

CHINA/UNFPA

REPRODUCTIVE HEALTH / FAMILY PLANNING CPR/98/P01
END OF PROJECT - WOMEN SURVEY REPORT

KEY FINDINGS

China Population Information and Research Centre

&

Division of Social Statistics, University of Southampton, UK

March, 2004



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Summary of key indicators

Demographic & socioeconomic

Population in year 2001 (000).....	1,284,927
Sex ratio in the general population (males per 100 females, 2002).....	106
Urban (%), 2001.....	37.7
Age distribution (%)	
0-14.....	26.3
15-24.....	18.1
60+.....	9.3
Women aged 15-49 (%).....	56.3
Median age (years).....	27.6
Population density, 2002 (/ sq. km).....	134
Annual population growth rate 1995-2000 (%).....	0.90
Crude Birth Rate (/1000), 2001.....	15.0
Crude Death Rate (/1000), 2001.....	7.0
Net Migration Rate (/1000).....	-0.1
Total Fertility Rate.....	1.8
Infant mortality rate.....	
Life expectancy at birth (in years), 2002	
Males.....	69.0
Females.....	73.0
Total.....	71.0
% female literate aged 15+, 2001.....	77.0
GNI per capita PPP (\$US, 2002).....	4,390
% of women aged 15-64 in labour force, 2000.....	80.0

Reproductive health

% of married women using any contraceptives.....	83.0
% of married women using modern methods.....	81.0
Maternal mortality ratio (per 100,000 live births).....	53
% of population aged 15-49 with HIV/AIDS.....	0.1
% of women among population aged 15-49 with HIV/AIDS.....	12.0
% of women receiving prenatal care.....	79.0
% of births attended by birth professionals.....	95.0
*Reproductive risk index, 2001.....	16.7

Sources: UNICEF, 2003. Population Reference Bureau, 2002, Population Action International, 2001, UN DESIPA, 1996 China Statistical Year Book, 2000. *Reproductive risk index (RRI) is composed of 10 key indicators of reproductive health. A score between 15-29 points indicate low risk. Ethiopia ranks the highest in the list with a risk score of 72.3 (details are available at Population Action International 2001). World Development Report, 2002

Summary of project indicators

Description of Indicator	Change between baseline & endline surveys
% of unmarried women aged 15-25 years.....	↑
% of women aged 15-19 years attending junior school.....	↑
% of unmarried women heard of any modern reversible methods.....	↑
% of women heard of condoms.....	↑
% of women heard of HIV/AIDS.....	↑
% of women who believe HIV/AIDS transmits through mosquito bite/ kissing/bathing/haircut/public bathing.....	↓
% of women heard of HIV/AIDS through IEC activities.....	↑
% of women who use female sterilisation.....	↓
% of women who use IUD or condoms.....	↑
% of women who heard about methods through IEC & Media.....	↑
% of women who make contraceptive decisions with their partner.....	↑
% of women who had contraceptive decisions made by health workers.....	↓
% of women who are satisfied with condoms.....	↑
% of IUD users who received follow-up visits.....	↑
% of women who receive contraceptive services from township and county level FP stations.....	↑
% of women/couples who received birth permits since 1995.....	↓
% of women aged 25-34 who postpone births.....	↑
% of women who receive follow-up visits after abortion.....	↑
% of women aged 15-29 who participated in any organised gynaecological check-up.....	↑
% of women who feel prenatal care is not necessary.....	↓
% of women who initiate prenatal care in the first trimester.....	↑
% of women who give births at home.....	↓
% of women who received postnatal care home visits in the first week after an institutional delivery.....	↑

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Executive Summary

The principal objective of the UNFPA Fourth Country Programme (CP4) was to implement a client-oriented informed choices approach to reproductive health/ family planning services for both men and women in 32 selected counties of China in accordance with the ICPD (International Conference on Population and Development) Plan of Action. The overall aim of the programme was to assist the government of China in implementing ICPD principles in the area of reproductive health and women's empowerment, specifically to meet unmet need through comprehensive and integrated client-centered reproductive health services. The long-term goal is to expand and make available quality oriented reproductive health services to Chinese men and women on a voluntary basis and in line with the principles, approaches and recommendations of the ICPD programme of action. As a part of the project implementation in 32 counties of 22 Chinese provinces, the China Population Information Research Centre, with the assistance of international consultants carried out a baseline (1998), midterm review (2001) and an endline survey (2002). These assessed and monitored changes in indicators related to reproductive health and family planning and measured the impact of the programme interventions. The following summarises the key findings of the baseline and endline surveys.

Reproductive health knowledge

- Between the baseline (1998) and endline (2002) surveys, knowledge of any modern method increased from 41% to about 86% and that of any modern reversible methods increased from 36% and 83%.
- By the endline period, more than 90% of unmarried women were aware of at least 3 contraceptive methods. Knowledge of natural methods (withdrawal, rhythm) also increased markedly.


- 
- Most women in the endline survey were aware that sharing utensils, public bathing, hair cutting, or shaking hands are not the possible routes of HIV/AIDS transmission and about 90% of those who had heard of AIDS knew that condoms help to prevent HIV/AIDS.

Contraceptive use

- Contraceptive prevalence was high at between 87-89%. Female sterilisation declined by 16% and IUD use increased significantly by 20%. Current use of condom was low overall although it increased appreciably in absolute terms from 1.7% to 3.8% between the baseline and endline surveys.
- Contraceptive service provision and utilisation increased substantially in both county and township level FP facilities.
- Although provision of follow-up care after IUD insertion increased significantly between the baseline and endline surveys, about 16% reported not receiving a follow-up visit after IUD insertion.
- The percentage of women who reported having made contraceptive decisions jointly with their husbands increased from 27% to about 70%; about 20% made decisions on their own. Health workers were more inclined to offer a range of methods where the decision making power was identified as being with women or couples.

Birth permits, fertility and induced abortions

- Birth permits* ceased to exist after 1998.
- Total fertility rates have stayed rather constant at a low level of 1.3 children per woman and women are more inclined to postpone childbearing to the later reproductive years.
- Concomitant to the improvements in service provision, the reported abortion ratios declined significantly from 0.24 in the baseline survey to 0.10 in the endline survey.

- 
- The proportion of women who received pre-operational counselling for induced abortions increased significantly in the endline survey (41.2% in the baseline survey compared with 84.8% in the endline survey). Although there was a parallel increase in women receiving follow-up services after induced abortion, the endline survey revealed that nearly 30% of those who had an induced abortion reported that they had not received any follow-up visit after an induced abortion.

Maternal & child health care

- The percentage of women aged 15-49 years who had attended any organised gynaecological check-up doubled from 32% to 68.2% between the baseline and endline surveys.
- The average frequency of prenatal checkups was 4.5 times in the baseline survey, which rose to 5.9 in the endline survey. About 75% initiated prenatal care within the first three months of pregnancy in the endline period when compared with a figure of 50% in the baseline survey.
- Home delivery rates dropped sharply from 47.3% to 18.9% between the baseline and endline surveys. Most of the postnatal visits were initiated in the first week after delivery, irrespective of the place of delivery.

The surveys demonstrated significant improvements in reproductive health care knowledge, utilisation and service provision in the interval between baseline and endline periods.

* Birth permits are a means employed to ensure that the number of new births among married couples in an area in a given year does not exceed the demographic goal in the form of birth quotas, given by the next higher superior government agency.


I

Introduction

China has taken important steps to ensure basic reproductive health rights for both women and couples and to provide a wide range of informed choice of services for the overall improvement of women's health status through an integrated client-centered and a quality oriented health delivery approach.

China has recently moved towards an integrated and client-oriented Reproductive Health (RH) approach from an administrative Family Planning (FP) approach. The Plan of Actions (POA) endorsed in the proceedings of the International Conference on Population Development (ICPD) and the subsequent meetings on women and social development provided a landmark opportunity for China to initiate efforts on reproductive health issues and move beyond demographic goals and family planning targets. The ICPD¹ was a milestone in the direction of redefining linkages between population and sustainable development. In fact, the government of China has already announced its intention, prior to the ICPD, to move from an administrative to a service-oriented RH approach. The efforts needed to promote a voluntary, client-oriented approach towards RH are, however, countless and it poses a big challenge to the government to administer changes in management, training and services delivery systems as well as monitoring and evaluation. Among the list of different policy and

¹ The ICPD POA, adopted by consensus by 179 states in 1994 and updated in 1999, embodies the principles of numerous international conferences and agreements to focus on improving the well-being of individuals, their reproductive health and reproductive rights. The POA recommended the provision of a wide range of informed method choices to both men and women to have a safe and satisfying sex life and to enable them with the rights to decide the number, spacing and timing of children, according to their choices and voluntary decisions.




programme challenges, the major areas that need attention include developing comprehensive strategies regarding long-term sustainability of small family size and its consequences, provision of appropriate quality oriented health services for children, women/couples and men especially in the adolescent and reproductive ages, reducing gender inequalities in basic and primary level education and finally and more importantly population level intervention measures to tackle the mounting levels of HIV/AIDS. In this backdrop, the UNFPA assistance has been sought to help the Government of China to achieve the goals enunciated in the POAs, especially on the grounds of reproductive health needs and rights of the individuals.

It has been agreed upon that the UNFPA will assist the government of China to ensure that the widest range of RH/FP services are provided in the selected 32 project areas without any form of coercion or other administrative pressure. Besides, the UNFPA and the government will work together to help these counties adopt an integrated client-oriented approach that will combine the promotion of family planning with economic development, universal education, improvement of women's status and provision of quality FP and RH services. Furthermore the proposed efforts will make sure that implementation of the FP programme is not in the form of imposing birth quotas and acceptor targets on FP providers but rather focus on the provision of better client-oriented quality RH services safeguarding the individual reproductive health rights and needs of women/men and couples.

Objectives of the UNFPA RH/FP project

The primary goal of this project was to assist the Government of China in implementing the International Conference on Population and Development (ICPD) Plan of Action in the area of reproductive health and women's empowerment ensuring a comprehensive and integrated client-oriented reproductive health services. The detailed objectives of this project were to contribute to

- *promote responsible reproductive behaviour through increased RH/FP information and knowledge*

- 
- *increased availability to women, men and adolescents of quality, integrated client-centered Reproductive Health/Family Planning (RH/FP) information services on a voluntary basis.*
 - *the formulation of the government's RH/FP strategies for the coming years, in line with the principles of the ICPD-POA.*


The project was funded by the UNFPA and jointly executed by SFPC (State Family Planning Commission), MSI (Marie Stopes International) and the UNFPA. The project was coordinated at the national level by the Department of International Trade & Economic Affairs (DITEA), the Ministry of Foreign Trade & Economic Cooperation (MOFTEC) and implemented by the SFPC² in close collaboration with MOH (Ministry of Health) and other NGOs.

RH/FP surveys and implementation

This report is based on the results from the baseline and endline surveys carried out as a part of the project implementation in 32 selected counties in 22 provinces, with primary target groups being men and women of reproductive ages living in these 32 counties. These counties have been selected based on the assessment of unmet reproductive health needs, commitment of local authorities to the implementation of the ICPD programme of action (as illustrated by the removal family planning targets and birth quotas), agreement to provide adequate institutional support including finances and services, as well as on their broad representation of various cultural socioeconomic and geographical areas of China. The SFPC carried out three surveys: baseline, midline and impact/endline³. All these surveys were aimed to evaluate the key Objectively Verifiable Indicators (OVIs) outlined in the CP4 Logical Framework Matrix. The technical guidance including survey and questionnaire design for the endline survey was provided by the University of Southampton, UK.

² SFPC was established in 1981. Since 2002, SFPC has been renamed as National Population and Family Planning Commission (NPFPC).

³ The endline survey methodology is briefly discussed in the appendix section of this report.



The baseline survey was conducted in October 1998 on three issues – reproductive health and family planning using a woman’s questionnaire, health manpower, training and counselling and follow-up services assessment of the project county staff using a service providers’ questionnaire and the quality/capacity of the facilities in providing services in accordance with the Quality of Care (QOC) and informed choices components using a facility questionnaire. Data on service provider and facility were aggregated at each county level. The baseline survey covered 32 counties of 22 provinces including autonomous regions and municipalities, with primary target groups being women of reproductive ages. The baseline survey covered a sample of 30,556 individual respondents.

The midterm survey was carried out in 2001 to assess (a) the success of implementation of the baseline survey, (b) the major technical difficulties confronted in the execution of the project and (c) to provide useful suggestions for the project design, implementation and the management of the endline survey. The midterm survey targeted mainly the leaders in charge of the project, family planning service providers, women aged 15-35 years in the 32 project counties (n=6,961). Data collection was carried out using letter survey with questionnaire and field reviews. The questionnaires focused on the progress of the project, specific services provided by the family planning service stations and women’s knowledge, attitude and practice of family planning.

