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FINAL ACTIVITY REPORT

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Title: Post-abortion Family Planning Services in China: a demonstration-intervention project to increase contraceptive use and to reduce unwanted pregnancies and induced abortions.

Project homepage: -

Keywords: Family Planning, China, Post-abortion care, Public Health.

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1. Project execution

Background

Induced abortion among both married and unmarried women are an important reproductive health concern in China, An estimated 10 million induced abortions is performed annually in China, with two-thirds as a result of contraceptive failure and one-third from non-use of contraception. About one-third of all abortions are repeat abortions. Induced abortion has been seen as a backup method for failure of contraception and for unplanned pregnancies after unprotected intercourse, in particular in light of the one-child family policy. The introduction of Post Abortion Family Planning (PAFP) is known to be an effective strategy to reduce the number of repeat abortions. However, at present, the delivery of Post Abortion Family Planning (PAFP) services is merely inexistent in China. Women generally leave the abortion clinics without contraceptive method and they are not systematically referred to family planning (FP) and / or counseling services. To our knowledge, no studies have been performed in China regarding the impact of post-abortion family planning services on use of contraceptive methods and abortion rate. It is in this context that our research project took place.

Objectives

The main purpose of the research project is to define optimal ways to introduce PAFP services in urban areas in China in order to reduce the rate of unwanted pregnancies and induced abortions. Three specific objectives were: (i) to have a better understanding of the existing situation, determinants of abortion and identification of barriers to FP services (ii) to find out the demographic characteristics of abortion women and (iii) to develop and measure two ways of introducing PAFP services.

Achievement: All the objectives have been attained

Activities and methodologies

The project took place in three large cities in China: Beijing, Shanghai, and Zhengzhou. The project team was further composed by three EU countries (Belgium, Denmark and the Netherlands).

Three main activities took place during the three years of duration of the project:

- In the first year (2005), a qualitative research has been undertaken and two different models of family planning services to be integrated in abortion services have been developed.

  The qualitative research was done in 25 hospitals of Beijing, Shanghai, and Zhengzhou. Previous to the research, staff was trained in qualitative research methods. The methodological tools used included observation, in-depth interviews (IDI), key informant interviews, and focus group discussion (FGD). The study was done in nine hospital offering abortion in Beijing, eight in Shanghai, and eight in Zhengzhou (Annex 1- The target group, places and times of the qualitative study in three cities). To start off, listing and ranking exercises were done with women seeking abortion in each hospital. This was followed by the observation of the services as well as of women and their partners who came to the hospital for abortion. In Beijing 81 women seeking abortion were interviewed, 80 in Shanghai, and 85 in Zhengzhou respectively. The following focus group discussions were conducted: six with service providers, six with women seeking abortion services under the age pf 25, six with women over the age of 25 seeking abortion service and six with the intimate male partners of women seeking abortion service. In each area key informant interviews were done with six heads of Gynecology and Obstetrics, six principals of abortion clinic, 12 medical staff members of Gynecology and Obstetrics, In-depth interviews were afterwards done with 30 women seeking abortion service in each hospital – this happened both pre-abortion and post-abortion, In depth interviews were also done with 12 intimate male partners of women seeking abortion service.

- In the second year (2006), a cluster randomized trial comparing two models of integrating PAFP services has been performed in three cities

  A total of 24 hospitals from three cities of China were paired and randomly assigned to either of the two intervention packages: A and B. Package A included provision of limited information and referral to existing family planning services, and Package B included face-to-face counseling, provision of free contraceptive methods, and male involvement, in addition to Package A. Women seeking abortion at these hospitals were interviewed at the time of the abortion and six months later. At the interview six months later, women were asked about use of contraceptive methods and abortion during the follow-up period.

- In the third year (2007), the outcome of the intervention has been assessed. Quantitative data collected before and after the intervention were compared.

  A structured questionnaire has been used for the data collection; data were collected twice, before randomization and after implementation of the intervention, respectively. The primary indicators were (a) use of contraceptives [use of any contraceptive methods, including condom, natural methods, IUD, contraceptive pills, emergency oral contraceptives, sterilization, injection, implant, diaphragm, spermicides, etc], (b) use of effective contraceptives (use of condom, contraceptive pills, IUD, and implants), (c) consistent use, correct use, and both consistent and correct use of condoms among condom users (d) no neglect among contraceptive pill users, (e) Pregnancies among all follow-up women, (f) unwanted pregnancies including induced abortion during the follow-up period and unwanted ongoing pregnancies for which women did not want to give birth to a baby among all follow-up women and (g) Repeat induced abortions among all follow-up women during the follow-up period. For the analysis, a conditional logistic regression accounting for hospital matching to calculate odds ratios for all the primary indicators was used. The comparisons have

been done between Package A and package B as well as between pre-intervention and post- intervention among package A and package B, by taking into account the cluster effect (hospital).

