ICRW
International Center for Research on Women

Improving the Reproductive Health of Married and Unmarried Youth in India

Evidence of Effectiveness and Costs from Community-based Interventions

Final Report of the Adolescent Reproductive Health Program in India

Rohini Pande, Sc.D.
Kathleen Kurz, Ph.D.
Sunayana Walia
Kerry MacQuarrie
Saranga Jain



ICRW
International Center for Research on Women

Improving the Reproductive Health of Married and Unmarried Youth in India

Evidence of Effectiveness and Costs from Community-based Interventions

Final Report of the Adolescent Reproductive Health Program in India

Rohini Pande, Sc.D.
Kathleen Kurz, Ph.D.
Sunayana Walia
Kerry MacQuarrie
Saranga Jain

FRHS HMP Swasti

Table of Contents

Tables and Figures

Acknowledgments

This program of research owes tremendous thanks to several people for their support, input, advice and partnership in enabling the project team to reach this point of conclusion.

First, we would like to thank the Rockefeller Foundation for financially supporting this program for 10 years. A very special thanks to Jane Hughes, the program officer who initiated this project, and who had the vision to invest in community-based intervention research on adolescent reproductive health as early as the 1990s. We also thank the other program officers at the Rockefeller Foundation who have worked with us over these years: Laura Fishler and Evelyn Majidi. As a consultant with the foundation, Nandini Oomman provided excellent technical input into Phase I and the proposals for Phase II.

We would like to thank a number of colleagues who provided advice and critical input at various points: Shireen Jejeebhoy, Asha Bhende, Ena Singh, Leela Visaria, Bert Pelto, Renu Khanna and Logan Brenzel. Many thanks to Ramesh Bhat from the Indian Institute of Management-Ahmedabad who provided invaluable technical input for the costing studies.

The ICRW staff, both in India and Washington, D.C., has been very generous with their time, good humor and support of the project team. A special thanks to ICRW President Geeta Rao Gupta, who was the first project director of this program when it began in 1996, and who has encouraged its progress since then. Many other staff were part of this project over the years and we would like to acknowledge them: Laura Nyblade, Ellen Cerniglia, Amanda Bartelme and Dee Mebane. In the India office, Anuradha Rajan, who was the country director when Phase II started, was very supportive of our field-based needs. Very special thanks to the finance and budget staff in both offices who were invaluable in managing the complex finances of this project: Venugopal and Prasenjit Banerjee in India, and Scott Welch, David Zamba, Rob Ferguson, Mike Lavelline, and others in the Finance & Administrative department in Washington, D.C. Finally, we thank Sandra Bunch, Margo Young and Sandy Won of the Communications team for a grand job in editing and pulling together the chapters in this report to make it one coherent piece, under great time pressure.

From the FRHS project, we would like to thank Nirmala Murthy, Asha Bhende, Hemant Apte, and M.H. Shah, all of whom served as consultants to the project. Thanks too to Vikas Aggarwal, the regional director-North India, for FRHS from 2002 to 2005. The District Health Office staff of Ahmednagar was very supportive and we would like to extend our thanks to them as well.

From the IHMP project, we would like to thank the Ford Foundation, ICCO (Netherlands) and Christian Aid (UK) for financial assistance for the intervention itself.

From the KEM project, we extend our thanks to the late V.N. Rao, the ex-director for research, for his continuous guidance and support for the project, and Asha Bhende.

From the CMC project, we would like to thank Jayaprakash Muliyil, professor and current head of the Community Health Department; Abraham Joseph, professor and former head of Community Health Department; K.R. John, professor of Community Health, for his helping in costing; and S. Saravanan.

From the Swaasthya project, many thanks to Steven Schensul with the University of Connecticut, Manish Verma, Shrabanti Sen, Javita Narang, Charu Sharma, Neetu Ann John and A.K. Chawla.

Finally, our immeasurable gratitude to and admiration for the field staff in all the studies, the community level staff, and all the adolescent girls, women, families and communities we worked with. Without their permission, participation, hard work and insights, none of this would have been realized. We hope that the results live up to their expectations.

Executive Summary

The International Center for Research on Women's (ICRW's) 10-year multi-partner research program, *Improving the Reproductive Health of Married and Unmarried Youth in India,* demonstrates that it is possible to create effective programs that, in a relatively short time, improve adolescents' health. This report draws on lessons learned on how to strengthen community and government efforts to improve youth reproductive and sexual health.

Youth reproductive and sexual health has become a priority for policy-makers, programmers and researchers in India due to the country's large adolescent population and its high rates of child marriage and early childbearing. India has one of the highest rates of child marriage in the world, a practice that often results in early childbearing and thus serious reproductive health problems. India also has one of the world's highest prevalence rates of iron-deficiency anemia among women, including adolescents. Young women and men in India commonly suffer from reproductive tract infections (RTIs) and sexually transmitted infections (STIs), but many do not have information about or access to the treatment they need or are reluctant to seek treatment because they expect negative consequences.

To address these issues, ICRW coordinated multi-site research and intervention studies with multiple partners from different community-based and nongovernmental organizations across India. Formative research conducted from 1996 to 1999 found that gender constraints are a primary obstacle to youth accessing reproductive health and sexuality information and services. This and other findings were used to inform an intervention research program from 2001 to 2006, which implemented and tested a variety of models to improve adolescent and youth reproductive health for married and unmarried girls, boys and couples in rural and urban areas across India. The partners for the intervention research were: Christian Medical College (CMC), Vellore; Foundation for Research in Health Systems (FRHS); KEM Hospital Research Center; Institute of Health Management, Pachod (IHMP); and Swaaasthya.

This intervention research program demonstrates concrete ways that programs in rural and urban settings can improve various aspects of youth reproductive and sexual health, including raising the age at marriage for girls, reducing the prevalence of anemia among adolescents, and improving married couples' knowledge and care-seeking for reproductive health. A key finding is that communities must be involved if gains are to be made in changing the social norms that discourage youth from accessing the reproductive and sexual health information and services they need. Researchers also identified several other crucial factors that contribute to the success of youth reproductive health interventions: developing cost-effective strategies for project interventions, addressing gender-based constraints, and involving men and boys.

In less than three years,[1] each project improved some aspect of youth reproductive and sexual health. Project-specific results include:

- Unmarried girls experienced greater self-confidence and an increased ability to negotiate with parents and their social environment.
- Girls' age at marriage increased by one year, from 16 to 17.
- Unmarried adolescent girls' nutritional status improved.
- Young married women's knowledge and use of services for a wide variety of reproductive and sexual health concerns, including reproductive infections, increased.
- Decision makers in young married women's lives showed awareness of and greater support for their wives'/ daughters-in-law's reproductive health needs.

The projects also demonstrate what processes and models work to achieve desired health outcomes. Specifically:

- Life skills programs can increase the age at marriage for girls.
- Life skills and adolescent development models can increase girls' confidence and their perception of their ability to make decisions about marriage and childbearing.
- An integrated health care program with reproductive health education, clinical referrals, and sexuality counseling can be used in a rural community. However, the extent to which youth will access and benefit from each program element may vary.
- Village-level female health aides can be trained to undertake speculum exams and are able to reach, examine and treat a larger proportion of young rural married women than a conventional doctor, even if the doctor is a woman.
- Community mobilization is associated with higher levels of some reproductive health knowledge and use of

[1] The intervention study dates span a five-year period. However, the actual intervention program typically was implemented for 18-36 months. The rest of the five-year period focused on training, fielding baseline, endline and other research, and data analysis.

services for many, but not all, health issues.

- Community involvement and mobilization is effective in creating a supportive environment for youth reproductive health and changing attitudes among key decision makers who influence youth's environments.

ICRW and its partners disseminated core messages based on this research to government officials throughout India, several of whom have replicated and adapted some of the reproductive health programs. For instance, the state government of Maharashtra is using the life skills model from IHMP's *Delaying Age at Marriage in Rurual Maharashtra* project to improve girls' reproductive and sexual health in rural Maharashtra. In Pune, the Municipal Corporation replicated the nutrition program from the IHMP project, *Reducing Anemia and Changing Dietary Behaviors among Adolescent Girls in Maharashtra,* to improve girls' nutrition and health in Pune city slums.

The study results and lessons learned show what works and can be scaled up; what models merit further investigation; and what research gaps remain. By integrating these lessons into policy and program design, policy-makers and programmers can advance efforts to improve youth reproductive and sexual health in India and elsewhere.

CHAPTER 1

INTRODUCTION

Youth reproductive and sexual health has become a priority for policy-makers, programmers and researchers in India due to the country's large adolescent population and its high rates of child marriage and early childbearing. India has one of the highest rates of child marriage in the world, a practice that often results in reproductive health problems for girls because of early childbearing. India also has the world's highest prevalence of iron-deficiency anemia among women, including adolescents. Young women and men in India commonly suffer from reproductive tract infections (RTIs) and sexually transmitted infections (STIs), but many do not have information about or access to the treatment they need or are reluctant to seek treatment because of perceived social consequences.

To improve this situation, a number of nongovernmental (NGO) and community organizations are working to orient reproductive health services in India toward youth. But little is known about what works, how to encourage youth to use available services and what the costs are to implement and replicate programs in different communities and settings. The 10-year multi-partner research program, *Improving the Reproductive Health of Married and Unmarried Youth in India,* provides important insights and lessons learned on these and other questions.

The International Center for Research on Women (ICRW) worked with five in-country partners to coordindate six intervention studies across India. Preliminary, formative research was conducted from 1996 to 1999, which found that gender constraints are a primary obstacle to youth accessing reproductive health and sexuality information and services. This and other findings were used to inform the intervention research from 2001 to 2006, which implemented and tested a variety of models to improve adolescent and youth reproductive health for married and unmarried girls, boys and couples in rural and urban areas across India.

This chapter provides some background on the state of youth reproductive health in India and how the research program was organized.

1.1 Adolescent Reproductive Health in India

Adolescents and youth form a significant proportion of the Indian population. Thirty-six percent of the total population of India is younger than 15. Another 19.3 percent of the population range in age from 15 to 24. Thus, more than half the population is younger than 25.

Research shows that worldwide millions of adolescents are married, and South Asia has one of the highest rates. Nearly one-third of girls (ages 15 to 19) in South Asia are married (Mathur et al. 2003). In India, marriage is early and nearly universal. The median age at marriage among women (ages 20 to 24) is 16.7 years. Almost all young women ages 25 to 29 (95 percent) are married (Indian Institute of Population Sciences and ORC Macro, 2000). The majority of men also marry: 72 percent of men ages 25 to 29 are married. However, men are typically older than women when they marry. In rural India, fully 40 percent of girls (ages 15 to 19) are married, compared to 8 percent of boys the same age.

Childbearing for women in India also is early. Among married women in their reproductive years (ages 20 to 49), the median age at which they first gave birth is 19.6 years. Nearly half of married women (ages 15 to19) have had at least one child (Indian Institute of Population Sciences and ORC Macro, 2000).

A common consequence of early marriage and childbearing is that girls enter marriage and become mothers without adequate information about reproductive and sexual heath issues, including sexual intercourse, contraception, sexually transmitted infections (STIs), pregnancy and childbirth (Mensch et al. 1998; Singh and Samara 1998). Even armed with this information, girls likely would be denied access to safe motherhood, contraceptive and disease prevention services due to social norms and restrictions that limit girls' and women's mobility, access to information, and resources in the marital home (Jejeebhoy 1998; Mathur, Greene et al. 2003).

Social barriers are even greater for unmarried girls. Many girls in some parts of India face "eve teasing," the practice of men singling out unmarried girls for public cat-calls, whistling, some physical contact, and in extreme cases, sexual assault. Girls are denied access to information about reproductive and sexual health, and are expected not to ask questions about such issues, because they are unmarried and female.

Little is known about the situation for boys and men, but research suggests that it is hard even for young men to access accurate, timely and good quality reproductive and sexual health information and services.

1.2 Overview: Improving the Reproductive Health of Married and Unmarried Youth in India

From 1996 to 2006, ICRW coordinated multi-site formative research and intervention studies on youth reproductive health and sexuality in India. This work focused on developing interventions tailored to the context of young people's lives, their families and their communities. The program was structured as a partnership between ICRW and multiple community-based non-governmental organizations (NGOs) across India. The community-based partners took the lead in implementation and ICRW, as the research partner, provided technical input and capacity-building on research and monitoring and evaluation. The program had two phases – an initial phase of formative research (Phase I), followed by an intervention research (Phase II). Subsequent chapters of this report will focus on the Phase II studies and findings; Phase I results will be discussed as relevant.

Phase I: Formative Research

The Phase I studies (1996-1999) addressed the paucity of basic research on adolescents in India, providing community-based data on the particular adolescent reproductive concerns within the study community (for example, Prasad et al. 2005; Barua and Kurz 2001; Abraham and Kumar 1999; Kurz et al. 1999). The findings from each of these studies were then used to design interventions. Phase I was conducted in collaboration with four organizations: three in Maharashtra state in western India, and one in Tamil Nadu in southern India. Table 1.1 provides a summary description of these four studies.

Table 1.1: Phase I Studies and Partners

Partner organization	Study title	Sample group
Tata Institute of Social Sciences, Mumbai, Maharashtra	Understanding Sexuality among the Urban Youth: A Study of Mumbai College Students	Unmarried, urban, male and female, ages 15-22
Christian Medical College, Community Health Department, Vellore, Tamil Nadu	A Study on Reproductive Health of Adolescents	Married, rural, males and females, ages 16-22
Foundation for Research in Health Systems, Ahmedabad (study in Maharashtra)	Use of Reproductive Health Services by Married Adolescent Females	Married, rural, females, ages 15-19
KEM Hospital Research Centre Pune, Maharashtra	Adolescent Sexuality and Fertility: A Study in Western Maharashtra	Unmarried and married, rural, male and female, ages 14-22

These studies describe a range of reproductive and sexual health knowledge, behavior and outcomes among married and unmarried young women and men in urban and rural areas. They were among the first studies in India to document that adolescents are sexually active before marriage and have little information about reproductive anatomy, physiology, sex and contraception. Researchers further found that adolescent women have a high prevalence of RTIs and gynecological morbidity. Few women, however, seek treatment for these problems, mainly because of familial and social constraints that limit their knowledge of and access to reproductive health services.

Young women's use of contraceptives also was low. Instead of contraceptives, unmarried girls often used induced abortion – usually with unapproved practitioners – to end a pregnancy; married adolescent girls also used induced abortions to space pregnancies.

The studies consistently found that existing reproductive health services did not serve adolescents well, whether unmarried or married, and services for gynecological problems were particularly underused. The studies concluded that gender constraints – a lack of power and decision-making opportunity for young women, especially unmarried young women – is at the root of these reproductive health behaviors and risks.

Phase II: Intervention Research

The program's formative data from Phase I informed the topics, design and implementation of the intervention program (Phase II), which was conducted from 2001 to 2006 in Maharashtra, Tamil Nadu and Delhi. Table 1.2 provides a description of these studies and partners.

Table 1.2: Phase II Studies and Partners

Partner organization	Intervention site	Study Title	Target group	Intervention theme
Christian Medical College	Vellore, Tamil Nadu	Reducing Reproductive Tract Infections among Married Youth in Rural Tamil Nadu	Married women ages 15-30 & their husbands	RTI/STI management: 2 approaches
Foundation for Research in Health Systems	Ahmednagar, Maharashtra	Social Mobilization or Government Services: What Influences Married Acolescents' Reproductive Health in Rural Maharashtra, India?	Married women ages 15-22 & their husbands	Government reproductive health (RH) services and community mobilization
Institute of Health Management	Pachod & Pune, Maharashtra	1. Delaying Age at Marriage in Rural Maharashtra 2. Reducing Anemia and Changing Dietary Behaviors among Acolescent Girls in Maharashtra	Unmarried girls ages 12-18	Life skills and nutrition
KEM Hospital Research Centre	Dhamari, Maharashtra	Reproductive and Sexual Health Education, Care and Counseling for Married Adolescents in Rural Maharashtra	Married couples ages 14-25	Integrated RH education, services and counseling
Swasthya	Tigri & Naglamachi, Delhi	Building Life Skills to Improve Acolescent Girls' Reproductive and Sexual Health	Unmarried girls ages 12-22	Life skills program, supportive adults

This program of intervention research had three overarching goals: (1) develop models that could improve adolescent reproductive and sexual health for married and unmarried adolescents and youth; (2) build and strengthen the capacity of implementing partners to carry out intervention research; and (3) link programs and research with policy so that research could feed into policy implementation.

The studies in this research program offered a wide range of interventions relevant to the reproductive and sexual health of married and unmarried male and female youth in urban and rural areas. These interventions included: interactive reproductive and sexual health education for unmarried girls; life skills courses for unmarried girls; nutrition behavior change and communication for unmarried girls to reduce iron-deficiency anemia; involving men, families and communities to advocate for young women's reproductive health; sexuality counseling for young couples; improving couple communication; changing provider attitudes; and testing models to provide clinical diagnostic and treatment facilities of RTIs for young married women and their partners.

A range of approaches was applied to implement the interventions, from providing clinical services to mobilizing communities. In some cases, sub-studies were added to the main study question in response to community demands or ICRW and partner staff's realization that additional issues should be addressed. These included sub-studies on infertility, qualitative interviews with men, and work with mothers-in-law.

1.3 Organization of Findings: This Report and Related Documentation

This report is one of several documents on the findings from this 10-year program. The full documentation of this program includes:

1. This final project report, *Improving the Reproductive Health of Married and Unmarried Youth in India,* which interprets the results across four overarching themes that these studies identify as critical for youth reproductive health: addressing gender-based constraints, involving men and boys, using community approaches, and developing cost-effective strategies.
2. The briefing kit, *Improving the Reproductive Health of Married and Unmarried Youth in India: Evidence of Effectiveness and Costs from Community-based Interventions*, which is a series of two-page summaries that describe specific results from each intervention and the four themes noted above.
3. Individual partner organizations' final reports with details about each study's design, implementation, monitoring and evaluation, and results.

For this report, Chapter 2 briefly describes the Phase II studies conducted by ICRW's five partner organizations and each study's main conclusions. Chapter 3 through Chapter 6 describe the findings in relation to four overarching themes that emerged as critical to successful reproductive and sexual health programs in India. The four themes recur across studies and are: addressing gender-based constraints, involving men and boys, using community mobilization approaches and developing cost-effective strategies.

Addressing Gender-Based Constraints
The Phase I formative research and other studies in India and elsewhere point to unequal gender-based norms as a key constraint in achieving better outcomes for youth. This is especially true for young women with respect to reproductive health. Chapter 3 examines to what extent the interventions were successful in addressing constraints based on gender norms for unmarried and married youth. What do the results say about how to address such constraints?

Involving Men and Boys
Until recently, most reproductive health programs and policies – including those for adolescents and youth – focused almost solely on women. Yet it is also important to work with young men and boys, both as young women's partners and for their own reproductive health concerns. All five interventions worked to varying degrees with men and boys. This report will present how successful these studies were at addressing (a) young men's and boys' own reproductive and sexual health needs and experiences, (b) the role of men and boys in young women's reproductive and sexual health, and (c) the reproductive health experiences of young men as part of couples. Chapter 4 will examine what these studies say about the difficulties of reaching young men and boys and about what works.

Using Community Mobilization Approaches
The Phase I research unequivocally pointed to the key role played by family and community in youth reproductive health. Youth in India, even when married, often do not make reproductive health decisions. Parents, spouses, in-laws and other gatekeepers influence or make these decisions. Community norms that typically place young people low in the family and social hierarchy also determine whether and how families address youth health needs. All the interventions worked to some degree with families and communities. Chapter 5 asks: What can the studies tell us about how effective community-based approaches and community mobilization are in addressing the reproductive health of youth as compared to alternative approaches? What makes such community approaches more or less successful?

Developing Cost-effective Strategies
The interventions in this research program were among the first community-based intervention studies in India targeted to youth reproductive health. To determine the feasibility of replicating and scaling up such efforts, three interventions included detailed costing studies. These studies included an analysis of how much it costs to implement specific approaches and the relative cost-effectiveness of alternative approaches. Chapter 6 presents these findings.

Finally, Chapter 7 summarizes the intervention findings and analyzes how successful the overall research program was in attaining its goals related to improving youth reproductive and sexual health. It also presents lessons learned and some key program challenges and limitations.

CHAPTER 2

SIX INTERVENTION STUDIES: OVERVIEW OF PHASE II STUDY DESIGNS AND KEY FINDINGS

2.1 Introduction

Despite India's large youth population and relatively high rates of child marriage, few interventions to improve adolescent and youth reproductive health have been well-evaluated and documented. This report helps fill that gap with its discussion of findings from the 10-year research program, *Improving the Reproductive Health of Married and Unmarried Youth in India*, a multi-partner, multi-intervention study that explored what works to improve youth reproductive and sexual health in India.

The International Center for Research on Women (ICRW) worked with five in-country partners to coordinate the six intervention studies across various rural and urban setting in India. Preliminary, formative research was conducted from 1996 to 1999, which found that gender constraints are a primary obstacle to youth accessing reproductive health and sexuality information and services. This and other findings were used to inform the intervention research from 2001-2006.

Results from the different interventions are organized based on their focus on married or unmarried youth. The formative research found that marital status (for both men and women, but especially women) was an important indicator of the specific constraints youth faced in accessing reproductive health information and services. Consequently, the interventions varied for the different populations.

In the discussion that follows, each intervention is summarized separately. First, the section on unmarried youth includes descriptions of three studies: (1) "Delaying Age at Marriage in Rural Maharashtra," (2) "Building Life Skills to Improve Adolescent Girls' Reproductive and Sexual Health," and (3) "Reducing Anemia and Changing Dietary Behaviors among Adolescent Girls in Maharashtra."

The next section on married youth also includes a description of three studies: (1) "Reproductive and Sexual Health Education, Care and Counseling for Married Adolescents in Rural Maharashtra," (2) "Social Mobilization or Government Services: What Influences Married Adolescents' Reproductive Health in Rural Maharashtra, India?," and (3) "Reducing Reproductive Tract Infections among Married Youth in Rural Tamil Nadu." Each study description contains a summary of the study designs, populations, research questions, methodology and key findings.

Three of the studies had an additional sub-study on costing the interventions. The design, results and implications of the costing exercises are described in Chapter 6.

2.2 Background: The Partners, Program Processes and ICRW's Role

ICRW partnered with five community-based organizations in Maharashtra, Tamil Nadu and Delhi in this program of intervention research:

- Christian Medical College, Vellore (CMC) – Tamil Nadu
- Foundation for Research in Health Systems (FRHS) – Maharashtra
- Institute of Health Management, Pachod (IHMP) – Maharashtra
- KEM Hospital Research Centre (KEM) – Maharashtra
- Swaasthya – Delhi

The intervention studies followed a similar process. Each partner organization developed a proposal in collaboration with ICRW that served as a roadmap for intervention design and monitoring and evaluation. Each study started with a quantitative baseline, sometimes after some initial rapport building or needs assessment if the area or population was a new one. This was followed by a period of identifying and training field workers; putting monitoring systems in place; field-testing and modifying intervention modules; and finalizing program design. The partner organizations typically launched the actual intervention about 6-12 months after the baseline and monitored it continuously. Short qualitative sub-studies were added when needed to address questions that arose in the course of the study, or in response to demand from the study populations. Each intervention ended with an endline quantitative survey, data analysis and final report.

Each partner took the lead in designing the program and implementing the intervention (including fielding research instruments). ICRW led and coordinated the network of partners through the entire program starting in 1996. ICRW's key roles included providing technical input on research design, developing research tools, analyzing data and writing journal articles; disseminating findings to policy-makers; synthesizing results across studies; and disseminating findings within India and in various international fora.

ICRW's technical input followed the same process across studies. ICRW discussed with each implementing partner all qualitative and quantitative instruments. Partners sent drafts to ICRW staff, who provided detailed feedback, suggested changes in questions or structure, and suggested literature to guide any instrument changes. Annual three-day workshops organized by ICRW project staff were a key component of technical support. Workshop sessions included peer review of each other's intervention studies and sessions led by ICRW staff on specific technical issues, such as conducting costing exercises and writing journal articles.

Once partners implemented research in the field, ICRW assisted with data analysis and writing. ICRW also collated a bulletin of journals, their interests, deadlines and other information to guide partners as they developed journal articles from research results. ICRW and partners both played an active role in disseminating results to policy-makers and other programmers interested in adolescent health. The partners took the lead in disseminating findings to policy-makers in each of their states. ICRW took the lead in linking with policy-makers at the national level in India, as well as internationally. ICRW and partners shared research findings with policy-makers and programmers through presentations at conferences, meetings with key government officials, dissemination of information at workshops and serving on advisory committees as resource people for other organizations' youth programs.

2.3 Intervention Studies with Unmarried Girls

Swaasthya and IHMP focused on unmarried girls. Both designed and implemented different life skills models. In addition, IHMP examined a critical but seldom addressed issue: iron-deficiency anemia among adolescent girls.

2.3.1 Delaying Age at Marriage in Rural Maharashtra, Institute for Health Management, Pachod (IHMP)

IHMP tested the effectiveness of a life skills program in (1) increasing the age at marriage for girls and (2) increasing their cognitive and practical skills and knowledge about reproductive and sexual health. IHMP conducted the program in multiple rounds of year-long sessions. The first round, fielded in 1998-1999, is the focus of this report. The study was motivated by the fact that the age at marriage in the area where IHMP works is low by the standards of Maharashtra state. Moreover, at the time the program started there was little documented evidence of what works to increase the age at marriage, particularly in the sphere of nonformal or life skills education.

The main outcome of interest was the median age at marriage. The central hypothesis of this study was that a life skills program of one year's duration should be able to increase the age at marriage of program participants by at least one year.

Study Sites and Target Groups

The life skills program started in a rural area of Aurangabad district in central Maharashtra, and IHMP subsequently implemented the same program at their other site in the slums of Pune city in Maharashtra. The program targeted all unmarried adolescent girls ages 12-18, with a focus on out-of-school and working girls. In the first round of the program, 440 girls enrolled and 179 completed the life skills course.

Intervention Design and Implementation

IHMP designed the life skills course as a one-year program with one-hour sessions each weekday evening. IHMP developed a total of 225 one-hour sessions divided into five sections: Social Issues and Institutions; Local Bodies (such as local government and civil society structures); Life Skills; Child Health and Nutrition; and Health. As part of the life skills class requirements, participating girls conducted a nonformal education practicum in the community. For example, participating girls who were literate and attending school taught basic literacy to nonparticipating girls.

Parents played a key role in designing the program. Before the program started, IHMP organized 10 focus group discussions with mothers and their unmarried daughters to establish the program's content and process. Once IHMP staff developed the program, they invited parents of potential participants to a workshop to learn about the curriculum and give feedback. The parents approved all parts of the curriculum but suggested that the module on reproductive and sexual health be offered only to girls who had reached menarche (about 13-14 years old). In response, IHMP offered this module as a separate three-day residential workshop to girls of that age group. Parents remained involved at all stages of the intervention through monthly meetings.

IHMP had earlier developed a system of village development committees (VDCs) with village representatives nominated by each community to solicit community input on all its interventions. IHMP and the VDCs selected and hired teachers for the life skills program from the community to optimize program effectiveness, sustainability and replicability. The key criterion was that teachers have at least seven years of formal education, the same level required for the village-based

anganwadi worker in the Integrated Child Development Scheme (ICDS), a national Indian government program for child development. This criterion was chosen so that, if successful, the program could be replicated in the ICDS throughout the country. Teachers had to be willing to conduct classes in their own villages. VDCs selected potential candidates who then were interviewed and tested for aptitude by representatives of these committees and the IHMP staff. IHMP trained a total of 28 teachers.

Research Methodology

IHMP monitored participant attendance and established processes and systems to address any problems that may occur in the life skills course.

IHMP and ICRW evaluated the program using a pre/post case-control design. Two noncontiguous primary health centers (PHC)[2] were randomly assigned to be the program and control areas. Villages within the two PHCs were divided into smaller geographical units, each comprising a population of 1,000-1,500. The program area had 35 of these geographical units, the control area had 36. Half of these units were randomly chosen for the intervention – 17 and 18, respectively.

IHMP collected census data in 1997, 1998, 2000 and 2001 from heads of all households in these PHCs. From the 1998 census, IHMP identified 894 unmarried adolescent girls ages 11-17 from the control area and 1,239 from the program area. In the control area the 894 girls served as a sampling frame to randomly select 11 adolescent girls per geographical unit to follow over the subsequent years, making a control sample (group) of 198 girls. IHMP gave the list of the 1,239 eligible girls in the program area to the life skills teachers so that they could recruit and enroll as many girls as possible into the course.

To evaluate the effectiveness of the program in increasing the age at marriage, teachers tracked the participating girls for one year after the life skills course to see who got married in that year. This analysis included girls who had married and moved out of the community, but did not include girls who were married into the community who had not lived in it beforehand. Research assistants with 15 years of education who were employed only for this purpose verified the data. Because birth records are not often kept in the village, age was established using the age charting technique where birth year is deduced by having the girl recall key life events.

For the evaluation, IHMP grouped the girls according to the degree of participation in the life skills course. Girls were defined as not attending if they did not attend any sessions or attended less than 70 percent of the sessions of the first volume of the course. Partial attendance was defined as attending 70 percent or more of the sessions in the first volume but attending less than 70 percent of the sessions of the remaining volumes. Girls were considered to have fully attended if they attended 70 percent or more of the sessions of all three volumes and also attended the reproductive and sexual health module.

IHMP and ICRW evaluated the program for changes in cognitive and practical skills, testing girls' knowledge and specific skills before and after each of the three volumes of the curriculum and comparing the results. IHMP also administered tests at similar times to girls in the control group. Due to the sensitive nature of the material in the fourth volume on sexual and reproductive health, there was no control group and therefore no program-control comparison for this topic.

Finally, IHMP interviewed 10 teachers, 87 parents and 84 girls after the life skills program for a qualitative evaluation of any changes in the girls.

Summary of Findings

Girls in the program group acquired cognitive and practical skills. At the pretest for each volume, girls in the program and control groups were at a similar level, each correctly answering about 66 percent of the test questions. After participating in each volume, program girls' correct answers increased 1.5 to 3.0 times, whereas the proportion in the control group showed statistically insignificant changes. These differences between program and control groups were statistically significant. After the fourth volume on sexual and reproductive health, taught in a three-day residential workshop to girls who had reached menarche, girls who answered at least two-thirds of the test questions correctly on this topic increased from 7 to 63 percent.