The endline/impact survey covered all 32 counties using three questionnaires. The survey was conducted in 2002. The woman questionnaire was designed to measure the change of KAP among women of reproductive ages on the informed choices related to quality of health care. It covered 500 married and unmarried women each from 32 counties (N=16,000). The service providers and facility questionnaires evaluated the infrastructure and the quality of care services provided within different range of health services at the county and township levels. The impact survey aimed to assess the impact of implementation of the project; to review the overall experiences gained in order to ensure a better application in the next 5th UNFPA Country Programme and to promote a sustainable development of the P01 project.



Organisation of the report

This report is organised into 8 sections including the introduction. Section 2 of this report addresses the background features of the respondents in the survey. Section 3 presents the major findings of knowledge and attitudes related to reproductive health issues. The use of family planning methods, the sources of information and supply of different methods, user satisfaction, the role of service provider and informed choices are elaborated in Section 4. The issues concerning birth and reproductive health services permits are briefly summarised in Section 5. Section 6 addresses fertility and induced abortions. The different aspects of prenatal care and maternal and child health services and utilization are examined in Section 7. Section 8 summarizes the key findings of this report and provides recommendations for the future activities of the UNFPA assisted reproductive health and family planning programmes in China. The report concludes with two appendices; (I) the endline survey design and methodology and (II) a list of selected project counties in the endline survey.



Background

Women are likely to postpone marriage and get enrolled in the junior and senior middle schools...

The important background information of the respondents covered in the survey includes age, marital status, residence status, ethnicity, education, and employment. This section discusses the background characteristics of respondents in the surveys.

Age distribution

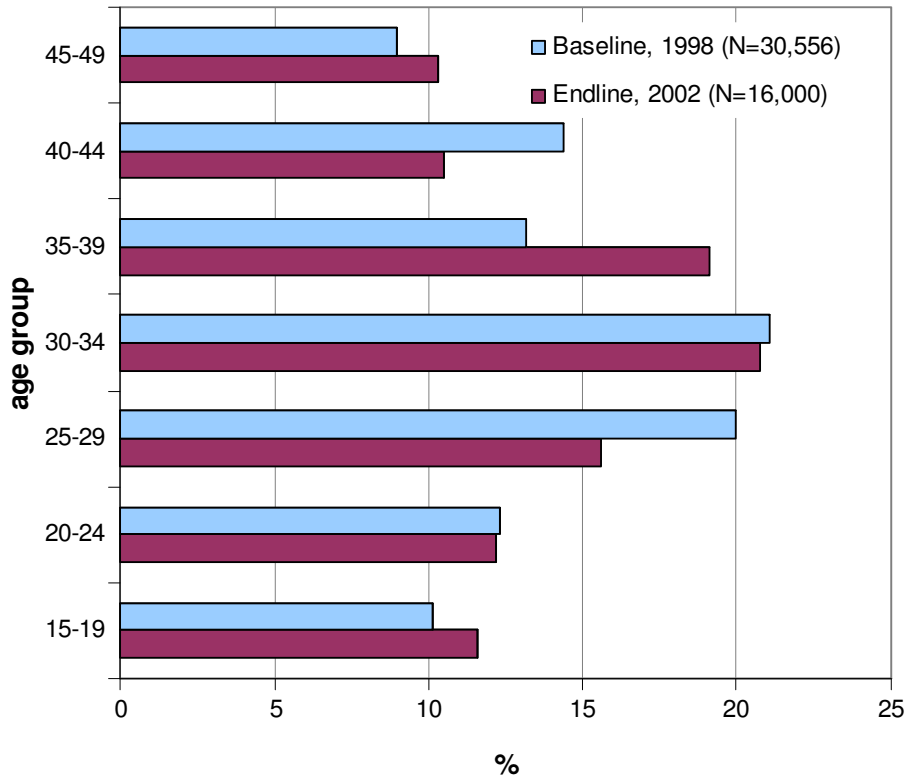
Figure 2.1 shows the age distribution of women in the total sample for both the baseline and endline surveys. The age groups are classified into the standard representation of five-year intervals. The proportion of women aged 15-29 years was 42.4% in the baseline survey, which decreased slightly to 39.4%. On the other hand, the proportion of women in the potential childbearing ages (15-39 years) was about 77% in the baseline survey, which increased slightly to 78% among those aged 20-44 years in the endline survey. This indicates that the proportion of women in the potential childbearing years has remained almost the same between two surveys. The average age of respondents was 31.6 in the baseline survey and was 31.8 years in the endline survey.

Marital status

Table 2.1 shows the comparison of women's marital status between the baseline and endline surveys. The results show that compared with the baseline survey, the

proportions of remarried, divorced or widowed women remained almost unchanged in the endline survey.

FIG 2.1 Age distribution of women in the reproductive ages



However, the proportion of unmarried women increased almost by a quarter from about 15% to 19% and that of married women decreased from 83% to 80% between the two surveys. According to the endline survey, the average age at first marriage for women had increased during 1991-2002 from 21.7 to 22.7 years⁴. This may account for the change in women’s marital status as noted above. A graphical illustration of the increase in the proportion of never married women is provided in Fig. 2.2. The proportion of never married women in the 15-19 age group was 97.5% which increased to 99.3% in the endline survey and the corresponding figures for the 20-24 age group were 36.3% in the baseline and 49% in the endline surveys. The national average female age at

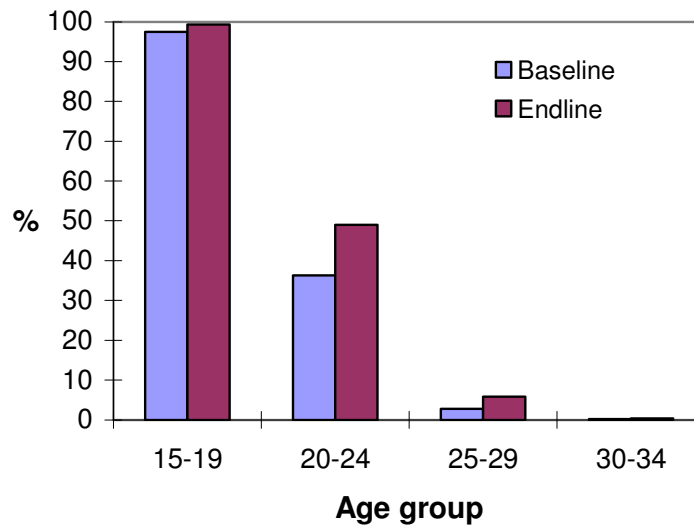
⁴ The legal age at marriage for women has been 20 years since 1980 in China.

marriage in China for the year 2000 was 22.6 years⁵. Our data investigation revealed that the proportion of never married women was high among urban residents, those belonging to Han community and those with better levels of education.

Table 2.1 *Marital status of women of childbearing age (%)*

Marital status	Baseline	Endline
Unmarried	14.9	18.5
Married for first time	82.9	79.4
Remarried	1.5	1.4
Divorced	0.2	0.2
Widowed	0.5	0.4
Total	100.0	100.0

Fig 2.2 *Proportion of never married respondents*



⁵ Source: SFPC (2000)


Residence status, education and ethnicity

Table 2.2 shows the distribution of women of childbearing ages according to residence status, education and ethnicity by their current age between the two surveys. Urban women accounted for 9.9% in the baseline survey and 7.3% in the endline survey.

Table 2.2 *Other background characteristics of respondents, baseline and endline surveys*

Characteristics	Age group							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Place of residence								
<i>Baseline (1998)</i>								
Urban	6.5	11.6	11.4	11.0	11.3	8.0	6.4	9.9
Rural	93.5	88.4	88.6	89.0	88.7	92.0	93.6	90.1
<i>Endline (2002)</i>								
Urban	5.2	6.4	9.2	7.8	7.5	8.6	5.8	7.3
Rural	94.8	93.6	90.8	92.2	92.5	91.4	94.2	92.7
Education								
<i>Baseline (1998)</i>								
Illiterate	4.6	9.9	15.4	18.0	28.8	49.5	55.1	24.4
Primary	19.5	37.6	45.7	40.0	29.3	30.9	34.3	35.5
Junior middle	57.3	37.0	29.9	32.8	26.2	12.9	7.9	29.2
Senior or above	18.6	15.5	9.0	9.1	15.7	6.8	2.7	10.8
<i>Endline (2002)</i>								
Illiterate	5.7	12.7	18.0	19.5	20.7	34.2	38.2	20.5
Primary	14.1	22.5	39.2	39.6	44.2	38.5	47.1	36.0
Junior middle	64.0	50.3	32.7	34.6	27.4	12.6	9.7	33.4
Senior or above	16.2	14.5	10.1	6.3	7.7	14.7	4.9	10.0
Ethnicity								
<i>Baseline (1998)</i>								
Han	84.1	87.7	90.0	90.5	89.6	91.5	90.8	89.5
Other ethnic	15.9	12.3	10.0	9.5	10.4	8.5	9.2	10.5
<i>Endline (2002)</i>								
Han	87.2	86.4	88.5	91.5	90.6	90.9	90.7	89.6
Other ethnic	12.8	13.6	11.5	8.5	9.4	9.1	9.3	10.4

Some distortions were found in the age distribution of respondents, especially for the urban residents in the 20-24 age group. Considering the expected social development and the prospects of economic opportunities in the developed urban regions of different



counties⁶, the percentage of urban women should not have decreased. The decrease as shown above may be caused by factors such as sampling errors and design problems. Nonetheless, the results might reflect the impact of cohort fertility among especially rural women born during the early 1980s when compared with their urban counterparts. The trends in educational attainment are convincing enough between the two surveys although the results seem to be affected by sampling errors. The overall proportion of illiterates decreased to about 21% in 2002 from 24% in 1998. However, the decline is in favour of older cohorts aged between 35 and 49 years. This indicates that efforts are needed to improve the female literacy levels. On the other hand, the proportion of women who had completed junior middle levels seems to show a steady increase over time. Few other changes that have occurred in the different levels of education have been trivial between the two surveys.

The increase in the junior middle school level is partly attributed to the educational development activities in China since the late 1990s. The improvement in educational attainment might have augmented the effective implementation of the programme, since better-educated beneficiaries may accept new knowledge and ideas more quickly and easily. The levels of education in the 32 project counties were found lower than the national figures. Furthermore, there is a significant difference in the levels of education between rural and urban respondents. Illiterate and semi-illiterate groups were found higher in proportions among rural areas when compared with their counterparts, while urban respondents seem to perform well in the junior and senior middle school education.

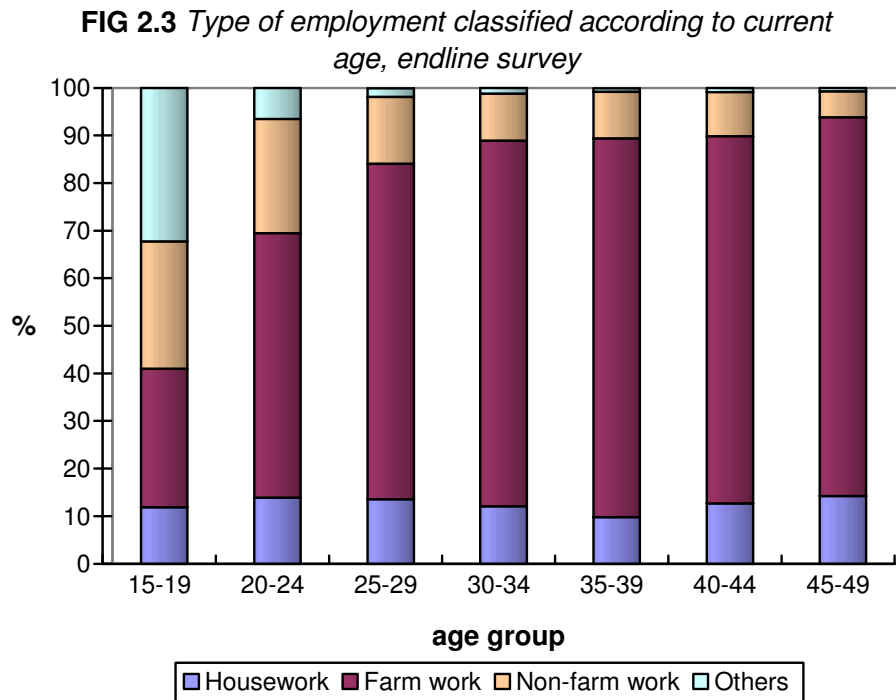
The ethnicity composition has not much changed between the two surveys. Han women accounted for 89.5% in the baseline survey compared with 89.6% in the endline survey and the corresponding figures for other ethnic groups accounted for 10.5% and 10.4% respectively. An important observation of this table is the comparatively lower proportion of Han women in the younger age groups and vice versa for the other ethnic groups. This observation indicates that past fertility decline pattern was comparatively less pronounced for other ethnic groups in the surveyed counties; these results

⁶ The county/provincial figures are not shown in this report mainly because of small sample size.

corroborate with the 2000 census result. Our data investigations revealed that education is far better among the Han community when compared with other ethnic groups.