Major results

Qualitative research

Women who seek abortion have little knowledge about contraception. Unmarried women viewed contraceptives as having negative effects on the balance in the body; they preferred 'natural' methods. For many unmarried women in our study the issue of contraceptive technology seldom arose in the first instance because they were concerned about its effect on their future fertility. The vast majority of unmarried women used 'natural' methods like withdrawal or having sex during the 'safe' period in their menstrual cycle, vaginal douching or using traditional Chinese medicines. They also reported some use of condoms, which were viewed as 'clean' (having no chemical substances in it), 'not bad for your body' and 'not affecting the body'. Its effective use nevertheless depended on male control. Condoms were also experienced as not enhancing sexual pleasure, which seemed to be linked with an increasingly individualised sense of self. Interviews with women in our study indicated that IUD's are considered as extremely inappropriate for unmarried women because it is 'bad for your body' 'not appropriate', 'painful', and a 'metal thing' inserted into the body. It is perceived as resulting in changes in menstrual patterns, abdominal pain, vaginal discharge and possible infections. While short term contraceptive technology like the contraceptive pill is available in China, it is mostly a high dosage medication that is taken once per month. Unmarried women in our study did not use it. They were concerned that it would affect their menstruation, a sign of health and fertility. At the same time the pill is viewed as a substance which is 'not clean', 'not safe', 'toxic', has 'bad' 'things' in it like 'hormones' that, because it has to be taken regularly, 'builds up', affects the

'shape' of the body, 'remains' in it, 'disturbs (bodily) levels' and affects the body's healthful balance.

At the same time the unmarried women in our study all accepted abortion as necessary to prevent the birth of an unwanted child. Having a child whilst being unmarried was presented as not economically viable and as being careless with one's own future. The women stressed that they still wanted to further their studies, get a good job, find a proper place to stay and such. In this regard they largely subscribed to state discourses concerning the obligation to produce a quality, planned child. This was not merely presented as the self- evident way to think about future offspring, but was also constructed as a responsibility towards the collective.

Neither emergency contraception nor abortion was viewed as healthy for the body or mind. Surgical abortion was seen as 'harmful', hurtful' and as 'thinning the womb'. Most of them fear the potential impairment of the body caused by abortion like infertility, inflammation, cancer and so on. The main reasons to seek abortion was that they did not see another alternative when they were pregnant. Especially unmarried women feared that others would know they were pregnant and that they would be discriminated.

Most service providers pointed out that there is an increasing amount of abortions, especially repeated abortion and abortion in unmarried women. This was expressed as an issue of concern because the women are youthful and should not be sexually active yet. Unmarried women who are sexually active were represented as indulgent, distracted, lacking responsibility, risk taking and involved in dubious societal changes. Providers consider abortion as a necessary option for women with an unwanted pregnancy, but that abortions often do lots of harm to women's physical and mental health. So abortion should be avoided. At the same time, providers warn that the use of contraceptives should not be neglected. Many women do not use or correctly use contraceptives during sexual intercourse. One of the problems is that most hospitals do not have special counseling services post-abortion. Providers

usually do not offer contraceptives on their own initiative and contraceptives are not free of charge. The health providers thought that the post-abortion service in China should be further improved, but considering the present condition of each hospital and the resource constraints, it is not easy to do so.

Family planning is a basic policy in China. One Child Policy has a visible effect on practicing abortion. Especially those married women, who already have a child, seek abortion because of this policy. Gender preference has less influence on practicing abortion. Most providers pointed out that when patients decide to practice abortion, the embryo is too small to distinguish its sex. But it may happen more in rural areas, whereas most couples in cities care little about whether the baby is a girl or a boy.

The Baseline characteristics of women who seek abortion

Demographic characteristics

The demographic characteristics were described and explored during the pre-intervention period (Table 1). Of 7291 women 50, 5% were younger than 25 years, 50.8% had an educational level lower than senior high school, 60.3% was floating population and 74.8% were unmarried. The unmarried youth, especially the unmarried floating population, have little chance to be informed and choose, and have little access to family planning services. In addition, the majority of them are people of low educational level without permanent vocations; all these factors put forward internal and external obstacles in the way of seeking family planning services.