The program also significantly delayed marriage. From 1997 to 2001, the median age at marriage rose by one year, from 16 to 17 in the program areas, and the proportion of marriages to girls younger than age 18 dropped from 80.7 percent

[2] States in India are divided into administrative units called districts. Each district is further subdivided into blocks. Each rural block contains 100 villages with a total population of 80,000-120,000. In rural areas, a network of PHCs, subcenters, community health centers and rural hospitals provide primary health care at the block level. There is one PHC for every 20,000-30,000 people, and each subcenter serves a population of 3,000-5,000.

to 61.8 percent in the same period, compared to no significant change in the control area. These changes occurred within the whole program area, not just among the girls who participated in the life skills program, suggesting broad community support for delaying marriage. Considering only the girls who participated fully in the life skills program versus a randomly selected group from the control area, logistic regression analysis indicates that the control group was four times more likely to marry before 18 than the group who fully participated. Other determinants of early marriage are being older, being out-of-school and having a mother who works.

While the exact mechanisms for this change are unclear, qualitative interviews with parents, teachers and girls give some idea about changes that occurred in the girls which may have influenced the observed outcomes. Respondents reported that after attending the life skills course, girls were more confident, spoke without hesitation or fear, exhibited more self-discipline, were more independent in day-to-day activities, and ultimately started influencing decisions in the household and about their own lives including their marriage.

2.3.2 Building Life Skills to Improve Adolescent Girls' Reproductive and Sexual Health, Swaasthya, Delhi

Swaasthya's intervention, also a life skills program, focused on decreasing adolescent girls' vulnerability, increasing their skills and confidence, and enhancing their sexual health. Swaasthya developed and implemented an intervention to address findings from earlier formative research that highlighted adolescent girls' vulnerability to sexual teasing, coercion and sexually transmitted infections (STIs), including HIV; their lack of decision-making power in their own sexual, reproductive and productive lives; and the importance of involving the broader community in trying to address these needs. Swaasthya's multifaceted intervention model engaged adolescent girls and the key individuals in their immediate environment.

Swaasthya implemented the program in three parts. In the first part, Swaasthya pilot tested the feasibility and effectiveness of a comprehensive community-based model for adolescent sexual health interventions in Tigri, a resettlement area in New Delhi. The pilot ran from April 1998 through April 2001. In the second part, Swaasthya tested this model for its replicability in another area, the Naglamachi slum in Delhi. The replicability study started in July 2003 with a baseline survey and qualitative research, and it ended in July 2006. The third part involved testing the model for sustainability in Tigri by monitoring and evaluating how well it worked and whether outcomes were sustained once Swaasthya withdrew in April 2001. The sustainability study was completed in December 2005.

In each part, the study assessed attitudinal, behavioral and programmatic outcomes. The main outcome of interest was girls' perceived self-determination in decisions around marriage (attitudinal change) and menstrual health and hygiene (behavioral change). Other outcomes of interest hypothesized to lead to the two key changes above were: (1) knowledge of reproductive and sexual health as well as of relevant legal issues such as the laws around rape and violence, (2) perceptions of support from key gatekeepers such as mothers, and (3) the extent of a positive perspective on life. Finally, the study assessed the degree of participation in the three elements of the program.

Study Sites and Target Groups

There were two study sites. The first was Tigri, a resettlement area in Delhi, with a majority of the population made up of economic migrants from the surrounding states of Rajasthan, Uttar Pradesh and Punjab. The second was Naglamachi, an illegal slum also in Delhi with migrant populations from regions similar to those of the migrants in Tigri. In both sites the target groups were adolescent girls and their mothers. In Tigri the focus was on unmarried girls from the ages of 12-22, whereas the Naglamachi program also included married adolescents in the same age range. In both sites, Swaasthya also involved mothers, other community elders and boys.

Intervention Design and Implementation

The intervention had three components: (1) developing social and peer support for adolescent girls, (2) training for adolescent girls to build skills to negotiate their environment, and (3) information, education and communication (IEC) through (a) one-on-one interaction with a Swaasthya female health worker and (b) video programs on community and adolescent issues that were screened on local cable television.

The social support component comprised periodic group meetings for adolescent girls and their mothers. Swaasthya visualized these as a safe, neutral space to develop inter-generational communication and to discuss misunderstandings about and with each other. In the second component, Swaasthya developed a skills-building module to train young girls to build negotiating skills and increase their capacity to deal with their social, familial and sexual environment. In the one-on-one IEC component, Swaasthya field workers initiated discussions on reproductive and sexual health, adolescence, and other issues the girls and Swaasthya identified as important. This interaction took place with girls individually or in small groups, often in the lanes of the resettlement (each lane was considered one "neighborhood"). For the second part of the

IEC component, a videographer developed videos as multi-episode, magazine-style programs on adolescent and community issues, health and social concerns, news from the community and entertainment spots. They were screened in the pilot phase in Tigri but not thereafter and not in Naglamachi because the evaluation found them to be ineffective.

As noted above, Swaasthya tested the initial model in Tigri. While the overall structure of the model remained unchanged when replicated in Naglamachi, Swaasthya modified certain implementation details to suit the very different environment and population, and to address lessons learned from what did not work in Tigri. For instance, Swaasthya hired a male school teacher to conduct skills building and social support groups with young boys, an endeavor that had not worked in Tigri. More details of the differences and similarities between the two sites can be found in Swaasthya's final report (Swaasthya 2006).

Finally, Swaasthya collected and, with input from ICRW and the costing consultant, analyzed program costs for the Naglamachi study to assess the costs of implementing such a model (see Chapter 6 for results of the costing substudy).

Research Methodology

Swaasthya conducted baseline and endline surveys in both sites, designing each as two cross-sectional assessments.[3] The rationale behind using this design rather than a longitudinal one was the assumption that cross-sectional assessments would capture community impact more broadly among girls in the community, regardless of whether they actually participated in Swaasthya's program. The baseline in Naglamachi was preceded by initial qualitative rapid appraisals to assess the needs and characteristics of the area. This had been unnecessary in Tigri because Swaasthya had already been working there for several years. The endline surveys asked about participation in different elements of Swaasthya's program. The baseline-endline comparisons evaluated the success of Swaasthya's program elements to influence desired outcomes. This study had no control group and thus it is difficult to attribute change solely to the program. Nonetheless, baseline-endline changes in variables of interest allowed for some assessment of the program and provided enough information to judge whether or not to undertake the replication and sustainability parts of the program. The surveys covered 401 girls at baseline and endline in Tigri. In Naglamachi, the baseline included 294 girls and the endline surveyed 365.

Swaasthya conducted a third survey in Tigri two years after they withdrew to assess whether and how sustainable the program and outcomes were. Sustainability was defined as the extent to which outcomes were maintained, the integrity of the content and implementation of the different program components, and the processes of implementation. Swaasthya and ICRW assessed outcome sustainability by comparing across surveys. Program and research staff assessed program and process sustainability through field records, qualitative interviews with community members, and Swaasthya staff members' observation of program implementation by the community.

In both sites, process monitoring mapped the progress of all three components of the intervention. Methods used included narrative documentation of participation and discussions in groups and skills-building workshops, and qualitative semi-structured interviews with adolescent girls and their mothers.

Summary of Findings

Quantitative analysis of the pilot program in Tigri showed that most of Swaasthya's intervention components were associated with improved outcomes for girls. Specifically, the skills-building modules, the social support groups and the one-on-one communication with the Swaasthya field worker were associated with high knowledge of reproductive and sexual health, a strong perception of support from mothers and other gatekeepers, and a positive perspective on life. Logistic regression showed that, at endline, participants in the skills-building modules and those exposed to the one-on-one interaction were significantly more likely to have higher perceived self-determination than girls who did not participate in these intervention elements. The one-on-one interaction also was positively associated with behavior as measured by better menstrual hygiene.

Overall program effects were weaker in Naglamachi than in Tigri. In particular, skills building – which seems to have been a critical element in Tigri – was not as significantly associated with a higher likelihood of improved outcomes in Naglamachi. Naglamachi has a more conservative social environment than Tigri, whereby girls in Naglamachi have less mobility and less freedom to attend the kind of program Swaasthya implemented. This may have contributed to the program being less

[3] The baseline survey in Tigri was not a true baseline to the extent that it was undertaken shortly after the program had been rolled out.

effective. Further, Swaasthya had worked earlier in Tigri and thus perhaps the population was more receptive to the adolescent program than was the case in Naglamachi.

The replication phase did not work out as planned. The initial plan had been to replicate the program through another organization whose staff would be trained by Swaasthya, thus testing whether another organization could replicate the study in another site. Unfortunately, the partner organization was unavailable at the last minute and Swaasthya had to replicate the study themselves at the new site.

The sustainability analysis in Tigri showed that outcomes and processes were largely sustained, but not the program itself: Several of the program components were not sustained by community members after Swaasthya field workers left. With respect to sustained outcomes and processes, process documentation suggested that adolescent issues, such as the sexual harassment that young girls face in the streets, were institutionalized in the community to the extent that they remained an important part of discussions in community organizations such as women's groups and youth groups. In addition, several outcomes remained at or near the levels they had reached by the endline of the Tigri intervention about 18 months earlier. However, multivariate analysis revealed that Swaasthya's program was no longer significantly associated with these outcomes. This may partly be due to the fact that several of the program components were not sustained by community members after Swaasthya field workers left; it also could indicate that once attitudes and perceptions change, further programmatic inputs are not necessary to maintain these changes. However, knowledge of sexual and reproductive health decreased, suggesting that consistent input is needed to maintain knowledge.

2.3.3 Reducing Anemia and Changing Dietary Behaviors among Adolescent Girls in Maharashtra, Institute of Health Management, Pachod (IHMP), Pune

IHMP designed its intervention study, conducted among unmarried girls from 2000-2003, to address the problem of anemia among young Indian women. India has the highest prevalence of iron-deficiency anemia among women in the world, including adolescents, and 60-70 percent of adolescent girls are anemic (Hemoglobin (Hb) < 12 g/dl). Despite the magnitude of the problem, few Indian public health programs are addressing iron deficiency anemia in adolescent girls.

The main outcomes of interest were dietary behavior and hemoglobin counts in young girls. The study sought to increase the number of daily meals adolescent girls eat from two to three or four; to encourage girls to consume iron-rich foods daily; to encourage girls to consume vitamin C-rich foods in combination with iron-rich foods daily; and to reduce the prevalence of anemia, especially in the severe (Hb < =7 gm/dl) and moderate (Hb < 7.1-9.9 gm/dl) categories.

Study Sites and Target Groups

IHMP conducted the study among unmarried adolescent girls from ages 10-19 in the slums of Pune city. The project started in 16 slums and then expanded to 27 slums in Pune and 72 villages in rural Maharashtra near Aurangabad. IHMP has initiated a similar program for married adolescent girls. The following describes the results from the initial study in 16 slums in Pune.

Intervention Design and Implementation

IHMP implemented this study as a community-based intervention trial. Ten of the 16 slums, with a total of 1,000 girls, served as intervention areas. Six slums with a total of 752 girls constituted the control areas.

The intervention included monthly home visits by a community-based health worker, an exhibition, nutrition demonstrations and nutrition-related fun fairs. Materials developed and used for the intervention included a cookbook on iron- and vitamin C-rich foods, stickers with each of the key messages, a flash card set with nutrition information, and posters on anemia. During the home visits community-based health workers assessed girls' dietary patterns, promoted nutritional messages using flash cards and the cookbook, and shared information on seasonally available, low-cost iron- and vitamin C-rich foods. The intervention was designed to encourage girls to eat four meals each day; eat at least one iron-rich food with each meal; eat tomato, lemon, raw salad or citrus (vitamin C-rich) foods with each meal; avoid tea with a meal; and eat a balanced diet.

Research Methodology

IHMP and ICRW assessed the intervention's impact using data from baseline and endline surveys two years apart to evaluate changes in dietary behavior; baseline-endline hemoglobin blood counts to measure the extent of iron-deficiency anemia; and comparisons of baseline-endline changes between study and control sites.

The baseline and endline surveys collected information on dietary and morbidity history, anthropometric measures, menstrual history, frequency of meals in a day, whether lemon is consumed with meals (to increase iron absorption), consumption of locally available iron-rich foods and workload within and outside the house. IHMP collected blood samples from 803 girls and measured hemoglobin using the cyanomethemoglobin method. IHMP used logistic regression to determine the predictors of anemia, with hemogloblin status (with Hb < 12 g/dl defined as anemic) as the dependent variable. Independent variables included economic status, consumption of iron-rich foods, meals eaten in a day, use of lemon with meals, morbidity in the past year, hours worked in a day and whether menses had started.

Summary of Key Findings

The analysis of the data and comparisons with the control area showed that girls in the study area had improved dietary behavior and lowered iron-deficiency anemia at endline compared to the baseline, and compared to girls in the control area. There was a significant increase in the intervention site compared to the control site in the percent of girls who eat more than three meals a day and in the frequency of eating fruits. Further, from baseline to endline, blood testing among girls in the intervention area showed that mean Hb levels increased from 5.8 to 9.5 gm/dl for severely anemic girls, and from 8.9 to 11.2 gm/dl for moderately anemic girls.

A limitation was that the intervention program was in place for two years before the endline survey assessed changes in the girls. By this time, many girls had left the program and new girls had joined, limiting systematic pre-post follow up of the original sample and possibly introducing biases among participating versus nonparticipating girls. There were also some problems getting the second (endline) measure of hemoglobin count and thus there may be some selection bias among girls for whom two measures of blood count are available. In addition, the information on dietary behavior was self-reported and may be biased to that extent. Finally, the study comprised two cross-sectional samples, whereas hemoglobin change is best measured on the same individuals pre- and post-intervention.

2.4 Intervention Studies with Married Young Women and their Partners

Three of ICRW's partners – KEM Hospital Research Centre, FRHS and CMC – worked with married adolescent and young women, their partners and their communities to address constraints that married young women and their partners face in accessing reproductive and sexual health information and services.

2.4.1 Reproductive and Sexual Health Education, Care and Counseling for Married Adolescents in Rural Maharashtra, KEM Hospital Research Centre (KEM), Pune

KEM's study examined the feasibility and effectiveness of providing a package of services in a rural community to improve married adolescents' sexual and reproductive health knowledge and status, and use of services. The package incorporated seven sessions of reproductive health education (RHE); sexuality counseling sessions for young married couples; and clinical referral for those who needed treatment for reproductive morbidities. The impetus for developing this package came from KEM staff observations and input from the community about the lack of such an integrated service approach in the study village. Thus, the study aimed to test whether it is possible in a rural area to overcome the limitations of providing only health education without clinical services or only clinical services with no health education by integrating the two and simultaneously providing both sets of services. In addition, the model added marital counseling, a service rarely provided to rural youth. KEM decided to focus on married adolescents and youth assuming that, given conservative social norms, parents and elders would frown upon discussions of sexuality with unmarried girls.

The main outcome of interest was the feasibility of this integrated approach. KEM measured feasibility in terms of: the ability of community-level educators to effectively conduct reproductive health education sessions; attendance at these sessions; use of counseling services; and increase in referrals for clinical services that could be attributed to the other two aspects of the intervention. A second outcome of interest was whether there were any changes in reproductive health knowledge in the program site pre- and post-intervention, specifically knowledge of pregnancy, contraception and risky sexual behavior.

Study Site and Target Groups

KEM implemented the feasibility study in Dhamari village in Pune district of Maharashtra. The study population was married male and female adolescents and young adults from the ages of 14 to 25. The program reached a total of 129 couples.

Intervention Design and Implementation

To address the importance of community and context in adolescents' reproductive health decision making, KEM designed the intervention to include a broad spectrum of community members, such as school teachers, local health providers, key community members and family members. KEM staff selected and trained interested local school teachers as reproductive health educators and lay counselors. They also trained various levels of health providers in reproductive health education and to recognize and refer people for counseling or health services. Parents, in-laws, kin members and other community members informally participated in all activities to the extent that their presence did not inhibit participation among adolescents. Early in the intervention process, it became apparent that field workers were more effective in reaching young couples if they went into the community in husband-wife couple pairs as opposed to individually, so KEM focused on training couples.

KEM initiated the three components of the intervention simultaneously, and adolescents self-selected which to participate in. Even though KEM structured the three components as an integrated program, each had a specific focus. The seven-session reproductive health education component provided information about reproductive physiology and health, risky behaviors (including for HIV/AIDS), sexuality, and male and family involvement in women's reproductive health issues. Education sessions also addressed misconceptions about reproductive health problems. KEM developed the final package of messages after extensive feedback from field workers and the community. The program contained repeating messages so participants could learn the course content even if they attended fewer than the seven sessions.

The counseling component provided a confidential space where young men and women, either individually or as a couple, could discuss their sexual and reproductive health concerns. Trained lay counselors participated in initial focus group discussions and to do referrals, while the counseling itself was designed as one-on-one sessions with a clinical psychologist.

The reproductive health education and counseling components included a system of referrals for young men and women who needed clinical reproductive health services. These services were provided by KEM.

Research Methodology

As a feasibility study, this study documented and assessed the process and dynamics of implementing this integrated approach in a rural community, rather than focusing on a change in behavioral outcomes. Nonetheless, baseline and endline data give some idea of change in knowledge of reproductive health in the study village, even though these changes cannot be attributed to the intervention in the absence of a control or comparison site.

A baseline survey of 114 couples assessed adolescent reproductive health knowledge, sexual risk-taking and behavior, reproductive morbidity, treatment-seeking behavior and community attitudes. KEM used baseline results to prepare training modules and the reproductive health education package. KEM continuously monitored the program and assessed implementation processes using systematic observation, documentation and various qualitative methods. These included 12 focus group discussions, 40 key informant interviews and 200 free listing exercises, all with a selection of youth and elders in the community. KEM also led five social mapping exercises with community members to identify and discuss reproductive health providers in the area. Because the goal was to develop a package of feasible interventions, the program itself evolved in an iterative way with process assessments generating appropriate design changes. At the end of the intervention period, KEM conducted an endline survey of 76 couples. KEM and ICRW then used these data to assess the feasibility of the integrated approach, while baseline-endline comparisons captured any changes in adolescent reproductive and sexual health knowledge.

Summary of Findings

Results show that the extent of participation and intervention feasibility varied for the three elements. Community-level educators were effective, people accessed the counseling services and a large proportion of clinical referrals came from the other two elements of the program, suggesting that the desired link between them was working. However, data on the RHE element show mixed results.

KEM's evaluation of the community educators showed that in both phases of the intervention, more than two-thirds of the educators were able to conduct sessions effectively. Attendance at health education sessions showed more mixed results. While close to 90 percent of the eligible couples attended at least one session, about three-quarters attended four of the seven sessions and less than half attended the full series of sessions. Qualitative assessments showed that reasons for nonattendance included work or child care responsibilities; not getting permission from family elders; and some seasonal migration. Counseling fared better. Before the intervention, no sexuality counseling was available to this population. During the intervention, almost a third of the couples attended a counseling session and more than half returned for follow-up

sessions. Finally, researchers observed an increase in the use of clinical services for several reproductive symptoms, and a large percent (70 percent of all referrals) were referred from the health education sessions.

Pre-post analysis of the change in reproductive health awareness showed that those who attended four of the seven health education sessions had similar levels of change as those who attended the full course. Among those who attended at least four sessions, knowledge increased about the need for antenatal care, as did recognition of certain danger signs during pregnancy. A larger proportion of youth were aware at endline than at baseline that both irregular menses among women and semen problems among men can cause infertility. Awareness also improved with respect to condom use as a way to prevent STIs and HIV; the need to treat partners as part of STI treatment; and knowledge of the specific ways to test for HIV. The increase in condom awareness in the context of HIV was particularly noteworthy. At baseline, only 37 percent of respondents mentioned condom use as important for HIV prevention, but this more than doubled to 83 percent by the endline.

Qualitative data and feedback from the community are consistent with the quantitative findings about the feasibility of this approach. The qualitative data suggest that couple communication increased where husbands and wives had previously been reluctant to discuss sexuality and reproduction with each other. The community's appreciation of this intervention was clear from their request for KEM to start such a program with unmarried girls, pointing out that girls need reproductive and sexual health information before they get married.

This study had certain limitations. The training took much longer than envisioned, and thus the implementation of the different components had to be delayed. Also, KEM initiated the use of couples as community educators during the intervention once the need became apparent, rather than at the start. Perhaps as a consequence, only three of the 14 community educators were couples, limiting the ability to make generalizations based on the experience of these educators.

2.4.2 Social Mobilization or Government Services: What Influences Married Adolescents' Reproductive Health in Rural Maharashtra, India? Foundation for Research in Health Systems (FRHS), Maharashtra

FRHS also worked with married couples, though the focus of this intervention program was young married women. Husbands were included to the extent that they were involved in their young wife's health. Specifically, the study (2001 – 2006) examined the relative effectiveness and cost effectiveness of addressing "supply" versus "demand" constraints to improve reproductive health for married young women. These constraints were identified in the Phase I research.

The key demand constraint the study addressed is that young married women's families and communities often place a low priority on their reproductive health needs, and yet it is family and community that make decisions about whether and what care young women can seek. Thus, the "demand" approaches used social mobilization to generate family and community support for young married women's reproductive health concerns.

The key supply constraint addressed was that existing government health services are not geared toward the reproductive and sexual health concerns of youth. At the same time, government health services are widely available and accessible for most rural young men and women in India. Thus, the "supply" approaches attempted to improve the quality and accessibility of available reproductive health services in the government sector for adolescents. Clearly both supply and demand factors are important. This study aimed to assess the *relative* roles of such demand and supply factors in enabling young, married women to better recognize, voice, seek treatment for, and thereby improve their reproductive health concerns.

The main outcomes of interest were young women's knowledge and use of services for maternal health (antenatal, delivery and postnatal), contraceptive use, abortion, infertility and treatment of reproductive tract infection (RTI) symptoms. The key outcomes of interest in terms of creating a supportive environment included husbands' knowledge of, and participation in, their wives' health seeking and the attitudes of mothers-in-law.

Finally, FRHS collected costs of both social mobilization and government service activities to compare the relative costs, and cost effectiveness, of the two approaches (see Chapter 6 for further details).

Study Site and Target Groups

FRHS implemented this intervention study in two comparable blocks of Ahmednagar district in Maharashtra. The target groups were newly married couples (married for less than one year upon entry into the study) where the wife was younger than 22 years old, and influential others in the family such as husbands and mothers-in-law. The upper age of 22 years was chosen given the area's female average age at marriage of 18 years. The program reached more than 1,800 young married women.

Intervention Design and Implementation

This intervention used a 2x2 experimental-control design. Each cell of the design was implemented in one PHC area. FRHS chose the four PHCs so that borders were not contiguous and spillover of the effects of the intervention was expected to be minimal. One PHC had only social mobilization strategies (SM), a second only improving government health services (GS), a third had both strategies concurrently (SM+GS) and a fourth served as a control group with neither strategy in place. Each intervention (including the control) was allocated randomly to the four PHC areas. FRHS implemented the intervention in 22 subcenter villages across these PHCs. Within any one of these villages all individuals were eligible to participate in the program and were not further randomized. Baseline-endline comparisons between each PHC and the control PHC, as well as between PHCs, were expected to yield the relative effectiveness of these strategies in improving reproductive health outcomes for young married women.

FRHS implemented the social mobilization strategy through existing community-based organizations. Many parts of Ahmednagar district already had a history of community-based organizations including (largely male) youth groups and women's self-help groups. Building on this history, FRHS collaborated with existing youth and women's groups, when possible, to create or strengthen these groups so that they could serve as forums for married adolescent girls (and, in the male groups, their husbands) where they could share problems, devise solutions and support each other. FRHS anticipated that engagement with male youth groups and women's groups would draw in husbands and mothers-in-law, who could offer knowledge and support, and ultimately participate in young women's reproductive health-seeking. Two social workers from FRHS and two members from the government's district training center organized these social mobilization activities, which were held in the villages.

For the government health service improvement strategy, FRHS worked in partnership with the government health system. The GS strategy focused on training health workers who had already undergone some training in reproductive and adolescent health. FRHS supplemented this training by sensitizing government health providers to adolescents' health needs and training them to provide couple counseling to married adolescent girls and their husbands. For their training, FRHS adapted and used other training methodologies that have proven successful elsewhere.

Research Methodology

FRHS conducted a baseline census of 1,866 married girls and women younger than 22 across the study villages in the four PHCs. This census included data on adolescent girls' health needs, their constraints, and their families and communities; health-seeking patterns; and experiences and perceptions of quality of care for a number of reproductive health outcomes. Similar censuses carried out at mid-point and at the end of the intervention provided comparison points with which to answer the main study questions.

FRHS conducted a quantitative survey of 972 husbands of young women mid-intervention to get information on their knowledge of, and involvement in, their young wives' health-seeking. Finally, FRHS conducted qualitative in-depth interviews at mid-point with 75 mothers-in-law to assess their attitudes toward their daughters-in-law.

To monitor and evaluate processes in the social mobilization arm, FRHS trained investigators to observe the activities, interactions and effectiveness of participating community-based groups with reference to a set of indicators developed for the purpose. Investigators monitored the GS arm through data on health seeking from health worker records and monitoring information from FRHS staff who attended government clinics.

Summary of Findings

The study found that adolescent reproductive health outcomes improved more in the sites that addressed demand constraints through social mobilization than in sites that did not.

Basic and detailed knowledge of maternal health, contraceptive side effects and abortion increased most in the SM site. Basic awareness of reproductive morbidities and infertility increased most in the SM+GS site, probably because the government hired a new female doctor in this site midway through the intervention who took a keen interest in these issues. Nonetheless, detailed information about morbidity and infertility improved more in the SM than the other sites. All intervention sites showed similar increases in awareness of modern and spacing family planning methods.

The SM arms also did well in terms of increases in service use compared to arms without social mobilization activities. The SM arm performed best on the increase in postnatal check-ups, contraceptive acceptance (particularly of spacing methods), treatment of gynecological disorders and partner treatment for symptoms of RTIs and STIs. The SM+GS arm did fairly well in terms of increases in care for high-risk deliveries, use of permanent contraceptive methods and treatment of RTI and STI

symptoms in young women. The GS-only site did not perform better than other sites on most outcomes. FRHS and ICRW expected the SM+GS arm to yield the best outcomes, as it was designed to increase both the demand for and supply of health care. However, the SM-only arm performed better for many outcomes, perhaps because the single intervention in the SM arm allowed for a more focused, concentrated effort.

Activities in the social mobilization arm to create a supportive environment for young women's health needs show some success. For instance, qualitative data show that mothers-in-law – who are often primary gatekeepers for young married women's health-seeking – are more likely to be supportive now than they were prior to the intervention. Similarly, the husbands' survey showed that most husbands are now aware of basic maternal care issues such as the need for antenatal care and are willing to seek treatment for problems during pregnancy and childbirth. This pattern is quite different from the patterns that had emerged in the qualitative data from Phase I, which suggested that husbands were largely ignorant of, and disinclined to participate in, maternal care for their young wives. Still, only a minority of husbands actually accompany wives for care. The data suggest that this is partly because maternal care is regarded as a "woman's issue" with no place for men, and partly because health care centers have minimal provisions for privacy and thus discourage husbands from being present when wives are being examined.

One key limitation of this study, ironically, is a result of its success at the community level. The health education sessions in the social mobilization arms were so popular that representatives of the control arm started implementing those sessions on their own after visiting the study arms. Thus some degree of contamination of the research design is likely.

2.4.3 Reducing Reproductive Tract Infections among Married Youth in Rural Tamil Nadu, Christian Medical College, Vellore (CMC)

The CMC study examined clinical outcomes, specifically, the prevalence and treatment of RTIs and STIs. This study (2001 – 2006) implemented and evaluated two different community-based approaches for providing youth-friendly, accessible, affordable and effective diagnosis and treatment for RTIs and STIs among adolescents and young women and men. The study compared two types of providers: (1) a community-based health aide trained to diagnose and treat in the home; and (2) a female doctor who would periodically provide treatment at a clinic held at a subcenter. The advantage of a community-based health aide is that she lives in the community and is thus accessible. In contrast, under the current Indian public health system, a rural doctor visits each subcenter only once every six weeks. However, the extent to which community-based workers, rural female health aides with a 10th grade education, can be trained in diagnosis and treatment is limited when compared to a medical doctor, and thus perhaps less effective or less accepted by the community.

CMC chose to evaluate these two particular ways of providing community-based RTI management because either of these approaches is feasible for the Indian public health system. CMC plans to share the results with the state-level health system with the expectation that the more effective alternative will be scaled up to other parts of the state.

The main outcomes of interest were the prevalence of select RTIs, both in terms of self-reported symptoms and according to laboratory tests; health-seeking behavior for RTI symptoms; and treatment for partners of women with RTI symptoms. Other outcomes of interest included the percent of all eligible women who were interviewed by health aides in each arm; the percent of interviewed women who were symptomatic; the percent of symptomatic women who were treated; and the percent of treated women who were deemed symptom-free.

Study Site and Target Groups

CMC conducted this study in two noncontiguous areas in Kaniyambadi block in Tamil Nadu, with a third site as the control. All married and unmarried men and women from 15 to 30 years old were eligible to participate. CMC chose this age group based on the Phase I research. Information from the census of the area maintained by CMC showed that there were a total of 4,586 women in the target age groups across the study arms.

Intervention Design and Implementation

The intervention used a quasi-experimental design with two study arms and one control arm. The arms were randomized, though within any one study arm all married individuals in the target age group were eligible to participate and were not further randomized. Senior gynecologists at CMC's community health division trained health aides and doctors for both arms. In one arm, health aides learned how to diagnose and treat RTIs and STIs based on symptoms and clinical speculum examination in the woman's home; in the second arm, health aides learned how to identify symptomatic women and refer them for formal diagnosis and treatment to the female doctor at the subcenter. CMC implemented the intervention in four cycles.

For both study arms, CMC developed an identical, detailed protocol for diagnosis, treatment and follow up for adolescent men and women, based on World Health Organization protocols. To ensure confidentiality, CMC assigned unique, anonymous identifiers to each study participant. Though there is some debate about the specificity and sensitivity of nonlaboratory diagnosis of RTIs and STIs, CMC's Phase I study showed high concordance between the study gynecologist's diagnoses based on clinical and (for married adolescents only) speculum examinations and subsequent laboratory tests. The same gynecologist was CMC's co-investigator for this study and conducted all the training for diagnosis and treatment. In a rural area with limited laboratory facilities, testing community-based diagnostic methods was considered particularly crucial. Nonetheless, CMC also conducted laboratory tests to corroborate these community-based diagnostic methods.