Employment status

Detailed information on employment status was collected only in the endline survey and the results are shown only for the endline survey. The results reveal that most women interviewed were engaged in farm work (68.5%), followed by non-farm work (13.7%), housework (12.4%) and other work (5.4%), as shown in Fig. 2.3. The respondents engaged in farm work increased with increase in current age; many young women were doing non-farm work and the proportion decreased with increase of age. Not much change was noticed for women of all age groups who reported not working at the time of survey. We found that only a few women aged 15-19 and 20-24 were engaged in “other type of work”. Obviously, these groups also include school students. This might reflect the recent trends of more women getting enrolled in education.





Summary

This section provided a brief description of the background characteristics of women of reproductive ages in the project counties. There have been modest social and demographic developments between the two survey periods. These changes are partly attributed to the changes in women's age structure, the increase in the proportion unmarried in the younger age groups coupled with moderate improvements in female education levels. It is quite clear and suggestive that development is on the way in the project counties and the P01 project impact is well reflected between the two time periods.



Reproductive health knowledge

Knowledge of contraceptive methods has almost doubled in the project areas. Women are aware of the different types of gynaecological diseases...the understanding of possible and impossible routes of HIV/AIDS transmission improved considerably.

An important component of P01 Project (objective 2) was to improve reproductive health knowledge of both women and men through diversified publicity and IEC (Information, Education and Communication) activities. This section will address the knowledge about contraceptive methods, gynaecological diseases, STDs and HIV/AIDS.

Knowledge of contraceptive methods

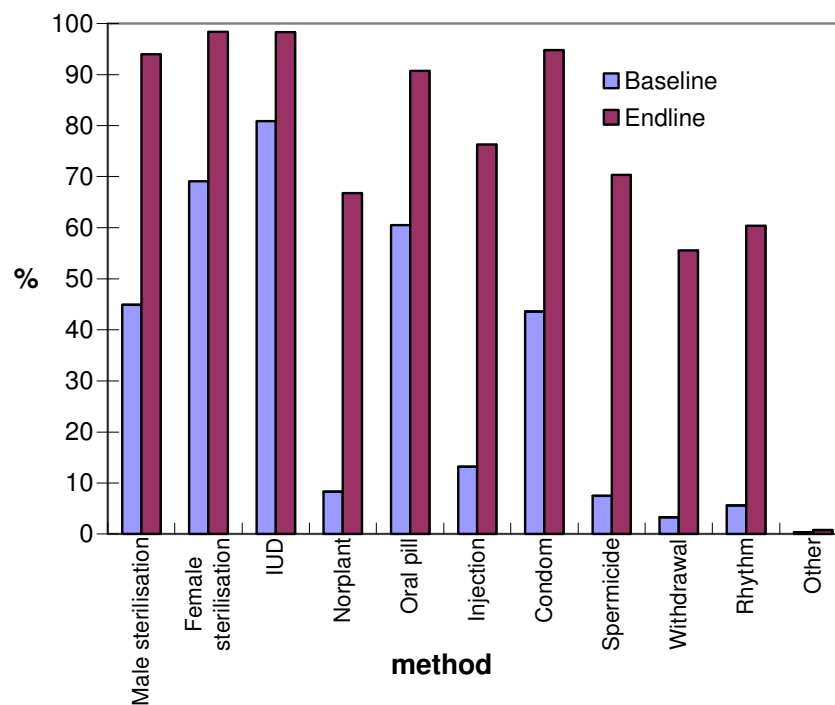
The knowledge of contraceptive methods is one precondition for making appropriate choice. The surveys conducted in the P01 project asked women if they have heard of a certain family planning method and how many methods have they heard of. Table 3.1 shows the changes in the levels of contraceptive knowledge among women between the baseline and endline surveys.

In comparison with the baseline survey, women's awareness have had enhanced in the endline survey for all the listed contraceptive methods, even less commonly used methods such as injections, Norplant and spermicide. Those who heard of at least one method increased significantly from about 31% in the baseline survey to over 70% in the endline survey.

Table 3.1 Percentage of women who have heard of various contraceptive methods

Methods	Baseline (%)	Endline (%)
Male sterilisation	44.9	94.0
Female sterilisation	69.1	98.4
IUD	80.9	98.3
Norplant	8.3	66.8
Oral pills	60.5	90.7
Injections	13.2	76.3
Condom	43.6	94.8
Spermicide	7.5	70.4
Withdrawal	3.3	55.6
Rhythm	5.6	60.4
Others	0.3	0.8
Any method	30.7	73.3
Any modern method	41.0	86.2
Any modern reversible method	35.7	82.9

FIG 3.1 Knowledge of contraceptive methods (%)



Whilst the knowledge of any modern method increased from 41% to about 86% between the baseline and endline surveys; the corresponding increase for any modern reversible methods are 36% and 83%. The increase in the levels of knowledge of modern reversible methods such as IUD and condom is particularly noteworthy (Fig 3.1). The level of contraceptive awareness could be further investigated by analyzing the question: how many of the existing contraceptive methods they have heard of. Table 3.2 shows the proportions of rural married and unmarried women according to the total number of contraceptive methods have they heard of. The proportion of women who knew 5 or more methods between the baseline and endline surveys increased markedly, irrespective of any difference in their marital statuses. For example, the proportion of unmarried women who have heard of at least 3 methods was roughly 36% in the baseline survey which increased to more than 90% in the endline survey. The corresponding figures for currently married women are 71% and 99% respectively. The results indicate the impact and outreach of awareness programme efforts about a wide range of methods to women of reproductive ages. It is also noteworthy that the knowledge of natural FP (withdrawal, rhythm) has increased markedly.

Table 3.2 *Percentage of rural women aged 15-35 years according to number of contraceptive methods they have heard of*

No. of contraceptive methods	Baseline		Endline	
	Unmarried	Married	Unmarried	Married
0	38.4	2.0	4.0	0.0
1	11.2	12.2	1.1	0.2
2	14.7	14.6	2.6	0.5
3	13.0	22.5	5.9	1.2
4	9.2	17.8	9.2	1.8
5 or more	13.5	31.0	77.1	96.3
Total	100.0	100.0	100.0	100.0

Women are becoming increasingly aware of the wide range of family planning options, even the rarely used methods such as Norplant, injections and spermicides as well as natural methods. In particular, more than 90% of unmarried women are aware of at least 3 contraceptive methods.



Sources of contraceptive knowledge

Women who have had heard of a certain contraceptive method in both the baseline and endline surveys were asked about the major sources of their information about the method. There was not much difference among various sources by the knowledge of a specific method. The percentage distribution of women who had obtained contraceptive knowledge from the major sources is shown in Table 3.3.

The IEC (Information, Education & Communication) component as a potential source of information has been reported by over 70% in the endline survey; the figures were significantly lower in the baseline survey. Although the proportion who reported mass media and school education were much lower, there seems some gradual improvement in the endline survey. The results suggest that IEC and mass media are the two major channels for people to acquire information about contraceptive methods while little information was acquired through service providers (including medical workers).

Another potential channel as a form of intervention could be schools, especially middle and high school levels. Peer groups form a major source for exchange of knowledge and experience related to contraceptive methods. It can be observed that women who responded friends and relatives as the major source of information have declined in the endline survey; this is attributed to two reasons. First, the survey asked women about the major source of information from which they receive family planning. Second, the impact of IEC activities during the project might have influenced women to report IEC as a major source. Therefore, the decline observed in other relevant sources in the endline survey cannot not be underestimated since IEC activities were one of the major program components in the P01 project areas.

Table 3.3 Major sources of information about contraceptive methods (%)

Sources	Baseline	Endline
IEC	33.2	73.2
Schools	1.1	1.5
Parents	1.5	1.0
Friends and relatives	34.4	7.5
Mass media	3.7	6.0
Books, newspapers and magazines	11.6	6.5
Medical workers	9.7	3.5
Others	4.9	0.8
Total	100.0	100.0

IEC: Information, Education & Communication

Knowledge of gynaecological diseases, STIs and HIV/AIDS

Improving awareness about various types of sexually transmitted infections (STI) is a major concern, as the prevalence levels are high. It is also important as STIs may be linked to high vulnerability to HIV infection. The percentage of women who are aware of important STIs is shown in Table 3.4. There has been considerable increase in the levels of knowledge of various gynaecological diseases especially HIV/AIDS; the percent increase between the baseline and endline survey is about 23%. This is a significant achievement considering the emerging and growing threat of HIV/AIDS and other reproductive tract infections among women of the reproductive ages; the extent and influence of IEC activities in the project areas explain this increase. The national family planning and reproductive health survey conducted in 2001 reported that 72.7% of women aged 15-49 years have heard about HIV/AIDS, which is close to the results obtained in the baseline survey.

Table 3.4 *Percentage of women who have heard of various gynaecological diseases, STDs and HIV/AIDS*

Disease	Baseline	Endline
Cervical erosion	49.9	85.5
Vaginitis	48.5	83.9
Genital herpes	19.4	53.0
Pelvic infection	na	85.4
Annexitis	na	83.9
Gonorrhoea	46.8	80.8
Syphilis	60.1	84.8
HIV/AIDS	75.4	92.7

na: not available

Knowledge of ways to avoid HIV/AIDS

Acquired Immune Deficiency Syndrome (AIDS) is a sexually transmitted infection caused by the Human Immunodeficiency Virus (HIV), which debilitates the human immune system and leads to death through secondary infections such as tuberculosis or pneumonia. HIV is generally transmitted through sexual contact or through contact with contaminated needles during injections, through transfusion of infected blood or through mother to child transmission, either at birth or through breastfeeding. In China, the HIV/AIDS prevalence has increased markedly over the last decade, although it is still low at the national level (the most recent national estimate is 840,000 representing a prevalence of around 0.1%). In order to effectively prevent HIV/AIDS, it is necessary to instil awareness among both men and women of the possible routes of HIV transmission. Both the baseline and endline survey questionnaires used multiple questions to measure the extent of women's knowledge about the possible and impossible ways for HIV transmission (Table 3.5). Both surveys listed the same types of channels for HIV transmission, but offered different answers for women to choose. The baseline survey offered three choices: yes, no and not sure, while the endline survey offered only the first two. To facilitate comparison, this report ruled out the category of "not sure" in the baseline survey in the analysis.