Table 1. Characteristics of women who seek abortion

Characteristics		<25age (=3684)		≥25age (n=3607)	
		N	%	N	%
Occupation	Jobless	657	17.8	755	20.9
	Clerk	1182	32.1	1116	30.9
	Service worker	733	19.9	383	10.6
	Student	281	7.6	93	2.6
	Others	831	22.6	1260	34.9
Education*	Junior middle school or under	752	22.7	705	23.5
	Senior middle school or technical secondary school	1130	34.1	902	30.1
	College or above	1436	43.3	1391	46.4
Registered permanent residence	This city	1463	39.7	2325	64.5
	Other city	2221	60.3	1282	35.5
Marital status	Single	2754	74.8	416	11.5
	Married	930	25.2	3191	88.5
Reason for this pregnancy	Non-use of contraceptive methods	2584	70.1	2149	59.6
	Failure of contraception	1100	29.9	1458	40.4
Pregnancy history (Including this pregnancy)	=1time	2236	60.7	587	16.3
	≥2times	1448	39.3	3020	83.7
Ever given birth	Yes	211	5.7	2242	62.2
	No	3473	94.3	1365	37.8

Reason for this abortion

The main reason of abortion was non contraceptive use; the result of a combination of low awareness and unforeseen sex. Before the abortion, 63.7 of them didn't use contraceptives, in 36.3% the contraceptive method had failed. In the 1770 women who did not use contraceptives, the reasons were: had unforeseen sex and did not have contraceptive methods (42.9%), didn't want to use contraception (35.0%), lack of knowledge (11.4%), and other reasons (10.7%), eg. unwanted sexual intercourse. Especially young people are not prepared for sexual relationships and do not use contraceptives when they have sex with a casual partner. These data re-enforce the rationale of the study: if young women can't acquire related contraceptive services immediately after abortion, they are is very likely to have repeated abortions.

Sexual behaviour

Women started their sexual life in an age range from 11.8 to 24.9 years, the median age was 20.7 years old. Of them, 13.6% started sexual activity before 18 years old, while 38.8% of them had sexual activity before 20 years old. For 4.7% of the women, their first sexual experience was unwanted sexual intercourse, and in total 6.8 experienced unwanted sexual intercourse. The median number of sexual intercourse was 6 times per month.

Repeated abortion

In the three cities, 35.0% of the respondents (974 women) experienced repeated abortion, and 48.4% of them had twice abortions in one year (Table 2)

Table 2. The rate of repeated abortion in three cities.

City	Number of repeated abortion woman	Rate of repeated abortion	Abortion times (Concluding this time)(min-max)
Beijing	297	32.9%	2-6 times
Shanghai	327	36.4%	2-9 times
Zhengzhou	350	35.7%	2-6 times

χ^2= 2.711, P=0.258. It shows that there is no significant difference between the three cities.

The cluster randomized trial

Hospitals and women included in data analysis

The trial originally consisted of 24 hospitals (12 pairs), but only 8 pairs of hospitals strictly followed the centralized randomization and could thus be included in the analysis. This analysis is based on women younger than 25 years seeking abortion at the 16 hospitals (8 pairs) that followed the centralized randomization.

Summary of results

A total of 2336 women (1189 before, and 1147 after implementation of the intervention) were followed up after six months. During the follow-up period, 2077 women (88.9%) had sexual intercourse. Both packages increased the use of any contraceptive methods, and consistent use and correct use of condom, and Package B also increased the use of effective methods. (Table 3)

Package B had more than doubled the impact of Package A on consistent condom use (odds ratio 2.32, 95% confidence interval 1.55-3.46), correct condom use (2.78, 1.81-4.26), and consistent and correct condom use (5.68, 3.39-9.53). (Table 4)

Table 3. Use of contraceptive methods among sexually active women, according to intervention and package.

	Hospitals allocated to Package A				Hospitals allocated to Package B			
	Before intervention		After intervention		Before intervention		After intervention	
	n	%	n	%	n	%	n	%
Use of any contraceptive methods	469	93.8	495	97.6	555	96.4	486	98.4
Use of effective contraceptive methods	436	87.2	453	89.3	518	89.9	475	96.2
Consistent use of condom	132	33.0	169	39.7	178	37.1	279	62.1
Correct use of condom	164	41.1	213	49.9	179	37.3	302	67.3
Consistent and correct use of condom	68	17.0	91	21.4	50	10.4	187	41.6
No neglect in use of contraceptive pills	39	83.0	30	62.5	53	89.8	27	77.1

Table 4. Odds ratios of use of contraceptive methods, comparisons between before and after intervention and between intervention packages.

	Package A			Package B			Package B *vs* Package A		
	Crude OR*	AOR**	95% CI	Crude OR	AOR	95% CI	Crude OR	AOR	95% CI
Use of any contraceptive methods[a]	2.62	2.45	1.22-4.95	2.50	2.55	1.00-6.46	0.82	0.81	0.27-2.40
Use of effective contraceptive methods[b]	1.36	1.19	0.79-1.81	2.78	2.35	1.33-4.17	2.13	2.03	1.04-3.98
Consistent use of condom[c]	1.42	1.37	1.01-1.85	2.93	2.75	2.05-3.68	2.33	2.32	1.55-3.46
Correct use of condom[c]	1.54	1.53	1.13-2.06	8.67	8.38	5.64-12.46	2.81	2.78	1.81-4.26
Consistent and correct use of condom[c]	1.40	1.36	0.93-1.97	8.43	8.01	5.46-11.77	5.71	5.68	3.39-9.53
No neglect in use of contraceptive pills[d]	0.96	1.33	0.29-6.16	0.49	0.64	0.10-4.13	0.19	0.19	0.03-1.38

* OR: Odds Ratio, ** AOR: Adjusted Odds Ratio

[a]Adjusted for women's birth place, education, occupational status, and history of contraceptive use, and men's occupational status.