Finally, CMC collected program costs for all activities to estimate the relative costs and cost effectiveness of the two approaches (see Chapter 6 for details).

Research Methodology

CMC continuously monitored the program. Log books were created for each participant, wherein health aides documented all details of home visits. Health aides also documented all illness and treatment history information and gave this to each participant to keep. Epidemiologists trained at CMC visited symptomatic study participants undergoing treatment at fixed intervals to monitor the health aides. The co-investigator conducted regular quality checks of the health aides' and doctor's diagnoses and clinical examinations. Program staff entered the monitoring data from all these sources into CMC's well-developed health information system on a regular basis, cleaned and analyzed these data concurrently, and used results to determine the need and content of follow-up training.

CMC compared the effectiveness of the two approaches based on self-reported symptoms and health-seeking behavior from survey data as well as laboratory assessments of actual symptoms of select RTIs.

The baseline information for this study came largely from an earlier survey that CMC conducted among the same population in 1996 as part of Phase I. Basic demographic and socioeconomic data from the Phase I survey were used as Phase II baseline data. CMC implemented an additional baseline questionnaire among 616 young married women in 2002, before the Phase II intervention started, to gauge young women's knowledge of and health seeking for symptoms of RTIs and STIs. CMC then conducted an endline survey of 507 young married women in December 2005. In the Phase I studies, CMC had conducted laboratory assessments of RTIs and STIs among 437 young married women in Kaniyambadi block in 1997. To assess changes in actual prevalence – as against self-reported symptoms from the survey data alone – CMC conducted an endline laboratory assessment in the study and control arms in 2006 for 431 young married women. Lab tests were conducted for six RTIs: trichomoniasis, bacterial vaginosis, candidiasis, syphilis, gonorrhea and chlamydia.

CMC and ICRW periodically used qualitative research methods to understand particularly intransigent issues. For instance, CMC research officers conducted focus group discussions with young men mid-intervention when it became clear that husbands of symptomatic women participants were not seeking treatment or not completing recommended treatment regimens. Researchers from CMC and ICRW then modified the study to address this gap.

Summary of Findings

Monitoring data show the relative effectiveness of each arm in reaching, examining and offering treatment to symptomatic women. Across the four cycles of the intervention there was not much difference in the percent of women initially interviewed and examined to determine whether they had any symptoms of RTIs. Overall, health aides in both arms interviewed more than three-quarters of all eligible women to assess symptoms of reproductive morbidity. The monitoring data indicated that a larger percent of interviewed women across the four cycles were deemed symptomatic in the doctor arm (33 percent) than the health aide arm (21 percent). Qualitative data suggest that this may be because in the health aide arm aides had to treat women themselves, so they may have questioned women more closely to determine who was symptomatic. However, of those women considered symptomatic of RTIs, a consistently larger percent were treated and cured of their symptoms in the health aide arm compared to the doctor arm. Thus, health aides in Arm A treated on average 52.8 percent of symptomatic women across the four cycles of the intervention and 35 percent were cured of symptoms, compared to 27.5 percent treated and 19.8 percent deemed symptom-free in Arm B. On the other hand, follow up was consistently weaker in Arm A (health aides) than in Arm B (female doctor).

A comparison of the baseline and endline community surveys demonstrates an increase in the proportion of women with knowledge of three or more symptoms of RTIs. Arm A showed a nearly 6 percent higher increase (from 36.8 to 69.7 percent) than Arm B (from 45.1 to 76 percent). Knowledge of each of the symptoms asked about in the survey also increased, though there is no consistent pattern of increased symptoms between arms.

Finally, the laboratory assessments show that the prevalence of six RTIs for which lab tests were conducted declined notably from 1997 to 2006. RTI prevalence dropped by about 50 percent in Arm A, from 45.2 percent to 22.9 percent, and by 58 percent in Arm B, from 31.5 percent to 13.2 percent.

Thus, overall, health aides in Arm A were more accessible and reached more women than the doctor in Arm B, but both arms performed similarly, on average, in terms of changes in knowledge of reproductive health and in actual RTI prevalence among young married women.

An important problem CMC faced in implementing this intervention was worker overload. The health aides already had several community health responsibilities, and RTI management was added to this already substantial workload. However, by the second round of the intervention, CMC addressed this issue by decreasing some of the health workers' other responsibilities for the duration of this study. In terms of research design, CMC found that the original control site could not, after all, be used as a control site in the intervention because of large-scale contamination due to a cancer-screening program that provided high-quality reproductive health services to women in the control arm. This program was independent of the CMC study. Thus, CMC and ICRW conducted all analyses comparing Arms A and B.

2.5 Conclusion

This chapter described the range of interventions that made up this program of research. Each intervention sought to identify and test solutions to address particular needs, gaps and constraints for adolescents and youth to access knowledge and services for reproductive and sexual health and development. Though the specific issues addressed and the approaches tested varied across sites, some common cross-cutting themes have emerged across sites suggesting what strengthens youth reproductive and sexual health: addressing gender-based constraints, involving boys and men, using community-based approaches and finding the most cost-effectiveness strategies. The following chapters present some detailed results around these themes.

CHAPTER 3

ADDRESSING GENDER-BASED CONSTRAINTS IN ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH

3.1 Introduction

Formative research that ICRW and its partners conducted at the outset of their 10-year research program, *Improving the Reproductive Health of Married and Unmarried Youth in India,* as well as many studies across India and other parts of the developing world, point to unequal gender-based norms as key constraints in achieving better outcomes for youth. This is especially true for young women, particularly with respect to reproductive health, but also for young men and boys.

This chapter presents insights on how to address gender-based constraints in youth sexual and reproductive health in India, primarily for young women but also for young men. These insights were extrapolated from the six intervention studies that comprised the larger research program, which concluded activities in 2006.

One finding is that to change deep-seated norms about gender, sexuality, and the reproductive health and rights of young women and girls, communities – and especially families – must be engaged. Chapter 5 will discuss community mobilization in greater detail, though this chapter will touch upon it as it relates to gender-based constraints.

The chapter will highlight the interventions' research findings, evaluation results, programmatic approaches and lessons learned related to gender constraints. Study results suggest that gender-based constraints – and thus effective ways to address them – vary for youth, depending on both gender and marital status. Reflecting these differences, the findings have been grouped into the following categories: (1) unmarried girls; (2) married girls and young women; and (3) boys and young men. For each group, particular gender-based constraints are discussed first, followed by a discussion of the interventions' effectiveness in addressing these constraints.

3.2 Background

Substantial research in South Asia documents that women in India face multiple gender constraints. Many authors argue that gender inequality is a structural phenomenon. Patriarchal institutions and norms establish patterns and sometimes formal rules for the allocation of material goods, rights, opportunities and obligations between men and women (Malhotra & Schuler 2005; Baltiwala 1994). In India, a number of structural factors lay the foundation for gender inequality. These include kinship and marriage norms, and resultant acceptable behaviors for unmarried and married men and women.

Much of the literature on gender inequality tends to focus either on children or adult men and women. Until recently, research on the manifestations and consequences of gender inequality for adolescents and youth was limited. Studies in the last few years show, nonetheless, that the constraints faced by women in general are even more severe for young women. Gender inequality particularly affects young women's access to sexual and reproductive health services. Moreover, this limitation occurs at the time in their lives when they are most likely to need such access, as they enter marriage, start engaging in regular sexual activity and initiate childbearing. Young men also face gender-based constraints that can limit their involvement in their partners' reproductive health and inhibit them from seeking care for their own sexual and reproductive needs.

Unmarried adolescent girls are denied access to information about sexuality and reproductive health and are expected not to ask questions about these issues because they are unmarried and female. At the same time they are vulnerable to sexual harassment and teasing. Most large surveys in South Asia tend to focus on married youth and thus data is scarce on the reproductive and sexual health of unmarried girls (Pachauri and Santhya, 2002). While there is very little literature that examines how to empower girls to address sexual harassment and teasing, there is research that shows that unmarried adolescent girls may be sexually active and thus may need more correct information about sexuality. Abraham et al. (1999) find in a study in India that, although the positive influence of correct knowledge is unclear, getting incorrect information from erotic materials is associated with a higher likelihood of premarital sex. The limited research on contraceptive use among unmarried girls indicates that there is very limited contraceptive use among them, thus placing them at higher risk of unwanted pregnancies (Pachauri and Santhya, 2002).

The situation is no better for married girls and young women. Married girls and young women are in a subordinate position relative to members of their husbands' families. Familial and social norms that restrict girls' and women's mobility, access to information, and access to resources in the marital home severely limit these young married women's ability to access reproductive health services (Jejeebhoy 1998; Mathur et al. 2003). Moreover, because of their gender, young age and newly married status, they have little power to articulate, negotiate or make decisions pertaining to their sexual and

reproductive health needs. Consequently, key life and health decisions for young married women frequently are made by family members and dictated by community norms (YouthNet 2004). Typically, husbands and mothers-in-law make the final decision about whether, when and what reproductive health care married girls can seek (Barua and Kurz 2001; Chowdhury 2003). As young women are under tremendous pressure to bear children, particularly sons, soon after marriage, they often are denied access to contraception (Barua and Kurz, 2001).

These norms limit both married and unmarried young women's ability to access appropriate sexual and reproductive health care. Further, because others in the household tend to be responsible for young women's access to care, providing reproductive and maternal health information and services to youth is more complicated than providing it for adults. Not just young women, but their parents, husbands and parents-in-law as well, need to recognize the need for care, decide to seek care and provide resources for care during pregnancy and delivery (YouthNet 2004). While recognition of these barriers for young women is increasing, documented evidence of what kinds of interventions or actions can help to mitigate them is limited. At the same time, given high rates of early marriage and early childbearing in India (International Institute for Population Sciences (IIPS) and ORC Macro 2000), it is clear that young women need better access to higher quality reproductive care (Mathur et al. 2003).

"Gender" does not simply mean "women." Gender norms (and age hierarchies) also affect young men's involvement in reproductive and sexual health, whether for their female partners or themselves. Until recently, reproductive health had typically been thought of as a woman's concern. Attention to the role of men in women's reproductive health is increasing as a result of the growing realization that men's attitudes, knowledge, and behavior can strongly influence women's health choices (Pachauri 2001; Population Council 1999; Barua et al. 2004).

The Programme of Action forged at the 1994 International Conference on Population and Development (ICPD 1994) catalyzed attention to men's involvement in reproductive health. Men's participation has been conceptualized in several ways since then, for instance: (1) men's involvement in decisions about family size and family planning; (2) men's responsibility to reduce risky sexual behavior and prevent spread of sexually transmitted infections; (3) men's support for the reproductive health of women; and (4) men's own reproductive and sexual health needs. However, research is still limited on issues of *young* men's involvement in reproductive health and how to overcome gender-based constraints that make it difficult to reach young men.

3.3 Results

The findings from the research program how that programmers and policymakers should not approach adolescents as a homogenous group. Rather, characteristics, constraints, and intervention opportunities and processes vary across gender, age and marital status. The rest of this chapter will summarize the reproductive health situation, gender-based constraints, and how the interventions addressed these constraints for (1) unmarried girls, (2) married girls and young women, and (3) boys and young men. More details about issues for boys and young men can be found in Chapter 4.

Data from across sites confirm that youth face numerous gender-based constraints in realizing their sexual and reproductive health, be they unmarried girls, married young women, or boys and young men. These constraints are rooted in the social norms for roles and behaviors for each of these sub-groups of youth. The set of interventions discussed here were developed to address several of these constraints, and have done so with varying levels of success, as described in this section.

3.3.1 Unmarried Girls: Gender and Social Norms around Sexuality, Reproductive Health and Eating Patterns

Constraints Faced by Young Girls

The qualitative data from Phases I and II of the research program showed that unmarried girls are, first and foremost, expected to be innocent virgins, with their virginity tied to family honor. They are expected to neither know about, nor have access to, any information about sexuality, sexual health or reproductive health until right before or at the time of marriage (Abraham and Kumar 1999).

At the same time, Phase I data suggest that adolescent girls may be sexually active. For instance, among never married adolescents in low income colleges in Mumbai, 26 percent of boys but only 3 percent of girls reported having had premarital sex (Abraham and Kumar, 1999). In the formative study of married adolescents in rural Tamil Nadu, conducted by CMC, 48 percent of boys but only 4 percent of girls said they had sex before marriage (Kurz et al. 1999). The veracity of this self-reported data cannot be confirmed, and researchers believe that girls underreport sexual activity before marriage because of strong social norms prohibiting it.

Qualitative data from the Swaasthya site in Delhi show that girls commonly face sexual harassment in their daily lives from neighborhood boys. As one girl noted:

> *Mostly boys in Tigri are vagabonds. The whole day they roam around and loiter here and there with their friends [and] just keep on teasing[4] girls whole day.* (Unmarried girl, Swaasthya study, Delhi, 1996-1998)

The Swaasthya study also showed that such public teasing often can lead to into forced physical intimacy or sex. Girls' ability to handle or anticipate such situations is seriously hampered by gender norms that frown upon giving girls any knowledge of sexual and reproductive issues and blame girls for such "teasing." Nor do girls know how to negotiate their way out of an undesirable sexual scenario since they rarely have any skills to do so. This lack of awareness and skills also means that many young girls enter marriage without the requisite knowledge to manage their reproductive and sexual health as young wives.

Data from both Swaasthya and IHMP show that norms that frown upon girls negotiating anything concerning sexuality extend to discussions about marriage. Girls may be taken out of school to marry, but they are not allowed to discuss with their parents whether, when and whom to marry.

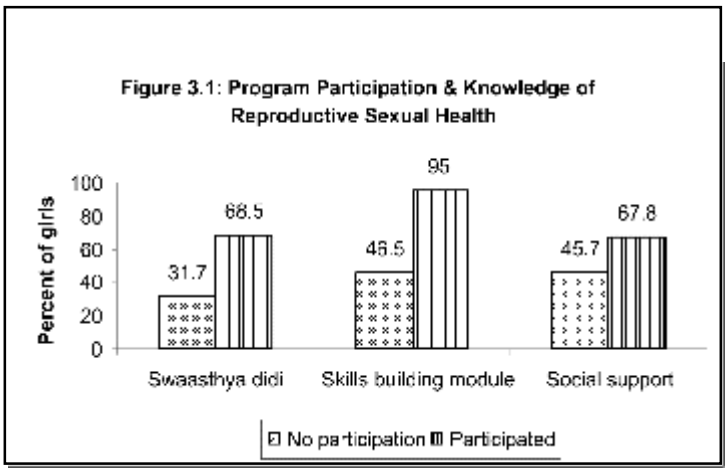
In addition to norms concerning sexuality and reproductive health, there are well-established norms about eating patterns suggesting that girls should be the last to eat in the household and should eat whatever is left after others – particularly the men and boys – have finished their meals. If the household food supply is limited, this norm will likely mean that girls eat the least relative to their dietary requirements and those of men and boys.

Program Interventions: Life Skills to Negotiate Age at Marriage and Nutrition Behavior Change and Communiation to Improve Eating Patterns

Program interventions among unmarried girls designed to reduce gender-based constraints to health and nutrition focused both on life skills programs that helped girls negotiate age of marriage (IHMP and Swaasthya) and on nutrition behavior change and communication that encouraged equitable eating patterns for girls in their households (IHMP).

The two life skills intervention studies described in Chapter 2 sought to empower unmarried girls to address the constraints they face because of gender and social norms related to their age and marital status. Specifically, the interventions were designed to improve girls' cognitive and practical skills, including their knowledge of reproduction and sexuality. They also aimed to increase their confidence and skills to negotiate social norms with others in their environment, including age at marriage. Quantitative and qualitative results from both studies show that participating girls' negotiating and cognitive and practical skills have improved.

The Swaasthya study focused on increasing girls' knowledge of reproductive and sexual health. The data show that by the end of the intervention period, a notably larger percent of girls who had participated in Swaasthya's program modules had good knowledge of reproductive and sexual health than girls who had not participated (where knowledge is measured as a dichotomized scale split into "high" and "low" knowledge).



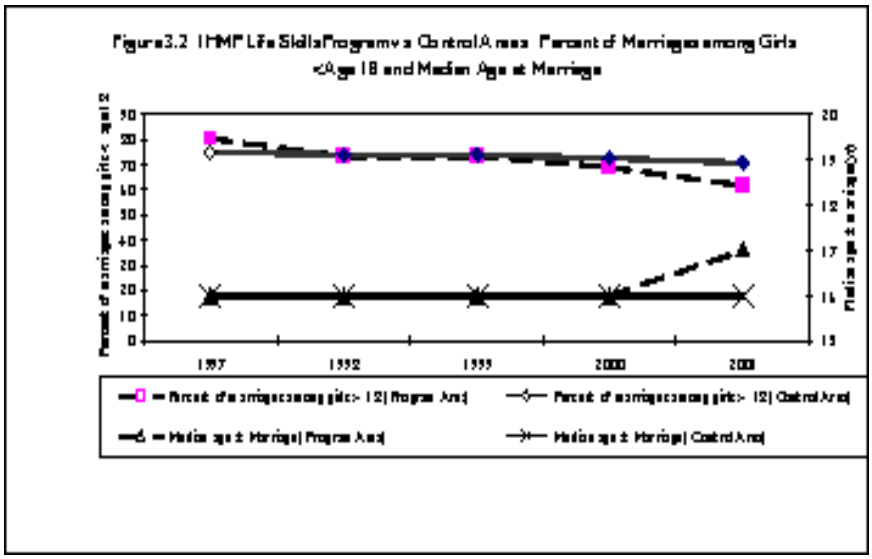
By the endline, more than twice as many girls who interacted on a one-on-one basis with a Swaasthya *didi* (field worker) had good knowledge of reproductive and sexual health compared to girls who had not had this opportunity. Participation

[4] "Teasing" in the Indian context refers to "eve teasing" which, in turn, is a common colloquial term in urban India for sexual harassment of girls by young boys in public places.

in the skills building module (SBM) shows similar results. Social support also had an impact, though not as large as that of the other two program modules.

IHMP's life skills program shows similar results. Girls in the intervention group acquired numerous cognitive and practical skills from the course. At the pre-test, a similar proportion of girls in the intervention and control groups correctly answered more than 66 percent of the test questions on reproductive health and a variety of life skills issues. At the end of the course, the proportion answering correctly in the intervention group increased from one and a half to three times, whereas the proportion in the control group showed only small changes. After a three-day residential workshop on sexual and reproductive health for girls who had reached menarche, girls who correctly answered at least two-thirds of the test questions increased from 7 percent to 63 percent. Qualitative data from case studies at IHMP further illustrates how the girls' lives have changed. These case studies include examples of girls who have successfully used the knowledge and confidence gained in the life skills module to educate other girls about the harmful effects of early marriage; to stop unwanted sexual advances; and to negotiate their own marriages and life goals with parents.

Both interventions had an impact on early marriage. Data that IHMP collected yearly from 1997 to 2001 from program and control villages show that the organization's interventions have been successful in raising the age at marriage. The median age at marriage among girls' married rose by one year in this period, from 16 to 17 years in the program areas, and the proportion of marriages to girls younger than age 18 dropped from over 80 percent to just about 60 percent, compared to minimal change in the control area (Figure 3.2).



Furthermore, focusing on just those girls who participated fully in the life skills program versus a randomly selected group from the control area, logistic regression analysis indicated that the control group was four times more likely to marry before 18 than the group who participated fully (Figure 3.2). Other determinants of marrying before 18 are being older, being out-of-school and having a mother who works.

TABLE 3.1: Effect of Program Participation on Age at Marriage, IHMP

Characteristic	Odds Ratio
In control area (study area)	**4.0****
14-17 yrs old (vs. 11-13 yrs)	3.9**
Not school-going (vs. in-school) 2.9**	2.9**
Working mother (vs. non-working) 2.4*	2.4*

N=358

Note: reference category in parentheses; also adjusted for girl's level of education, economic status, and mother's literacy;
**p<.01; *p<.05

Swaasthya's program focused on providing girls with the skills to negotiate with their parents when and whom to marry, as well as the ability to recognize themselves as empowered to engage in this negotiation. Swaasthya's key outcome variable measured self-perception of the ability to negotiate both marriage and childbearing. After controlling for other factors, the data show that at least two of the three program elements in Swaasthya's intervention successfully increased girls' confidence that they could influence decisions about marriage (Table 3.2).[5] Two of the intermediate outcomes the intervention addressed – gatekeeper support and knowledge of reproductive and sexual health – also significantly improved perceived self-determination.

TABLE 3.2: Logistic Analysis: Factors Associated with Perceived Self-determination, Swaasthya

Independent variable	*Odds Ratio (p-value)*
Program variables	
Interaction with Swaasthya *didi*	1.76 (0.016)
Skills building program	7.51 (0.002)
Social support groups	0.33 (0.005)
Intermediate variables	
Supportive gatekeepers	1.66 (0.039)
Knowledge of reproductive and sexual health	3.60 (0.000)
Positive perspective score	1.34 (0.242)

Note: all independent variables measured as dichotomized scales ("high" & "low") with "low" as reference. Regression controls for respondent's age and education.

Source: ICRW-IHMP

Qualitative data from girls who participated in the skills building groups confirm the contribution of Swaasthya's program to girls' confidence and girls' recognition of that change. For instance, one of the participants had this to say when asked how she thought participation in the program had changed her:

> *Whatever problems have come my way I have tried to solve them myself. Earlier I had to hear a "no" from my mother for everything but after SBM [Swaasthya's skills building module], I tried to talk to my mother 1-2 times and I feel SBM has helped. Earlier I could not talk openly to anyone, I used to sit quietly but now everyone says that I talk a lot. Even* didi *wonders how I have changed so much!* (Unmarried girl, Swaasthya study, Delhi, 2000)

The qualitative data also suggest that girls were more able to directly negotiate choice of partners, despite parental opposition. As one participant noted:

> *When I developed a friendship with one boy…my brother saw us and informed my father…my father started hitting me. Then I talked confidently to my father…the way I answered my father was possible only due to SBM training…I even told my father…your daughter also has some wishes like the choice of partner…yet my father is not ready…but I believe that he will agree.* (Unmarried girl, Swaasthya study, Delhi, 2000)

In addition to life skills interventions to help with negotiating age of marriage, IHMP's nutrition behavior change and communication study described in Chapter 2 sought among other objectives related to reducing iron-deficiency anemia to address the norm suggesting that girls should eat last and least While imparting nutrition change and communication, community-based workers visited girls' homes to sensitize families to the importance of girls getting regular and adequate meals. The evaluation of changes from before to after the nutrition behavior change and communication intervention shows that dietary behavior has improved significantly, especially a significant increase in the probability of young girls in the study getting three full meals a day. This shift likely reflects a change in mealtime behaviors in the family such that girls' meals are given the same importance as meals for others in the household.

[5] The coefficient for skills building modules is based on a small sample size and thus should be interpreted with caution.

3.3.2 Married Girls and Young Women: Culture of Silence for Reproductive Needs

Constraints Faced by Married Women

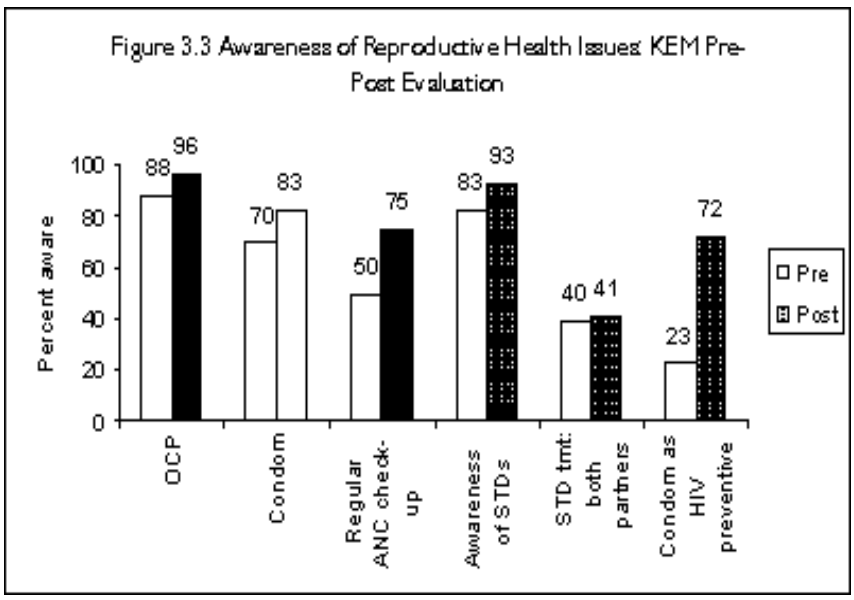
Marriage does not ease the constraints that young women face; rather, it changes the nature of the constraints. Data from the studies confirm that a married young woman is at the bottom of the family hierarchy. As such, she is expected to work hard, bear children (preferably male) soon after marriage, it is considered an embarrassment for a young woman to discuss not complain, and not do or say anything without permission. Even after marriage, it is considered an embarrassment for a young woman to discuss sexual and reproductive needs. Consequently, a strong culture of silence surrounds the reproductive needs of young married women. A household is not likely to pay attention to, or spend money on, a new bride's reproductive health needs unless they explicitly interfere with her ability to work or reproduce. At the same time, the young bride herself has little or no autonomy to voice her concerns or seek treatment or advice for any of these concerns (Barua and Kurz 2001).

This culture of silence means that young married women often suffer silently with reproductive tract infections (RTIs). Phase I data from CMC (1996-1999) showed that 53 percent of married women ages 16-22 reported symptoms of RTIs, 38 percent had clinically-diagnosed RTIs and 14 percent had clinically diagnosed pelvic inflammatory disease or cervicitis. Yet, two-thirds of symptomatic women had not sought any treatment, largely for reasons related to perceived stigma and embarrassment (Prasad et al. 2005).

Program Interventions: Breaking the Culture of Silence

Interventions for young married women addressed a number of known gaps in these women's reproductive and sexual health knowledge and use of services. The interventions also endeavored to change the norms and attitudes of husbands, mothers-in-law, providers and influential others in the community that inhibit young women's reproductive health care. Evaluation and monitoring data to date, as well as qualitative data, show some success on both fronts.

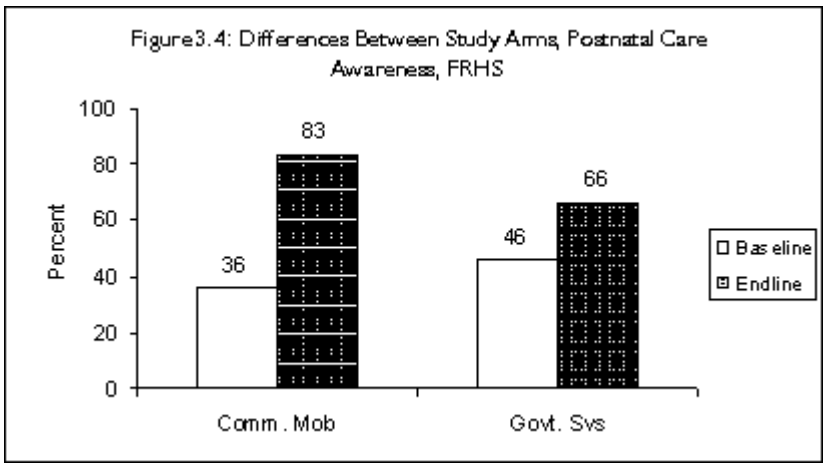
Knowledge and use of reproductive health services improved from baseline to endline on some, but not all, reproductive health outcomes. For instance, as Figure 3.3 shows, young married women in the KEM study site demonstrated increased awareness on issues such as the need for regular antenatal care through medical providers and the use of a condom to prevent HIV transmission, but less so on other issues such as the importance of partner treatment in the management of STIs. Data from FRHS are similarly mixed.



Source: ICRW-KEM

These interventions also elucidate which approaches are likely to succeed in increasing young married women's knowledge and use of health services. The CMC study found that community-based health workers were more accessible to young women who had RTI symptoms than was a clinic-based periodically-available doctor. On average, across the four rounds of the intervention, a similar proportion of sample women in both Arms A and B received the initial screening to determine whether or not they had symptoms of RTIs. A smaller percent of women were deemed symptomatic in Arm A than Arm B; however, of those women who were symptomatic, and averaged across the four rounds, health aides in Arm A examined more symptomatic women (61 percent on average) than did the female doctor (37.5 percent on average).

The FRHS study found that community-based approaches were more effective than approaches that focus solely on traditional service delivery in increasing knowledge and use of services that were particularly intransigent because of deep-seated cultural and gender norms. In the area where FRHS works, post-natal care is one such outcome. There is a strong belief that a woman who has just given birth not be allowed to leave the home, even if she needs postnatal care. FRHS worked with the community to emphasize the need for postnatal care while still respecting tradition where possible. This study found that, from baseline to endline, there was a much larger increase in awareness of the need for postnatal care in the community mobilization arm compared to other arms. Also, women in the community mobilization arm were more likely to use postnatal care services than women in other arms, though postnatal care remained low even at endline (Figure 3.4).



Source: ICRW-FRHS

A shared feature of the successful approaches was that they worked with decision makers in the family and community – particularly husbands and mothers-in-law – who dictate and enforce the gender-based norms that constrain young married women's access to knowledge and services. Data from in-depth interviews with mothers-in-law from the FRHS study show this to be the case. Prior to the intervention, mothers-in-law of women in the study area were suspicious of their young daughters-in-law's needs for access to any formal care during pregnancy. As one mother-in-law noted:

> *...Nowadays these girls go to the doctor, take medicines and make a lot of fuss about pregnancy...I am not convinced about all this care and medicines. These girls take all these medicines but cannot do their routine work. The slightest exertion makes them start having tremors and weakness. The earlier tradition of doing hard work during pregnancy was much better.* (Mother-in-law, FRHS study, Maharashtra, 1996-1998)

Toward the end of the intervention, attitudes had changed in the project area, with mothers-in-law being more supportive. As one older woman noted:

> *I think this new system of care is good for the health of the mother and the child. This generation is lucky. We did not have such system.* (Mother-in-law, FRHS study, Maharashtra, 2003).