Table 3.5 *Percentage of women who believes HIV/AIDS can be transmitted in various ways*

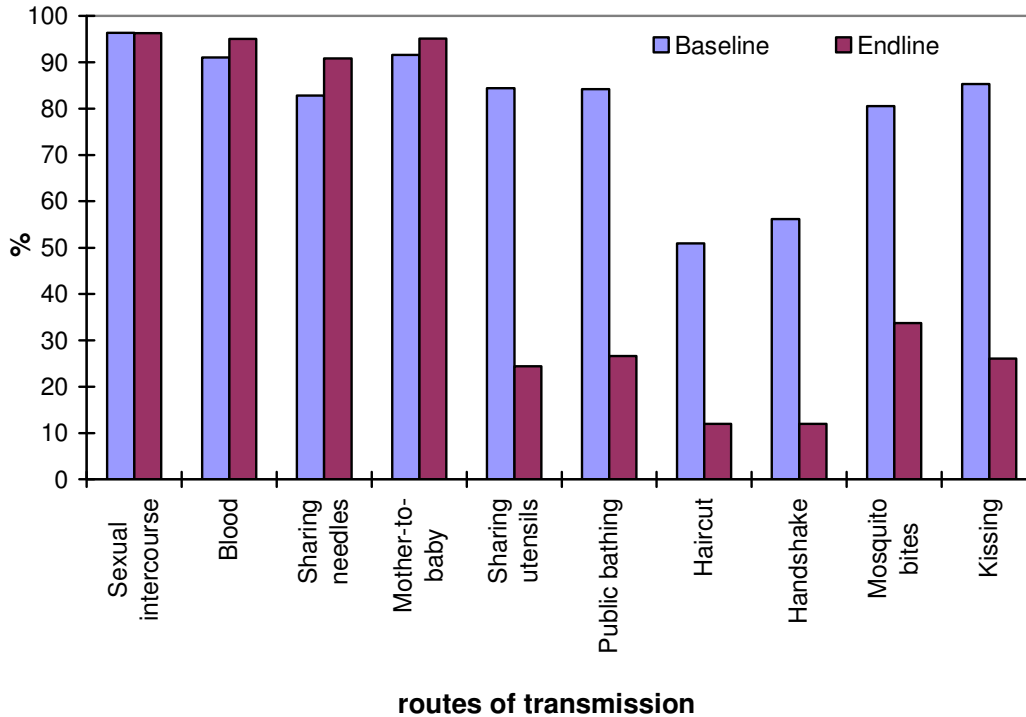
Route for transmission	Baseline	Endline
Sexual intercourse	96.4	96.3
Blood	91.0	95.0
Sharing needles	82.8	90.8
Mother-to-child	91.6	95.1
Sharing utensils	84.4	24.4
Public bathing	84.2	26.6
Haircut	50.9	12.0
Handshake	56.2	12.0
Mosquito bites	80.5	33.7
Kissing	85.3	26.0

Of the ten channels listed, except for the response on sexual intercourse which remained almost unchanged, the other nine responses changed considerably. The knowledge regarding the already high (baseline) three correct possible routes of transmission such as mother-to-child, blood and sharing needles increased further in the endline survey. Conversely, the endline survey revealed that a considerable proportion of women were aware that sharing utensils, public bathing, haircut, handshake are not the possible routes of HIV transmission. The changes in trends are further illustrated in Fig 3.2.

This indicates that the public awareness about HIV/AIDS had enhanced significantly in the project areas. In terms of the role of condom in preventing AIDS, the endline survey revealed that 89.8% of all women who have had heard of AIDS agreed that condom helps to prevent HIV/AIDS (this information was not mentioned in the baseline survey). As for educational level, the percentage who reported condom as precaution against HIV/AIDS was 87.3%, 89.4%, 90.6%, 93.4% and 96.0% respectively for illiterate, primary school, junior middle school, senior middle school, and college and over, increasing with improvement of education (table not shown separately).



FIG 3.2 Knowledge of different routes of HIV/AIDS transmission (%)



Source of HIV/AIDS knowledge

Table 3.6 shows the sources of knowledge about AIDS. In the project counties, IEC activities was the major source for women to have heard about HIV/AIDS (44.3%), followed by mass media (40.6%) and newspapers and magazines (7.1%). Compared with the baseline survey, the most striking change was the significant increase of IEC activities and decrease of the sources related to mass media and friends and relatives. However, this phenomenon was unique only to the project areas, where IEC activities were particularly emphasised as a part of the P01 project. Furthermore, it implies the effective implementation of the project intervention in the specific regions. On the other hand, mass media plays an important role in the whole of China. According to the national FP/RH survey conducted in 2001, 82.9% of women who had heard of AIDS and

knew it is infectious reported that they acquired relevant information mostly through mass media. Although there is some improvement in the school education as a source for HIV/AIDS knowledge, the overall proportion is much lower.

Table 3.6 Sources of knowledge about HIV/AIDS (%)

Major sources	Baseline	Endline
IEC activities	4.0	44.3
School education	0.8	1.7
Parents	0.2	0.1
Friends and relatives	29.9	3.6
Mass media	50.6	40.6
Books, newspapers and magazines	11.1	7.1
Medical workers	1.5	1.9
Others	1.9	0.7
Total	100.0	100.0

IEC: Information, Education & Communication

The existence of different channels has helped women to understand the possible and impossible routes of HIV/AIDS transmission. Improvements in the levels of knowledge indicate that women would be better able to protect themselves from STIs and reduce the stigma associated with it. The future challenge will be to educate young people and migrants, especially men...



Summary

The development of this project has significantly contributed to improve women's overall knowledge about reproductive health. When compared with the baseline survey, women's awareness about contraceptive methods increased significantly in the endline survey. For example, it reached up to 98.3% and 94.8% respectively for modern reversible methods such as IUD and condom. The knowledge of any modern reversible family planning methods increased substantially from 35.7% in the baseline survey to 82.9% in the endline survey. However, the increase in the contraceptive knowledge among unmarried women was less significant, which is probably due to their weak participation in project activities. The major source of family planning information is through IEC dissemination and mass media whereas parents and school education are minor sources for family planning information. Awareness about gynaecological diseases have had also improved quite substantially. The successful implementation of the project is furthermore reflected in the over time increase of HIV/AIDS knowledge. Nearly 90% of the women in the endline survey reported that they knew the efficacy of using condoms for preventing HIV/AIDS transmission. Many women are now aware of the possible routes of HIV/AIDS transmission. The IEC activities in particular and mass media have had played an important role in enhancing women's knowledge about HIV/AIDS, as evidenced by the findings that about 40% of women acquired relevant information through each of the two channels mentioned above.

IV

Contraceptive use

Contraceptive prevalence remains high with a considerable shift towards reversible modern method use. Whilst IUD is the preferred method, women seem less keen to use Norplant, oral contraceptives or injections. User satisfaction has increased and women and couples are making contraceptive decisions by themselves rather than through health workers...

This section will examine the contraceptive use among women of reproductive ages, particularly contraceptive mix, source of information, decision making and user satisfaction, the role of service providers in offering informed choices, source of methods, services supply and inter-spousal family planning communication. The comparison of method use between baseline and endline periods is expected to provide the changes that have occurred in the recent time and the influence of project implementation as well as governmental family planning policy measures.

Contraceptive prevalence

Contraceptive prevalence rate⁷ (CPR) is a standard measure that refers to the proportion of women who are currently using various contraceptive methods among ever married women of reproductive ages (including both women married for the first time and those remarried). CPR is one of the widely used indicators which provide a measure of

⁷ Technically, CPR is a ratio measure and not rate. For estimating the true contraceptive prevalence rate, the denominator should consider the population at risk including sexually active women who are fecund, pregnant or amenorrhoeic.

population coverage of contraceptive use considering all potential sources of methods supply. We will restrict the usage of CPR as contraceptive prevalence. Table 4.1 shows the prevalence of contraceptive use classified according to women's age in the baseline and endline periods.

The national family planning and reproductive health survey figures in 2001 indicate that overall contraceptive prevalence was as high as 86.9% in China. This was reflected in the P01 project that during the baseline survey, the prevalence was about 88%, which slightly increased furthermore to 89% in the endline survey. Similar figures apply to the age-specific distribution of contraceptive prevalence.

In our data investigations, it was noted that although the contraceptive use among 15-19 age group in the endline survey was little lower than in the baseline survey. It might be due to random effects rather than a change per se, because the number of women observed was too small (N=14). On the other hand, if we examine the trends cohort-wise, the use prevalence among women aged 15-19 years increased significantly from about 24% in the baseline period to about 68% in the endline period. Similar increase in the trends was observed among other age groups.

Table 4.1 *Prevalence of contraceptive use by age (grouped) of women (%)*

Age group	Baseline	Endline
15-19	24.4	19.0
20-24	67.2	68.4
25-29	88.1	88.3
30-34	95.0	94.8
35-39	96.8	98.5
40-44	91.1	94.7
45-49	70.2	68.4
Total	87.7	89.1

Contraceptive mix


The national FP/RH survey in 2001 showed a general high contraceptive prevalence rate for currently married women of childbearing age, with little difference between urban and rural areas. The information on method mix is supposed to yield a better picture especially in forecasting service needs and demand in the future. This measure should ideally provide clues on provider bias, supply problems and method preferences.

The changes occurred in contraceptive mix patterns after the implementation of the P01 project is clearly evident. Table 4.2 demonstrates the contraceptive mix among current users in the baseline and endline surveys. The results from the national FP/RH survey in 2001 are also quoted in the table to ensure consistency of results from different sources. The results are considerably significant between the baseline and endline surveys. A noticeable development is the shift in use towards reversible methods especially modern spacing methods.

Table 4.2 *Contraceptive mix patterns among women of reproductive ages (%)*

Contraceptive methods	Baseline	Endline	National survey in 2001
Male sterilisation	12.0	9.1	7.9
Female sterilisation	42.2	35.5	38.1
IUD	41.2	49.3	45.6
Norplant	0.5	0.5	0.4
Oral pills	1.8	1.6	2.0
Condom	1.7	3.8	5.1
Others	0.6	0.4	0.9
Total	100.0	100.0	100.0

Regarding use of irreversible modern methods, female sterilisation declined by almost 16% and male sterilisation declined by 25% between the baseline and endline surveys. A significant increase of almost 20% was observed in the use of IUD. Although there are significant improvements in condom acceptance as a birth spacing method or as a protection method against reproductive tract infections/HIV, the overall proportion is not very impressive. The low use of condoms has serious ramifications in the future



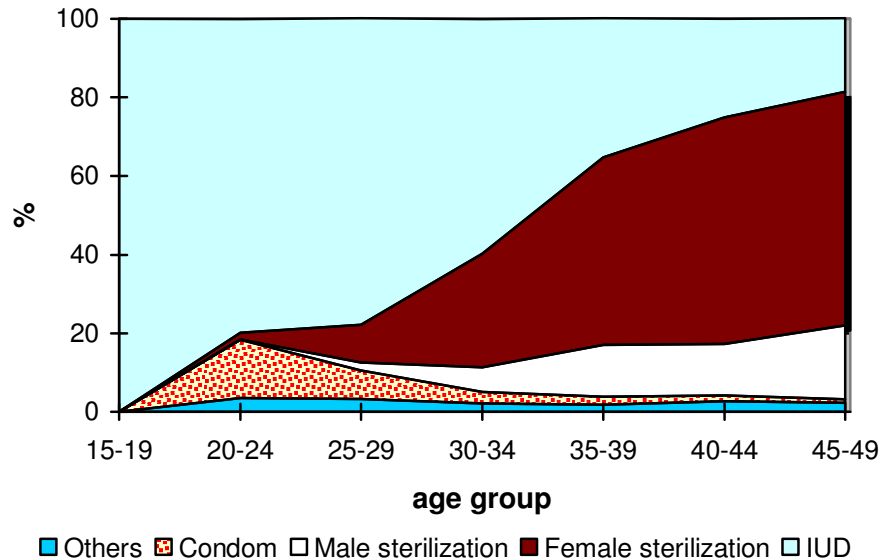
considering the emerging threat of HIV/AIDS in China. Yet another important observation is the neglect towards other modern methods such as Norplant and oral pills; the figures are low in both the surveys.

A comparison between the endline survey and the national survey in 2001 showed that the proportions of female sterilisation and condom users in the project counties were lower than the national average while those for male sterilisation and IUD were higher than the national average. The impact of project intervention was clearly reflected in the high uptake of IUD and low uptake of female sterilisation. The proportion of condom use increased whereas male sterilisation use decreased; however, the former was still lower in absolute terms and the later was higher than the national average. It is worth noting here that the urban representation of the intervention project was considerably less which might explain the differences in figures between these surveys and that at the national level.

The age-specific pattern of contraceptive mix (conditional on use) for the endline survey is graphically illustrated in Fig. 4.1. Many young women seem to prefer IUD and the preference declines as the age increases. Female sterilisation on the other hand tends to increase among older age cohorts. Male sterilization seems to be least preferred method particularly among younger cohorts. Condom use appears to be high among the 20-24 age group and it steadily declines over older age groups.

The midterm evaluation report made a comparison of the contraceptive mix for currently married women aged 15-35 between the baseline and midterm evaluation survey. The age group 15-35 years is selected in order to maintain consistency between surveys as the midterm survey collected information from only women from this age group. On the other hand, women in this age group are also more likely to be sexually active and use more reversible methods. How it had changed after the midterm evaluation survey and whether the trends could sustain remain an issue of great concern. Table 4.3 demonstrates the changes in contraceptive mix in rural counties for different age groups from the baseline, midterm evaluation and endline surveys.

FIG 4.1 *Contraceptive mix by current age of women, endline survey*



It is clear from the table that male and female sterilisations have decreased among women of the potential childbearing years; the IUD and condom use on the other hand showed an increasing trend especially between the baseline survey and midterm survey. Between the midterm evaluation and the endline survey, female sterilisation tends to decline and IUD use tends to increase whereas male sterilisation and condom use remained more or less stable. This shows that people in the project counties show an inclination to choose reversible methods highlighting the possible positive impact of the project intervention. An important observation here is the striking differences between various counties (tables not shown). Female sterilisation in the baseline was over 70% in three counties and below 10% in four other counties, whereas in the endline survey, only one county has a prevalence of more than 70% and six were below 10%. From a programme and policy perspective, it is imperative to focus on these best performing and poor performing counties in order to facilitate and optimise resources allocation.