[b]Adjusted for women's birth place, education, occupational status, and history of effective contraceptive use, and men's occupational status.

[c]Adjusted for women's birth place, education, occupational status, and history of condom use, and men's occupational status.

[d]Adjusted for women's birth place, education, occupational status, and history of pill use, and men's occupational status.

The rates of unwanted pregnancy and repeat abortion were reduced after either of the intervention packages, with no significant difference between them (Table 5)

Table 5. Pregnancies, unwanted pregnancies and induced abortions among all follow-up women*, according to intervention and package

	Hospitals allocated to Package A				Hospitals allocated to Package B			
	Before intervention		After intervention		Before intervention		After intervention	
	n	%	n	%	n	%	n	%
Pregnancy	46	8.3	41	7.4	27	4.3	16	2.7
Unwanted pregnancy	30	5.4	23	4.1	14	2.2	8	1.4
Induced abortion	26	4.7	18	3.2	12	1.9	7	1.2

*If a woman had more than one event, we counted only once.

Conclusion: The results demonstrated that an essential intervention Package A, (group education and referral to existing family planning services), increased the use of any contraception after abortion and the consistent and correct use of condom. A comprehensive intervention Package B (individual counseling, provision of free contraceptive methods, limited male involvement,) in addition to Package A, had a much stronger effect on couples' behavior change in use of contraception after abortion and the consistent and correct use of condom. A comprehensive approach in family planning services may be superior to a simple approach for increasing use of effective contraceptive methods and user adherence among abortion-seeking couples in China.

2. Dissemination and use of results

Dates	*Type*	*Type of audience*	*Countries addressed*	*Size of audience*	*Partners involved**
18-20/12/07	*Press conference (Annex 2,3)*	*Journalists, policy decider, scientific researcher, health provider, Master and PhD students*	*China*	*40*	*All*
19/10/07	*Conference- ICRH international symposium* • *Two oral presentations (Annex 4)* • *One poster presentation (Annex 5)*	*Scientific researcher, policy decider, health provider, master and PhD students.*	*Belgium*	*300*	*1,2, 6*
2006	*Publication- Paper published in Chinese (Annex 6)*	*Chinese journal of family planning*	*China*	*Chinese speaking people*	*2*
2007	*Publication -6 papers have been published in Chinese (Annex6)*	*Chinese journal in family planning, and in maternal and child health care*	*China*	*Chinese speaking people*	*2,3*
2007	*Publications-one paper has been published (Annex 7)*	*Social sciences in Africa and Asia*	*International*	*Journal*	*all*

Dates	*Type*	*Type of audience*	*Countries addressed*	*Size of audience*	*Partners involved**
2008	*Publications-one paper ready to be submitted for publication (Annex 8)*	*Scientific researcher, health provider and policy decider and others*	*International*	*Journal*	*all*
2007 -	*Website, www.icrh.org Description of project results,*	*Visitors website (researchers, politicians, students, etc.)*	*international*		*1*
04/08	*Seminar (Annex 8)*	*Higher education*	*Denmark*	*30*	*6*
03/10/08	*Conference –Cochrane colloquium (Annex 8)*	*Scientific researcher, health provider and policy decider and others*	*Germany*	*500*	*all*
2008-2009	*4 papers will be further developed for submission to international journals (Annex 9)*	*Scientific researcher, health provider and policy decider and others*	*International*	*Journal*	*all*

***** In this table, partners are numbered as:

Partner 1: ..... ICRH (Belgium)
Partner 2:..... NRIFP (PR China, Beijing)
Partner 3:..... HNRIFP (PR China, Henan-Zhengzhou)
Partner 4:..... SDC (PR China, Shanghai)
Partner 5: ..... ASSR/UvA (Netherlands)
Partner 6: ..... DESC/UAAR (Denmark)