The young daughters-in-law were also more confident in voicing their concerns to their mothers-in-law, despite ages-old family hierarchies. As one young woman stated:

> *When I had nausea and loss of appetite, I told her (mother-in-law). She told me that I was pregnant. She has brought up six children. She accompanied me for check-ups.* (Young married woman, FRHS study, Maharashtra, 2003)

3.3.3 Boys and Young Men: Lack of Involvement in Their Own and Their Partner's Reproductive Health

Constraints Faced by Young Boys and Men

Adolescent boys and young men also face constraints that arise from gender norms, roles and expectations. These constraints can inhibit both their involvement in their partner's reproductive health and their willingness to seek care for their own reproductive health concerns.

Qualitative and quantitative data show that social norms act as a barrier to husbands' participation in health care for their wives. Data from FRHS show that, while a large percentage of young husbands were aware of issues arising during pregnancy and a majority professed responsibility for their wife's care during maternity, very few actually participated. Only half the men who said that husbands should accompany their wives for antenatal and postnatal care actually did so; the proportion falls to one-third for delivery care (Barua et al. 2004). Qualitative data point to social norms about acceptable gendered behavior for husbands – and men in general – as a key reason for this gap between awareness and behavior. The common sentiment in most communities was that maternity issues were "women's affairs" that had no place for husbands' participation. The health system added its own barriers. As one husband explained:

> *She had registered at the local government center. I had gone with her but I was made to wait outside…I don't know about the advice given to her, as I was outside.* (FRHS study, Maharashtra, 1996-1998)

Young men are also not aware of, or ashamed to acknowledge or seek care for, their own sexual or reproductive health issues. Discussions with young men in Tamil Nadu as part of the CMC study show that sexual mores that frown upon discussion of sex or association with unacceptable sex affect both men and women. Men voiced their embarrassment with STIs. One married man from CMC's study commented," Even dying is not so important, others should not know about it. That is most important."

Another pointed out that men only seek treatment when symptoms become apparent because of the embarrassment associated with STIs, which are in turn associated with "having a wrong relationship," a common euphemism for extramarital sex or sex with a commercial sex worker.

Similar constraints operate for perceived infertility among young men. In FRHS counseling sessions for infertility, several men expressed anxiety at not being able to impregnate their wives, including the anxiety of not being able to discuss this with other family members because of feared aspersions cast on their masculinity.

Program Interventions: Greater Participation in Their Own and Their Partner's Reproductive Health

Gender norms, by definition, affect both women and men. Social norms that accord low priority and a low place in family and community hierarchies to youth also affect both women and men. Recognizing this, all the studies have involved men and boys in the interventions to varying degrees. For instance, all three interventions focusing on married young women sought to at least understand, if not address, the concerns of young husbands. These concerns include young husbands' inability to be involved in their young wives' reproductive health, particularly maternal health, despite a desire by some to do so; their experience and participation as partners of young women in managing RTIs and STIs; sexuality concerns; and infertility concerns. Chapter 4 discusses work with young men and boys further.

To enhance young husbands' participation in their wives' reproductive health, FRHS held separate interactive education sessions with husbands of young women and other male youth in the community. Data collected from husbands during the intervention suggest that attitudes were changing. Whereas husbands earlier had dismissed maternal care as "women's affairs," a majority of husbands now voiced a sense of responsibility to accompany their wives to clinics for maternal care and pay for such care as needed. FRHS also conducted counseling sessions for young men and young couples to address sexuality concerns tied to perceived infertility. KEM included men's concerns in their intervention by focusing activities on couples rather than the woman alone, and by using couples as community health educators. Finally, CMC introduced male social workers to discuss with husbands their reluctance to accept and complete treatment for RTI symptoms.

Despite these efforts, addressing young men's constraints was more difficult than addressing women's. Data from KEM show that their intervention was less effective in increasing general reproductive health knowledge among men than women. CMC still is struggling to encourage men to seek and complete treatment for STIs. Part of the reason may be gendered norms that strongly inhibit men from voicing concerns about or participating in reproductive health; part may be because the interventions started out focusing more on women. Men were incorporated as it became clear in the field that they were indeed an essential element of the "gender" equation.

It also has been difficult to involve young boys. When Swaasthya first implemented its successful adolescent reproductive and sexual health model for girls in Delhi, they faced multiple problems in trying to engage young boys on a regular basis, even when they started activities of interest such as cricket clubs. Videos were popular among boys, so staff combined a health education session led by a dynamic male doctor specializing in reproductive and sexual health with the screening of an entertaining health education video ("infotainment"), and many boys came to watch and have a discussion afterward. However, their involvement through videos was intermittent. In the replication of their program in another site in Delhi, Swaasthya was able to draw boys into regular attendance in the program because a popular local figure – a well-liked male school teacher – led the health education sessions. This worked well for a while, but when the teacher had to leave the

program, it was not possible to replace him, and regular attendance by boys decreased. Clearly, more research is needed to identify ways to involve young boys in such programs on a regular basis.

3.4 Conclusion

Young women and men, married and unmarried, are constrained with respect to behavior, knowledge and attitudes around reproductive and sexual health, and their access to reproductive services is limited. At the same time, the data from the interventions strongly suggest that it is possible to address the gender and social norms at the root of these constraints to improve young people's sexual and reproductive health knowledge and use of services, even in a relatively short period.

The interventions described here have shown ways to train young, unmarried girls to learn and use skills to successfully negotiate their environment in multiple realms of life. Further, work with unmarried girls has succeeded in raising the age at marriage. For young married girls and women, these interventions demonstrate how to break the culture of silence around reproductive health. The interventions have catalyzed discussion among women, their families and their communities about previously-taboo sexual and reproductive health issues, the need to address young married women's reproductive health, and the need for better information and services from health care providers. Finally, this intervention research program has revealed gender-based constraints that affect young men and boys, though more information is needed to better include them in reproductive health efforts.

Overall, this programmatic experience and the research analyses show that the bulk of the barriers are social. Thus, as these studies demonstrate, a sustainable and effective way to address these constraints is to address the social environment in which adolescents and youth live, whether through family elders, peers or the health system. This work shows that it is possible to change opinions and behavior among husbands, parents and in-laws to be more supportive of adolescents in their households, despite rigid social norms that may inhibit such support. Chapter 4 describes in more detail how these interventions worked with husbands and other men and boys in study areas. Chapter 5 further describes the interventions' efforts at community mobilization.

CHAPTER 4

CONSIDERING THE PERSPECTIVES OF MEN AND BOYS

4.1 Introduction

The six intervention studies described in Chapter 2 aimed to improve elements of young women's reproductive health – their knowledge, attitudes or practices related to reproductive health, as well as the specific health outcomes. To accomplish these objectives, most studies intervened primarily and directly with young women, for instance, through the provision of health education, life skills or social support groups, or reproductive health services. That said, young women's choices and outcomes are influenced heavily by their social context, particularly when, as in the case of India, this context results in constraints that arise from gender inequality. As noted in Chapter 3, young women experience gender constraints, which impede their ability to improve their knowledge, attitudes or practices related to reproductive health or other health outcomes, as well as their ability to make or influence decisions that will affect their lives enormously, such as who they marry and at what age they marry.

For young women, mothers, fathers, husbands and parents-in-law exert significant influence on their reproductive health options and decisions around marriage. To accomplish the objective of improving youth reproductive and sexual health, interventions need to reach the people who influence girls and young women. In this chapter, the focus is on men and boys.

Across the different studies, the influence of men and boys in young women's lives, especially as it affected their reproductive health, emerged strongly. Intended and unintended results pointed to the role of men and boys as peers, husbands and fathers to make decisions for girls or to influence girls' decisions in other ways. Addressing their role was sometimes part of the study design; other times addressing men and boys arose out of demand from the community. Getting men or boys involved in the intervention sometimes resulted in improving health outcomes; at other times it was about understanding more fully how men and boys can obstruct opportunities.

The fact that young men faced constraints in accessing information or services for sexual and reproductive health similar to young women – though often not as intensively – also emerged from the interventions. As Chapter 3 described, some of these constraints arose because gender norms dictate what is considered unacceptable or acceptable for men's reproductive lives. Some of these norms also shape institutions and systems that provide reproductive health information and services, and can serve as barriers to young men. As such, the interventions also tried to address some of boys' and men's concerns about their own reproductive and sexual health.

Results on men and boys from the intervention studies, as well as literature on the topic, can be organized into three categories. In the literature, the second of these has received the most attention:

- Men's and boys' experiences with their own health and sexuality.
- Men's involvement in women's reproductive health.
- Couple dialogue for improving reproductive health.

One inherent concern in some of the literature is that focusing on men and boys will divert scarce resources of services for women to services for men (Berer 1996). Reproductive health advocates guard against competition for women's reproductive health resources.

In contrast,the approach taken in this paper is to view resources synergistically. In other words, providing reproductive and sexual health and preventive services for young men and women does not need to be a zero-sum equation. Rather, addressing the constraints that boys and men face may well contribute to improving constraints for boys *and* girls.

4.2 Background

Literature on the three topics is reviewed below, followed by results from the five studies in India.

4.2.1 Men's and Boys' Experiences with their Health and Sexuality

Until very recently, the experiences of men and boys *vis-à-vis* their health and sexuality have been largely missing from research and programmatic agendas related to youth reproductive and sexual health (Barker 2003). With reproductive health historically categorized under "women's health", there is no comparable clinical training or education that addresses men's unique reproductive health needs (Ndong et al. 1999; Wegner 1998). Furthermore, HIV/AIDS and family planning arenas have mainly focused on men by promoting condoms and vasectomies, though neither method is preferred by either men or women (Drennan 1998).

Gender roles often dictate men's experience with their reproductive health. For young men, the experience is about performing as they think a man should – showing sexual prowess or ability, proving fertility and achieving the socially expected role of husband and provider (Barker et al. 2003). These values translate into unsafe sex and other risky behaviors that negatively affect both men and their partners (Drennan 1998). Recent evidence has shown, however, that young men are uncomfortable with some of these social expectations, even finding them burdensome (Duvvury et al. 2002). This evidence suggests an opportunity to discuss modifying their self-expectations.

Adolescent boys lack knowledge regarding sexuality and sexual behavior, male reproductive health and that of their female partner(s). Studies indicate that boys may pretend they know a lot about sex, but in reality they are frequently misinformed because they rely on peers and media (Barker et al. 2003). Yet, young men may be open to new information and therefore serve as effective targets for reproductive health interventions. Research from Kenya indicates that when men were exposed to family planning and other reproductive health topics when young as opposed to when they are older, they were more likely to have a positive attitude toward and be supportive of their partner's use of family planning (Wilkinson 1997).

4.2.2 Men's Involvement in Women's Reproductive Health

Men's involvement in women's reproductive health has received more research and programmatic attention in the last decade than men's own reproductive health or men's actions as part of a couple. Although men have long been blamed for many women's reproductive health issues, preventing use of family planning and spreading sexually transmitted infections (STIs), they are now central to a broader new approach in which they are seen as key actors in improving and sustaining women's health (Danforth 1995). The approach is variously referred to as men's participation, men's responsibility, male motivation, male involvement, men as partners, and men and reproductive health (Drennan 1998), and often involves gender sensitization training and clinical services. Studies show that increased male involvement can result in improved reproductive health and health-seeking behavior among women, though few interventions have been fully evaluated (Sternberg and Hubley 2004).

The greater involvement of men comes with some concerns (UNFPA 2005). One is that more male involvement would lead to less control by women for decisions related to their health, and even less access to the resources needed to implement those decisions. For example, one study showed that Middle Eastern family planning programs had actually increased men's power over the fertility of their wives, rather than increasing the women's choices (Cornwall 1998). Throughout the course of reproductive health programs, especially ones promoting greater male involvement, it may be useful to monitor changes in women's empowerment and in equality between the partners (Helzner 1996). Another major concern, mentioned earlier, is that funding for programs that involve men will compete with funding for some of the more direct services for women's reproductive health (Berer 1996).

4.2.3 Couple Dialogue for Improving Reproductive Health

Communication is crucial for men and women working together to improve the health and reproductive health of the family unit, including family planning and disease prevention (Helzner 1996). Research consistently demonstrates that men and women who discuss family planning are more likely to use it, to use it effectively and to have fewer children. In contrast, when men and women do not know their partners' fertility desires, attitudes about family planning or contraceptive preferences, the consequences can include unintended pregnancies, transmission of STIs and unsafe abortions (Drennan 1998).

Communication between couples also promotes a sense of equality within the relationship, which can have direct reproductive health benefits. For example, women who can negotiate sex with their partners are less likely to be exposed to HIV and AIDS (Barker 2003). Also, higher education improves a couple's ability to communicate about reproductive health matters. According to a study in Nigeria, for example, partners with post-primary education reported discussing family planning four times more frequently than when neither partner was educated (Meekers and Oladosu 1996).

4.3 Results

The five studies in India that are the focus of this report were designed to improve young women's reproductive health while considering their social context, which involved men in a variety of ways as described below. Because men and boys were not the target group of the interventions, many of the results do not include program effectiveness data. Instead, descriptive data on men's experiences, men's involvement, and couple dialogue are included as well as data about the processes of involving men and boys, the pitfalls and the opportunities.

4.3.1 Men's and Boys' Experiences about their Health and Sexuality

Getting and Sustaining the Participation of Adolescent Boys in New Delhi Slums: Swaasthya

Within the Swaasthya program in Tigri, which focused primarily on unmarried adolescent girls, one component included outreach to adolescent boys with health education messages. Boys were reportedly hard to reach for such education purposes, so Swaasthya employed ways to attract their interest. Videos were popular among boys, so staff combined a health education session with the screening of an entertaining video. The strategy worked, and many boys attended initially. When the program was replicated in Naglamachi, another slum community in New Delhi, the videos could not be used. Therefore, another approach was used to draw boys: a popular local figure – a well-liked male school teacher – led the health education sessions. This was also successful, and many boys attended.

However, male participation in the program proved hard to sustain. Boys were often in search of a livelihood opportunity, which they prioritized if it conflicted with the Swaasthya program. In Naglamachi, the well-liked teacher left the program, and it was not possible to replace him. Instead, Swaasthya sought out the outreach workers who work in communities such as Tigri. The boys did not, however, feel comfortable with female outreach workers, and male outreach workers were rare due to low wages in such social-sector jobs.

It is worth noting that demand for Swaasthya's boys' sessions came from mothers and adolescent girls, who wanted to sensitize boys to gender issues. Mothers and girls hoped that if boys were exposed to Swaasthya's intervention sessions, it would motivate them to stop or lessen sexual harassment, which is one way that could make girls feel safer in their communities.

Sexual Performance Concerns of Young Men in Ahmednagar, Maharashtra: Foundation for Research in Health Systems (FRHS)

In their intervention study, Foundation for Research in Health Systems (FRHS) identified youth groups and other community-based organizations as key actors for the social mobilization part of their intervention to improve the reproductive health of young married girls in Ahmednagar district. Male youth groups were made up of males up to age 35. Men in youth groups and other community-based organizations became active social mobilizers, voicing issues about their sexual and reproductive health, involvement in their wives' reproductive health, and couple dialogue to address infertility.

In health education sessions held for the men's youth groups, young men expressed anxiety about their sexuality and perceived sexual problems. To address these concerns in a sustainable manner, FRHS reviewed other community-based interventions that had addressed similar issues and considered using the "helpline" model, where people can call a trained professional to answer questions or concerns on any given topic. This approach had been used successfully in urban areas, but to adapt it for a rural setting, research staff considered using a locked box, which is placed locally where participants can leave pieces of paper with their questions. After vetting this idea with men in the youth groups, however, it became clear they were not comfortable with this mechanism because they did not want their questions and concerns, even as a group, potentially becoming public. Instead, youth groups chose initial health education topics by consensus to discuss in a forum that addressed their concerns. Topics included HIV/AIDS transmission and prevention and STI signs and symptoms. Interest was significant enough that a magazine on these topics was produced in the local language, which was then widely distributed to the health staff, district authorities and interested members of the communities.

Building on the popularity of the initial sessions and the magazine, youth groups requested more health education sessions addressing sexual performance, infertility and family planning. Participating young men were concerned about sexual performance, so sessions dealt at length with questions and misconceptions about erection, desire, impotence, size and shape of the penis, and effects of promiscuous sexual behavior.

Some time later, staff from a primary health care center requested help from the FRHS team because the center was receiving requests for vasectomies – which had not been received in years – from men in the FRHS health education sessions. Health care center staff wanted training on male reproductive health so they could be better informed and therefore better able to respond appropriately to these requests. Subsequently, the district health officer sought training for the district health staff in all of the primary health care centers.

4.3.2 Men's Involvement in Women's Reproductive Health

Fathers Get Involved in Life Skills Program Promoting their Daughters' Well-being: Institute of Health Management, Pachod (IHMP)

In their one-year life skills course for unmarried, out-of-school, adolescent girls (ages 10-18) in rural Aurangabad district, Institute of Health Management, Pachod **(**IHMP) worked closely with parents in designing the course and conducted monthly meetings to discuss the girls' progress.

The girls' fathers surprised IHMP. Whereas IHMP expected initial resistance to the program, especially because it would address issues of marriage, sex and family planning, IHMP found that both fathers and mothers welcomed the program. Both participated in curriculum development (often in separate groups), but the nature of their involvement was markedly different. While mothers thought the life skills course was a necessary and good idea, they left the details to the "experts" at IHMP. This was not the case with men. Fathers had strong and clearly articulated opinions about what skills their daughters needed to improve their quality of life, both as unmarried girls in their homes and later as married girls.

Fathers appealed for life skills modules such as a working knowledge of child upbringing, home management, money management and agriculture as well as sexual and reproductive health, which they felt their daughters would need in married life. Fathers also supported the inclusion of a comprehensive sexuality module, but requested that it be reserved for the older girls who would be closer to marriage. In response, the life skills course was designed to have the sexuality module conducted last, as a special residential program for girls 13 and older. In addition to the course curriculum, fathers considered the girls' mobility and suggested acceptable venues within the villages, the duration and timing of the course, as well as what the profile of the teachers should be. Finally, 70 percent of fathers kept track of the progress of the course by asking daughters what they were learning from their life skills classes. Throughout the girls' involvement, it was apparent that the fathers held their daughters' interests at heart, even when they would be leaving their parental homes for marital homes in the next few years.

Husbands Learn about Maternal Health, but their Participation Is Limited: Foundation for Research in Health Systems (FRHS)

FRHS' Phase I research (1996-1999) had indicated that although men had a limited understanding about maternal health, they made the decisions about and allocated the resources for maternal health care. Consequently, FRHS' intervention study explored ways to increase men's involvement in the maternal health of their young wives. A quantitative survey of 972 husbands and qualitative interviews with 37 husbands gauged the extent of, and factors associated with, husbands' knowledge about, sense of responsibility toward and actual participation in health-seeking for their wives' antenatal, delivery and postnatal care, as shown in Table 4.1.

TABLE 4.1: Husbands' Knowledge of Antenatal Care (ANC), Delivery and Postnatal Care (PNC)

Routine care (%)	ANC	Delivery	PNC
Knows about need for care	77	85	69
Feels responsible to accompany	81	86	68
Accompanied for care	54	29	51
Treatment of problems (%)			
Knows problems can arise	85	83	71
Feels responsible to accompany	88	96	91
Accompanied for treatment	72	78	80
Percent who accompany for routine care if:			
Aware of need for ANC	57	30	53
Not aware of need for ANC	39	20	38
Percent who accompany for treatment of problems if:			
Had accompanied for routine care	90	95	95
Had not accompany for routine care	52	65	65

Source: ICRW-FHRS

More than 75 percent of the husbands demonstrated knowledge of the need to seek routine antenatal care and that antenatal problems were possible. They knew some specifics about antenatal care – the survey indicated that more than 75 percent knew that their wives should get iron tablets and tetanus-toxoid injections, and from the qualitative interviews revealed that men were clear about the need for nutritious diet and precautions in lifting heavy objects or working hard.

> *I would make sure that her work load is less during pregnancy and that she has proper nutritious diet, medicines and checkups. All this care benefits both the mother and the child and is therefore necessary.* (husband, age 25)

Husbands knew less about delivery and postnatal care, except that their wives needed to be registered for delivery at a medical institution. This lower level of knowledge is probably related to the local custom of the wife delivering away from the husband at the mother's house, and staying at the natal home during the postnatal period (about six weeks after birth). Thus husbands are rarely exposed to, and not expected to know about, delivery and postnatal care.

In addition, most husbands professed a sense of responsibility to accompany their wives and pay for their care, particularly if problems arose during pregnancy or delivery.

The data indicate that husbands are participating in their wives' maternal care with some constraints.

> *I want to take her for check up. I think I will take her to private doctor as the care is better. I have advised her to be more careful about her work and diet.* (husband, age 22)

But husbands' actual participation generally equated to paying for care, as opposed to accompanying the wife or participating in the care alongside her. Traditional expectations in this community about men's role in maternal care dissuaded them from taking an active role in what is seen as a "woman's affair." In addition, the health system itself rarely accommodates husbands accompanying their wives for care. Husbands who did go with their wives were made to sit outside and were not given any explanations about the care their wives received (Barua et al. 2004).

> *She had registered at the local government center. I had gone with her but I was made to wait outside…I don't know about the advice given to her as I was outside.* (husband, age 25)

Following preliminary data collection and an intervention focusing on young married women's health, young men in the communities requested health education sessions for themselves. In response, sessions were organized for men on menstruation, pregnancy, contraception, abortion, reproductive tract infections (RTIs) and STIs, including HIV and AIDS. Each session generated enormous interest and many questions. Husbands developed an appreciation of their role in encouraging healthier behavior patterns for their young wives, like nutritious diet and reduced workload during pregnancy, as well as visiting clinics for routine or risk-related maternal health services. Also, information from the health education sessions allowed men to support their wives in an informed way by participating more in decisions about maternal care, which were usually made by mothers-in-law or mothers.

4.3.3 Couple Dialogue to Improve Reproductive Health

Basic Communication about Treating Sexually Transmitted Infections: Christian Medical College, Vellore (CMC)

The Christian Medical College, Vellore (CMC) intervention study compared the effectiveness of village-level health aides to a female doctor for diagnosing and treating RTIs and STIs, which the CMC's formative research had found to be highly prevalent among young women (Prasad et al. 2005). The CMC intervention study design, described in greater detail in Chapter 2, was based on standard protocol, which called for women to be examined, and, if diagnosed with an STI, given treatment for both themselves and their husbands. The idea was that it was efficient for both wives and husbands to be treated with only one contact with the health system.

Women who were infected tended to take their medicine given by the health aide upon diagnosis, but tended not to pass their husbands' medicine on to them, fear of their reactions. Two weeks after the women were treated, only 19-27 percent of husbands had taken treatment. Qualitative data suggest that men were concerned about the stigma related to having a sexually transmitted infection, because STIs are most commonly attributed to "having a wrong relationship," an extramarital affair.

With professional encouragement from CMC staff, however, men increased their treatment rate. Two weeks after women's diagnosis, social workers visited their homes to check on their husbands and to counsel them to get treated, if they had not already done so. This seemed to be effective: two weeks later, health aides again visited the same homes and found that 45-60 percent of husbands had been treated. Qualitative data from the study suggest that the husband would take the diagnosis more seriously and be more willing to get himself treated if the woman's infection was severe and if a medical professional encouraged him to do so.

Despite women's reluctance to give medicine to their husbands if diagnosed with and treated for an STI themselves, most symptomatic women – 78-83 percent – did discuss their diagnosis with their partners. And most of these women reported that their husbands encouraged them to be treated (87-91 percent).

This situation – couples discussing basic STI information, but avoiding the partner treatment issue – seems a good platform from which to promote couple dialogue.

Limited Discussion among Couples about Infertility: Foundation for Research in Health Systems (FRHS)

In the FRHS study, the social mobilization component included interactive health education sessions for community members on reproductive health issues. Following a session on causes of and misconceptions about infertility, 110 young

couples requested the FRHS team to assist them with their fertility concerns. In response, FRHS arranged for a sexuality counselor to talk with these couples and conducted interviews with 79 of these couples who sought the counselor's services.

Qualitative data from the interviews suggested that women most often were blamed for the couples' infertility and could suffer social consequences, for example not being invited to certain important occasions such as naming ceremonies or religious rituals. About one-third of the women were concerned about the possibility of failing to conceive soon after marriage because of the negative consequences. For instance, many married young women who did not conceive within the first few months after marriage were not accepted in their marital families and communities as a legitimate wife because of their failure to conceive. They were considered outsiders to their accepted roles because they were neither a virgin nor a widow. At the same time, failing to fulfill their required reproductive role within marriage, married young women who could not conceive were also not considered *Savashna* (married woman). As one respondent noted, "A woman should conceive in the first year because as long as she doesn't have baby, she is not totally accepted and integrated in the marital family." At a minimum, young married women who were childless faced taunting. As one woman observed:

> *Such women have to face the taunts of their in-laws as well as of the community made in jocular manner but sharp enough to hurt. This is my own experience.*

Women worry because they endure most of the familial and social disapproval resulting from a failure to conceive. The interviews indicate that this disapproval soon takes the form of extra work, denial of food and violence against the woman, as well as attempts at a second marriage for the husband. As a 17-year-old girl married for less than three years stated:

> *My husband says it's okay. We have not committed any sin so we will have children. But I am sure he faces taunts from his friends. He never talks about these things with me. I am worried that if I don't conceive soon my in-laws will wait for a little more time and finally opt for his second marriage. [Then] they will throw me out of the house.*

Men also indicated experiencing anxiety and lacking information about infertility, even if the social consequences for them are less severe. Men wondered, for example, whether infertility was caused by an inadequate size of their penis or inadequate duration of intercourse; and whether certain coital positions or extramarital affairs facilitated conception. In rural communities, men usually have the upper hand in daily life but doubts about fertility seem to weaken their feeling of power. Men voiced the need for reassurance from their wives about their sexual abilities, even asking for feedback on their "performance" in front of the counselor. The anxiety led some men to lie about their childless state. One 36-year-old childless woman recounted her experience:

> *My husband, whenever asked about not having children, says that he has a wife and two children who stay in Mumbai. I am his second wife but I know for a fact that his first wife died long ago. When he is drunk he says that if he had children he would not have become a drunkard.*

Other men in the study reported decreasing interest in sex, less frequency in sexual intercourse and even a few cases of impotence.

The data from the interviews did not, however, indicate that couples were discussing their infertility. Because young women do not have the power to publicly counter the repercussions of infertility, and often do not discuss infertility with their husbands privately, their desperation often leads to increased strain within the marital relationship. For instance, in one counseling session a woman stated upon entering the room, "See our reports and confirm, who is at fault?" The counseling session gave her the opportunity to bring her hidden struggle and distress into the open. The counseling sessions provided a welcome opportunity to begin addressing such anxiety and conflict, and point to a potentially important role of couple dialogue for infertile couples.

Health Education Designed for Couples in Rural Pune District, Maharashtra: KEM Hospital Research Centre

In a rural part of Pune district, Maharashtra, KEM Hospital Research Centre tested the feasibility of implementing an integrated package of reproductive health education, clinical referrals and services, and sexuality counseling for young married couples using volunteer community-level educators (CLEs). Couples were targeted specifically with a goal of promoting couple dialogue. The health education sessions were seven days long and increased knowledge of a variety of obstetric and gynecological topics. The study measured couple dialogue by determining whether information was presumably passed on from a spouse who did attend the session to the spouse who did not attend. Husbands and wives who attended sessions together probably communicated about the information they were learning, but the extent of their dialogue was harder to assess, and so is not included here as couple dialogue.

In some cases, the wives' knowledge about a given topic increased after the husband attended a session. For example, of approximately 20 couples, more than two-thirds of wives (69 percent) reported knowing that they needed to avoid heavy work during pregnancy after hearing it from their husbands, compared to only a little more than one-third (39 percent) before the health education intervention. Also, one-third of wives (33 percent) reported knowing that STIs could be detected through signs and symptoms after husbands told them, whereas none of the women had understood this beforehand. Furthermore, 61 percent of wives knew that condoms could prevent HIV and AIDS and other STIs after husbands told them, compared to 39 percent of wives who knew this beforehand.

There was one important increase in husbands' awareness: Fewer men reported thinking that infertility problems emanated only from women after their wives attended a session on this topic (56 percent of men beforehand, but 31 percent afterward).

Several topics yielded substantial increases in knowledge when wives conveyed the information to their husbands or husbands conveyed it to their wives. These topics included: limiting family size through vasectomies (an increase in the percentage of husbands reporting knowledge from 0 to 13 percent, and in wives from 7 percent to 21 percent). In addition, knowledge that medical advice could be an acceptable reason for an induced abortion increased from 0 to 10 percent in both husbands and wives, and knowledge that the female sex of the fetus was not an acceptable reason for induced abortion increased from 15 percent to 30 percent in both husbands and wives.

These findings suggest that dialogue can be successfully promoted between husbands and wives, and substantial health information can be exchanged. It is particularly noteworthy that husbands took such an interest in the health topics and communicated them well to their wives, and the wives reported learning this information at the post-test, even if they hadn't heard the information directly from the educators. Men are likely to be successful promoters of health behaviors because they often control the resources and decisions related to changing behaviors at home and seeking health care outside the home. For example, men reported learning that their wives should avoid heavy work during pregnancy and convinced their wives of this. Further investigation will be required, on the other hand, to determine how wives can more often convince their husbands of the need to recognize and adopt important health information and behaviors.

4.4 Conclusions

In India and elsewhere, men make many of the decisions and control many of the resources related to their partners' ability to seek reproductive health care and to prevent reproductive health problems. However, men often are not targeted with information about their partners' reproductive and maternal health, which is not surprising given conventional assumptions that maternal health is solely a "woman's affair."

Recent efforts have sought to better understand the nature of men's control over resources (such as the masculinity studies by Barker 2003 and Duvvury et al. 2004) as well as possible ways to improve the situation by engaging men in a more gender-balanced decision-making and resource allocation process (such as studies on male involvement and couple dialogue by Danforth 1995 and Drennan 1998). The results reported here contribute to efforts that aim to understand men's experiences and to improve reproductive health through male involvement in women's health and couple dialogue on reproductive health issues. An underlying premise of this work on men and boys in India is that women's reproductive health has a better chance of improving if men are engaged in joint partner decision-making and resource allocation processes.

It is important to add that engaging men in joint decision-making can be complementary to, not in competition with, a women's empowerment approach (Helzner 1996). Vigilance is required, however, to promote both men's involvement and women's empowerment to ensure that the former does not preclude the latter, as in the example of the Middle East family planning program (Cornwall 1998). And so the second premise of this work with men and boys in India is that women need to be empowered to fulfill their part of the joint decision-making about seeking reproductive care and preventing poor reproductive health outcomes.