Sterilisation use decreased reasonably whereas IUD and condom use increased considerably.

Table 4.3 *Changes in contraceptive mix for women aged 15-35 in rural areas of project counties (%)*

Contraceptive methods	Baseline	Midterm evaluation	Endline
Male sterilisation	8.8	4.6	4.8
Female sterilisation	35.8	25.5	22.0
IUD	50.8	60.9	65.2
Norplant	0.8	1.1	0.6
Oral pills	1.7	2.3	1.9
Condom	1.6	5.3	5.2
Others	0.5	0.2	0.3
Total	100.0	100.0	100.0

Contraceptive decision making

Who makes decision regarding the use of a particular method; the woman or her husband/partner or the health worker or other individuals from the immediate context? This particular question is important in understanding the extent of influence on woman/couples to choose and use an appropriate method. Table 4.4 shows the percentage distribution of women according to individuals involved in making method choices.

Most of the decision to choose a method has been jointly considered by both couples, which indicates the extent of mutual approval regarding methods and inter-spousal family communication roles. This change was particularly observed in the endline survey and the difference between the baseline and endline surveys are highly impressive. For example, the proportion of women who responded that decisions to choose a method has been made jointly increased from 27% during the baseline period to about 70% in the endline period. The corresponding national figure (1998-2001) is about 15%, which highlights the need for a comprehensive family planning counselling services for couples in other (non-project) regions of China.

Family planning health workers seem no longer involved in influencing the woman/couple to make decision about a particular method; the proportion of those who influenced woman/couple to choose a method reduced drastically from about 39% to 4%. This is an interesting result in due consideration to the fact that more and more women are aware of different methods and the choices that are offered are informed. The national figures (1998-2001), however, indicate that about 30% of woman had been influenced of their family planning decisions by the FP workers, which is less than the proportion found in the baseline survey, but much higher than the proportion found in the endline survey. This result suggests the need for further improvements to be made in creating an informed choices environment in the family planning services delivery system in non-project counties.

Table 4.4 *Percentage of women who reported to have made contraceptive decisions by themselves, their husbands, relatives, peer groups or health providers*

Decision maker	Baseline (1995-1998)	Endline (1999-2002)	National survey (1998-2001)
Woman herself	27.3	23.3	43.7
Husband	1.5	1.4	1.2
Both	27.0	70.2	14.7
Relative or friend	1.6	0.2	0.5
FP worker	38.8	4.3	31.1
Medical worker	3.2	0.8	8.4
Others	0.5	0.0	0.4
Total	100.0	100.0	100.0

Health workers are more inclined to provide a wide range of informed method choices and leave the decision powers to women or couples.

User satisfaction

Both the baseline and endline surveys asked whether women and their husbands were satisfied with the method they were currently using. In general, the percentage of women who were satisfied with a particular method was on the increase, but by varying degrees for different methods (Table 4.5). There has been a significant increase of about 30% in women's satisfaction about condoms between the baseline and endline surveys; thanks

to development of diversified and high-quality condoms in recent years along with increase in women’s awareness about the role of condom in preventing HIV/AIDS. In addition, their satisfaction with IUD also increased markedly between these two time periods. The user satisfaction with regard to Norplant and male sterilisation remained mostly unaltered throughout the surveys.

Table 4.5 *Percentage of women who reported satisfaction with various methods*

Contraceptive methods	Baseline	Endline
Male sterilisation	90.2	90.0
Female sterilisation	86.2	92.8
IUD	85.2	94.4
Norplant	73.7	75.3
Oral pills	79.8	88.0
Condom	72.4	93.5
Others	76.4	78.7
Total	85.8	93.1

Role of service providers and informed choices

The role of service providers in offering informed choices is reflected in three aspects: providing counselling and follow-up visit, informing clients of the advantages, disadvantages and side effects of various methods, and helping clients to choose the method suitable for them.

The counselling services prior to IUD insertion and follow-up visit are assessed to understand the changes as a result of the project implementation. In the baseline survey, a total of 3,870 women had IUD insertion during 1995-1998 and responded to questions about counselling and follow-up visit. The corresponding numbers in the endline survey are 1,964 who had inserted IUD during 1999-2002.

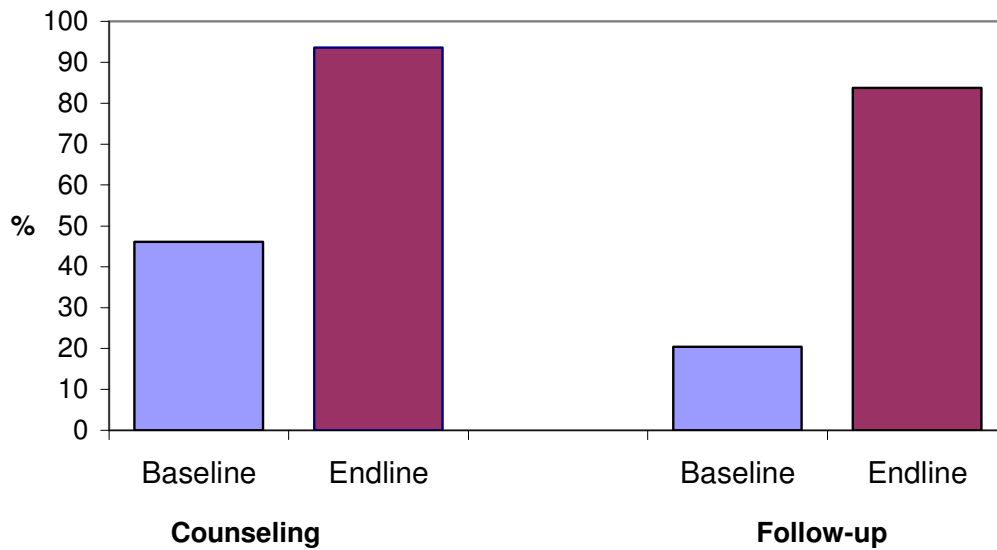
Table 4.6 and Fig. 4.2 shown below provide a clear indication that the proportions of women who have had received counselling and follow-up visits increased remarkably, particularly the follow-up visit. The endline survey reported that more than four-fifth of women have had received IUD pre-insertion counselling and subsequent follow-up visits

after the procedure. It should be pointed out that follow-up visits help providers to identify and treat the possible side effects or complications thereby ensuring appropriate and informed choices. Few respondents who reported unsure of IUD pre-insertion procedures and follow-up measures are presumably unlikely to be aware of the method and its utility.

Table 4.6 *Percentage of women who had received IUD pre-insertion counselling and subsequent follow-up visit*

Answer	Baseline (1995-1998)		Endline (1999-2002)	
	Counselling	Follow-up visit	Counselling	Follow-up visit
Yes	46.1	20.4	93.6	83.8
No	51.6	77.8	6.1	14.5
Not sure	2.3	1.8	0.3	1.7
Total	100.00	100.0	100.0	100.0

FIG 4.2 *IUD pre-insertion counselling and follow-up visits*



In the endline survey (1999-2002), of those who initiated the use of methods such as male sterilisation, female sterilisation, IUD, Norplant, oral pills, injections, condom and spermicide, 93.2% were informed by service providers of the advantages of the method and 92.0% about the disadvantages and side effects.

Regarding how and to what extent service providers help clients to choose method, the endline survey provided more detailed information in the questionnaire for service providers. Table 4.7 shows that the proportion of service providers who said they never made the decision for clients increased remarkably from 18% in the baseline survey to 72% in the endline survey. Those who said they always provided information to help clients to make decision increased markedly. The change in the work style of service providers towards a client-centered approach is becoming clear in the project areas.

Table 4.7 *Role of service providers according to how and to what extent they have helped clients to choose the method (%)*

Frequency	Before 1999			After 1999		
	Make decision for clients	Recommend the method	Provide information	Make decision for clients	Recommend the method	Provide information
Always	14.1	4.6	7.6	0.4	2.0	60.2
In most cases	37.1	55.4	22.5	1.3	13.5	29.1
Sometimes	30.8	33.7	60.1	26.8	68.8	4.4
Never	18.0	6.3	9.9	71.5	15.6	6.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Sources of contraceptive services provision

During the baseline survey, a total of 5,514 people reported the use of male sterilisation, female sterilisation, IUD and Norplant during 1995-1998. In the endline survey, the number was 2,582 during 1999-2002. The source of these clinical-based contraceptive services is a key indicator to analyze the role of system performances in the stock and delivery of family planning methods. It is further indicative of the accessibility and availability of various methods. Table 4.8 shows the source of contraceptive services as reported by women respondents.

Table 4.8 Sources where people received sterilisation (male/female), IUD and Norplant (%)

Localities	Baseline (1995-1998)	Endline (1999-2002)
County and above level hospitals	8.5	4.4
County and above level MCH hospitals	2.9	3.3
County FP service stations	10.5	13.7
Township hospitals	29.2	16.2
Township FP service stations	43.3	59.9
Village clinics	4.0	2.1
Private clinics	0.4	0.1
Others	1.3	0.3
Total	100.0	100.0

The percentage of people who received these four contraceptive services in the family planning system increased by 3 and 17 percentage points respectively at the county and township levels. On the other hand, those who received contraceptive services at the village clinics, private clinics and other facilities decreased by about three percentage points.

Contraceptive services provision has improved in the county and township level FP service stations.

Inter-spousal family planning communication

The endline survey asked women a question about whether they had communicated or discussed family planning issues with their husband, in a bid to further understand the status of male participation in the context of informed choices approach. Unfortunately, this question was not asked in the baseline survey. Table 4.9 shows the responses provided by women in the endline survey classified according to husband's educational level.

Table 4.9 *Inter-spousal family planning communication by the levels of education of husbands, endline survey (%)*

Educational level	Frequently	Occasionally	Never
Illiterate	28.0	53.5	18.5
Primary school	27.6	58.8	13.7
Junior middle school	35.1	56.1	8.8
Senior middle school	36.8	56.0	7.2
College and over	43.6	51.6	4.8
Total	32.8	56.7	10.5

The results indicate that only 32.8% of women have had frequent family planning communication with their husbands, showing that male involvement in FP discussion is inadequate although decisions are made jointly. On the other hand, the data reveal a close relationship between husband’s educational level and inter-spousal communication about contraceptive issues. For example, among husbands with college or above level education, the percentage of those having frequent communications with their wives was much higher than their illiterate counterparts or with primary education.

Nevertheless, the slightly increased condom use in the endline survey does show that men are gradually becoming aware of the importance of their involvement in family formation processes and especially as responsible partners. In addition, a significant difference was found when we made a comparison between project counties: condom use was over 15% in 2 counties, between 1.0-9.7% in 22 and below 1.0% in 8 (including 2 counties with none currently using). This indicates the heterogeneity in condom use among women from different project counties within the project counties and the need for a detailed data examination. Last but not the least; special attention might be paid to the remaining 10.5% of the respondents who had never talked about family planning with their spouses.

Summary

This chapter discussed some of the most important indicators of current contraceptive use vis-à-vis contraceptive mix, source of information, decision making and user satisfaction, the role of service providers, source of methods and inter-spousal family planning communication.

The overall contraceptive prevalence has modestly increased from 87.7% during the baseline survey to 89.9% during endline survey. Current users of female sterilisation dropped from 42.2% in the baseline survey to 38.1% in the endline survey and male sterilisation declined from 12% to 7.9% in the same periods. The use of IUD and condom has significantly improved whereas Norplant, spermicide and injection seem to be largely ignored methods. The percentage of couples making joint decisions increased significantly by 43 percentage points while that of recommendations by FP workers decreased markedly by 35 percentage points. The decision to use a method is therefore made mostly by couples or woman and FP workers seem no longer involved in influencing woman/couple's family planning decisions.

Service providers tend to offer informed method choices rather than merely imposing them on women/couples. This indicates that their working approaches are undergoing great changes from a mode of “making decision for clients” to “providing information to aid them to make decision”. The user satisfaction has improved significantly especially in the case of condoms; the proportion satisfied using condoms were 72.4% in the baseline survey which rose to 93.5% in the endline survey. Counselling and follow up services for IUD insertion have improved but only 83.8% reported to have had follow-up visits in the endline survey. Follow-up visit services need attention and should be strengthened. Contraceptive services supply has increased mostly in the county and township level FP. Township FP service stations had become an important source for contraceptive service provisions. We found that 33% and 57% of women interviewed had frequent and occasional family planning discussions with their partners. The low use of condoms in some project counties indicates that male participation in family planning has been inadequate and efforts are needed in this regard.