3. Annexes

Annex 1. Implementation of the qualitative study

Method	Target group	Time	Place
FGDs	Service Providers	March 28,2005	Beijing and Japan Friendship Hospital
		Apr. 19,2005	Xuan Wu Hospital, Beijing
		Apr. 19,2005	Navy's 411 Hospital, Shanghai
		Apr. 19,2005	Xu Hui Hospital, Shanghai
IDI	Director of Gynecology Department	Apr. 52005	Xuan Wu Hospital, Beijing
		Apr. 8,2005	Hai Dian Hospital, Beijing
		Apr. 19,2005	Navy's 411 Hospital, Shanghai
		Apr. 15,2005	Xu Hui Hospital, Shanghai
		Apr. 11,2005	The 3rd Affiliated Hospital of Zhengzhou University
	Principal of abortion clinic	March 31,2005	An Zhen Hospital, Beijing
		Apr.5,2005	Xuan Wu Hospital, Beijing
		Apr. 7,2005	The 1st Affiliated Hospital of Zhengzhou University
		Apr. 12,2005	Central Hospital, Zhengzhou
	Gynecologist	Apr. 11,2005	People's Hospital, Beijing
		Apr. 142005	Navy's Hospital, Beijing
		Apr. 11,2005	Xu Hui and Hong Kuo Hospital, Shanghai
		Apr. 6, 2005	The 1st People's Hospital, Zhengzhou
		March 31,2005	The 2nd Affiliated Hospital of Zhengzhou University
IDI	Nurses	March 28,2005	Navy's Hospital, Beijing
		Apr. 11,2005	People's Hospital, Beijing
		Apr. 7,2005	Xu Hui and Hong Kuo Hospital, Shanghai
		Apr. 7,2005	The 5th Hospital, Zhengzhou
		Apr. 7,2005	The 3rd Hospital, Zhengzhou

Annex 2. Agenda of National dissemination and Press conference meeting, Beijing, Dec 2007.

"Post Abortion Family Planning services" the Sixth Frame Program of EC

National dissemination of PAFP Project
Partner workshop and - Press conference

Agenda of the meeting

Date	Time	Content	Speaker	Facilitator
18th December Morning	9:00~9:15am	Introduction of the preparing of the dissemination meeting	Professor Yimin Cheng Dr. Wei-Hong Zhang	Dr. Wei-Hong Zhang
	9:15~10:45am	Discussing about the dissemination meeting	All partners	
	10:45~10:55am	Tea break		
	10:55~12:00am	Discussing about the dissemination meeting	All partners	
18th December Afternoon	14:00-16:30pm	Discussing about the dissemination meeting individually Preparing and perfecting the next day's meeting	All partners	Professor Yimin Cheng

The morning of 19th December - Press conference of PAFP Project

Date	Time	Content	Speaker	Facilitator
19th December Morning	9:00-9:10am	Welcome Introduction of the guests	Professor Yimin Cheng	Professor Yimin Cheng
	9:10-9:20am	The director of the national Research Institute for Family Planning	Director Weiguo Wang	
	9:20-9:30am	The director of the international cooperation of National population and Family planning Commission	Director Xiaomei Ru	
	9:30-9:40am	representative of the Ministry of Science and Technology	Li Jie	
	9:40-9:50am	General introduction on Ghent University	Mr Meus	
	9:50-10:00am	Delegate of Research Unit of General Practice give a speech	Dr Henrik Støvring, Denmark	Professor Yimin Cheng and Dr Wei-Hong Zhang (ICRH)
	10:00-10:10am	Present the project (what's) and main, general research results from this project	Dr Wei-Hong Zhang, ICRH	
	10:10-11:00am	Question –Response	All	
	11:00-11:30am	Tea break		
	11:30-12:00am	Integration of family planning with abortion services in three cities of China: a cluster randomized trial –PAFP project	Denmark team	

Date	Time	Content	Speaker	Facilitator
19th December Afternoon	14 : 00-14 : 50pm	Sample size calculation in the planning of a cluster randomized trial: analytical and simulation based approaches	Dr Henrik Støvring, Denmark	Dr. Jinliang Zhu
	14 : 50-15 : 00pm	Tea break		
	15 : 00-15 : 30pm	Why women seeking abortion in three cities of China	Beijing team, China	
	15 : 30-16 : 00pm	The characteristics of women seeking abortion in three cities of China-PAFP project (30 minutes)	Shanghai team, China	
	16 : 00-16 : 30pm	Attitudes and Practice of Post Abortion Family Planning among abortion service provider in three cities of China-PAFP project	ICRH team	
	16 : 30-17 : 00	Attitudes and Practice of Post Abortion Family Planning among women seeking abortion in three cities of China-PAFP project	Zheng zhou team, China	
20th December Morning	8:00-8:20	Summary of the dissemination meeting	Professor Yimin Cheng	Professor Xiao Xu
	8:20-10:00	The final report for EC, publications	Dr. Wei-Hong Zhang	
	10:00-10:10	Tea break		
	10:10-12:00	Discussion	All partners	
20th December Afternoon	14:00~16:00	Discussing about the future cooperation	All partners	Professor Juncai Xu
	16:00	Closure	All partners	

Annex 3: Images of National dissemination and Press conference meeting, Beijing, Dec 2007.