The vigilance needed to jointly promote men's involvement and women's empowerment encompasses careful design of programs, keeping the opportunities and lessons reported here in mind, and close monitoring and evaluation of reproductive health outcomes. Evidence of well-evaluated programs involving men and boys is currently thin (Sternberg and Hubley 2004). The results reported here were on studies targeting adolescent girls, not men and boys, and so can only contribute lessons and recommendations, not rigorous evaluation. Evaluation studies are greatly needed to show that any new resources spent on programs targeting men and boys actually are a way to improve the reproductive health of women and girls, not a diversion from that purpose.

4.4.1 Engage Young Men and Talk with Them about Sexual Behavior

Programs seeking to improve youth reproductive and sexual health should address young men's questions and concerns about sexual performance and promiscuous sexual behavior, as the FRHS study did, because these topics appear to be paramount for young men. Engaging men on these topics should serve as an entry point, which then leads to opportunities for discussing broader issues of men's and women's reproductive health, and the effect of gender roles on health status and health-seeking behavior. As programs adopt new components to discuss sexual behavior and other reproductive and sexual health issues with young men, the progress of those discussions should be monitored, the behavior change and the reproductive and sexual health outcomes of young women and men should be evaluated, and the results should be disseminated.

An additional lesson about working with this age group is that young men and boys can initially be engaged in health programs if techniques that appeal to them are used, such as entertaining health education videos ("infotainment") used in Swaasthya's study, but program practitioners need to plan for males' intermittent or curtailed participation, especially if employment opportunities arise.

4.4.2 Engage Fathers and Husbands More to Promote the Health and Well-being of their Daughters and Young Wives

Program practitioners should explore, then build on, fathers' interest in and support for the welfare of their adolescent daughters, as the IHMP study did. Also, newly married husbands may be more knowledgeable and interested in the maternal health of their wives than is sometimes assumed, as FRHS showed, and they could be actively involved in maternal health programs. As programs adopt new components to involve the participation of fathers, husbands and other male partners in women's health, the progress of those discussions should be monitored, the behavior change and the reproductive and sexual health outcomes of young women and men should be evaluated, and the results should be disseminated.

4.4.3 Promote Couple Dialogue and Evaluate Its Impact on Reproductive Health Outcomes

Couple dialogue could be an effective method for stimulating improvements in reproductive health and deserves further investigation and programmatic refinement. It has been found to be effective in promoting the use of family planning methods (Meekers and Oladosu 1996). In the India studies, the need for couple dialogue was palpable. Such dialogue was preliminary in the CMC study about joint treatment seeking and the FRHS study on infertility, and a health education course conducted for as short a period as seven days was found to have some effect in promoting couple dialogue. As programs adopt new components to promote couple dialogue on reproductive health topics, the progress of the dialogue should be monitored, the behavior change and the reproductive and sexual health outcomes of young women and men should be evaluated, and the results should be disseminated.

CHAPTER 5

THE ROLE OF COMMUNITY MOBILIZATION APPROACHES

5.1 Introduction

As Chapter 3 noted, providing reproductive and sexual health information and services to youth in India is challenging due to social norms and restrictions around girls' and women's mobility, and their lack of access to information and resources in both the maternal and marital home (Mathur, Greene et al. 2003; Jejeebhoy 1998). Typically, husbands and mothers-in-law make the final decision about whether, when and what reproductive health care married girls can seek (Chowdhury 2003; Barua and Kurz 2001). Similarly, mothers-in-law and other in-laws control the decisions on timing and number of children young married couples will have. Even interspousal communication on seeking health services and counseling is guided by adults and peers in the community. For decisions related to unmarried girls' selection of whom or when to marry, parents and other adults in the family play a pivotal role. In other words, key life and health decisions for young people frequently are made by family members and dictated by community norms (YouthNet 2004). Thus, not just young women, but also their husbands, parents and parents-in-law need to recognize the need for care, decide to seek care and provide resources for reproductive care (YouthNet 2004).

The nature of these social pressures and constraints makes a strong case for youth reproductive health programs to involve parents, partners and the broader community. Despite increasing recognition of the importance of such an approach, few youth reproductive health interventions that seek this broader involvement have been thoroughly evaluated (YouthNet 2004; Lloyd 2004). Similarly, few intervention efforts have systematically documented *how* to mobilize communities and families around youth reproductive health.

This chapter focuses on lessons learned from the intervention studies on using community mobilization strategies to improve youth reproductive and sexual health. Across all the studies, community mobilization was a key approach to provide information, increase service use and generate community demand for quality health services for youth, though each study used a different combination of strategies to involve communities. Broadly, the mobilization processes created human resources within the community to provide education and information and created a supportive environment by involving adults from existing groups.

This chapter describes the range of strategies used by the five partners to mobilize families and communities in study areas. Chapter 3 presented findings that illustrated the effectiveness of community mobilization designs in addressing youth gender-based constraints. This chapter will elaborate on some of these findings by describing how community mobilization contributed to realization of reproductive and sexual rights for young people and changed social norms around reproductive and sexual health for youth. The chapter also discusses how community-based organizations can be a vehicle for sustaining positive changes. Finally, the chapter discusses the challenges of implementing a community mobilization approach in an intervention research setting.

Across these studies, community involvement or mobilization – regardless of the specific *modus operandi* – was possible only because program activities were structured to maximize community participation. At the most basic level, program activities were planned or implemented by consulting with community stakeholders. Equally critical, program staff went beyond program specifics to create an environment conducive for social change by discussing broader issues of caste, gender and the reasons for poor health with key decision makers such as husbands, mothers-in-law and other family elders. The studies from Phase I had clearly shown the culture of silence surrounding adolescent health. Breaking this silence meant encouraging adolescent issues to become community issues by achieving a broader understanding within the community that would situate adolescent issues within other social issues of concern.

This extensive community involvement worked because, in all cases, the program design was responsive and flexible enough to incorporate feedback from the community. For instance, Foundation for Research in Health Systems (FRHS) added sessions on infertility and drug abuse in response to requests from community youth; KEM Hospital Research Centre changed session times to be more convenient for young couples who had child care constraints; and Institute for Health Management, Pachod (IHMP) responded to villagers' requests that certain sessions be held only for sub-groups of girls who were deemed appropriate.

5.2 Background

Community-based mobilization for development is not new. The use of community development and participatory approaches in public health gained momentum in 1978 at the Alma Ata conference, when the World Health Organization emphasized the use of community participation to provide primary health care for all (Zackus and Lysack 1998). The

fundamental principles of community participation make it especially appealing for health programs. Specifically, effective community engagement and mobilization can foster a better understanding among programmers of the ideas, needs and concerns of people, while also fostering skills and capacities of community members to assess their own needs. Thus, such an approach can lead to better-designed programs, create transparency and local accountability, and encourage community empowerment and ownership. Finally, it can create sustainability by increasing the community's ability to create or maintain structures that implement solutions, assess impact and modify programs as necessary.

Similar approaches can be used to address youth reproductive and sexual health concerns by providing a way for young people to declare publicly their rights to control their own reproductive health. Moreover, mobilizing and actively involving communities can create an enabling environment toward young people and can be a catalyst for changing social norms.

5.3 Community Mobilization Components and Strategies across the Studies

The intervention designs across the eight studies built in some extent of community mobilization to address young people's concerns. Table 5.1 below summarizes the different types of community approaches used.

TABLE 5.1: Community Mobilization Strategies

	Consult community at start of intervention	Continuous community input during intervention	Mobilize or create community groups	Community as field staff	Work with parents & in-laws	Community implements without NGO
Christian Medical College, Vellore (CMC)	x			x		
Foundation for Research in Health Systems (FRHS)	x	x	x	x	x	
Institute of Health Management, Pachod (IHMP)	x	x		x	x	
KEM Hospital Research Centre	x	x		x		
Swaasthya	x	x	x	x	x	x

The combination of strategies and how each strategy was realized in the field varied across groups. All the groups followed two underlying strategies that were considered essential for any work with adolescents. The first was to consult the community at the start of the intervention to obtain their approval and consent. The importance of this strategy emerged from Phase I results, which showed that the sensitivity surrounding youth reproductive and sexual health made it impossible to work on these issues without community consent. The second was recruiting and training community members with certain pre-specified qualifications as key field staff to implement intervention activities. This was considered essential to the sustainability and community ownership of the projects. Beyond these two, each project had a range of other strategies to involve either the broader community or select members within it, depending on the project goals.

5.3.1 Community Mobilization in Foundation for Research in Health Systems (FRHS)

FRHS and Swaasthya had the most explicit models of community involvement. The FRHS study, in fact, specifically tested the role of social mobilization in improving youth reproductive health. FRHS' social mobilization strategy worked with indigenous community-based organizations to provide health education on a variety of issues to young women, their

husbands and mothers-in-law and the community as a whole. These organizations became the key forum for regular interactive health education sessions held in communities participating in the social mobilization research arms. Two types of groups participated: men's youth groups and women's groups that brought young daughters-in-law and mothers-in-law together. The rationale was that these groups were acceptable as a forum to discuss community issues, which would make it easier to discuss sensitive topics – such as youth reproductive health – in these same groups. The health education sessions aimed to give young people and key decision makers in the community the information they needed and motivated them to access services and demand more of service providers. FRHS was able to also work with mothers-in-law in these groups because older women typically attended these sessions, and the community organizations provided a good forum to generate intergenerational communication. This, in turn, contributed to creating an enabling environment for young people to voice their reproductive needs to key decision makers such as in-laws.

These groups were also the medium for continuous community involvement in both FRHS' program and the provision of overall health services available for youth. The members of the community organizations were involved in the planning and implementation of these health education sessions. Further, FRHS built the skills of these groups to enable them to monitor the provision of health services provided by the government. Finally, the community mobilization arm of FRHS intervention was implemented by identified and trained health educators from the community, thus providing an opportunity for greater community ownership of the program.

5.3.2 Community Mobilization in Swaasthya

Swaasthya's study also involved work with community groups, creating social support groups for girls and their mothers. Some groups were formed from existing self-help groups created via Swaasthya's prior interventions; other times new groups were formed. These community groups met on a monthly basis and shed light on areas of concern for adolescents. Through Swaasthya's mediation, these concerns were presented to the women's groups, and women's reactions were reported back to the adolescent groups. This helped the girls' and women's groups to get to know each other's points of view, which in turn facilitated mutual understanding of needs and problems. Within their groups the girls also found support among their peers. The groups thus formed a network of social support for the girls, providing an enabling environment for them to discuss sensitive issues of sexuality and reproductive health in a safe space.

With input from the community, Swaasthya recruited young community women as the key implementers around whom much of the program revolved (Swaasthya *didi*). These field workers were interpersonal communicators who were the main source of information for girls. Swaasthya also tested the long-term effectiveness of community mobilization and ownership by withdrawing from the project and measuring whether and how the project and its outcomes were sustained by the community.

5.3.3 Community Mobilization in Institute of Health Management, Pachod (IHMP)

Similar to Swaasthya and FRHS, IHMP's life skills and nutrition programs depended heavily on community involvement, though the effects of this involvement were not explicitly evaluated. IHMP's community mobilization efforts incorporated four of the six features outlined in Table 5.1: (1) initial consultation with the community, (2) continuous community input, (3) using community members as key implementers, and (4) working with parents.

Before either of IHMP's programs started, the needs assessment revealed that parental involvement was crucial to effective implementation. The life skills program therefore had a strong component of planning and conducting regular meetings, which started before the actual intervention, with parents of adolescent girls. IHMP sought parental input in designing the program; parents were then invited to continue to participate in various ways such as regular parent-teacher meetings, consultations with IHMP staff about the life skills curricula, and an open invitation to attend sessions. The broader community beyond parents, including other stakeholders such as opinion leaders, also was involved through regular village meetings where IHMP apprised the community about the life skills program. Further, the sessions were held in the villages, giving the community an opportunity to observe and approve.

The community also played a key role in choosing teachers for the program. IHMP operationalizes civil society participation in their community health programs through village and slum development committees (VDC) that have members nominated by the community. These committees enable active community participation in program design, planning and implementation, monitoring and supervision. The VDCs participated in selecting the teachers from within the communities for the life skills program. Involving the larger community in recruiting teachers, as well as the fact that these teachers were from the community, was considered likely to lead to greater acceptability and sustainability, and help in the retention of the girls in the program.

Similarly, the nutrition program was conducted with active community participation. IHMP trained community members who went on to implement all nutrition activities. Several of the program's activities did not target just adolescent girls but also their parents, families and the broader slum community in study areas. This was considered critical as the program was trying to change broad norms around dietary behavior in the household to improve young girls' nutritional status.

5.3.4 Community Mobilization in KEM Hospital Research Centre

As with the other groups, KEM Hospital Research Centre solicited initial community acceptance and continuous community input. KEM sought input from parents and other adults who influenced adolescents' lives for all aspects of the program, including the location of the health education sessions, training materials and monitoring the quality of intervention components.

Beyond these processes, KEM incorporated community involvement by identifying and using community youth as health educators and lay counselors. These field staff, nominated by community leaders and trained by KEM, formed the foundation of KEM's feasibility study. Specifically, KEM trained young couples from the intervention village as health educators and communicators to implement KEM's reproductive health education arm. These community-level educators conducted field sessions for youth in the evenings. Select youth also were trained as lay counselors to identify and refer peers in need to the trained counselor in the program.

5.3.5 Community Mobilization in Christian Medical College, Vellore (CMC)

Although CMC did not specifically use a community mobilization model, community involvement was nonetheless important. As with ICRW's other partners in this intervention program, CMC went through an initial consultation with the community to obtain approval for the project from key elders in the community. CMC convened a day-long meeting with the *panchayat* (elected village council) and community leaders to share CMC's findings from the Phase I study on the health status of women and the prevalence of reproductive tract infections (RTIs) and to solicit feedback. Community leaders voiced a need for community-based health services and gave their consent for introducing and conducting this clinical study.

Similar to several of the other groups, community-level workers were the backbone of the intervention. As Chapter 2 explains in detail, this study tested whether a trained female health aide, who resides in the community and has a good rapport with the women in the community, can help in the provision of accessible, acceptable and effective services important for the control of RTIs. With the community's input, CMC staff identified and trained community-level health aides to gain access to and examine and treat young married women with RTI symptoms. The health aides usually resided in one of the villages they served. CMC staff tested the effectiveness of these health aides in the program. Thus, while this study did not incorporate community participation into the project as extensively as the other studies, a community-identified and community-based worker was still a core component of the models tested.

CMC worked with respected community leaders to persuade partners of symptomatic women to seek treatment and to encourage women to access health services. Community elders also monitored the management of services through regular meetings with CMC staff. In the study arm that had a female doctor periodically conduct a clinic, the village *panchayat* provided support in getting appropriate space and other infrastructure for the female doctor to visit and examine symptomatic study participants.

5.4 Results: Effectiveness of a Community Mobilization Approach

Based on the community mobilization designs, community involvement was expected to contribute to three things: (1) achieving a positive change in outcomes of interest; (2) creating a supportive and enabling environment for adolescents to exercise their rights to good reproductive health; and (3) generating local capacity, ownership and sustainability. The study designs for the most part did not allow an evaluation of the independent effect of each type of community mobilization strategy on these three sets of themes. The results presented below from across the studies illustrate the role of community mobilization as a whole for these three themes.

5.4.1 Achieving Positive Changes in Outcomes of Interest

The effectiveness of community involvement in positively changing outcomes varies across outcomes and studies. The FRHS cross-sectional pre- and post-evaluation suggests that knowledge and use of services increased more in the social mobilization arms (with or without the component to strengthen government services) than in other study arms for certain outcomes (Table 5.2) such as awareness and use of health services by young women on issues related to maternal health, infertility, RTI treatment and family planning.

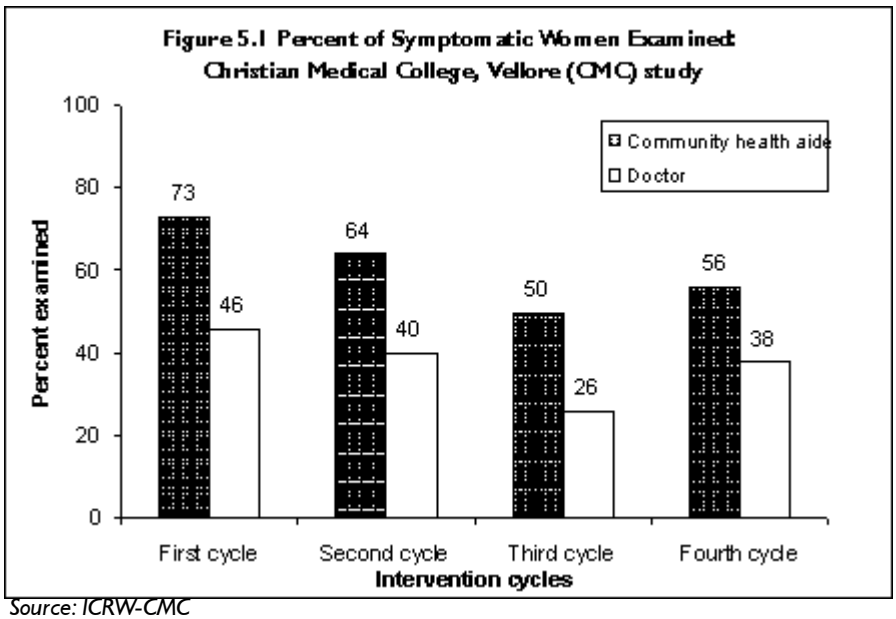
TABLE 5.2: Baseline-Endline Differences by Arm-Foundation for Research in Health Systems (FRHS) study

Knowledge and use of health services	*Percent change between baseline and endline*			
	Social mobilization (SM) only	Government services (GS) only	SM+GS	Control
Need for antenatal care check-ups	24.2	18.5	12	18.9
Need for partner treatment for RTIs/STIs	30.6	-5.7	17.6	10.5
Treatment of pregnancy danger signs	24.4	22.5	24.2	16.5
Sought treatment for RTIs/STIs	79.5	44.8	98.2	26.7

Source: ICRW-FRHS

As pointed out in Chapter 3, social mobilization performed particularly well with outcomes where traditional beliefs were strong, such as the need for postnatal care. It is here that the community mobilization approach was important: working with mothers-in-law in the community groups enabled FRHS to harness the good beliefs that they held about postnatal care, while also encouraging them to discard harmful beliefs. For other outcomes, such as the treatment of danger signs during pregnancy, social mobilization arms did not appear to perform better than other arms of the study. It is not clear from the data what made certain outcomes more sensitive to community mobilization than others, and this needs further study. One possible explanation is that behavior change based on harnessing existing norms in new ways is quick to have an impact and does not need extensive discussion with community members, whereas changes that require changing the underlying norm need more time or intensity of effort and discussion with community members who enforce such norms to effect change.

The CMC study also shows the greater effectiveness of a community-focused approach in addressing sensitive issues such as prevalence of RTIs among young women. The data demonstrate that across all four cycles of the study a consistently larger proportion of symptomatic women were examined, treated and reported as free of symptoms in the health aide arm compared to the doctor arm, suggesting that the community-level health workers were more accessible to these women and more effective in addressing their RTI symptoms than was a doctor who visited periodically. In particular, health aides were able to overcome a big hurdle in RTI management, namely, women's reluctance to submit to speculum exams. While the proportion varied over the cycles of the study, on the whole the health aides examined 50-75 percent of symptomatic women, compared to less than 50 percent examined by the doctor (Figure 5.1).



Source: ICRW-CMC

The two key aspects of Swaasthya's community involvement elements designed to improve outcomes were the social support groups and interpersonal communication through the Swaasthya *didi*.

TABLE 5.3: Social Support and Select Outcomes, Tigri and Naglamachi - Swaasthya Study

	Tigri		Naglamachi	
Participation in social support groups	Yes	No	Yes	No
Outcome variables of interest (percent, by social support participation)				
High perceived support from gatekeepers	66.1	68.1	74.8	68.9
High knowledge of reproductive and sexual health issues	67.8	45.7	62.2	43.3
Positive perspective on life	57.7	53.9	40.5	22.0
Perceived self determination	40.7	48.1	23.4	16.5
Hygienic menstrual health	40.7	41.9	42.3	36.2

Source: ICRW-Swaasthya

Social support group effectiveness varied by outcome. As a whole, and at least at a bivariate level, by endline girls in social support groups had a higher knowledge of reproductive and sexual health issues and were more likely to have a positive perspective on life than girls who did not participate in these groups. For the other outcomes, the result varied by outcome and location, perhaps reflecting the strength of particular groups. (Table 5.4)

In contrast, interaction with the Swaasthya *didi* was strongly associated with the main attitudinal and behavioral outcomes of interest in this study, namely perceived self-determination and menstrual hygiene. In logistic analysis of determinants of these outcomes at endline in both Tigri and Naglamachi, after controlling for other factors, a girl reporting interaction with the Swaasthya *didi* is almost twice as likely (odds ratio of 1.6 in Tigri and 1.7 in Naglamachi) to practice better menstrual hygiene than girls who were not exposed to the Swaasthya *didi*. For perceived self-determination, the odds are even higher in both sites (1.8 in Tigri and 2.8 in Naglamachi).

5.4.2 Creating a Supportive and Enabling Environment

Evidence from the studies demonstrates the importance of working with families and communities to create a supportive and enabling situation for youth reproductive and sexual health. Related to this is the evidence showing increased confidence among both married and unmarried young women in voicing their reproductive needs when interventions work with key decision makers. This is not surprising: only in a supportive environment are young women able to assert their rights to good reproductive health.

Qualitative data from the FRHS study illustrate the benefit of involving families and communities to change a disempowering environment and young women's attitudes. Before the intervention started, young married women were not allowed any access to government health workers, even if they came to the home, as noted by health workers during the Phase I study:

> *One hurdle was how to reach women who were pregnant for the first time. In the husband's household the problem was compounded by the fact that hardly any physical or mental space was allowed for this woman.... On a few occasions when the mother-in-law would move away for some reason the daughter-in-law would immediately open up and in a brief moment state the real problem....* (Government female health worker, India, 1994)

Young women themselves were also well aware of their restrictions. As one young pregnant woman said:

> *Sister [government health worker] comes home to give health advice but I am not allowed to talk to her.* (Young woman, India, 1996-1998).

At baseline, young women did not have the confidence to express their own needs. The FRHS community mobilization arm increased young women's confidence and changed the attitudes of mothers-in-law. Process documentation shows that younger women increasingly participated in the meetings: at initial sessions, only about 25 percent of participants were younger women, by the midpoint survey this participation had increased to 40-50 percent. Interviews with health workers in the latter half of the intervention time period showed that young women and their families were more vocal when demanding health services. According to one primary health center medical officer (2003):

> *People have started asking a lot of questions now. Earlier they did not.*

Swaasthya's and IHMP's interventions for unmarried girls show similar changes in the environment and in girls' confidence. Swaasthya's intervention measured girls' confidence and found that their perspectives on life, perceptions that gatekeepers were supportive and perceptions of decision-making ability around marriage and childbearing were all higher at endline than baseline (Chapter 2). Further, Swaasthya's community mobilization elements were associated with higher levels of confidence (Table 5.3), especially among girls who interacted with the Swaasthya *didi*.

By the end of the Swaasthya and IHMP interventions, young unmarried girls in the study areas were able to negotiate marriage, friendships with boys and future life choices, as the quotes cited in Chapter 3 and the case study below illustrate. Similarly, the KEM study appears to have changed community attitudes toward reproductive health knowledge for unmarried girls: part-way through the intervention, parents and community elders requested KEM – which was working only with young married couples – to hold similar sessions on reproductive and sexual health with unmarried girls.

IHMP Life Skills Program Helps Reshma Seek New Opportunities

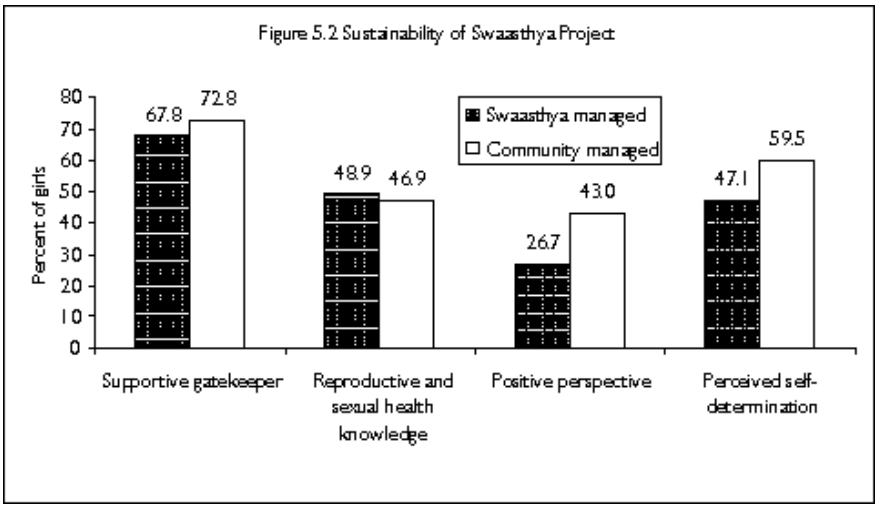
Reshma [name changed] was not allowed to go out of her house. Her father is a rickshaw driver and her mother is a domestic worker. Reshma is in the 8th standard (secondary school). When the life skills course started in the slum, Reshma wanted to attend the classes. Reshma's participation in the course and related activities was made possible through the intervention of community-based workers to whom her parents were willing to listen. The community-based worker and IHMP's supervisor met Reshma's father. They convinced him to send Reshma for the course. IHMP initiated cricket coaching for girls in the slums. Reshma was very interested in playing cricket. At first her parents were very reluctant. However, Reshma and the community worker convinced her parents to let her play. Reshma soon became the captain of her cricket team, won a cricket championship and was honored in the village and her school. Reshma was then selected by her school for a state-level sports competition to be held in Lucknow, Uttar Pradesh. She won three medals in Lucknow. Her parents attribute the honors heaped upon their daughter to her participation in the life skills program. Now her parents permit her to go where ever she wants.

5.4.3 Generating Local Capacity, Ownership and Sustainability

Involving the community has built local capacity. Each intervention site has community members who have been trained in different aspects of youth reproductive health and have actively participated in implementing the intervention. However, the question remains: how sustainable is this capacity and what ownership of the intervention do communities assume after such involvement?

The feasibility study by KEM and the life skills intervention by IHMP provide some indirect evidence toward sustainability. Even after KEM's study ended, staff found that community-level educators were continuing health education sessions. Unfortunately, continuous follow-up has not been possible so it is unclear whether this work is still being sustained. Sustainability is evident from IHMP's life skills program to the extent that it is now in its third year and the number of girls enrolled has increased dramatically since the first year. In the first year of the program, 300 rural girls were enrolled; by the second year, the number increased to over 2,000 and spread to the urban slums of Pune. Current enrollment is even higher.

Direct evidence from Swaasthya's sustainability study shows mixed results about continued community mobilization and involvement once the external organization that spearheaded the intervention leaves. Quantitative and qualitative data show that community members who were trained and expected to take over the program did not do so. Most program elements were discontinued for reasons that include a lack of private space once the Swaasthya office was closed; diminishing community interest; decreasing time and availability of adolescent girls; and unwillingness among parents to send their daughters for activities when Swaasthya, whose presence had earlier lent legitimacy, was no longer running the program. A comparison of the data at the end of Swaasthya's management of the program with data from a period 18 months after the community took over shows that, in contrast, knowledge and attitudinal outcomes have largely been maintained. Girls' level of knowledge of reproductive and sexual health has minimally decreased. However, changed perceptions that formed the core of the program have been maintained. In other words, perceptions of gatekeeper support, overall positive perspectives on life and perceived self-determination have remained at the same levels from the time when Swaasthya withdrew or increased. (Figure 5.2) This suggests that once perceptions are changed in a way that involves the community, these perceptions percolate further and can be maintained, at least in the short term.



Source: ICRW-Swaasthya

5.4.4 Challenges in Undertaking Community Mobilization

One of the desired outcomes of community mobilization – that the community increasingly voices its demands – also can turn into a key challenge. Involving the community means that the program team must constantly be attuned to concerns raised by community members. This becomes particularly challenging when expectations that demand activities or services beyond the scope of the project are raised. For instance, FRHS had to expand its program – and stretch existing funds, time and staff capacity – to provide infertility counseling and referral services for young couples.

Second, maintaining interest in the program among participants, stakeholders and the community is challenging for implementing organizations because interest may weaken once a project has gone on for a while, or once the implementing organization withdraws, as was the case with Swaasthya's sustainability study. Finally, though identifying and training community members as key implementers is a central part of involving the community, such workers are likely to lack requisite skills, putting the onus on the project organization to continually develop and refresh these skills. This can often be resource intensive for a program and difficult to maintain over a long period of time.

5.5 Conclusions

All the interventions in this research program purposely included some level of community involvement or mobilization. We were not able to rigorously measure the effectiveness of community-oriented approaches compared to other approaches in all cases. However, evaluation data, where it was generated, as well as qualitative data from the studies, suggest that community approaches are effective in some spheres, but not a magic bullet for everything. Thus, the evidence is inconclusive about whether and to what extent community mobilization leads to improved outcomes for youth reproductive and sexual health. These studies suggest that improvements depend on the outcome, the type of community approach and the location. Neither is it clear that involving and building a community's capacity will necessarily translate into an adolescent intervention being sustained in its full form once the implementing organization leaves. On the other hand, process documentation shows that community members at various levels can be organized and involved in improving reproductive health for youth. Further, regardless of location or type of approach, involving the community is critical for and effective in creating a supportive and enabling environment where girls and young women can voice their reproductive needs.

CHAPTER 6

THE COSTS OF ADOLESCENT REPRODUCTIVE HEALTH PROGRAMS: EXPERIENCES FROM THREE STUDY MODELS IN INDIA

6.1 Introduction

Over the past decade, an increasing number of interventions and studies have focused on improving youth reproductive and sexual health. Yet far fewer studies have analyzed the costs associated with these programs despite demand for this type of information. At the same time, policy-makers and program planners seek to know which strategies are most cost-effective for achieving particular outcomes, and what resources are required to implement or scale up a particular strategy.

To address this gap, three of the six studies discussed in this report conducted costing sub-studies. During the process, ICRW and the implementing organizations learned that program-oriented nongovernmental organizations (NGOs) can incorporate cost evaluations into activities and adapt activities as needed when cost inefficiencies are identified even with a lack of experience in conducting costing research and analysis. This chapter presents the programs' costing activities and findings.

