consumed iron folate tablets during their last pregnancy.

Table 9.6. Percentage Distributions Of Ever-Pregnant YCAG Members According to Their Practice of ANC During Last or Current Pregnancy

Number of ANC visits	Percentage
None	23.0
One	10.5
Two times	11.4
Three times	20.5
Four and more times	34.2
Received TT injection during pregnancy	16.0
None	
One	13.2
Two	26.9
Three	40.6
Four and more	3.2
Consumption of iron folate tablets during pregnancy	
Yes	46.1
No	53.9
Total n=219	**100.0**

9.4 Knowledge about HIV/AIDS

Awareness about HIV/AIDS is nearly universal among the YCAG members (97%). There is low awareness about the signs and symptoms of HIV/AIDS and the public exposure to persons living with HIV/AIDS (PLWA). Fully 48 percent knew no signs or symptoms of the disease. Table 9.7 shows that more than 42 percent of the respondents mentioned weight loss as a symptom of AIDS and nearly one-third of the respondents cited prolonged fever.

Among the YCAG members who had heard of AIDS, knowledge about preventive measures is widespread. Almost all the YCAG members who were interviewed (94%) reported that using condoms during sex protects one from HIV/AIDS. Nearly, three-fourths of the respondents (74%) mentioned that avoiding intercourse with commercial sex workers could prevent AIDS. The YCAG members cited several other common preventive measures: refraining from sex with others except one's spouse (66%) and using sterilized syringes or needles (39%).

Table 9.7 Percentage Distribution of YCAG Members According to Their Knowledge about HIV/AIDS

Have you ever heard about HIV/AIDS? (n=237)	Percentage
Yes	97.0
No	3.0
Sign and symptoms of AIDS (n=230)	
Weight loss	41.7
Prolonged fever	31.7
Prolonged diarrhea	9.6
Fever at evening	3.0
Headache	2.2
Other*	5.2
Don't know	48.3
Knowledge about prevention of HIV/AIDS (n=230)	
Use condom	93.5
Avoid sex with commercial sex workers and multiple partners	73.9
Avoid sex with others except spouse	65.7
Use only sterilized syringe	38.7
Use only tested blood	20.4
Avoid sex with AIDS infected person	2.6
Women who contracted AIDS should not conceive	1.3
Don't know	1.7

* Body itching, cough, dislike food, etc.
Percentages total may exceed 100 due to multiple responses

9.5 Perceived Benefits of Being YCAG Members

Almost all of the YCAG members (95%) stated that they have benefited greatly from being YCAG members. They also reported on the various topics that they discussed in their regular YCAG meetings. Almost all of the YCAG members mentioned that they talked about family planning methods (97%). Other common topics were: safe motherhood (92%), immunization and childcare (87%), and HIV/AIDS (83%). Moreover, between two-thirds to three fourths of the respondents mentioned topics such as nutrition and breastfeeding (79%), and age for marriage (65%). In addition, nearly half of the respondents said that they discussed abortion issues (see Table 9.8).

Table 9.8. Perceived Benefits from YCAG and Topic Discussed in YCAG Meeting

Do you perceive any benefits from being a YCAG member?	Percentage
Yes	94.6
No	5.4
Topic discussed in the YCAG meeting	
Family planning methods	97.5
Safe motherhood (ANC/delivery care/prenatal care)	92.4
Immunization/child care	87.3
STIs/HIV/AIDS	83.5
Nutrition/breastfeeding	78.9
Late/early marriage	65.4
Unsafe abortion	48.5
Infertility	41.4
n=237	

Percentages total may exceed 100 due to multiple responses

9.6 Sharing of Knowledge by YCAG Members with Others

Nearly all YCAG members (94%) reported that they shared the knowledge and information they gained from the group meetings with their spouses and also with the community. Over three-fourths of the respondents mentioned that they shared knowledge with their friends and neighbors (79%) and with their husbands (76%). Close to two-fifths of the respondents also mentioned that they shared the knowledge and information they gained with fellow group members (39%), and other family members (36%) (see Table 9.9).