Annex 4: Oral presentations at ICRH international symposium 19th Oct 2007

Integration of family planning in post-abortion care in China: results of a baseline survey

SRH O2

Yimin Cheng

Objectives:

To assess different approaches for integrating family planning services for young women into post-abortion care in China

Methods:

This baseline-survey was done as a first step in an intervention study. Eight abortion clinics in each city of three large cities in China were randomly assigned to either a basic intervention group A or a comprehensive intervention group B. Before the intervention, data were collected amongst the clients and the service providers of the abortion centres to assess the needs and demands for family planning services post-abortion.

Results:

Among 1008 respondents younger than 25 year old, 636 (63.1%) experienced their first abortion while 372 (36.9%) had a repeat abortion. The shortest interval between two abortions was only 2.5 months. Of the women, 45% women experienced two abortions within one year

As reason for the current pregnancy 60.2% reported non-use of contraceptives and 39.6% contraceptive failure. In those reporting contraceptive failures, a large proportion used traditional contraceptives methods, such as rhythm (41.4%) and withdrawal (42.2%). Among those who experienced repeated abortion, the rate of consistent condom use was only 13.9%.

The respondents' knowledge and attitudes on contraception were poor: only 3.5% of the respondents knew the correct time of ovulation after abortion and. Only 14.7% knew how to correctly use oral contraceptives. With regard to the attitudes towards traditional contraceptives, 55.9% of respondents considered that rhythm was the most appropriate contraceptive method for adolescents. Moreover, 48% of respondents believed that douching the vagina immediately after sexual intercourse was an effective contraceptive method.

Both clients and service providers had a positive attitude towards integrating family planning in abortion clinic: 90.7% of the clients hoped that the abortion clinics could provide them family planning post abortion and nearly all service providers were willing to promote these services.

Conclusion:

Relatively high rate of repeated abortion and low rate of contraceptive use indicate that the needs of most abortion women are not met. Integration of family planning into the regular abortion services and into post-abortion care responds to a demand and is feasible.

***Y. Cheng*[1]** [1]*: National Research Institute for Family Planning, China*

Integration of family planning with abortion services in three cities of China: a cluster randomized trial

SRH O3

Wei-Hong Zhang

Objectives:

To define optimal ways to introduce post-abortion family planning services (PAFP) in urban areas in China to increase the use of effective contraceptive methods, and adherence to condoms to reduce the rate of unwanted pregnancies and induced abortions.

Methods:

A total of 24 hospitals from three cities of China were paired and randomly assigned to either of the two intervention packages: an essential package (Package A) and a comprehensive package (Package B). Package A included provision of limited information and referral to existing family planning services, Package B included face-to-face counselling, provision of contraceptive methods, male involvement, in addition to Package A. Women seeking abortion at these hospitals were interviewed at the time of the abortion and six months later. At the interview six months later, women were asked about use of contraceptive methods and abortion during the follow-up period. Data were collected both before and after implementation of the intervention. This analysis was based on women of younger than 25 years seeking abortion at 14 hospitals (7 pairs) that strictly followed the randomization.

Results:

A total of 2184 women, 1104 before and 1080 after intervention, were followed up after six months, 59.3% of those interviewed during the abortion. During the follow-up period, 1935 women (88.6%) had sexual intercourses. Overall, Package A did not affect couples' behaviour in use of contraceptive methods, whereas Package B increased couples' use of effective methods (96.2% vs. 90.4%; P<0.001) and adherence of condom use (61.0% vs. 34.6%; P<0.001). The rate of unwanted pregnancy and repeated abortion was somewhat reduced after either of the intervention packages.

Conclusions:

A comprehensive approach in family planning services may be superior to a simple approach for increasing use of effective contraceptive methods and use adherence among abortion-seeking couples.

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Annex 5: ICRH international symposium 19th Oct 2007-Poster presentation

SEXUAL AND REPRODUCTIVE HEALTH RESEARCH: MAKING A DIFFERENCE

Ghent, Belgium, 17-19 October 2007

TITLE

Knowledge, Attitudes and Practice of Post Abortion Family Planning among abortion service provider in three cities of China - PAFA project.

AUTHORS

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OBJECTIVES

To assess Knowledge, Attitudes and Practices (KAP) of Post Abortion Family Planning (PAFP) in service providers working in abortion centres in three big cities of China (Beijing, Shanghai and Zheng Zhao).

METHODS

The data were collected as part of the project: Post Abortion Family Planning (PAFP), which is under the 6th European Union (EU) Research and Development Framework Programme, INCO. Standard questionnaires were used to interview 605 service providers in January 2006. The KAP survey was done previous to an intervention aiming at integrating family planning in abortion services in the targeted hospitals.