6.2 Background

Of the few studies that have calculated costs of providing reproductive health services, most have focused on facility-based services and on adults. Far less is known about costs of community-based programs for youth. As communities consider creating programs, key questions remain, such as whether the costs of providing quality reproductive health services to young people are similar to costs for providing services to adults, and what the costs will be.

The World Health Organization's (WHO) Center for Adolescent Health (CAH) has developed a framework in which different costing research questions emerge as relevant as a country (or state or district) moves from making initial investments in quality youth-friendly reproductive health to increasing coverage (Stenberg 2006). At the initial stages, investment is motivated by a realization of the costs to society of not providing services to youth; still, decision makers need to know the costs of providing a basic set of services through a variety of delivery mechanisms. Next, to expand coverage, the costs to individual adolescents to access services must be considered. At this point, the economic costs of current services, including their nominal costs, per unit costs and cost effectiveness (in terms of specific reproductive health or service use outcomes) are important complements to data on effective intervention strategies and can be used to identify opportunities to improve cost efficiencies. Finally, incremental costs (both financial and economic) are relevant to decisions about integrating an enhanced package of services to youth and scaling up coverage (WHO 2006).

The few studies on costing adolescent reproductive health address a mixture of these questions. WHO/CAH has conducted pilot initiatives to calculate the current costs of providing youth-friendly reproductive health services to adolescents in India, Uganda and Vietnam. One study in Tanzania examined the start-up, running and incremental costs of a community-based sexually transmitted infection (STI) prevention program largely focused on school-based education activities (Terris-Prestholt et al. 2006). Another study in Mexico calculated the marginal, running and per capita costs of youth centers that deliver sex education and family planning services (Townsend et al. 1987). Another study in South Africa compared the running and per unit costs (clinical visits) of youth centers providing reproductive health information, life skills, clinical services and other activities (Janowitz et al. 2003). A study in Senegal examined the incremental costs of adding community-, clinic- or school-based adolescent reproductive health interventions to existing activities (Diop et al. 2004). All studies calculated total costs, whether financial, economic or both. Several studies calculated per unit costs in terms of target population or service use and, in some cases, incremental costs. It is, however, rare for cost effectiveness to be calculated in terms of a particular reproductive health outcome.

Three of the six ICRW-coordinated studies on adolescent reproductive health – those conducted by Christian Medical College, Vellore (CMC), Foundation for Research in Health Systems (FRHS) and Swaasthya – conducted cost studies to create reliable data on the costs of adolescent reproductive health programs. Each study sought to answer a different research question. The Swaasthya study analyzed the financial costs of its program to understand the resource requirements for replication and to identify cost efficiencies. The FRHS and CMC studies collected economic cost data and incorporated it into the coverage and outcomes data to compare different approaches to improving reproductive health among youth.

Glossary

cost-effectiveness ratio: *Cost-effectiveness analysis evaluates and compares the relative contribution of various interventions or different strategies. Generally an intervention is compared with another mutually exclusive intervention to gauge which alternative is more cost effective and has the best outcomes. The cost-effectiveness ratio may be expressed as follows:*

$$\frac{\text{Cost of Intervention}}{\text{Increase Awareness or Utilization of Services}}$$

economic costs: *The opportunity cost of using resources in one program rather than in an alternative use. Economic cost is the "payment required to keep that input in its present employment, or ... the remuneration the input would receive in its best alternative employment" (Nicholson 1989) whether or not an actual financial expenditure is required (see financial costs).*

financial costs: *Actual expenditures or outlays made for a specific intervention.*

full-cost accounting*: The costs of all resources that are being employed in running a project or program, including basic infrastructure.*

per unit cost: *Calculated as total costs divided by the unit of the outcome (for example, the number of health education sessions). Outcomes as denominators in this case can be measured in three ways: (1) change in primary outcomes, such as the final effect or impact on health status due to the intervention, (2) change in intermediate outcomes, for example, intermediate changes due to the intervention of the project, and (3) absolute process measures, which measure the activities in the intervention. When per unit costs capture change in primary or intermediate outcomes, these are equivalent to the cost effectiveness of an intervention.*

per capita cost: *A type of per unit cost measuring the total cost of the intervention divided by the population reached or served by the intervention.*

6.3 Data Collection Processes and Methods

At the outset of the study, all the investigators at ICRW and each of the partners recognized that the capacity for undertaking costing studies lay outside of our principal areas of expertise. Thus, an external expert on costing helped conceptualize and plan the research design for the costing study, ensuring both rigor and relevance to the overall intervention study goals.

Originally, it was envisioned that the costing expert would take the lead in managing the data and conducting the cost analysis. However, two of the three project teams opted to use the costing exercise as an opportunity to develop new capacities within the organization. For these teams, the costing expert served as a trainer and senior technical advisor, mentoring staff and providing quality checks on the study design and analysis. Partner staff, however, took the lead in managing the data and conducting analysis. Even in the third project team, which did not conduct the analysis itself, exposure to the costing study and participation in developing the design and data collection strengthened the team's skills in costing research.

Through this process, each of the three studies asked a somewhat different costing question and used varying methods to collect different cost data. These methods are described in detail below, and the results are then analyzed. Since all cost data and analysis for the three studies were calculated in Indian rupees, the findings are reported in rupees with U.S. dollar amounts in parenthesis. An exchange rate from August 2006 of 46.7 rupees to the dollar was used.

6.3.1 Costs of Two Approaches to Reduce Reproductive Tract Infections among Married Youth in Rural Tamil Nadu: Rural Health Aides vs. Female Doctor

As explained in Chapter 2, CMC tested two alternate approaches to diagnose and treat reproductive tract infections (RTIs) among rural, young married women ages 15-30 and their partners: reliance on a health aide (Arm A) versus using a

female doctor (Arm B). In addition to the main study goal of testing the feasibility, accessibility and effectiveness of the two approaches, CMC collected cost data to compare the costs – total and per capita – and relative cost effectiveness of the approaches. CMC's costing question was:

What are the costs of using trained, rural health aides (Arm A) versus a female doctor (Arm B) to treat RTIs among young, married women? Which approach is more cost effective?

To understand the types of costs encountered in each of the two arms, it is helpful to review the roles and specific activities of the health aides and female doctors in both arms. Table 6.1 below describes these activities.

Table 6.1: Roles and Activities of Health Aides and Doctors in CMC Study Arms

	Arm A Health Aide	Arm B Female Doctor
Case identification: Visit, interview and documentation	health aide	health aide
Treatment: Examination, counselling and treatment for woman and partner	health aide	female doctor
Follow-up: Visit, interview, examination, documentation and treatment of resistant infections	health aide	health aide and female doctor

Source: ICRW-CMC

6.3.2 Christian Medical College, Vellore (CMC) Cost Analysis

Data were collected over four rounds of intervention activities, from July 2002 to September 2005, representing the complete running time of the intervention study. The primary focus of the costing study was on the costs to CMC of *providing* RTI services. All implementation costs, including administrative and overhead costs, were included. However, certain necessary but ancillary costs to preparing and implementing a good quality intervention, such as research and training costs, were excluded.

In comparing the costs of the two intervention approaches, total costs of the two approaches over the life of the intervention were calculated and broken out by round and intervention activity (case ID, treatment or follow-up). Per capita costs of the overall approaches were determined by dividing the cost of the approach by the number of women in the target group in each arm (2,292 in Arm A and 2,294 in Arm B).

Because the effectiveness of the two approaches was determined, in part, by the number of women identified as symptomatic, examined, treated or cured (syndromic cure), per capita costs of case identification, examination, treatment or cure reflected the relative cost effectiveness of the two approaches. Syndromic cure was defined as treated women who were found to be free of symptoms at follow up. Cost effectiveness was calculated using the formula mentioned in the glossary.

For each arm, per capita costs for case identification were calculated by dividing the costs of case identification by the number of women screened; for treatment, by dividing treatment cost by the number of women treated; and for symptomatic cure, by dividing follow-up and repeat treatment costs by the number of women no longer reporting symptoms.

To complement data on the costs of providing RTI services, the costs incurred by a woman to access services in Arm A or Arm B also were estimated.

The CMC study applied the concept of full-cost accounting and calculated economic costs, not financial costs. All categories of intervention costs were allocated among three activities: case identification, treatment or follow-up. These activities were apportioned to the two intervention arms as illustrated in Table 6.2.

Table 6.2: Allocation of Intervention Costs by Activity and by Arm in the Christian Medical College, Vellore (CMC) Study

	Arm A Health Aide	Arm B Female Doctor
Case ID	• Health aide salaries • Stationery/office supplies • Costs associated with quality assurance	• Health aide salaries • Stationery/office supplies • Costs associated with quality assurance
Treatment	• Health aide salaries • Stationery/office supplies • Drugs/medical supplies • Costs associated with quality assurance	• Health aide salaries • Doctor salaries • Stationery/office supplies • Drugs/medical supplies • Costs associated with quality assurance
Follow up	• Health aide salaries • Stationery/office supplies • Drugs/medical supplies • Treatment of resistant infection	• Health aide salaries • Stationery/office supplies • Drugs/medical supplies • Treatment of resistant infection

Source: ICRW-CMC

Personnel costs in each arm were allocated according to the percentage of time staff reported spending on each activity according to timesheets and interviews with staff. Similarly, recurrent costs of supplies were allocated according to the percentage used by each arm and activity. Costs for capital items with a lifespan of more than one year, like buildings and equipment, were calculated using available depreciation tables. Costs of certain capital items that were specific to this intervention and lasted over the course of the intervention, such as the family folder used to track health aide or doctor interactions with women, were apportioned equally among four rounds. The costs for the space used at subcenters were calculated using the rental rates. Transportation costs were calculated by the rental value of the vehicle and percentage use by each activity. Utility costs were calculated per unit use.

CMC also calculated costs per number needed to treat (NNT); the costs of reducing one case of STI infection; sensitivity analysis of the cost-effectiveness ratios; and the incremental cost- effectiveness ratio using the following formula:

$$\text{ICER} = \frac{\text{Total cost of Health Aide Arm - Total cost of Dr Arm}}{\text{Effectiveness of Health Aide Arm - Effectiveness of Dr Arm}}$$

These data are presented elsewhere (Prasad et al. 2004, I.K. 2005).

6.3.3 Costs of Two Approaches to Improve Married Adolescents' Reproductive Health in Rural Maharashtra, India: Social Mobilization vs. Increased Government Services

As noted in Chapter 2, FRHS improved the reproductive health knowledge and care seeking of young, married women (younger than 22 years) and their husbands through two very different strategies: a social mobilization strategy (SM) and a government services improvement strategy (GS). To determine the cost effectiveness of each, FRHS measured increases in reproductive health knowledge and improved care-seeking for selected reproductive health concerns and calculated the costs of implementation. FRHS's costing question was:

> *What is the most cost-effective way to increase young, married women's reproductive health knowledge and use of reproductive health services: social mobilization or strengthening government services?*

6.3.4 Foundation for Research in Health Systems (FRHS) Cost Analysis

This cost analysis considers the economic costs of *implementing* the intervention approaches, applying the concept of full-cost accounting. It does not include the costs to individuals or households for participating in intervention activities or using reproductive health services.

Costing data were collected on a quarterly basis over 20 quarters between April 2001 and March 2006. Costs included were salaries, stationery and supplies, operations and maintenance, travel, trainings and meetings, office equipment and rent, and infrastructure.

All teams organized their costs into functional categories or "cost centers." These were identified based on project objectives, and costs were identified and distributed across cost centers. The principal cost centers were: social mobilization, government services, administration and research. The first two centers dealt directly with the intervention approaches and are termed mission cost centers. The others support these and so are considered service cost centers. Depending on the purpose of the analysis, the service cost centers of research and administration can stand on their own or be allocated across the mission cost centers.

Costs were allocated across the cost centers according to allocation rules established at the outset of the project as shown in Table 6.3 below. Personnel costs were allocated on the basis of the percent of working time per activity, while vehicles, supplies, equipment and building space were similarly allocated based on the percent use by activity.

TABLE 6.3: Allocation of Different Strategy Costs to Activities (Percent), FRHS study

Activity	*Social mobilization*	*Government services*
Strategy-specific activities	100	100
Training FRHS staff	50	50
Head office administration	75	25
Head office research and M&E	75	25
Field office research and M&E	60	40
Advisory committees	60	40
Evaluation surveys	50	50
Costs for each strategy computed by summing up activity costs allocated as above		

Source: ICRW-FRHS

Some activities, such as administrative and advisory activities, training and evaluation, required common inputs and shared the outputs equally across the two arms. Thus for these activities, costs were allocated to each arm proportional to estimated effort in each arm. Social mobilization was more complex to plan and implement because it had more components and more activities. Thus, a larger proportion of administrative and advisory costs were allocated to that arm than to the government services arm, proportional to estimated time spent on each arm. Using a similar rationale, a larger portion of head office and field office research and monitoring and evaluation (M&E) costs were allocated to SM than to GS because SM required greater and more complex data collection efforts, particularly for staff at the head office. In contrast, data collection and analysis for the government services arm largely comprised collating data from existing government reports and records.

In analyzing the two arms' costs, the total cost of the intervention and each arm, the per unit cost of a major activity in each arm and the per capita cost of each arm (cost of the arm divided by the number of target population in the arm site) were calculated. Cost-effectiveness was measured by the cost of the increase in outcomes of interest, namely, reproductive health knowledge and use of reproductive health services. The change in outcomes of interest was quantified by comparing baseline to endline data and calculating the percentage change between the two. Then, cost effectiveness was calculated using the formula shown in the glossary.

In addition to data presented in this chapter, FRHS calculated the quarterly running costs of both intervention strategies and analyzed the variability of costs by cost center, by category and by per unit costs across quarters. These data are presented elsewhere (Aggarwal et al. 2005).

6.3.5 Costs to Replicate an Adolescent Girls' Reproductive and Sexual Health Program in Delhi

Swaasthya assessed the costs of replicating its original Tigri intervention at a second site in Naglamachi to gain a better understanding of the types and magnitude of costs a partner agency would likely incur should it adopt Swaasthya's innovative model. Swaasthya's costing question was:

> *How much does it cost Swaasthya to implement a model adolescent reproductive and sexual health program in a new site?*

6.3.6 Swaasthya Cost Analysis

Swaasthya collected data on financial costs, rather than economic costs, because it was interested in the overall budget and the financial outlays needed to implement the model. Swaasthya included all costs incurred from November 2003 to June 2005 during 20 months of preparation and implementation of the program. As a part of its analysis, Swaasthya

calculated total and per unit costs for the full program, by cost center and by program element.
Swaasthya did not test the cost effectiveness of its intervention elements. Rather, Swaasthya considered its model and its associated costs as an integrated program. Furthermore, Swaasthya limited its analysis to the costs incurred by the organization and excluded costs incurred by others. It also excluded research costs, as did CMC, because the model could be replicated by a partner agency without research activities.

A cost center approach was used to collect data and organize it into costs related to the functions of start-up activities, program implementation, and monitoring and supervision. The start-up activities cost center included program planning, participatory appraisal activities, and training of trainers for staff development. Accounted costs included staff time, meeting costs, venue costs, travel and transportation expenses, and administration costs.

Administration costs included rent; costs of maintenance and amenities, stationery supplies, photocopies, local travel and communication; and other staff time and expenses supporting the capacity of the organization to implement the project but not directly attributable to the project.

A portion of the organization's overall administration costs (35 percent) was allocated to the program based on the intensity of effort expended on this program relative to Swaasthya's other programs and activities. Administration costs were further allocated to cost centers, and activities within those cost centers, based on the relative intensity and duration of the activity where duration was measured in the number of days of intervention activities.

Per capita costs were calculated for each program element (see Chapter 2 for details on program elements) separately by dividing the total costs for each program element by the number of persons in the target population reached by that program element. Per capita costs were not calculated for the overall integrated program because it is unlikely that each program element reached a unique group of persons; that is, it is likely that some adolescent girls participated in multiple elements of the program. Thus, adding the costs of each element to arrive at a total cost for all elements combined would have likely miscalculated the per capita costs by double-counting girls who attended more than one element.

6.4 Results

The costs and cost effectiveness of activities varied tremendously across projects. This is not surprising given that each study had a different location, target group and question. Because each project was unique, each set of costing results is presented separately in this section.

6.4.1 Christian Medical College, Vellore (CMC) Cost Findings

CMC evaluated the cost effectiveness of using health aides (Arm A) versus a female doctor (Arm B) to treat RTIs among young married women. The findings show that using village-based health aides was generally more effective and less costly.

Examining program effectiveness, Table 6.4 shows that Arm A outperformed Arm B by many measures. Health aides achieved similar outreach in both arms, screening for RTIs among 86 percent of the 2,292 women on average in Arm A and 88 percent of the 2,294 women on average in Arm B in each of the four rounds. While both approaches reached a similar number of women with initial screenings, fewer women in the health aide arm reported symptoms of an RTI but a greater percentage of these women were examined, diagnosed , treated and cured of symptoms when compared to their counterparts in the doctor arm.

Table 6.4: Effectiveness of CMC's Health Aide (Arm A) vs. Female Doctor (Arm B)

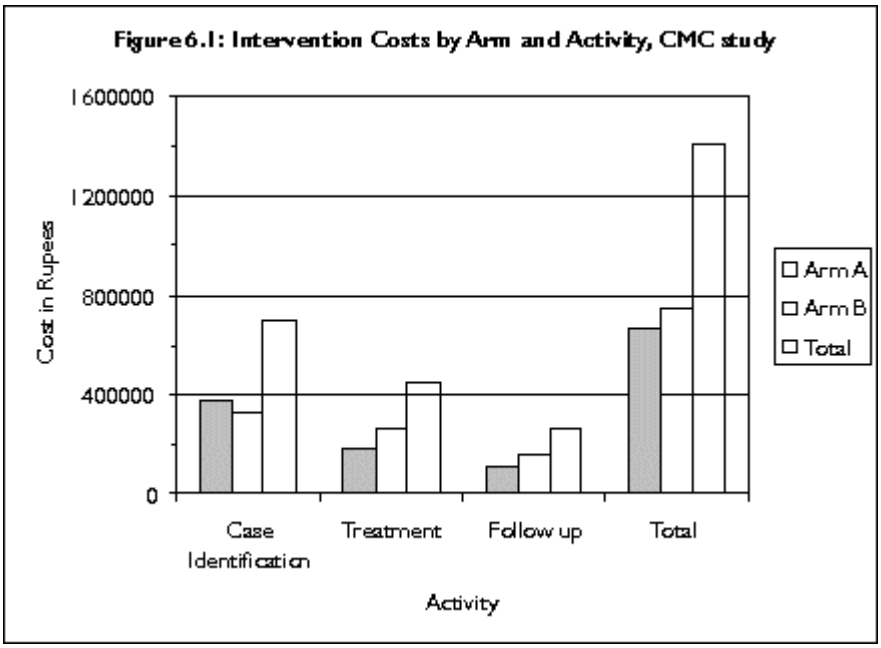
Round	1st		2nd		3rd		4th	
	Arm A (N= 2,292)	Arm B (N= 2,294)	Arm A (N= 2,292)	Arm B (N= 2,294)	Arm A (N= 2,292)	Arm B (N= 2,294)	Arm A (N= 2,292)	Arm B (N= 2,294)
% screened	94	88	79	85	81	88	89	89
% reporting symptoms (among screened)	31	44	23	33	14	30	15	25
% examined (among reporting symptoms)	73	46	64	40	50	26	56	38
% treated (among reporting symptoms)	60	34	54	33	44	17	53	26
% cured of symptoms (among initially reporting symptoms)	35	19	30	20	30	18	44	22

Source: ICRW-CMC

6.4.2 Christian Medical College, Vellore (CMC) Total Costs

The health aide approach applied in Arm A cost Rs. 6,63,000 (U.S. $14,197) while the doctor approach in Arm B cost Rs. 7,47,000 (U.S. $15,996). This adds to a total of Rs. 14,10,000 (U.S. $30,193) for the intervention as a whole.

In both arms, case identification was the most cost-intensive activity, followed by treatment and follow-up. As Figure 6.1 shows, Arm A cost less for most activities, except for case identification where Arm A cost Rs. 3,74,000 (U.S. $8,009) to Arm B's Rs. 3,26,000 (U.S. $6,981). The biggest difference in costs between the two arms is in treatment costs. This reflects the difference in inputs for treatment in the two arms: in the Arm A approach using health aides, RTI diagnosis and treatment cost Rs.1,81,000 (U.S. $3,876) compared to Rs. 2,65,000 (U.S. $5,675) for female doctors to do the same in Arm B.



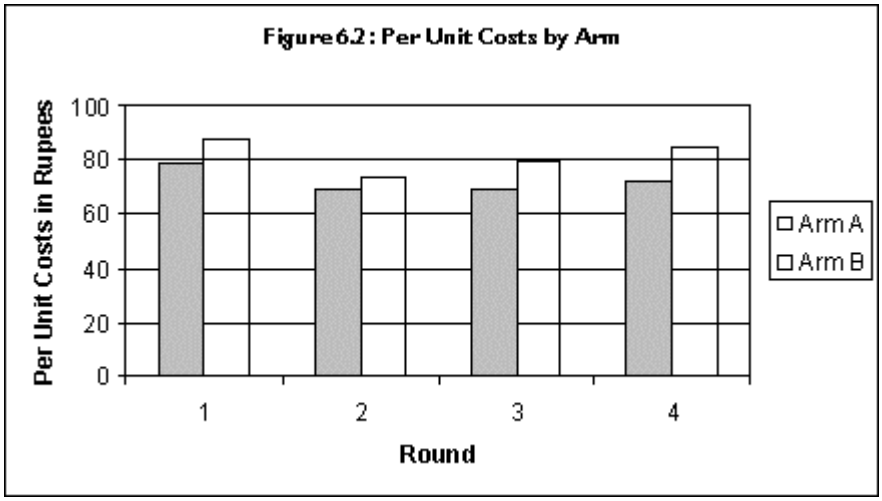
Source: ICRW-CMC

These data, combined with monitoring and evaluation results described in Table 6.4, show that using village-based health aides was both more effective and, for most activities, less costly than using female doctors to treat RTIs among married young women. Cost-effectiveness, however, varied by activity, as is illustrated in more detail below by comparing per unit costs in the two arms.

6.4.3 Cost Effectiveness

Cost effectiveness is measured in terms of the relative number of women each study arm was able to identify, treat and cure of self-reported symptoms – in other words, in terms of accessibility of health aides versus doctors to study women in Arm A versus Arm B. Cost effectiveness is *not* being examined in terms of any change in actual prevalence of RTIs. Thus, in this case, cost-effectiveness is measured by per unit costs.

For the intervention as a whole, using a health aide (Arm A) generated on average lower per unit costs at Rs. 72 (U.S. $1.54) per woman than using a female doctor (Arm B), which cost on average Rs. 81 (U.S. $1.73) per woman. Across intervention rounds, these costs ranged from Rs. 69 to Rs. 78 (U.S. $1.48 to U.S. $1.67) per woman in Arm A, compared to Rs. 73 to Rs. 88 (U.S. $1.56 to U.S. $1.88) per woman in Arm B, with Arm B more expensive than Arm A in each round of the intervention (Figure 6.2).



The differences across arms in per unit costs varied by activity, as shown in Table 6.5.

The per unit costs of identifying symptomatic women were consistently higher in Arm A, though these differences were small with little variation across intervention rounds. This can be attributed to the consistently higher costs for case identification activities because similar numbers of women were screened in both arms.

Per unit treatment costs, on the other hand, were consistently and sizably lower in Arm A than in Arm B, indicating that providing RTI treatment through health aides is more cost effective than through doctors. This is not surprising given that the total costs for Arm A were lower than for Arm B, *and* more women were treated for RTIs in Arm A than in Arm B.

Finally, the per unit costs for symptomatic cure, defined as follow-up costs divided by the number of women cured of symptoms, were highly variable across rounds and between arms. Neither arm was clearly more cost effective than the other. Costs per woman cured were highly sensitive to the number of women in follow–up activities (the denominator). This number was small and varied from round to round. For example, the number of women in follow up hit a low of 166 in round three, when health aides in both arms were diverted from their usual intervention activities for the decadal census. This finding implies that per unit costs to achieve symptomatic cure would fall if follow-up activities were sustained at a scaled-up level. However, it is impossible to definitively conclude which arm would emerge as more cost-effective at a higher intensity. A better picture of cost-effectiveness for symptomatic cure would emerge if a consistently higher proportion of treated women were followed up in each of the rounds.

Table 6.5: Per Unit Costs in Rupees of Arm A vs. Arm B by Activity, CMC study

	Case ID		Treatment		Symptomatic Cure	
Round	Arm A	Arm B	Arm A	Arm B	Arm A	Arm B
1	42 ($0.90)	32 ($0.69)	112 ($2.40)	147 ($3.15)	138 ($2.96)	209 ($4.48)
2	47 ($1.01)	37 ($0.79)	211 ($4.52)	281 ($6.02)	281 ($6.02)	264 ($5.65)
3	53 ($1.13)	44 ($0.94)	352 ($7.54)	577 ($12.36)	874 ($18.72)	609 ($13.04)
4	50 ($1.07)	45 ($0.96)	236 ($5.05)	525 ($11.24)	223 ($4.78	471 ($10.09)

Source: ICRW-CMC

6.4.4 Costs Incurred by Women

To complement the data on costs to CMC of *providing* RTI services to women, rough estimates were made of the costs to women of *seeking* RTI services through the two approaches. These estimates considered actual financial outlays and opportunity costs to women seeking services in either arm. For both arms, these included the costs of the time women spent for the screening interview, the exam and any counseling. For Arm B, where women had to go to a subcenter for treatment, estimated costs of travel time and waiting time at the subcenter also were included. Since baseline data revealed

that the majority of women worked as agricultural laborers, the average hourly wage for female agricultural workers was used to calculate the cost of time spent to seek treatment.

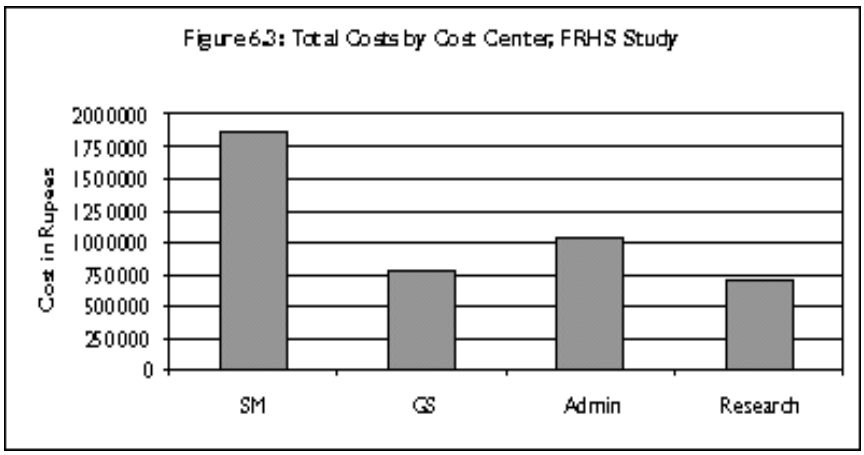
Even before calculating the costs, it was anticipated that costs to women who sought care in the health aide approach were lower than in the female doctor approach. Women who seek care through the health aide in Arm A lose less time away from work and have no travel costs since the health aide provides services in the home. On the other hand, those who seek treatment in Arm B have to travel away from the village. Indeed, the average cost to women was estimated at Rs. 6 (U.S. $0.13) to seek care in Arm A as compared to Rs. 35 (U.S. $0.75) in Arm B.

6.4.5 Foundation for Research in Health Systems (FRHS) Findings

The FRHS study evaluated whether social mobilization was a more cost-effective method than strengthening government services to improve young married women's knowledge of reproductive health and use of reproductive health services. However, the comparison proved difficult because of the very different nature of activities in the two approaches. Overall, social mobilization (SM) cost more than strengthening government services (GS). It also cost more per capita, but less per activity than did strengthening government services. SM was more cost effective in achieving some outcomes, but less cost effective than GS in others.

6.4.6 Total and Per Capita Costs per Study Arm

Of the total costs of Rs. 43,54,685 (U.S. $93,248), the largest portion – 42 percent – was incurred by the social mobilization arm. This amounted to Rs. 18,54,400 (U.S. $39,709). In contrast, the government services arm accounted for 18 percent of all costs. The remaining costs were incurred by administration and research. (Figure 6.3)



Source: ICRW-FRHS

When the research and administrative costs are apportioned across the two study arms, the social mobilization arm cost Rs. 28,92,800 (U.S. $61,944) while the government services arm cost Rs. 14,62,000 (U.S. $31,306).

Per capita costs also were higher in SM than GS. There were 457 young married women younger than 22, the primary target group, in the social mobilization arm and 780 in the government services arm. Although more people beyond the target group undoubtedly benefited from the intervention activities – and quite purposefully so in the social mobilization arm – only the target group is included in per capita cost estimates. These numbers yield a per capita cost of Rs. 6,330 (U.S. $135.55) for social mobilization and Rs. 1,874 (U.S. $40.13) for government services.

6.4.7 Total and Per Unit Costs for Each Activity

The social mobilization arm proved to be nearly twice as costly as the government services arm in terms of total costs, and even more expensive in terms of per capita costs. However, the intervention activities in the two approaches were not comparable; the social mobilization intervention was more complex and required more intensive inputs than the GS intervention (where the FRHS input was training of government health workers and observing the MCP[6] camps).

[6] The government conducted regular large clinics on maternal and child health. These were called maternal and child protection – or MCP – camps.

Keeping these differences in mind, FRHS examined per unit costs in terms of the cost per major representative activity in each arm; in other words, a per activity cost. In this analysis, the social mobilization arm cost less than government services. The cost of conducting a participatory health education session with community-based organization members in the SM arm and the cost of observing and providing technical input in the form of training into an MCP camp in the GS arm were analyzed and compared. To calculate the per activity costs, total costs for each arm were divided by the number of activities conducted. The per activity cost varied widely from quarter to quarter, depending on the number of activities conducted. Over the lifespan of the project, the cost per health education session was Rs. 1,037 (U.S. $22.21) rupees and the cost per camp observation was Rs. 3,249 (U.S. $69.57).