Birth permit systems

The distribution of birth permits no longer exists since 1999 and all the 32 project counties have abolished the issuance of birth permits....

This section will focus on the birth permit systems and the changes that are recently brought about through reproductive health policies.

One of the P01 project requirements is to abandon the birth permits and acceptor targets systems. Until a few years ago, the family planning workers were specifically encouraged to achieve fertility targets through rewarding couples who limit and plan their births in desired ways and penalising those who go beyond the hitherto policy lines. The UNFPA in China was particularly committed to the task of removing birth permit systems from the national population and family planning programmes. During the midterm evaluation survey, all the 32 project counties reported that they had eliminated the birth quota in accordance with the project requirement. This had been verified in the endline survey. In the endline survey, all women who had become pregnant since 1995 were asked about whether they had a birth permit. Three choices were provided to the question: yes, no and don't need. The survey found that during 1995-2002, there were a total of 6,506 pregnancies, with live births accounting for 85.6% of the total.

Table 5.1 shows the percentage of women who had either a birth permit according to the year of birth of living child. The issuance of birth permit has been dropping from 1995 onwards. After 1999, however, all the 32 counties cancelled the birth permit system (no

birth permit was issued since-1999). Apparently, project interventions had played a key role in this regard.

Table 5.1 *Percentage of women who received a birth permit according to year of birth of child*

Year of birth	Birth permit
1995	80.1
1996	75.6
1997	72.1
1998	59.5
1999	0.0
2000	0.0
2001	0.0
2002	0.0

Summary

According to the project goals, all the 32 project counties have abolished the birth permit system since 1999. When viewed from the perspectives of ICPD POA, the removal of birth permit systems is a remarkable achievement of the FP/RH intervention project.

VI

Fertility and induced abortions

Fertility rates are low and births are likely to be postponed towards higher ages. Abortion rates have decreased considerably. Quality oriented follow-up visits should be strengthened to ensure that there are no adverse health effects for women undergoing abortions.

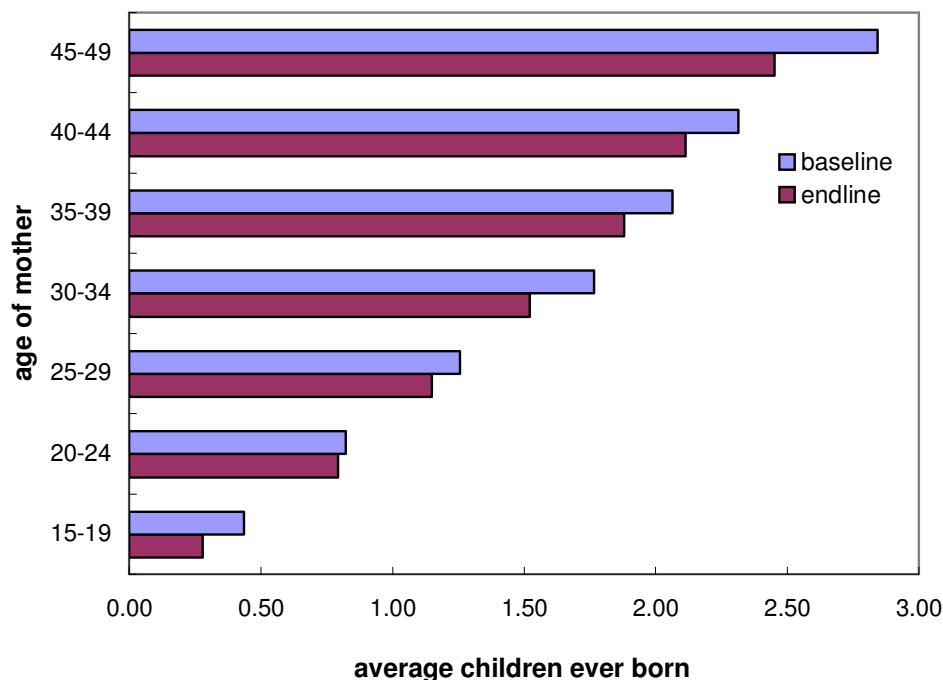
The objective of this section is to highlight the changes that have occurred in fertility indicators and discuss the quality of services aspects related to the changes in induced abortions.

Fertility

Fig. 6.1 shows the average number of children ever-born classified according to the age of married women. Compared to the baseline survey, the average number of children ever-born to married women had slightly decreased for all age groups, particularly for those aged 45-49. Since the proportion of unmarried women in the endline survey was 24% higher than those in the baseline survey (see Table 2.1), we made only a comparison of only married women of childbearing age for this indicator in order to avoid the influence of the increase in the number of unmarried women. The average number of children was about 1.81 in the baseline and 1.67 in the endline survey.

The changes in the period total and age specific fertility rates during 1995-1998 and 1999-2002 are shown in Table 6.1. It should be noted that the fertility measure described in this report is a period measure and are subjected to tempo effects.

FIG 6.1 Average number of children ever-born by married women aged 15-49 years



The age-specific fertility rates fluctuated slightly but the total fertility remained relatively stable between the time periods. While there is a slight increase in fertility among 25-29 age group, the increase is significantly higher among women aged 30-34 indicating possible postponement behaviour. These patterns are graphically illustrated in Fig. 6.2. The observed shifts in fertility towards higher ages could indicate: (a) an increase in the female schooling levels and a concomitant increase in the female age at first marriage (b) increase in the use of reversible methods and (c) postponement of sterilisation towards higher ages.

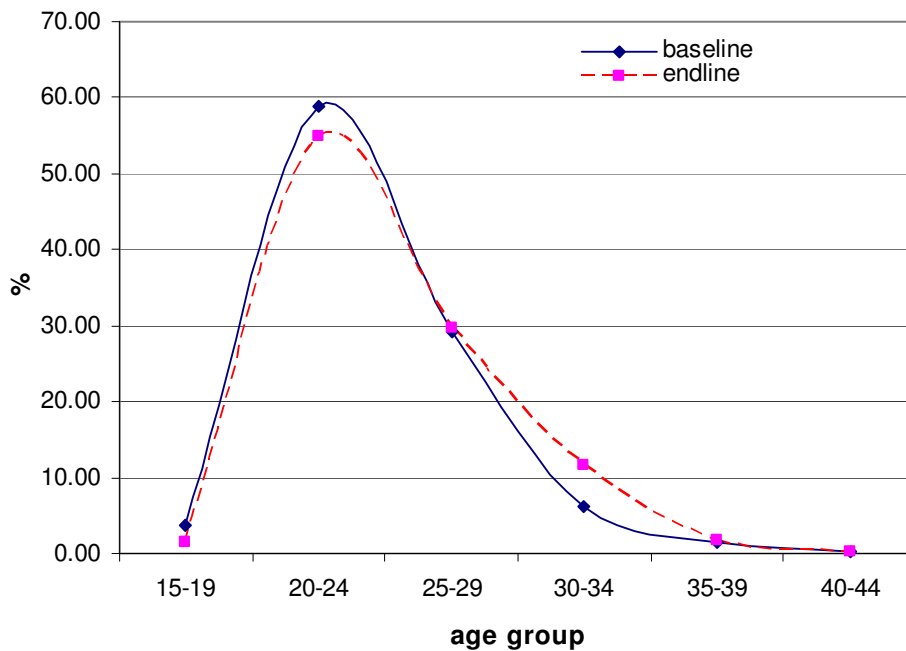
When compared with the baseline survey during 1995-1998, the average total fertility only increased by 0.01 points in the endline survey during 1999-2002. Nonetheless, the low period total fertility rate might indicate the possibilities of underreporting of births in the surveyed counties.



Table 6.1 Age-specific fertility and total fertility rates

Age group	Baseline (1995-1998)	Endline (1999-2002)
15-19	0.010	0.004
20-24	0.159	0.150
25-29	0.079	0.081
30-34	0.017	0.032
35-39	0.004	0.005
40-44	0.001	0.001
Total fertility rate	1.35	1.36

FIG 6.2 Age specific fertility rates expressed in proportion



Induced abortions

Before analyzing the survey data regarding induced abortion, it is necessary to brief on the source and reliability of these data. The data came from two sources: records of service institutions and interviews with women. Generally speaking, statistics based on records kept by the health system are more reliable because these records are official and



pre-marital abortion is also included. With the availability of increased medically induced abortions (about 10% of all abortions according to endline survey) in recent years, it is likely these figures may also be underestimated because some women might have had medically induced abortions at home. Estimates made by SFPC based on abortion statistics revealed that nationwide the abortion rate was 43 per thousand in 1990, 23 in 1995 and 18 in 2001. Thus, overall the rate has been decreasing markedly. Data collected through interviews are more liable to underestimate the situation because only married women were interviewed and it was hard to collect the number of pre-marital abortions. It is likely that induced abortions could be underreported as spontaneous ones and not vice versa. Besides, some married women may consider this a private issue and hence decline to respond. In view of this, we felt it is advisable to focus the attention on the development trends rather than the figures when analysing relevant data.

Table 6.2 shows the percentage of married women of childbearing ages according to the frequency of induced abortion. Induced abortion rate refers to the number of induced abortions for every 1,000 women of childbearing age in a given year. There has been a reduction in the proportion of women who reported to have had experienced induced abortion in the endline survey when compared with the baseline survey. The decline is mostly pronounced for women who have had experienced at least 2 abortions. In the baseline survey during 1995-1998, the average abortion rate was 11.5 per thousand.

Table 6.2 *Percentage of married women of childbearing age by frequency of induced abortion*

Frequency	Baseline	Endline
0	74.3	86.6
1	17.9	10.7
2	5.7	2.2
≥3	2.1	0.5
Total	100.0	100.0

In the endline survey during 1999-2002, it dropped to 4.3 per thousand. Abortion rates in the project counties had dropped as a result of this project intervention, however, it would not drop as significantly as observed in the endline survey. Except for

underreporting, the low abortion rate in both surveys is also attributed to two other reasons. First, more than 90% of the women surveyed lived in rural areas and were using mostly sterilisation, with hardly any reported experience of contraceptive failures. That would not be different from the rest of the country. Second, unmarried women might have experienced more number of induced abortions, but only married women were asked about their abortion experience in the two surveys.

Induced abortion ratio refers to the number of induced abortions for every live birth in a given year. In the baseline survey, it stood at 0.24; in the endline survey, it reduced to 0.10, a trend identical to the change in the induced abortion rates as noted above. The calculations for the midterm evaluation survey based on family planning statistics from the 32 project counties revealed an abortion ratio of 0.18 in 1998, 0.16 in 1999 and 0.11 in 2000, closely related to the decreasing trend demonstrated in the endline survey.

Due to the difference between the two surveys in the questionnaire design, different conditions were imposed on the interviewees for issues regarding abortion-related services. To facilitate comparison, some conditions were controlled. In the following analysis, the sample size was 378 for the baseline survey during 1995-1998 and 191 for the endline survey during 1999-2002. The proportion of women who had received pre-operational counselling and follow-up visit increased significantly in the endline survey, particularly the follow-up visit increased by 55 percentage points (Table 6.3). Women's satisfaction with abortion-related services had also increased. However, it should be pointed out that although efforts were made to improve follow-up visit service, there were only less than 70% of clients who had received that particular service, compared with more than 80% for follow-up visit service regarding IUD insertion.

Table 6.3 *Percentage of women who have received pre-operational counselling and follow-up visit after induced abortion and those who are satisfied with the service they had received*

Indicator	Baseline (1995-1998)	Endline (1999-2002)
Pre-operational counselling	41.2	84.8
Follow-up visit	13.2	68.2
Satisfaction with service	58.5	92.1



Summary

The average number of children ever-born for married women had declined from 1.81 in the baseline survey to 1.67 in the endline survey. The total fertility rate was 1.36 during the 1999-2002 which remained almost unchanged compared with that during 1995-1998. Both the abortion rate and abortion ratio were found decreasing between these surveys. The proportion of women who had received pre-abortion counselling had increased in the endline survey. However, follow-up visits need more attention and should be strengthened. The FP information system in the project counties had almost failed to collect accurate and reliable information about induced abortion, which makes it hard for a proper assessment of the abortion situation in these counties.

VIII

Maternal and child health care

Many women give births in the health institutions, initiate timely prenatal check-up and have early postnatal check-up...but some especially illiterate women lack knowledge as to whether it was necessary to have prenatal check-up... Apart from pregnancy related reasons, a high utilization of gynaecological related services indicate increase in both health awareness as well as the burden of gynaecological ill-health.