RESULTS

The Characteristics of respondent in survey is shown in table 1, overall the average age of the respondents was 38.4 years, and 97 % were female.

Table 1. Characteristics of respondent in survey, n=605

Characteristics	n	Percentage (%)
City		
Beijing	203	33,55
Shanghai	186	30,74
Zhengzhou	216	35,70
Level of education		
Junior middle school or Below (9 years)	1	0,17
Senior middle school (12 years)	122	20,17
Junior college (15 years)	170	28,10
University	222	36,69
Master	65	10,74
PhD	25	4,13

The KPA survey showed that more than half of providers indicated that they needed more information on how to counsel clients on the appropriate family planning (FP) methods. Only 20 % knew how to to animate an information session targeted at a group of clients. The majority (90 %) thought it was necessary to provide counseling on contraceptive methods to abortion seekers, but in practice, only 70 % of them provided these services regularly and only 10 % did that at each occasion. The lack of educational materials and of contraceptive methods free of charge, were reported as the mains barriers to increase PAFP services. Forty percent of providers indicated that they didn't know any FP clinic outside their hospital and 60 % of providers had not recommended the women to any FP clinic after abortion.

CONCLUSIONS

Near all of abortion services providers had positive attitudes to promote the PAFP services. But there was limited knowledge on how to provide FP after abortion. PAFP services in China can be improved by training of health care providers and integration between abortion services and FP services in order to induce the risk of unwanted pregnancy and subsequent abortion.

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Annex 6: Published articles in Chinese

1) Cai yamei, Cheng yimin, Lv yanhong, et al. The study on the necessity of Post Abortion Family Planning Service (PAFPS) for the floating abortion women. Chinese journal of family planning, 2006,8:472-474.
2) Cheng yimin, et al. From the induced abortion to the spread of contraceptive usage. Journal of Practical Obstetrics and Gynecology, 2007,20(9):588-590.
3) Lv yanhong, Li ying, Guo xin, et al. Cross-sectional Research of Sexual Behavior and Contraceptive Use among Young Women Seeking Abortion in Beijing. Chinese journal of women-child health care, 2007, 22(21): 2955-2958.
4) Cai yamei, Cheng yimin, Lv yanhong,et al. The necessity of post abortion family planning service in china. Model preventive medicine,2007,34(12):2255-2257.
5) Wang xiaoyan, Cheng yimin, Cai yamei,,et al. The effect of male factor on contraceptive use among induced abortion women in Beijing. Chinese journal of family planning, 2007,6:345-348.
6) Wei hong, et al. Influential factor study on health service utilization of floating population with RTIs. Chinese journal of family planning, 2007,11.
7) Zhang peiyu, et al. Situation on post-abortion service of health providers in hospitals. Maternal and child health care journal of China, 2007,22(27):3839-3843.

Annex 7: Published article on qualitative research results

The making on an absent woman. The Chinese state and the sexually active unmarried female.

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Abstract

China's state policy of enforcing a one child family and sexuality within the context of marriage and reproduction as the norm is waning. Although there is a rise in sexual activity among unmarried women, they still largely fall outside the normative discourses of the state, and medical technology that has been introduced into women's bodies as part of population control. Family planning policy creates categories of the normative and its opposite, the not normative. The paper highlights the contradictory position of the sexually active unmarried woman, who is overlooked and not catered for while her pregnancy is simultaneously viewed as a problem because it is unplanned and unauthorised.

Key words: China, population, planning, unmarried, women.

Introduction

Western media and academic publications concerning reproductive health in China have in the past focused almost overwhelmingly on its one-child policy as a coercive form of population control, as well as on its negative consequences, including sexual repression, sex selective and forced abortions (Anagnost 2000; Chu 2001; Department of Justice, USA 1995; Greenhalgh 1993, 1994; Qi and Chu 2002; Rigdon 1996; Zhang 2005). While sex selective abortion of a foetus is currently prohibited in China and its population policy has become less punitive (Zhang 2005), a recent report by Amnesty International (2005) stated that women and girls were still severely 'abused' through compulsory abortions and sterilizations.

Although the availability of contraception and abortion, and the consequent ability to have non reproductive sexual relations (for pleasure) and to decide when and if to have a child, can have an emancipatory effect for women, it has been argued that, in the case of China, women's bodies served as the foci of state and medical management for the restriction of population growth. This is because the authority of the Chinese state's birth limitation programme was almost exclusively imposed through control over female bodies which became the micro-sites where the implementation of state policy was put into effect (Greenhalgh 1994). According to Foucault (1978) modern bio-power operates through the disciplining of individual bodies, as well as the regulation of populations. In the case of China both processes intersected in the bodies of individual women – i.e. the population policy, its hypothetical embellishments, bureaucratic incarnation and implementation through family planning programmes affecting the distribution of social power, economic and other resources. It also impacted on individual women's subjectivities and embodied experiences (Greenhalgh 2003 198-200).