Per capita costs also were calculated for health education sessions, based on the number of participants per health education session. A total of 2,790 health education sessions were held, with an average of 17 participants per session, eight of whom were part of the principal target group of young married women ages 15-22 years. Thus, the per capita cost of one health education session was Rs. 61 (U.S. $1.31) per participant (Rs. 3,249/17) or Rs. 130 (U.S. $2.78) per young married woman (Rs. 3,249/8).

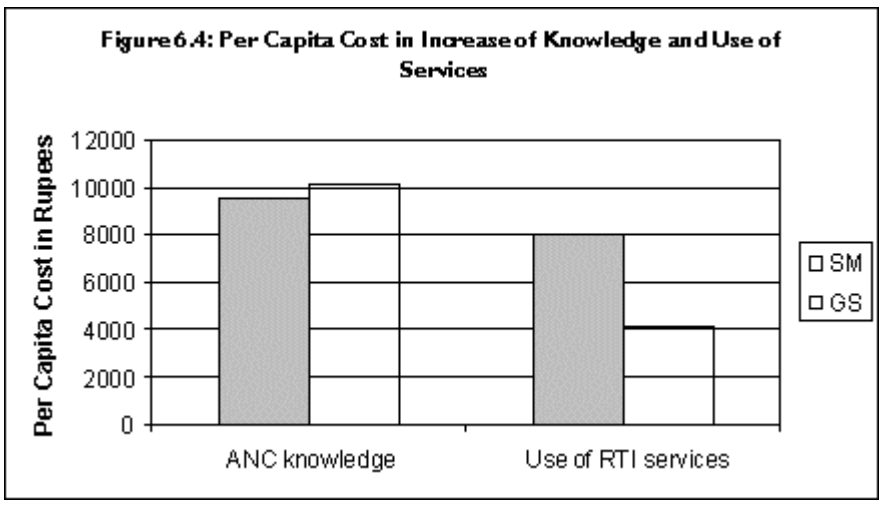
6.4.8 Cost Effectiveness

The per activity cost for each approach cannot be used to measure cost effectiveness of the two approaches because the representative activities in each approach are so different. Thus, one health education session is not expected to produce the same change in the outcomes of interest as one MCP camp observation. Instead, the costs must be linked to*outcomes* rather than to *activities* to determine which approach yields the greatest improvement in knowledge or health-seeking for the least cost. Cost effectiveness was assessed by comparing the cost of the increase in knowledge or health-seeking outcomes achieved in each of the arms.

Examining effectiveness, overall, the social mobilization arm performed better than the government services arm in terms of improving young married women's awareness of various reproductive health issues, with some variation across outcomes. Across arms, patterns for increases in service use were even more varied than for knowledge. The social mobilization arm had the greatest increases in postnatal check-ups, contraceptive use (particularly of spacing methods), treatment of gynecological disorders and partner treatment for symptoms of RTIs or STIs. Notably, the government services arm did not perform significantly better than the SM arm in increasing the use of services.

The relative cost effectiveness of each arm varies depending on the outcome variable used, as illustrated by the two outcomes shown in Figure 6.4. Neither the SM nor the GS approach emerges as consistently more cost effective than the other. As Figure 6.4 demonstrates, the SM arm is more cost effective than the GS arm in achieving certain outcomes (e.g. knowledge about antenatal care or ANC) and less cost-effective in achieving others (e.g. use of RTI services).

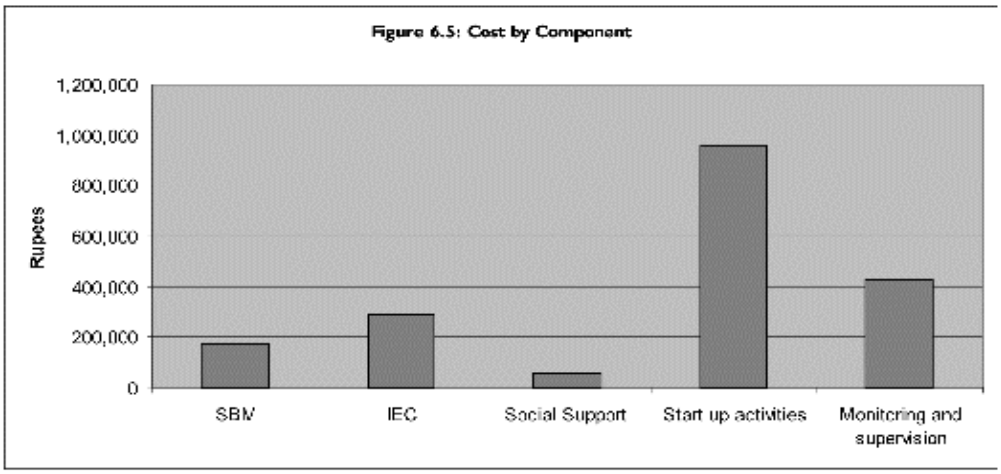
Figure 6.4: Per Capita Cost in Increase of Knowledge and Use of Services



Source: ICRW-FHRS

6.4.9 Swaasthya Total Cost

The total cost of Swaasthya's integrated program was Rs. 19,05,075 (U.S. $40,794). Start-up costs of Rs. 9,60,000 (U.S. $20,557) exceeded the running costs of all other program elements –indeed of all other program elements combined (Rs. 5,19,000 [U.S. $11,113]) or of program monitoring and supervision activities (Rs. 4,26,000 [U.S. $9,122]). (Figure 6.5)

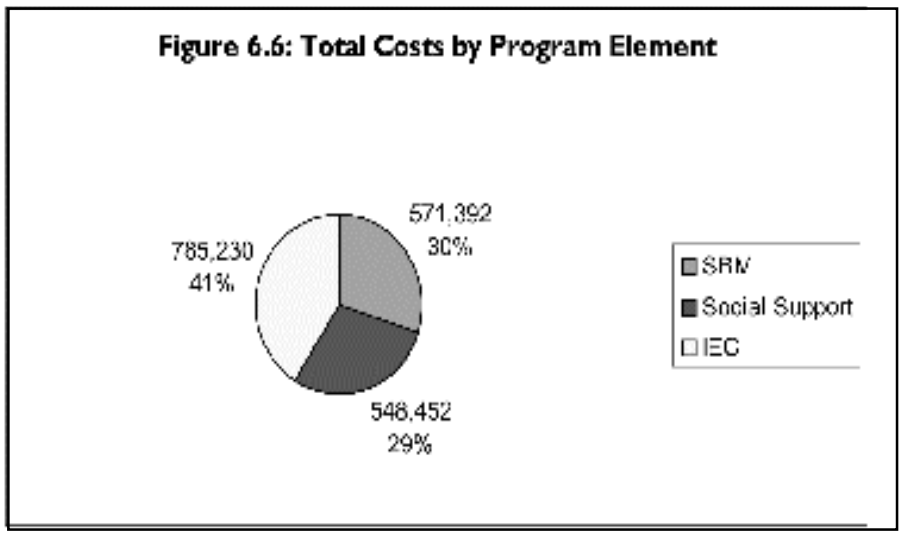


Source: ICRW-Swaasthya

6.4.10 Costs of Program Elements

To better understand the full cost of the intervention model, start-up and monitoring costs were allocated to the three program elements: skills-building module (SBM); information, education and communication (IEC); and social support. When these costs were specific to a particular program element, 100 percent of the costs were allocated to that element. The general start-up and monitoring costs that remained were apportioned equally across the three elements.

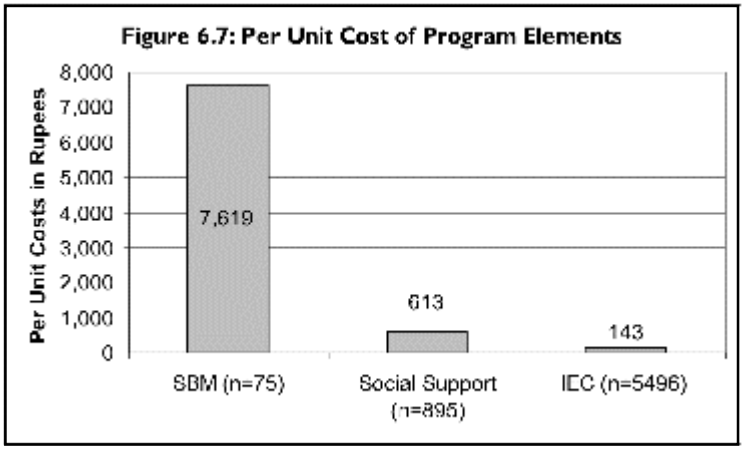
With the monitoring and start-up costs allocated to the program elements, the costs for the social support and SBM elements were roughly equal at Rs. 5,48,000 (U.S. $11,734) and Rs. 5,71,000 (U.S. $12,227), respectively. The IEC element of the program was more costly (Rs. 7,85,000 [U.S. $16,809]), accounting for 41 percent of the program's total cost of Rs. 19,05,075 (U.S. $40,794). IEC targeted both adolescent girls and adult women. (Figure 6.6)



Source: ICRW-Swaasthya

6.4.11 Per Capita Costs

Although the total costs for the three program elements do not vary widely, the per capita costs can be expected to vary considerably because the elements were not expected to reach an equal number of people. The IEC element, for example, reached nearly 5,500 people as compared to only 75 adolescent girls who participated in the skills-building module. Thus, on a per capita basis, IEC cost Rs.143 (U.S. $3.06) per person as compared to social support at Rs. 613 (U.S. $13.13) per person and SBM, clearly the most expensive on a per capita basis, at Rs. 7,619 (U.S. $163.15) per person. The most costly program element – IEC – was the least costly on the basis of cost per person reached. (Figure 6.7)



Source: ICRW-Swaasthya

6.5 Challenges and Rewards in the Costing Process

The intervention costing studies were modeled differently. Swaasthya investigated the financial costs of implementation because those costs best suited its interest in understanding the budget resources required for replication. CMC and FRHS measured economic costs, though one incorporated research costs while the other did not. All three studies calculated total costs and costs by program component or approach and per capita costs. FRHS also calculated cost per activity in each of two arms. Two of the teams, CMC and FRHS, compared the cost effectiveness of their two approaches by linking costs with intervention outcomes. Although different costing models were employed**,** all three teams experienced similar challenges and rewards.

6.5.1 Common Challenges

The teams that undertook the costing studies relied on external guidance and expertise while investing in building technical capacity among project and finance staff. In addition to the capacities of staff, the teams needed to invest in other resources for the costing exercises. Studies required a computerized accounting system, updated financial software, accounting procedures that made it feasible to identify all costs – whether direct or indirect – and attribute them to defined cost centers, and substantial staff time. These factors had personnel and cost implications.

Another challenge facing investigators was the difficulty of obtaining data. This was not usually an issue where the organization's costs, whether financial or economic, were concerned, but it was more challenging to collect data about costs incurred by others. In some cases, external data could be obtained, but receiving it in a timely manner and compatible format was difficult. Feasibility of collecting data from external sources was a key reason most studies limited themselves to their costs of providing services (or implementing activities) rather than the costs of accessing services, participating in activities or costs to collaborating agencies providing complementary components. For example, FRHS would have liked to consider the state government's costs for participating in activities that improved provision of government services in the government services arm or their costs for providing improved services to young people, and were granted access to that data. Similarly, Swaasthya was able to obtain some of the data needed to estimate the costs of resources that a potential partner organization would need to mobilize to replicate and scale up their model program. However, neither organization was able to obtain all necessary data and in the format necessary for meaningful analysis.

6.5.2 Unanticipated Rewards

Unanticipated rewards extend beyond the groups involved and beyond the life of this intervention research program. The costing studies necessitated a more intense collaboration between program and finance staff than is typical in either program implementation or intervention research, which resulted in a deeper appreciation among staff. Program staff had a greater understanding and appreciation of finance and accounting systems and data, and finance staff were offered a unique opportunity to be involved in the program and research activities of the organization.

The teams anticipated an onerous process to collect costing data. By and large, data collection proved to be less time consuming than anticipated. In fact, ensuring that allocation rules were based on rational assumptions, calculating indirect costs and testing the allocation rules at the beginning of the study took more consideration and time than the ongoing task of collecting cost data.

Despite some trepidation about the costing studies, the project teams grew more confident of both their in-house skills to conduct the analysis and the feasibility of the studies. Training staff to collect, manage and analyze cost data did require an ongoing investment, but the investment and experience came with a payoff. As one principal investigator concluded:

> *Costing exercises can be a regular component of community health programs. It is possible and feasible for public health practitioners to cost programs. (Dr. Jasmin Prasad, Christian Medical College, Vellore)*

Each of the teams found use for the costing data beyond the research question. First, insights into the economic costs and the exact portion of each of the indirect costs led to a better understanding of the true costs of the interventions being studied and an improved ability to budget realistically and accurately for them. Partners also had an enhanced understanding of actual expenditures compared to budgeted amounts.

Second, project teams were able to identify human resources, infrastructure and other assets that were not being used to full capacity and engage them more efficiently. They also discovered cost-cutting measures such as sharing vehicles across project activities or coordinating activities in neighboring villages to reduce overall staff time and transportation costs. As a result, the interventions were implemented in an increasingly cost-efficient manner over the course of a project.

Third, project teams examined intervention costs by the intensity of intervention activities and outreach. In so doing, teams were able to achieve a more optimal level of coverage or intensity and to try various cost saving strategies. FRHS, for example, determined an optimal number of health education sessions to be conducted per village, which allowed FRHS to make more strategic decisions regarding their implementation. Some of these cost-saving strategies benefited others as well. FRHS found it both effective and cost-efficient to have one social worker active per primary health center (PHC). Using this information, the Maharashtra state government elected to have one social worker per block (4-5 PHCs) in one of its projects, since the government social workers had fewer data collection, record keeping and data analysis activities than their FRHS counterparts during the course of the study.

6.6 Conclusion

The three costing studies, with their different research questions and designs, made valuable contributions to an area where knowledge is particularly weak. These studies provide detailed costing data on several specific adolescent reproductive health programs, and the approaches that were costed out are different from other adolescent reproductive health approaches that have been costed in the past. These studies may be of particular interest to the Indian government, which currently is seeking to learn more about the costs of providing adolescent reproductive health services through the public sector. The per capita and per activity costs also give some insight into the optimal scale and intensity of activities for implementing such interventions so that these programs are cost efficient

Finally, by linking the costs to outcome data, the CMC and FRHS cost studies provide rare data on the cost effectiveness of the compared intervention approaches. In the case of CMC, there is fairly convincing evidence that the health aide approach is a more cost-effective model than the female doctor model, at least at current levels of RTI prevalence and outreach. The evidence about the relative cost-effectiveness of the government services versus social mobilization approaches that FRHS employed is more mixed with no clear conclusion emerging.

Perhaps most importantly, the experience of the teams shows that it is feasible for program-oriented NGOs to undertake costing studies, even when costing research is not their core competence. This should be an encouraging lesson for other organizations implementing or evaluating adolescent reproductive health interventions. Hopefully, more people will be motivated to study the costs of these interventions and contribute to a body of knowledge that needs more information.

CHAPTER 7

SUMMARY AND CONCLUSIONS

The 10-year multi-partner project, *Improving the Reproductive Health of Married and Unmarried Youth in India,* provides important insights and lessons learned on how to strengthen community and government efforts to improve youth reproductive and sexual health.

The research program, which ran from 1996 to 2006, demonstrates concrete ways that programs in rural and urban settings can improve various aspects of youth reproductive and sexual health, including raising the age at marriage for girls, reducing the prevalence of anemia among adolescents, and improving married couples' knowledge and care of reproductive tract infections (RTIs). A key finding is that communities must be involved if gains are to be made in changing the social norms which underlie gender constraints – the main obstacle to youth accessing the reproductive and sexual health information and services they need. Researchers also determined that several other factors are crucial to ensuring that youth reproductive health interventions succeed: developing cost-effective strategies, addressing gender considerations, and involving men and boys.

The International Center for Research on Women (ICRW) coordinated the six multi-site research and intervention studies with five partners from different community-based and nongovernmental organizations across India. This multi-partner structure presented challenges, but on balance bolstered the research capacity and expertise of the partners, who took the lead in the program design, implementation and evaluation.

ICRW and its partners also succeeded in disseminating core messages based on this research to government officials throughout India, several of whom have already replicated and adapted some of the reproductive health programs in various states. For instance, the state government of Maharashtra is using the life skills model from IHMP's *Building Life Skills to Improve Adolescent Girls' Reproductive and Sexual Health* project to improve girls' reproductive and sexual health in rural Maharashtra. In Pune city, the Municipal Corporation replicated the nutrition program from the Institute of Health Management, Pachod (IHMP) project, *Reducing Anemia and Changing Dietary Behaviors among Adolescent Girls in Maharashtra,* to improve girls' nutrition and health in Pune city slums.

The study results and lessons learned show what works and can be scaled up; what models merit further investigation; and what research gaps remain. By integrating these lessons into policy and program design, policy-makers and programmers can advance efforts to improve youth reproductive and sexual health in India and elsewhere.

7.1 Results

The research program, *Improving the Reproductive Health of Married and Unmarried Youth in India,* had three goals: (1) implement and test models to improve reproductive and sexual health for married and unmarried youth; (2) build and strengthen the capacity of implementing partners to carry out intervention research; and (3) disseminate program- and research-based messages to policy-makers and other opinion leaders to inform policy decisions.

Quick Results: Improved Youth Reproductive and Sexual Health
ICRW and partner researchers conducted formative research from 1996 to 1999, which highlighted that gender-based constraints are a primary obstacle to youth's access of reproductive and sexual health information and services. This and other findings informed the 2001-2006 intervention research which included six projects, each with its own design, goals and objectives toward the overall goal of improving youth reproductive and sexual health.

In less than three years,[7] each project improved some aspect of youth reproductive and sexual health. These results underscore the message that effective programs can lead to health improvements in a relatively short time.

Project-specific results include:

- Unmarried girls experienced greater self-confidence and an increased ability to negotiate with parents and their social environment.
- Age at marriage for girls increased by one year, from 16 to 17.
- Unmarried adolescent girls' nutritional status improved.

[7] The intervention study dates span a five-year period. However, the actual intervention program typically was implemented for 18-36 months. The rest of the five-year period focused on training, fielding baseline, endline and other research, and data analysis.

- Young married women's knowledge and use of services for a wide variety of reproductive and sexual health concerns increased, though not for all outcomes measured.
- Decision makers in young married women's lives, such as husbands and mothers-in-law, experienced an increased awareness and demonstrated greater support for their wives'/daughters-in-law's reproductive health needs.
- Young married women and their partners increased their use of RTI services.

The projects also demonstrate what processes and models work to achieve desired health outcomes. Specifically:

- Life skills programs can increase age at marriage for girls.
- Life skills and adolescent development models can increase girls' confidence and their perception of their ability to make decisions about marriage and childbearing.
- An integrated health care program that comprises reproductive health education, clinical referrals, and sexuality and marital counseling can be used in a rural community. The extent to which youth will access and benefit from each program element, however, may vary.
- Village-level female health aides can be trained to undertake speculum exams and are able to reach, examine and treat a larger proportion of young rural married women than a conventional doctor, even if the doctor is a woman.
- Community mobilization is associated with higher levels of some, but not all, outcomes measuring reproductive health knowledge and use of services.
- Community involvement and mobilization is effective in creating a supportive environment for youth reproductive health and changing attitudes among key decision makers who influence youth's environments.

Strength of Partnerships: Building Community-Based Intervention Research Capacity
In addition to improving youth health, the research program sought to build and strengthen the partners' research capacity. This motivation led to the decision to structure the program as a partnership between ICRW and in-country program organizations.

Most of the five partners had some research experience, including monitoring and evaluation (M&E). By partnering with ICRW, they experienced an opportunity to build and deepen these skills. ICRW:

- Provided detailed, in-depth input into the design of the intervention research in each partner's proposal, including study design, main outcomes, how these were to be measured, what tools to use, and an analysis plan for data generated;
- Provided extensive input on each instrument to be fielded;
- Held annual technical workshops on specific topics such as M&E, writing for journal articles, policy and advocacy, costing and others. These workshops also allowed partners to engage in a process of peer review for their respective studies; and
- Participated actively in data analysis, presentations of findings at national and international forums, and journal article writing.

As the main research partner, through this partnership ICRW staff honed their skills in working with field-based NGO program partners. Equally important, ICRW researchers strengthened their ability to balance academic-style research rigor with the flexibility in implementing research that field realities (such as incomplete data collection; imprecisely timed baselines, etc.) necessitate. ICRW was also able to strengthen partnerships with some high-quality Indian organizations for future collaborations.

Insight to Action: Linking Research and Policy
Another key component of the research program was to inform policy that shapes youth reproductive health programs, especially in India, on what works and how to make programs more effective. Specifically, the program focused on policy-makers at three levels: (1) Indian states where the five partners worked, (2) nationally in India and (3) nationally in the United States. Policy changes already are visible at the Indian state and U.S. national level.

ICRW and its partners involved Indian state policy-makers from the beginning by choosing project designs that the state government health system could replicate if shown to be effective. By the study's end:

- The state government of Maharashtra had adapted and scaled up IHMP's life skills model for rural Maharashtra.
- The Pune city Municipal Corporation replicated IHMP's nutrition program in the Pune slums.
- Ahmednagar district government officials adopted the training modules piloted in the *Social Mobilization or Government Services* project by the Foundation for Research in Health Systems (FRHS), including modules on couple infertility and counseling and male involvement – all of which were new to the public health system.

- The Tamil Nadu state government provided the public health system sub-centers for the Christian Medical College, Vellore (CMC) project which examined differences between health services between a community health aide and a female doctor.

Research staff also disseminated key messages on how to improve youth reproductive and sexual health based within India nationally through various forums for international organizations, presentations at policy think tanks, and exchanges with donors and government officials. Similar exchanges in the United States resulted, on July 13, 2006, in three U.S. Senators introducing the *International Child Marriage Prevention and Assistance Act* (S. 3651). Data from this program research helped inform and shape specific language in the bill.

7.2 Lessons Learned

In addition to project-specific results and findings, the research program as a whole yielded a richer understanding of youth reproductive and sexual health and how to improve programs that provide critical information and services. Researchers identified four overarching themes as crucial to successful youth reproductive health interventions: (1) develop cost-effective strategies, (2) address gender-based constraints to reproductive health, (3) create community-based interventions, and (4) involve men and boys.

Develop Cost-effective Strategies
Part of assessing the effectiveness of a program is to understand the various costs involved in implementing, replicating and scaling up a project and how these costs relate to health and other outcomes. ICRW and its partners built into several of the projects costing analysis methods to see whether it is possible to integrate such analysis into program design and to test the different approaches' cost effectiveness.

On balance, community mobilization approaches in these studies were more effective in achieving the outcomes and more cost-effective than other approaches. In all cases, researchers found that cost considerations vary depending on program context and reach. Finally, a key lesson learned is that it is possible for NGOs with minimal skills in costing to nonetheless conduct costing exercises, albeit with external technical assistance.

Reduce Gender Constraints
Formative research from 1996 to 1999 highlighted that social taboos and gender norms restrict young women's and men's knowledge of and access to reproductive health services. The intervention research (2001 to 2006) shows that it is possible to address these gender-based constraints and improve young people's reproductive and sexual health knowledge and use of services in a relatively short time. To do so, key actors in adolescents' social environment – family elders, peers and health care staff – need to be involved.

An example of how quickly and effectively programs can change gender-related social norms is the FRHS intervention, which involved the broader community in providing reproductive health and sexual information to young married women. Married women were identified as the target group primarily to respect the community norm that such information was not appropriate for unmarried girls. However, once the intervention was underway and parents and other community elders saw its benefit, they requested that unmarried girls be included as well.

Involve Communities
Partners used a variety of strategies across the interventions to mobilize and otherwise involve communities as a way to address gender constraints and achieve desired outcomes, both health and social. These strategies ranged from consultations with key community members, parents, other decision makers and youth before the intervention started; the creation of community-based groups; and the recruitment and training of community members as field staff.

In addition to finding that community mobilization is an effective approach for many, though not all, youth reproductive and sexual health issues, the research program found that community involvement and mobilization is flexible, and can – and should – be tailored to suit the target population, geographic and cultural area, and intervention design.

Engage Men and Boys
A crucial component of addressing gender constraints and mobilizing communities is involving men and boys. Partners experimented with various approaches, including engaging with youth groups and cricket clubs; approaching urban boys at street corners where they would typically congregate; hiring young male social workers or field workers to reach boys and men; and trying to identify male role models to work with young boys. In some cases these efforts were successful, as in the case of men's participation in their wife's maternal care, or partner treatment for sexually transmitted diseases (STIs), or fathers' involvement in the life skills curriculum for their daughters. However, none of the groups was successful in working with young boys.

Part of the problem likely lies in the history and dynamics of development programs, which traditionally have worked primarily with women. Young boys and men have much less experience with such projects and working with program staff, which may have contributed to their reluctance to participate. Norms of masculinity that discourage men from admitting to any health or sexual problems also may help explain why young boys were reluctant to join health education sessions and young men hesitated to seek care for RTI symptoms or infertility problems. Findings from related interventions showed that broader social norms which consider women's health as solely a woman's issue also create a barrier to young husbands' involvement in the health care of their young wives.

7.3 Challenges and Limitations

Improving the Reproductive Health of Married and Unmarried Youth in India experienced many successes, including several improved health outcomes for youth. However, the complexity of this multi-partner, multi-intervention research program had some inherent challenges and limitations.

Limited Randomization in Study Designs
Except for the IHMP life skills program, the studies were not fully randomized experiments. For the two studies that were feasibility studies, this fact may be less of an issue. However, for the remaining studies, which were structured as test-control models, this was a limitation.

In the FRHS and CMC studies, the unit of randomization was the primary health center or block, respectively, rather than the individual. The different arms of the study were randomized across only *one* PHC or block each, making for a very small sample size of randomized units. Within each unit (PHC or block), of course, many individuals participated. However, individuals were not randomized into participants and nonparticipants. Rather, participants were self-selected. Program participants, thus, are unlikely to represent the population at large. For ethical and practical reasons it was neither possible nor advisable to randomize at the individual level. To partially address this issue, the analysis focuses on comparisons of pre- and post-intervention changes, compared in turn between study and control arms. Further, rather than restricting the analyses to program participants, researchers included all eligible individuals in each study arm. Still, the change in outcomes cannot be fully attributed to the intervention in question.

Ethical Considerations
Adhering to the study design also was a challenge, particularly in terms of contamination between study and control arms. In the various community settings, where partners had worked for several years, it was neither possible nor ethical to deny program participation or treatment to individuals from the control site if they demanded to participate, which in some cases they did. Some contamination was possible to address, while some was not. For instance, the CMC study noted all the nonstudy women who sought treatment and excluded them from the program evaluation. In the FRHS study, on the other hand, when project staff explained to the community groups in the control area why they could not roll out the intervention to them at this point, the control area groups decided to hold health education sessions themselves; thus the results are likely to be contaminated to some degree. This contamination may explain, for example, why the control group performed as well as or better than study groups by the endline on some of outcomes of interest.

Community Demands
A related challenge was that as the interventions were established and the communities became involved, many approached research staff with additional demands. For example, communities of the KEM and FRHS interventions asked to include unmarried adolescents in the projects. Communities asked that young men and boys in several of the studies be included in the interventions. FRHS community participants requested additional project activities, such as the infertility sessions.

In some but not all cases, research staff were able to incorporate these requests into the project design. This experience raises several questions about how to move forward with similar interventions: How does an organization address community demands when they arise from an intervention's success? What to do with limited resources? Changing project designs mid-stream also poses problems for evaluation design. On the other hand, community organizations, such as the research partners, cannot afford to disappoint or break the trust of the communities they work in. Partners and ICRW addressed this dilemma by directing community members to alternative avenues for any such additional demands, and documenting the demands.

Staff Overload
Various aspects of implementing the interventions also presented challenges, especially work overload for field workers. In some cases, such as the KEM, Swaasthya and IHMP life skills studies, research staff chose community volunteers for field roles in the study. In the others, research staff assigned existing field staff these responsibilities, resulting in worker overload in several cases, most notably the health aides in the CMC study. Research staff adopted stop-gap measures like temporarily hiring additional staff or removing other duties from field staff. However, no clear overall solution emerged, especially given resource constraints. Moving forward with similar interventions, this challenge would need to be addressed.

Partnerships

The partnership structure adopted for this research program was both a challenge and a valuable learning experience. The program was structured as a relatively equal partnership between ICRW and in-country partners who were the implementing organizations.

A key challenge right at the start was to build an environment of mutual trust and respect so that each partner saw the value of the partnership. ICRW and the partners discovered that there is no substitute to investing time upfront to cement the relationships between different organizations. Program organizations who have been working in their communities for a long time may naturally look with suspicion upon the "outside" researcher who has arrived to "tell them what to do." On the other hand, research organizations may consider their program counterparts as entirely lacking in research training or capacity. Given the possibility of mutual misunderstanding and that the purpose of evaluations is to feed results back into programs to improve them, it is incumbent upon the research organization to structure the partnership in such a way so as to make evident to the program partner the benefits of such a partnership. The research partner also has to ensure that they are not seen as taking over the program. ICRW and its partners were able to cement partnerships by being transparent about their own strengths and weaknesses; recognizing the complementarities in partnering; and spending time throughout the life of the project to build mutual trust and respect.

Another key partnership challenge is fostering communication with other community stakeholders such as the Indian government and other organizations in India working on the same issues. This study was successful in doing so at the level of the state government, largely because of in-country partners' prior strong relationships with key government officials in their states or districts. ICRW and the partners were less successful in building partnerships with national government or national-level organizations until late in the program. This experience suggests that a lot of ground can be lost if audiences are not formed, and stakeholders not involved, from the program's inception.

7.4 Implications for Policy

The interventions in this program were well-monitored, and many subtle adaptations were made to strengthen the interventions as they were being implemented, so results show efficacy and effectiveness. In partnership, the research program was able to monitor, evaluate and measure the costs of the youth reproductive and sexual health interventions to have the type of valid results presented here. It is critically important to monitor the progress of interventions, otherwise one cannot determine whether an intervention had succeeded unless processes were in place to monitor and check that certain aspects of the intervention process in fact had occurred. If results showed that the intervention had not improved outcomes, this could have been for either two reasons: (1) the intervention did not really occur or (2) it was not really efficacious and effective.

Similarly, it is critical to evaluate intervention results using an appropriate intervention research design. Otherwise, the research team cannot know if an intervention worked to achieve its outcomes. This program was well-evaluated and, therefore, yielded valid results on which decisions can be made (or have already been made) to replicate or scale-up the youth reproductive and sexual health interventions.