This section presents various aspects of maternal and child health, including gynaecological examinations, prenatal checkups and delivery service. The Safe Motherhood Initiative (SMI) / Essential Obstetric Care (EOC) package of the WHO recommends that all pregnant women must receive basic, professional prenatal care⁸. The recommendations specifically point out that prenatal care should monitor the complication signs of pregnancy, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counselling on preventive care, delivery care, postnatal care and nutrition related aspects. These specific standards of prenatal care suggested in the essential SMI package are essential to reduce both maternal mortality as well as morbidity. This section examines some of the key indicators related to gynaecological and maternal health that are outlined in the CP4 logframe.

⁸ Harrison, K (1990) The political challenge of maternal mortality in the third world. *Maternal mortality and morbidity – A call to women for action*. Special Issue, May 28, 1990.

Gynaecological care

Both the baseline and endline surveys asked the respondents: ‘have you participated in any organised gynaecological checkups in the past two years?’ and ‘where did you have the last gynaecological check-up?’ Table 7.1 shows the percentage of women who had participated in any organised gynaecological checkups according to their age for the baseline and endline surveys. A significant proportion of women seem to have had initiated participation in the organised gynaecological examinations. The participation rates varied among different age groups and the patterns are clearly illustrated in Fig 7.1.

Table 7.1 *Percentage of women who have participated in organized gynaecological check-ups according to their age*

Age group	Baseline survey (N=30,556)	Endline survey (N=16,000)
15-19	2.4	3.1
20-24	26.4	43.8
25-29	43.0	85.9
30-34	39.8	88.5
35-39	37.4	84.1
40-44	30.3	76.2
45-49	25.2	65.2
Total	32.0	68.2

The proportion of women aged 15-19 who had participated in any organised gynaecological check-ups increased only by a small margin between the survey periods and ranked the lowest among all age groups. The low participation rates for this age group were partly due to the fact that most women in this group are unmarried. Besides women in this age group probably have a low incidence of gynaecological diseases such as Reproductive Tract Infections (RTIs) or perhaps they don't seek treatment even if they experience problems due to attitudinal factors/cultural norms. Nonetheless, the 15-19 age group could be a potential risk group vulnerable to the risks of sexual and reproductive tract infections. Women aged 25-34 years are higher in proportion to have participated in the organized gynaecological check-ups, which indicates the fact that these women could be suffering from RTIs and other gynaecological ill-health.

FIG 7.1 Women seeking gynaecological examinations by current age

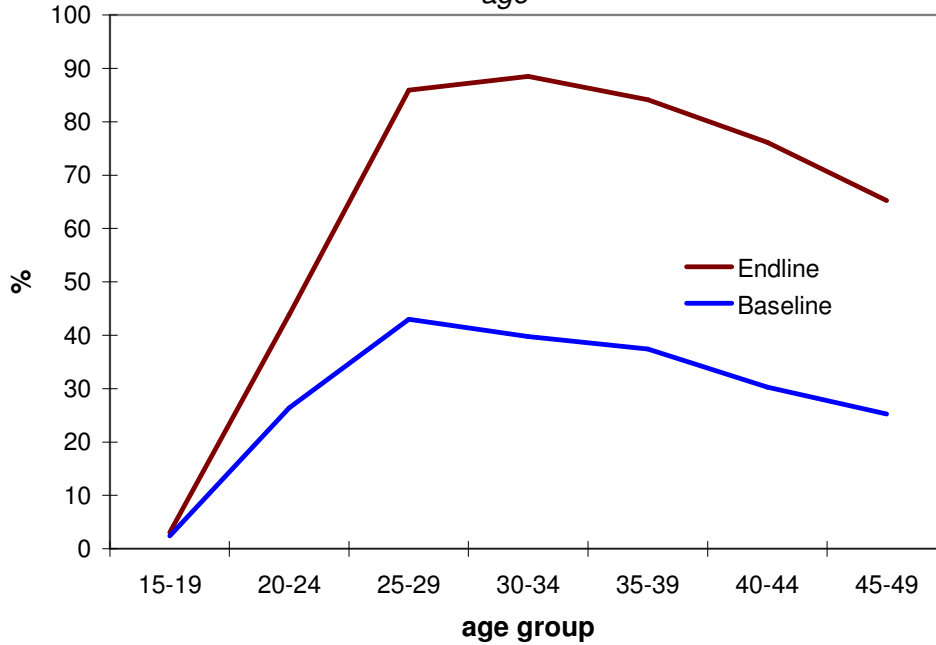


Table 7.2 shows the sources where women have had the last gynaecological check-up in the baseline and endline surveys. The endline results highlight the fact that many women are approaching particularly township level FP stations for their gynaecological examinations. The proportion seeking gynaecological examinations in township level FP stations increased by about 41% in the endline survey when compared with the baseline survey. Those seeking care in the village and county level hospitals including MCH facility have decreased between the two survey periods. Although there is a decrease in those seeking gynaecological checkups at village clinics, about one-fifth still utilise village clinics. The increase in the percentage seeking gynaecological care at the township FP service stations may reflect the fact that most of the gynaecological checkups are usually organized and performed in the family planning set-ups.

Table 7.2 Sources where women have had their last gynaecological check-up (%)

Localities	Baseline (N=9,782)	Endline (N=10,916)
County and above level hospitals	4.2	2.4
County and above level MCH hospitals	3.1	2.5
County FP service stations	3.8	3.2
Township hospitals	11.9	4.7
Township FP service stations	43.6	61.5
Village clinics	31.5	20.3
Private clinics	0.1	0.0
Others	1.8	5.3
Total	100.0	100.0

Women in the prime reproductive ages between 25 and 39 years are more likely to have availed any organized gynaecological check-ups, especially in township FP stations.

Prenatal care

The questions in the baseline and endline surveys about prenatal checkups are basically identical, except for some minor differences regarding the way women were interviewed and the responses recorded. Regarding the question about the timing (in weeks) of first prenatal check-up, the endline survey added a category 'don't know'. This particular choice was not provided for the same question in the baseline survey. To facilitate comparison, this report does not include the 'don't know' category and the information is provided for those who responded the number of weeks of pregnancy at the time of first prenatal check-up.

Table 7.3 demonstrates the percentage of women who had prenatal checkups classified by their educational level for the baseline survey during the period 1995-1998 and during 1999-2002 for the endline survey. The endline survey reveals a markedly higher percentage of prenatal checkups than the baseline survey. In the baseline survey, the percentage of prenatal checkups increased with the increase in women's educational level. In the endline survey, the trend continued, but the differences between different

educational levels were insignificant. This indicates that project interventions could highly influence even the illiterate groups in the society.

Table 7.3 *Percentage of women who have had prenatal checkups according to their educational levels*

Educational level	Baseline (N= 5,050)	Endline (N= 2,697)
Illiterate	57.4	95.6
Primary school	80.9	94.7
Junior middle school	91.6	98.1
Senior middle school	97.5	100.0
College and over	100.0	100.0
Total	82.3	96.6

The reasons for not having prenatal checkups are shown in Table 7.4. The reasons provided for not having prenatal checkups were to some extent identical in the baseline and endline surveys. About 15-16% of women did not know whether prenatal checkups were necessary and about 10% had not sought prenatal checkups because it was too expensive.

Table 7.4 *Reasons for not having prenatal checkups (%)*

Reasons	Baseline (N= 5,050)	Endline (N= 2,697)
Don't know it is necessary	16.2	15.2
Don't know where to have it	1.5	2.0
No access to transportation	4.2	12.6
Too expensive	10.8	10.0
Have no time	3.2	5.0
Feel embarrassed	5.8	9.1
Don't think it is necessary	52.6	44.5
Others	5.8	1.7
Total	100.0	100.0

About 20% reported not to have had received services because of other reasons such as poor transportation and economic difficulties. In particular, about 45% of women felt that it was unnecessary to have prenatal checkups. This indicates that these women lack the basic health awareness about the importance of pregnancy and prenatal checkups.

Efforts are therefore needed to enhance the IEC activities especially targeting these particular groups of women.

The frequency of prenatal care received according to the level of education is shown in Table 7.5. The average frequency of prenatal checkups was 4.5 in the baseline survey, which rose to 5.9 times in the endline survey. The SMI recommends early initiation of prenatal care (first trimester) and at least three checkups that include blood pressure checks and other procedures to detect pregnancy complications. The frequency of prenatal care of 5 or more times has increased quite convincingly between the baseline and endline survey irrespective of any educational differentials; better educated women are higher in proportion to have utilised more number of prenatal checkups. In the endline survey, the trend continued, but the difference between different educational levels was insignificant, particularly the illiterates and those who had completed primary school level.

Table 7.5 *Frequency of prenatal check-ups according to women's educational level (%)*

Educational level	Baseline (N= 5,050)		Endline (N= 2,697)	
	1-4	≥5	1-4	≥5
Illiterate	80.3	19.7	47.8	52.2
Primary school	71.8	28.2	47.2	52.8
Junior middle school	59.8	40.2	35.8	64.2
Senior middle school	33.7	66.3	29.2	70.8
College and over	12.9	87.1	32.4	67.6
Total	64.5	35.5	41.5	58.5

When compared with the baseline survey, the percentage of women who had 1-4 prenatal checkups reduced while those who had five or more increased in the endline survey. The duration of pregnancy at first prenatal check-up averaged 3.8 months in the baseline survey, which further decreased to 3 months in the endline survey (Table 7.6).


Table 7.6 *Timing of first prenatal check-up according to the month of pregnancy (%)*

Months into pregnancy	Baseline (N= 5,050)	Endline (N= 2,697)
1	6.2	4.9
2	25.7	32.0
3	17.7	37.3
4	11.6	9.6
5	12.4	6.5
≥6	26.4	9.6
Total	100.0	100.0

The endline survey found that many women initiated prenatal care well in advance; about 75% initiated prenatal care within the first three months of pregnancy in the endline period when compared with a figure of 50% in the baseline survey. When compared with the baseline period, women who initiated prenatal care during the fifth month of pregnancy declined by about 48% in the endline period. Conversely, those who postponed prenatal care to 6 months or above declined significantly in the endline period. While hospital remains the major source for women to have prenatal checkups, an important change in the endline survey was the increase in proportion of women approaching county and township FP service stations, in particular, township FP service stations (Table 7.7).

Table 7.7 *Sources where women had obtained prenatal care (%)*

Localities	Baseline (N= 5,050)	Endline (N= 2,697)
County and above level hospitals	20.5	16.7
County and above level MCH hospitals	8.4	9.5
County FP service stations	1.8	5.3
Township hospitals	42.2	37.9
Township FP service stations	16.8	25.8
Private clinics	3.5	0.8
Village clinics	4.7	3.5
At home	1.2	0.1
Others	0.8	0.4
Total	100.0	100.0



About 76% of the women surveyed in the baseline period expressed their satisfaction with prenatal checkups, which further increased to 98.4% in the endline survey. It should be noted that the level of satisfaction in the baseline survey was women's general feeling and impression about all the prenatal checkups they had received since 1995, while the data in the endline survey were an aggregated result of women's satisfaction with each check-up they had during 1999-2002.

About 15-16% of women doubt whether prenatal care was necessary and many find it difficult to access prenatal care because of transportation difficulties. Both the timing and frequency of prenatal care improved significantly between the two surveys.

Place of delivery

The SMI encourage deliveries under proper hygienic conditions under the supervision of trained health professionals and recommends postnatal checkups to be initiated within two months after delivery, especially for births that take place in non-institutional settings. Table 7.8 shows the proportion of women who have had delivery at various institutions and other places during the baseline and endline periods. The hospital delivery rate had increased from 50.9% in the baseline survey to 79.8% in the endline survey. In terms of the place of delivery, those who had given births at private clinics, home and other localities decreased to differing extent, especially those delivered at home (by about 60%). In contrast, those delivered at the health and family planning service facilities increased, with deliveries at township hospitals rising by the largest margin (about 58%). However, there were still about 20% of the women surveyed during endline period who had given births at home.

The percentage of women who had received postnatal home visit according to the place of delivery is shown in Table 7.9. It can be observed that the proportion of postnatal home visits had more than doubled from 41.7% in the baseline survey to 87.6% in the endline survey. Similar trend has been observed for all the other categories.