Table 9.9. Types of Persons with Whom Information from YCAG Meetings is Shared

Type of person with whom information is shared (n=237)	Percentage
Friends/neighbor	78.9
Husband	75.9
Group member	39.2
Family member/relatives	36.3
Other	1.7
No	5.5

Percentage total may exceed 100 due to multiple responses

9.7 Inter-spousal Communications

One of the objectives of YCAG formation for young married women was to encourage them to communicate with their spouses about reproductive health topics. The present survey has shown that inter-spousal communication is overwhelmingly high. Most YCAG members (86%) reported that they talked about reproductive health issues with their spouses. The most frequently discussed topic was family planning methods (97%). The other most commonly discussed

reproductive health issues were: STIs and HIV/AIDS (46%), safe motherhood (45%), immunization (43%), and other health-related issues (28%) (see Table 9.10).

Table 9.10. Percentage Distributions of YCAG Members According to Their Communication with Husbands about Reproductive Health Matters

Do you discuss reproductive health with your husband? (n=237)	Percentage
Yes	86.5
No	13.5
Range of reproductive-health topics discussed with husband (n=205)	
Family planning methods	97.1
STIs/HIV/AIDS	46.3
Safe motherhood	44.9
Immunization	42.9
Other health related issues*	27.8

*Pneumonia, infertility, number of children, nutritional food, age at marriage.
Percentage total may exceed 100 due to multiple responses

9.8 Awareness about YCAG Membership in the Family

In this survey, all 237 YCAG members were asked whether or not their spouses and other family members were aware of their membership in the group. Almost all of the spouses of the respondents (92%) and most of their mothers-in-laws knew about the respondents being YCAG members. Just below half of the respondents' fathers-in-law (48%) and about a quarter of the respondents' sisters-in-law and brothers-in-law (25% to –26%) were aware of respondents' membership in the group (Table 9.11)

Table 9.11. Distribution of the Respondents According to Family Members Who Were Aware of Their Membership in YCAG

Family member with knowledge about respondents being YCAG members (n=237)	Percentage
Husband	91.6
Mother-in-law	78.9
Father-in-law	48.1
Sister-in-law	24.9
Brother-in-law	26.2

Percentage total exceed 100 due to multiple responses

X. CONCLUSIONS AND DISCUSSION

There is evident impact of the OR intervention in enhancing young couples' knowledge about safe motherhood practices. Knowledge about the need for pregnancy checkups was almost universal in all three of the study sites, and the proportion of those unaware about the number of times a pregnant woman needs to undergo ANC has declined sharply. Moreover, knowledge that a pregnant woman should attend at least four ANC visits increased in the experimental areas. Young married women have become increasingly aware about what they need to know to ensure a safe pregnancy. Women in the experimental areas were more able to cite a minimum of three danger signs during pregnancy, labor, and delivery as compared to those in the control site.

This OR study clearly demonstrates the effectiveness of communication-based models such as formation and reactivation of YCAGs and MGs, training, group interaction, and social events in creating enabling environments for young married couples to learn and interact about sexual and reproductive health topics. The increase in reproductive health-related knowledge and practice among the young married women has been remarkably high in both the YCAG and the MG areas. However, the changes in the practice of family planning and antenatal care have not shown consistent trends perhaps because of the conflict situation in the project sites during the implementation phase.

The YCAG model has proven to be relatively more effective in enhancing knowledge among young women about family planning and safe motherhood. Building confidence among YCAG members, improving their reproductive health knowledge and behavior, as well as their ability to share and communicate about these issues with their spouses, friends, and neighbors, are good examples of the impact of the YCAG model.

The MG model demonstrated how to be more effective among young women in improving family planning acceptance, enhancing awareness about MG group activities related to family planning and reproductive health, and encouraging their participation in such activities.

Both models would likely have performed better had the sociopolitical situation in the project sites allowed timely implementation of the interventions, regular monitoring, and timely evaluation of the project. Nevertheless, this OR study has shown how these two models can be effective in reaching young couples with reproductive health information and services.

Both of the models tested in this OR study can be replicated in Nepal. The MG model is easy to copy since the mother's group concept is not new and groups exist in most districts in the country. Reactivating mother's groups, inducting young women members into the group, and providing training and regular monitoring of their activities by local bodies could make the difference. Replicating the YCAG model is possible in areas where nongovernmental organizations are already engaged in reproductive health programs.

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