Further, and particularly with replicating and scaling up in mind, it is crucial, but not commonly undertaken, to assess the costs of interventions and report these costs alongside their efficacy and effectiveness results. Program planners will want to know the costs of the intervention before they consider whether they can afford to replicate it or scale it up. These interventions were pioneering because they assessed the costs of interventions that were well-monitored and well-evaluated.

Appendix I: Team Members, ICRW and Partners

International Center for Research on Women (ICRW)
Rohini Pande, Sc.D., Project Director
Kathleen Kurz, Ph.D., Director, Reproductive Health & Nutrition and previous project director
Sunayana Walia, Reproductive Health Specialist
Kerry MacQuarrie, Research Associate
Saranga Jain, Research Associate
Shana Pereira, Program Assistant
Dee Mebane, Amanda Bartelme and Ellen Cerniglia, Administrative Assistants

Foundation for Research in Health Systems (FRHS)
Alka Barua, M.D., Executive Director, FRHS, and Principal Investigator
Vikas Aggarwal, Ph.D., Regional Director, North, FRHS
Ramesh Waghmare, Field Coordinator
Deepak Dhongde, Programmer

Social workers:
Vaishali Kulkarni
Alka Diwane
Sampada Barde
Rohini Misal
Hemlata Sonawane
Asmita Bokare
Mr. Shinde
Mr. Balasaheb Salve

KEM Hospital Research Centre
Surinder Jaswal, Ph.D., Tata Institute of Social Sciences - Principal Investigator

KEM Hospital Research Centre – Pune:
Laila Garda, M.D., Research Scientist - co-Principal Investigator
Ujjwal Nene, Clinical Psychologist - co-Principal Investigator
Shilpa Karvande, Anthropologist - co-Principal Investigator
Anuprita Dixit, Research Officer
Lokesh Gujjarappa, Research Officer

Institute of Health Management – Pachod (IHMP)
Ashok Dyalchand, M.D., Director
Manisha Khale, Associate Director
Nandita Kapadia-Kundu, Ph.D., Additional Director, Pune Centre

Swaasthya
Geeta Sodhi, M.D., Director
J.S. Negi, Administrative and Finance
Geetanjali Dixit, Project Coordinator
Paramita Kundu, Program Coordinator
Ugra Mohan Jha, Research Officer
Sunita Kujur, Documentation Officer
Rajendra Prasad, Consultant, Data Management and Analysis
Field workers: Dolly, Nisha, Indira, Sitara, Jyoti, Ram Kumar

Christian Medical College, Vellore (CMC)
Sulochana Abraham, M.D., MPH, co-Principal Investigator, former professor and head of the Community Health Department
Jasmin Prasad, M.D., MPH, DNB, co-Principal Investigator and study coordinator
Annie I.K. George, M.D., doctor for the Arm B part of the study and leader for the costing study
Savita Sanghi, D.C.H., who conducted the endline prevalence study
Health aide workers who participated

Long-term Consultants
Asha Bhende, Ph.D., former professor, Indian Institute of Population Sciences, Mumbai
Ramesh Bhat, Ph.D., professor, Indian Institute of Management-Ahmedabad

Appendix II: List of Policy Briefs in Briefing Kit

In addition to this report, the briefing kit, *Improving the Reproductive Health of Married and Unmarried Youth in India: Evidence of Effectiveness and Costs from Community-based Interventions,* provides information on the research program, *Adolescent Reproductive Health Program in India*. The kit consists of a series of research briefs (listed below) that highlight specific study results. The briefs also can be accessed on the ICRW Web site, www.icrw.org.

1. Improving the Reproductive Health of Married and Unmarried Youth in India: Institute of Health Management, Pachod
   Project: Delaying Age at Marriage in Rural Maharashtra, India

2. Improving the Reproductive Health of Married and Unmarried Youth in India: Institute of Health Management, Pachod
   Project: Reducing Anemia and Changing Dietary Behaviors among Adolescent Girls in Maharashtra, India

3. Improving the Reproductive Health of Married and Unmarried Youth in India: Swaasthya
   Project: Replicating an Adolescent Girls' Reproductive and Sexual Health Program in Naglamachi, Delhi, India

4. Improving the Reproductive Health of Married and Unmarried Youth in India: Swaasthya
   Project: Building Life Skills to Improve Adolescent Girls' Reproductive and Sexual Health, Tigri, Delhi

5. Improving the Reproductive Health of Married and Unmarried Youth in India: KEM Hospital Research Centre
   Project: Reproductive and Sexual Health Education, Care and Counseling for Married Adolescents in Rural Maharashtra, India

6. Improving the Reproductive Health of Married and Unmarried Youth in India: Christian Medical College, Vellore
   Project: Reducing Reproductive Tract Infections among Married Young Women and Their Partners in Rural Tamil Nadu, India

7. Improving the Reproductive Health of Married and Unmarried Youth in India: The Foundation for Research in Health Systems
   Project: Role of Mothers-in-Law in Young Women's Reproductive Health: Evidence from Intervention Research in Rural Maharashtra, India

8. Improving the Reproductive Health of Married and Unmarried Youth in India: The Foundation for Research in Health Systems
   Project: Social Mobilization or Government Services: What Influences Married Adolescents' Reproductive Health in Rural Maharashtra, India?

9. Understanding Costs to Improve Adolescent Reproductive Health: Evidence from Three Adolescent Reproductive Health Intervention Research Programs in India

10. Understanding Costs to Improve Youth Reproductive and Sexual Health: Results from a Study in Rural Maharashtra, India

11. Understanding Costs to Improve Youth Reproductive and Sexual Health: Results from a Study in Tamil Nadu, India

12. Understanding Costs to Improve Youth Reproductive and Sexual Health: Evidence on Replicating a Tested Model in Delhi, India

13. Influence of Men and Boys on Youth Reproductive and Sexual Health: Lessons from Intervention Studies in India

14. Influence of Men and Boys on Youth Reproductive and Sexual Health: Husbands' Involvement in Maternal Care in Rural Maharashtra, India

15. Community Mobilization and Youth Reproductive and Sexual Health: Findings from Intervention Studies in India

16. Addressing Gender-Based Constraints in Youth Reproductive Health: Experiences and Behaviors about Infertility among Young, Rural Couples in Maharashtra, India

17. Addressing Gender-Based Constraints in Youth Reproductive Health: Findings from Intervention Studies in India

Appendix III
Publications from the Adolescent Reproductive Health Program in India

Abraham, Joseph, Ruth Archana Srikanth, Sulochana Abraham, Jasmine Prasad and Renu John. 2000. "Sexual behaviour: Older husbands, younger wives." In eds. Raju, Saraswati and Ann Leonard. *Men as Supportive Partners in Reproductive Health.* New Delhi: Population Council.

Abraham, Joseph Jasmine Prasad and Sulochana Abraham. 2003. "Gynecological problems among young married women in Tamil Nadu, India." Chapter in *Towards Adulthood*, World Health Organization, Geneva: 138-141.

Abraham, Leena and K. Anil Kumar. 1999. "Sexual Experiences and their Correlates among College Students in Mumbai City, India." *International Family Planning Perspectives* 25(3): 139-146 & 152.

Apte, Hemant. 2000. "Beginning of a process: Male involvement in reproductive health." In eds. Raju, Saraswati and Ann Leonard. *Men as Supportive Partners in Reproductive Health.* New Delhi: Population Council.

Apte, Hemant and R.K. Mutatkar. July-September 2000. "Condom – Awareness, Opinions and Behaviour," News & Views, *Journal of the Council of Sex Education and Parenthood (International)* 52: 10-18.

Barua, Alka. 2000. "Young husbands' involvement in reproductive health in rural Maharashtra." In eds. Raju, Saraswati and Ann Leonard. *Men as Supportive Partners in Reproductive Health.* New Delhi: Population Council.

Barua, Alka and Kathleen Kurz. May 2001. "Reproductive health-seeking by married adolescent girls in Maharashtra, India," *Reproductive Health Matters* 9(17): 53-62.

Barua, Alka, Rohini Pande, Kerry MacQuarrie and Sunayana Walia. December 2004. "Caring Men? Husbands' Involvement in the Maternal Care of their Young Wives." *Economic and Political Weekly* 39(52): 5661-5668.

International Center for Research on Women. April 2004. *Youth, Gender, Well-Being and Society: Emerging Themes from Adolescent Reproductive Health Intervention Research in India*. Research Update. Washington, D.C.: ICRW.

International Center for Research on Women. February 2001. *Youth, Gender, Well-Being and Society: A Contextual Approach to Adolescent Reproductive Health and Sexuality in India*. Information Bulletin. Washington, D.C.: ICRW.

Mutatkar, R.K. and Hemant Apte. 1999. "Sexual behaviour among adolescents in rural Western Maharashtra." *AIDS Research and Review* 2(2): 89-94.

Prasad, Jasmin, Sulochana Abraham, Kathleen M. Kurz, Valentina George, M. K.
Lalitha, Renu John, M. N. R. Jayapaul June, Nandini Shetty and Abraham Joseph. June 2005. "Reproductive Tract Infections among Young Married Women in Tamil Nadu, India," *International Family Planning Perspectives* 31(2): 73-83.

Prasad, Jasmine, Sulochana Abraham, B. Akila, Abraham Joseph and K.S. Jacob. 2003. "Symptoms related to the reproductive tract and mental health among women in rural southern India." *The National Medical Journal of India*. 16(6): 303-308.

Appendix IV: Presentations

2006

"Costing Community Interventions for Adolescent Reproductive Health," Kerry MacQuarrie. Assessing Costs of Health Services Provided to Young People conference, organized by World Health Organization's Center for Adolescent Health (WHO/CAH). Geneva, Switzerland. July 2006.

"Observations on WHO/CAH/ADH Costing Tools," Kerry MacQuarrie. Assessing Costs of Health Services Provided to Young People conference, organized by World Health Organization's Center for Adolescent Health (WHO/CAH), Geneva, Switzerland. July 2006.

"ICRW's Work with Men," Kathleen Kurz, Ph.D. and Nata Duvvury, Ph.D. ICRW Insight to Action seminar. Washington, D.C. USA. June 2006.

"HMIS: Key to Successful Implementation of Young Married Women's Reproductive Health," Alka Barua, M.D. Global Health Council meeting. Washington, D.C. USA. June 2006.

"Life Skills and Age of Marriage in Rural Maharashtra," Ashok Dyalchand, M.D. and Manisha Khale. ICRW brownbag seminar. Washington, D.C. USA. March 2006.

"Empowering Girls and Increasing Age of Marriage," Ashok Dyalchand, M.D., and Janabai Gite (life skills student from rural Maharashtra). ICRW 30th anniversary gala. Washington, D.C. USA. March 2006.

"Life Skills and Child Marriage in Rural Maharashtra," Ashok Dyalchand, M.D., and Manisha Khale. United Nations Commission on the Status of Women annual meetings. New York, USA. March 2006.

2005

"Community Mobilization and Reproductive Health Needs of Married Adolescents," Rohini Pande, Sc.D. and Anju Malhotra, Ph.D. YouthNet international consultation on community mobilization approaches in youth reproductive health. Washington, D.C. USA. October 2005.

"Realization of Young People's Health Concerns and Rights Through Community Mobilization," Sunayana Walia. 10th International Women and Health Meeting. New Delhi, India. September 2005.

"Infertility Concerns Among Young Couples in Rural India," Sunayana Walia. 10th International Women and Health Meeting. New Delhi, India. September 2005.

"Addressing Gender-Based Constraints for Adolescents and Youth: Findings from Intervention Research Studies in India," Rohini Pande, Sc.D. 10th International Women and Health Meeting. New Delhi, India. September 2005.

"Cost Effectiveness of Two Approaches to Treating Women's Reproductive Tract Infections," Jasmin Prasad, M.D. Global Health Conference. Washington, D.C. USA. June 2005.

"Costing of Young Married Women's Reproductive Health Strategies," Kerry MacQuarrie. 2005 Global Health Conference. Washington, D.C. USA. June 2005.

"Youth Reproductive Health Intervention Research: Implications for Community Monitoring," Sunayana Walia. Meeting for the Indian federal government's Reproductive and Child Health (RCH-2) program, organized by the Indian Ministry of Health and Family Welfare, with support from DFID and UNFPA. New Delhi, India. May 2005.

"Finding Solutions to Adolescent and Youth Reproductive Health Concerns: Challenges in Intervention Research," Sunayana Walia. Regional Workshop on Monitoring and Evaluation organized by International Planned Parenthood Foundation. Bhopal, India. April 2005.

"Community Mobilization and Reproductive Health Needs of Married Adolescents," Rohini Pande, Sc.D. Population Association of America (PAA) annual meeting. Philadelphia, USA. March 2005.

2004

"Men as Partners: Emerging Findings from an Intervention Research Program in India," Sunayana Walia. International Conference on Men as Partners in Sexual and Reproductive Health, organized by ICMR and WHO. Mumbai, India. December 2004.

"Finding Solution to Adolescent and Youth Reproductive Health Concerns: Evidence from Intervention Research Studies in India," Sunayana Walia. Young People's Sexual and Reproductive Health Needs in Asia: Progress, Achievements and Ways Forward. New Delhi, India. December 2004.

"Making NGO-Government Partnerships Work for Married Adolescents," Vikas Aggarwal, Ph.D. Young People's Sexual and Reproductive Health Needs in Asia: Progress, Achievements and Ways Forward. New Delhi, India. December 2004.

"A Comprehensive Intervention Strategy to Address the Needs of Married Adolescents in Rural Areas," Laila Garda, M.D. Young People's Sexual and Reproductive Health Needs in Asia: Progress, Achievements and Ways Forward. New Delhi, India. December 2004.

"Young Wives, Young Mothers: Meeting the Needs of Child Brides" and "Child Marriage: Connecting Research Insight to Policy Action at ICRW," Rohini Pande, Sc.D. ICRW board meeting, Washington, D.C. USA. November 2004.

"Young Wives, Young Mothers: Meeting the Needs of Child Brides in India," Rohini Pande, Sc.D. Capitol Hill Briefing. Washington, D.C. USA. September 2004.

"Adolescent Reproductive Health in India: Key Lessons from Five Intervention Studies," Sunayana Walia. Asia-wide round table meeting on "ICPD + 10," organized by IPPF. Kathmandu, Nepal. August 2004.

"Early Age at Marriage and Life Skills Program," Sunayana Walia. Child Marriages in India: The way forward. Human Rights Law Network national consultation. New Delhi, India. July 2004.

"Life Skills for Adolescent Girls," IHMP staff. Meeting organized by UNFPA. New Delhi, India. June 2004.

"Intergenerational Communication Key to Young Married Women's Reproductive Health," Alka Barua, M.D. Global Health Council Annual Meetings. Washington, D.C. USA. June 2004.

"Impact of Life Skills Education on Age at Marriage of Adolescent Girls," Manisha Khale. Global Health Council Annual Meetings. Washington, D.C. USA. June 2004.

"A Strategy for Addressing Reproductive Health Issues Concerning Married Adolescents and Young Adults in a Rural Area of Western Maharashtra: A Feasibility Study," Surinder Jaswal, Ph.D. Global Health Council Annual Meetings. Washington, D.C. USA. June 2004.

"Addressing Adolescents Within Safe Motherhood: Examples from India," Kathleen Kurz, Ph.D. Global Health Council Annual Meetings. Washington, D.C. USA. June 2004.

"Young Women's Health Seeking for Reproductive Tract Infections: Intervention Research in India," Rohini Pande, Sc.D. and Jasmine Prasad, M.D. Global Health Council Annual Meetings. Washington, D.C. USA. June 2004.

"Young People: Towards a Healthy Future," Sunayana Walia. Ministry of Youth Affairs and Sports and the Ministry of Health and Family Welfare. New Delhi, India. May 2004.

2003

"Youth and Marriage: Evidence from India," Kathleen Kurz, Ph.D. WHO/UNFPA meeting on married adolescents. Geneva, Switzerland. December 2003.

"Obstacles to Expanding Contraceptive Choices among Married Adolescent Females," Alka Barua, Ph.D. Expanding Contraceptive Choices: International and Indian Experiences and their Implications for Policy and Programs, Indian Council of Medical Research (ICMR). Mumbai, India. December 2003.

"Caring Men: Husbands' Involvement in the Maternal Care of their Young Wives," Rohini Pande, Sc.D. Reaching Men to Improve Reproductive Health for All, USAID-sponsored conference on men as partners. Dulles, Virginia, USA. September

2003.

"Caring Men: Husbands' Involvement in the Maternal Care of their Adolescent Wives in Rural India," Alka Barua, M.D., Rohini Pande, Sc.D., Sunayana Walia and Kerry MacQuarrie. Population Association of America Annual Meetings. Minneapolis, USA. May 2003.

"Caring Men: Husbands' Involvement in the Maternal Care of their Adolescent Wives in Rural India," Rohini Pande, Sc.D. and Kerry MacQuarrie. Johns Hopkins University Population Center Seminar Series. Baltimore, USA. March 2003.

"Impact of Life Skills Education on Age at Marriage of Girls: A Community Based Intervention Study in Rural Maharashtra," Ashok Dyalchand, M.D. Mantralaya (State Legislature), Maharashtra State Health Secretary and other state legislators. Mumbai, India. 2003.

2002

"The Value of M&E Integrated with Program Implementation: Case Studies from India," Kathleen Kurz, Ph.D. The MacArthur Foundation. International Advisory Group meeting. Chicago, USA. December 2002.

"Addressing Adolescent Girls and their Environment to Reduce Reproductive & Sexual Health Morbidities," Geeta Sodhi, M.D., Manish Verma and Shrabanti Sen. 6th Asia Pacific Social Science and Medicine Conference. Kunming, China. October 2002.

"Reproductive Health Needs of Married Adolescents," Kathleen Kurz, Ph.D. Capitol Hill briefing. Washington, D.C. USA. April 2002.

2001

"Adolescent Reproductive Health and Sexuality in India: Testing Effective Interventions," Rohini Pande, Sc.D. Turning Research Results into Practice: Service Delivery/Research meeting, organized by the Academy for Educational Development (AED). Washington, D.C. USA. July 2001.

"Adolescent Reproductive Health and Sexuality in India: Testing Effective Interventions," Kathleen Kurz, Ph.D. Methodological Issues in Intervention Research in RCH. Conference, organized by International Institute for Population Sciences. Goa, India. 2001.

References

Abraham, L. and K.A. Kumar. 1999. "Sexual Experiences and Their Correlates Among College Students in Mumbai City, India." *International Family Planning Perspectives* 25(3):139-147.

Aggarwal, V., A. Barua, R. Bhat, K. MacQuarrie and R.P. Pande. 2005. "Costing of Young Married Women's Reproductive Health Strategies: Lessons from a Community-Based Intervention." Washington, D.C.: Global Health Council.

Barker, G., J. Lyra and B. Medrado. 2003. "The Roles, Responsibilities, and Realities of Married Adolescent Males and Adolescent Fathers: A Brief Literature Review." Background paper prepared for the WHO/UNFPA/Population Council Technical Consultation on Married Adolescents, Dec. 9-12 in Geneva, Switzerland.

Barker, G. 2003. "Engaging adolescent boys and young men in promoting sexual and reproductive health: lessons, research and programmatic challenges." In *Adolescent and Youth Sexual and Reproductive Health: Charting Directions for a Second Generation of Programming*. New York: Population Council. 109-153.

Barua, A. and K.M. Kurz. 2001. "Reproductive Health-seeking by Married Adolescent Girls in Maharashtra, India." *Reproductive Health Matters* 9(17).

Barua, A., R.P. Pande, K. MacQuarrie and S. Walia. 2004. "Caring Men? Husbands' Involvement in Maternal Care of Young Wives." *Economic and Political Weekly* 39(52).

Berer, M. "Men." 1996. *Reproductive Health Matters* 7.

Cairo Programme of Action. 1994. International Conference on Population and Development, Cairo, Egypt.

Chowdhury, S.N.M. 2003. "Pregnancy and postpartum experience among first-time young parents in Bangladesh: preliminary observations." In *Towards Adulthood: Exploring the sexual and reproductive health of adolescents in South Asia,* edited by S. Bott, et al., 59-61. Geneva, Switzerland: World Health Organization.

Cornwall, A. 1998. "Beyond Reproduction: Changing Perspectives on Gender and Health." In *Gender and Development In Brief 7.* Brighton, UK: BRIDGE, Institute of Development Studies. http://www.bridge.ids.ac.uk/dgb7.html.

Danforth, N. 1995. "Let's not forget about the men." *Choices: The Human Development Magazine*. UNDP. 33-34.

Diop, N., H. Bathidja, et al. 2004. "Improving the Reproductive Health of Adolescents in Senegal." Washington D.C.: FRONTIERS/Population Council.

Drennan, M. 1998. "New Perspectives on Men's Participation." *Population Reports* 26(2). Baltimore, Maryland: Population Information Program (PIP).

Duvvury, N., et al. 2002. *Men, Masculinity and Domestic Violence: Summary Report of Four Studies.* Washington, D.C.: International Center for Research on Women (ICRW).

Foundation for Research in Health Systems. 2005. Final Report: *Community-Based Approach to Married Adolescent Girls' Reproductive Health.* Ahmedabad, India.

Helzner, J. 1996. "Men's Involvement in Family Planning." *Reproductive Health Matters* 7.

I.K., A. 2005. "The cost and effectiveness of alternate strategies in the diagnosis and treatment of RTI/STI in Kaniyambadi block, Tamil Nadu." MD in Community Medicine thesis, Christian Medical College, Vellore, India.

Janowitz, B., C. Cuthbertso, M. Beksinska, and Q. Cebekhulu. 2003. Final Report: *The Costs of Programmes at Selected Youth Centres in South Africa.* Washington, D.C.: FRONTIERS/ Population Council and Reproductive Health Research Unit.

Jejeebhoy, S.J. 1998. "Adolescent Sexual and Reproductive Behavior: A Review of the Evidence from India." *Social Science and Medicine* 46(10):1275-90.

KEM Hospital Research Center. 2004. Final Report: *Reproductive and Sexual Health Education, Care and Counseling for Married Adolescents in Rural Maharashtra, India*. Pune, India: KEM Hospital Research Centre.

Kurz, K.M., L. Abraham, H. Apte, A. Barua, and A. Joseph. 1999. "Adolescent Sexuality and Reproductive Health in India." Paper presented at Population Association of America meetings. March 1999 in New York, NY.

Lloyd, C.B., ed. 2004. *Growing up Global: The Changing Transitions to Adulthood in Developing Countries.* Washington, D.C.: The National Academies Press.

Malhotra, A. and S.R. Schuler. 2005. "Women's Empowerment as a Variable in International Development." In *Measuring Empowerment: Cross-Disciplinary Perspectives*. edited by D. Narayan. Washington, D.C.: World Bank.

Mathur, S., M. Greene, et al. 2003. "Too Young To Wed: The Lives, Rights, and Health of Young Married Girls." Washington, D.C.: International Center for Research on Women (ICRW).

Meekers, D. and M. Oladosu. 1996. "Spousal communication and family planning decision-making in Nigeria." Working Papers in African Demography No. AD9h-03. University Park, Pa.: Population Research Institute.

Mitchell, M.D., J. Littlefield, and S. Gutter. 1999. "Costing of Reproductive Health Services." *International Family Planning Perspectives* 25: Supplement.

Nicholson, W. 1989. *Microeconomic Theory: Basic Principles and Extensions, Fourth Edition*. New York: Dryden Press.

Ndong, I., R.M. Becker, J.M. Haws, and M.N. Wegner. 1999. "Men's Reproductive Health: Defining, Designing, and Delivering Services." *Men's Reproductive Health* 25: Supplement.

Over, M., and P. Piot. 1991. "HIV Infection and Sexually Transmitted Diseases." In *Disease Control Priorities in Developing Countries*, edited by D.T. Jamison, and W.H. Mosely. New York: Oxford University Press.

Pachauri, S. 2001. "Male Involvement in Reproductive Health Care." *Journal of Indian Medical Association* 99(3):138-141.

Pachauri, S. and K.G. Santhya. 2002. "Reproductive Choices for Asian Adolescents: A Focus on Contraceptive Behavior." *International Family Planning Perspectives* 28(4):186-95.

Piot, P., and J. Rowley. 1992. "Economic Impact of Reproductive Tract Infections and Resources for their Control." In *Reproductive Tract Infections: Global Impact and Priorities for Women's Reproductive Health,* edited by A. Germain, K.K. Holmes, P. Piot, and J.N. Wasserheit. New York: Plenum Press.

Population Council. 1999. "Men as Partners: Finding Social Support for Women's Reproductive Health." *Population Briefs* 5(3). Washington, D.C.: Population Council.

Prasad, J.H., A. I.K., R. Bhat, K. MacQuarrie and R.P. Pande. 2004. "Cost Analysis of CMC Vellore Study." Paper presented at ICRW dissemination meeting, Reaching Youth: Learning from Five Reproductive Health Intervention Studies, May 11 in New Delhi, India.

Prasad, J.H., S. Abraham, K.M. Kurz, V. George, M.K. Lalitha, R. John, M.N.R. Jayapaul, N. Shetty and A. Joseph. 2005. "Reproductive Tract Infections Among Married Young Women in Tamil Nadu, India." *International Family Planning Perspectives* 31(2): 73-82.

Shulz, K.F., J.M. Schulte, and S.M. Berman. 1992. "Maternal Health and Child Survival: Opportunities to Protect Both Women and Children from the Adverse Consequences of Reproductive Tract Infections." In *Reproductive Tract Infections: Global Impact and Priorities for Women's Reproductive Health,* edited by A. Germain, K.K. Holmes, P. Piot, and J.N. Wasserheit. New York: Plenum Press.

Stenberg, K. 2006. "Measuring the Cost of Health Services provided to Young People." Paper presented at WHO Center for Adolescent and Child Health and Development working meeting, Assessing the Costs of Reproductive Health Services to Young People, July 19-21 in Geneva, Switzerland.

Sternberg, P. and J. Hubley. 2004. "Evaluating men's involvement as a strategy in sexual and reproductive health promotion." *Health Promotion International* 19(3):394. Oxford: Oxford University Press.

Swaasthya. 2006. Final report: *The Feasibility and Effectiveness of Transferring a Comprehensive, Community-based Model for Adolescent Sexual Health, An Intervention Research Study.* New Delhi, India: Swaasthya.

Terris-Prestholt, F., L. Kumaranayak, A. Obasi, B. Cleophas-Mazige, M. Makokha, J. Todd, D. Ross, and R. Hayes. 2006. "From Trial Intervention to Scale-Up: Costs of an Adolescent Sexual Health Program in Mwanza, Tanzania." *Sexually Transmitted Diseases* 33(4).

Townsend, J., E. Diaz de May, Y. Sepulveda, Y. Santos de Garza, and S. Rosenhouse. 1987. "Sex Education and Family Planning Services for Young Adults: Alternative Urban Strategies in Mexico." *Studies in Family Planning* 18(2):103-108.

United Nations Population Fund (UNFPA). 2005. Technical Report: *Male involvement in reproductive health, including family planning and sexual health.* New York: UNFPA.

Wegner, M.N., E. Landry, D. Wilkinson, and J. Tzanis. 1998. "Men as Partners in Reproductive Health: From Issues to Action." *International Family Planning Perspectives* 24(1):38.

Wilkinson, D., D. Kirby, C. Waszak, and J. Zieglar. 1991. "Six school-based clinics: their reproductive health services and impact on sexual behavior." *Family Planning Perspectives* 23(1):6-16.

World Bank. 1993. "Investing in Health." *World Development Report.* Oxford: Oxford University Press.

YouthNet. 2004. "Maternal Health Care among Adolescents." *YouthLens on Reproductive Health and HIV/AIDS*. Arlington, Va.: YouthNet.

Zackus, J. and C. Lysack. 1998. "Revisiting Community Participation." *Health Policy and Planning* 13(1):1-12.

About the Adolescent Reproductive Health Program in India

The International Center for Research on Women (ICRW) has collaborated with partners in India on multi-site intervention studies to improve youth reproductive health in India. The partners are Christian Medical College, Vellore (CMC); the Foundation for Research in Health Systems (FRHS); the Institute of Health Management, Pachod (IHMP); KEM Hospital Research Centre; and Swaasthya.

This program was conducted in two phases. Phase I (1996-1999) comprised formative research that documented key concerns and constraints about adolescent reproductive and sexual health. It included a study by the Tata Institute of Social Sciences, Mumbai, which did not participate in Phase II; IHMP did not participate in Phase I. In Phase II (2001-2006), these findings were used to design and implement intervention research programs to test alternative models to improve youth reproductive and sexual health.

The research program was supported by the Rockefeller Foundation.

For further information contact:

International Center for Research on Women (ICRW)
Rohini Pande, Sc.D., project director, rpande@icrw.org
Kathleen Kurz, Ph.D., director, reproductive health and nutrition, kkurz@icrw.org
Sunayana Walia, reproductive health specialist, swalia@icrwindia.org
Kerry MacQuarrie, research associate, kerry@icrw.org
Suranga Jain, research associate, sjain@icrw.org

Christian Medical College, Vellore (CMC)
Dr. Sulochana Abraham, principal investigator, sulochana.abraham@gmail.com
Dr. Jasmine Fraaud, co-investigator, jasminep@cmcvellore.ac.in

Foundation for Research in Health Systems (FRHS)
Dr. Alka Barua, principal investigator, frhs.mysore@gmail.com

Institute of Health Management, Pachod (IHMP)
Dr. Ashok Dyalchand, director, ihmp@vsnl.com
Nandita Kapadia-Kundu, Ph.D., additional director, Pune office, ihmpp_ajgd@sancharnet.net.in

KEM Hospital Research Centre and Tata Institute of Social Sciences
Surinder Jaswal, Ph.D., principal investigator, surijas@tiss.edu
Dr. Laila Garde, co-investigator, kemvnr@vsnl.net

Swaasthya
Dr. Geeta Sodhi, director, swaasthya@satyam.net.in

International Center for Research on Women
1717 Massachusetts Avenue, NW
Suite 302
Washington, DC 20036, USA
Tel: (202) 797-0007
Fax: (202) 797-0020
e-mail: info@icrw.org
Web site: www.icrw.org

Country Office:
42, Golf Links, First Floor
New Delhi 110003
India
Tel: 91-11-2465 4216/7; 2463 5141
Fax: 91-11-2463 5142
e-mail: info@icrwindia.org