Table 7.8 *Place of delivery (%)*

Place of delivery	Baseline (N= 5,050))	Endline (N= 2,697))
County and above level hospitals	14.7	19.6
County and above level MCH hospitals	2.9	9.3
County FP service stations	0.6	1.9
Township hospitals	26.7	42.3
Township FP service stations	4.1	6.4
Private clinics	1.9	0.3
Village clinics	1.2	1.2
At home	47.3	18.9
Others	0.6	0.0
Total	100.0	100.0

Table 7.9 *Percentage of women who had received postnatal home visit according to the place of delivery*

Place of delivery	Baseline (N= 5,050))	Endline (N= 2,697))
County and above level hospitals	40.1	87.1
County and above level MCH hospitals	47.3	89.8
County FP service stations	60.6	97.0
Township hospitals	40.2	90.6
Township FP service stations	68.8	97.1
Private clinics	40.0	45.3
Village clinics	61.7	78.1
At home	39.7	77.7
Others	27.6	0.0
Total	41.7	87.6

Of these, home visit paid to women delivered at township hospitals and county and above level hospitals increased by the largest margin, by 50 and 47 percentage points respectively. Table 7.10 demonstrates the timing of the first postnatal home visit in both surveys. Compared with the baseline survey, the endline survey reported a shorter time range for the first home visit. The average interval was 1.7 weeks in the baseline survey and 1.6 weeks in the endline survey. About 15% of first postnatal visits were conducted after two or more weeks.

Table 7.10 *Timing of first postnatal home visit (%)*

Weeks	Baseline (N= 5,050)	Endline (N= 2,697)
1	72.8	74.6
2	12.5	11.1
≥3	14.6	14.3
Total	100.0	100.0

Home-based deliveries declined sharply from 47.3% to 18.9% between the baseline and endline surveys...many give births at the county level MCH and township hospitals. Most of the postnatal home visits were initiated in the first week after delivery.



Summary

This section addressed the important aspects of maternal and child health care delivery systems. The participation in any organized gynaecological checkups in the past two years increased from 32.0% in the baseline survey to 68.2% in the endline survey. Prenatal care rates increased from 82.3% during 1995-1998 to 96.6% during 1999-2002; the average number of checkups in the given period of time increased from 4.5 to 5.9; the average duration of pregnancy at the time of first prenatal check-up decreased from 3.8 months to 3 months; the proportion of women who were satisfied with the prenatal check-up services increased from 75.7% to 98.4%. Hospital delivery rate increased from 50.9% during 1995-1998 to 79.8% during 1999-2002; postnatal home visit in a given period of time rose from 41.7% to 87.6%; however, there were still 20% of women who reported to have had given births at home. Despite the progress made in the maternal and child health care services delivery, there are still considerable number of women who had failed to seek prenatal health services as a result of lack of awareness, knowledge and information besides other external constraints.


VIII


Recommendations

Investing in women's health is crucial and ongoing efforts should continue to safeguard the overall welfare of populations...

The results of endline survey show significant changes and improvements in both reproductive health services delivery provisions and utilisation. This report provided a broader overview of the changes in RH/FP knowledge, behaviour and services as a result of intervention in the selected counties. The RH/FP indicators may differ from one region to another. The regional/county level statistics are not covered in this report due to sample size reasons and also due to the want of sufficient space. Further elaborate data analysis with consideration of background characteristics are promising and worth attempting for an in-depth understanding of local RH/FP issues. Nonetheless, it is a fact that some of the important issues are common among most of the project sites. The advantage of this survey is the wider coverage of study subject and better sampling representation. The following are few recommendations based on the conclusions of this study derived from the analysis of the pooled data from the 32 counties of 22 provinces.

1. Because of the diversity of counties in the project sites, the changes and improvements observed vary largely from county to county. The space for further improvement relies on the performance of individual counties. In order to sustain the project efforts and goals for providing better quality of care services and make available well informed choices, it is imperative that each county should be responsible in adopting its own strategy to make further progress in RH/FP.

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2. The FP service efforts should continue and be more standardized; service components such as follow-up services after IUD insertion and induced abortion need attention and greater emphasis in the RH/FP programmes. Service providers at the township and county level health institutions should receive appropriate training about service standards to make the follow-up service institutionalized.
 3. The endline survey affirmed that contraception mix behaviour has changed considerably during the process of informed choice promotion. Many young couples now choose reversible or temporary methods especially IUD and condoms. Although this is one of the significant achievements of the project objectives, efforts should be placed to monitor the chances of unwanted pregnancy rates as a result of method failure as neither IUD nor condoms assures 100% method efficacy. The service provider should pay more attention on counselling and follow-up activities in order to tackle or reduce the problems related to method side-effects and failures. The counselling component should be further strengthened in the family planning services especially at the local and sub-local levels.
 4. More attention should be paid to the reproductive and sexual health issues of unmarried youth especially males. This recommendation is made keeping in view of the emerging threat of reproductive tract infections and HIV/AIDS among both men and women in the prime reproductive age group. Considering the possible migration (internal and international) potentials among youth in the future, the intervention and monitoring measures should start as early as possible. Efforts should focus on encouraging more male participation in family planning particularly with the goal of promoting good quality condoms. The existing counselling and follow-up services should further strengthen the adolescent health services, within the RH/FP programme, addressing the demand and needs of adolescent boys and girls.

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5. Further research investigation is required to understand the situation of underserved and vulnerable groups, such as potential clients from poor families, unmarried adolescents, and migrants, in order to improve the accessibility and availability of services. Efforts should be placed to further encourage the knowledge of health facilities and institution deliveries in order to avoid maternal and child health morbidity/complications and mortality.
 6. Finally, it is equally important to pay attention to improve the basic amenities such as transportation facilities and public hygiene situation as part of the overall objective to provide basic and quality client-centred reproductive health and family planning services.

Appendix I

Sample design and weighting strategy

This section briefly discusses the sample design and weighting strategies of the endline survey. Although this survey was the end-line survey, and therefore it would be usual to link the design to the base-line, it was effectively design ‘independently of the base-line. This was necessary as insufficient information existed on the base-line design. The ‘target population’ was all women of reproductive ages in the ‘project counties’ who lived in a township with a family planning facility. In addition, information was collected from the facilities and providers in the sampled townships.

Description of the design

All 32 project counties were included in the sample. These formed strata and within each stratum the requirement was to select a sample of 500 women. Although not efficient for estimates at the ‘population level’ (across all 32 counties) as the counties varied in size, this approach was taken to ensure between county comparisons could be made.

Selecting the townships

Within each county the population is divided into ‘townships’, which formed the primary sampling units (PSUs) for selecting the within county sample. Every county has a ‘major urban area’ that is identified as the ‘county township’. As the facilities in these townships are ‘different’ from those in the remaining townships the 32 county townships were always selected. Within each county, a further four townships were selected using systematic sampling from a list ordered by the GDP of the townships.



Selecting the neighbourhood committees / villages

The townships are made-up of secondary sampling units (SSUs) that can be a mixture of urban areas called ‘neighbourhood committees’ and rural areas called ‘villages’. In reality most of the urban areas are found in the county townships. Within the selected PSUs we required a sample of 5 SSUs. If there was one urban (rural) SSU in a selected PSU then that urban (rural) SSU was selected and the remaining four SSUs were selected from the rural (urban) areas. Otherwise, the sample of five SSUs was split between the urban and rural areas in proportion to the total population living in each type of area. (This approach was needed as it is only at this level that areas are classified as urban or rural and it was necessary to ensure both types were represented in the final sample of women.) The samples of SSUs were then selected using systematic sampling from lists ordered by total population size.

Selecting the respondents

Within each selected SSU, a list of all the women in the target population sorted by age and marital status was prepared. A systematic sample of 20 women was then selected from each list. This allowed each SSU to define an interviewer’s workload as 20 was felt to be a realistic workload for one interviewer to handle. The advantage of this type of clustered design is a substantial reduction in fieldwork costs.

The weighting strategy

The sample design has four levels as outlined below. The weights used reflect the structure in the sample design so give ‘unbiased’ estimates of population level quantities.

Level 1

All 32 counties (indexed by c) are in the sample.

Level 2

Within county c there are Q_c townships that have a service provider and we wish to select five. However, the county township is always sampled so we select four more townships from the remaining Q_c-1 townships. Townships are index $i = 1$ to Q_c .

Level 3

Within a selected township i of county c we need to select five villages / neighbourhood committees. Let M_{ci} be the total number of units (indexed by j) within the township with M_{ci}^r being the total number of villages and M_{ci}^u being the total number of neighbourhood committees. We sample m_{ci}^r and m_{ci}^u from each group such that the total is five. If $M_{ci}^r = 1$ then $m_{ci}^r = 1$ or if $M_{ci}^u = 1$ then $m_{ci}^u = 1$. Otherwise, the five is split between the two types in proportion to the total population living in each type.

Level 4

Within a selected area j we select 20 women (indexed by k) from the N_{cij} women within the selected area.

Women level weights

There are four types of weight for women depending on whether they live in a village or neighbourhood committee and depending on whether they come from the township with the county provider.

		Rural (Villages)	Urban (Neighbourhood Committees)
Township has County Provider	Yes	$w_{cijk} = \frac{1}{1} \times \frac{M_{ci}^r}{m_{ci}^r} \times \frac{N_{cij}}{20}$	$w_{cijk} = \frac{1}{1} \times \frac{M_{ci}^u}{m_{ci}^u} \times \frac{N_{cij}}{20}$
	No	$w_{cijk} = \frac{Q_c - 1}{4} \times \frac{M_{ci}^r}{m_{ci}^r} \times \frac{N_{cij}}{20}$	$w_{cijk} = \frac{Q_c - 1}{4} \times \frac{M_{ci}^u}{m_{ci}^u} \times \frac{N_{cij}}{20}$

From these weights define the total of the weights as

$$W = \sum_{c=1}^{32} \sum_{i=1}^5 \sum_{j=1}^5 \sum_{k=1}^{20} w_{cijk}$$

where W is an ‘estimate’ of the total number of women in the target population. However, as we are interested in means / proportions we actually work with the scaled weight

$$\tilde{w}_{cijk} = \frac{n}{W} \times w_{cijk}$$

where n is the total achieved sample of women.

Facility level weights

For the facility sample it is assumed that within a township there is only one facility to be sampled. Therefore, if the facility is in the county township the weight is one and $\frac{Q_c - 1}{4}$ if the facility comes from one of the other townships. If we refer to the facility

weight as w_{ci}^f , we then calculate $\tilde{w}_{ci}^f = \frac{160}{W^f} \times w_{ci}^f$ where W^f is the sum of the original weights and 160 is the total number of facilities in the sample (five from each of the 32 counties). The scaled weight is used in the subsequent analysis.

Provider level weights

For the sample of providers, it is assumed that the 30 selected within each township are a simple random sample. Therefore the weight w_{ci}^p for each provider within a township is considered to be the same as w_{ci}^f , the weight for the township facility. However the scaled weight used in the analysis is given by $\tilde{w}_{ci}^p = \frac{960}{W^p} \times w_{ci}^p$ where W^p is the sum of the provider weights and 960 is the total number of providers in the sample (30 from each of the 32 counties).



Non-Response Adjustments

No adjustments were made to any of the weights for unit non-response as the response rates were very high and therefore any bias due to non-response was considered to be minimal.

Appendix II

List of project counties selected in the endline survey and their total population, 2000

Regions	Province	County	Population
Central	Anhui	Guichi	614500
Central	Anhui	Xuanzhou	830558
Central	Henan	Mengzhou	333547
Central	Henan	Pingqiao	750239
Central	Hubei	Yingshan	405864
Central	Hubei	Qianjiang	1006201
Central	Hunan	Linwu	307416
Central	Hunan	Youxian	743700
Central	Jiangxi	Yushui	726921
Central	Shanxi	Linxian	557505
East	Fujian	Jianou	516944
East	Guangdong	Sihui	397862
East	Hainan	Wenchang	550250
East	Hebei	Fengning	374376
East	Hebei	Luanxian	537260
East	Shandong	Dongming	692561
West	Chongqing	Rongchang	805606
West	Gansu	Yuzhong	427421
West	Guangxi	Lipu	368863
West	Guangxi	Longan	371019
West	Guizhou	Zhenfeng	330145
West	Guizhou	Pingba	333205
West	Inner Mongolia	Aohanqi	579996
West	Ningxia	Pingluo	260880
West	Qinghai	Datong	425383
West	Shhanxi	Xixiang	398004
West	Shhanxi	Luonan	457029
West	Sichuan	Yilong	978000
West	Sichuan	Bazhong	1240000
West	Xinjiang	Kuerle	323823
West	Yunnan	Xinping	263066
West	Yunnan	Xiangyun	435404
Total			17343548