Greenhalgh (2003:198) argues that the Chinese government's Marxist-inspired vision of increasing the pace of development and modernization of society involved the planning of both production and reproduction. Not only were individual and social bodies made to conform, peoples' sex lives were equally regulated and even policed (Zhang 2005). This uniquely Chinese

innovation involved a process in which the state, and not individual couples, planned the conception and birth of future citizens. With its vast population and formidable birth planning program, China can serve as a disturbing example of Foucault's surmise concerning the social power inherent in population discourse and practice (Greenhalgh 2003:198).

This paper gives an overview of recent research done on the high prevalence of abortion and repeat abortion in China, by a consortium[1] of European and Chinese research institutes in three provinces, namely Beijing, Hunan and Shanghai. The study is aimed at improving access to post-abortion family planning for women. One of the first goals was to assess knowledge and attitudes regarding contraception and determinants of abortion, among women who had an induced abortion.

The main focus of this paper, however, is on females who have been marginalized in China's family planning efforts, namely unmarried women. Drawing on the work of Foucault, it was argued that through the construction of the concept birth planning as applied in China, fresh orders of knowledge were shaped, new objects of intervention, forms of subjectivity, and types of governmentality emerged (Curtis 2002). At the same time dominant state discourses and policies functioned to obscure and omit certain groupings, like unmarried sexually active women, and their related practices, thereby relegating them to the 'not normal', the unregulated and those not provided for.

What can be surmised from Chinese state discourses is that it typically constructed and still largely represents sexuality as inherently heterosexual, marital and reproductive. Sexuality was and is still closely linked to planned reproduction within a conjugal relationship being privileged over sexuality for pleasure and outside of marriage (Friedman 2000:14). Although it is acknowledged, the latter is increasingly constructed as 'problematic'. Family planning policy prescriptions had and still have social and economic consequences that impact on women's selves both in the private and public domains (Greenhalgh 1994:3). This is particularly so for unmarried women.

The paper starts off with a brief overview of China's population policy and its notions concerning planned births. It is firstly argued that policy discourse and practice concentrates overwhelmingly on the planning of sexuality and birth, which, in turn, are implicitly linked to marriage. It simultaneously constitutes what Zhang (2005:2,4) calls a 'libidinal economy' and a particular subjectivity, informed by sexual sublimation and inhibition. In the second instance the paper tries to show that the absence of unmarried women from most official statistics indicates the negative way in which sexual activity before marriage was and is still frequently viewed. It also meant that the sexual needs and activities of unmarried women remained officially concealed, peripheral and possible to overlook. In the third instance the paper argues that the absence of information about sexuality and the poor provision of short-term contraceptive technology can be understood as ways to regulate certain knowledge closely associated with notions of uncontrolled sexuality for pleasure. As mooted above, this had particular implications for single women who became sexually active. In the fourth instance, it is argued that while there is a shift in discourse towards issues concerning the sexual activities of unmarried women, they

are increasingly constructed as a risk group in need of information about reproduction and contraceptive technology, which are essentially disciplinary techniques of the body. Finally the paper tries to show that the way in which the women understand the effects of contraceptive technology on their bodies, is somewhat discordant with the medical discourse on effectiveness and side effects.

The paper first attends to the research methodology on which the information contained in this report is based and then turn to population discourses in China, its consequence for unmarried women in relation to sexuality, the use or non-use of contraception and the resultant abortion.

Methodology :

In 2005 qualitative research was done in 25 hospitals of Beijing, Shanghai, and Zhengzhou Staff attended a training course in qualitative research methods to enable them to do the study. The methodological tools used included observation, In-depth interviews, key informant interviews, and focus group discussion. The study was done in nine hospital offering abortion in Beijing, eight in Shanghai, and eight in Zhengzhou. To start off, listing and ranking exercises were done with women seeking abortion in each hospital. This was followed with the observation of the services as well as of women and their partners who came to the hospital for abortion. In Beijing 81 women seeking abortion were interviewed, 80 in Shanghai, and 85 in Zhengzhou respectively. The following focus group discussions were conducted: six with service providers, six with women seeking abortion services under the age pf 25, six with women over the age of 25 seeking abortion service and six with the intimate male partners of women seeking abortion service. In each area key informant interviews were done with six heads of Gynecology and Obstetrics, six principals of abortion clinic, 12 medical staff members of Gynecology and Obstetrics, In-depth interviews were afterwards done with 30 women seeking abortion service in each hospital – this happened both pre-abortion and post-abortion, In depth interviews were also done with 12 intimate male partners of women seeking abortion service.

Population policy and normalised sexuality

Chinese governmentality realised many political aims through family planning policy and its highly structured system of records and instruction concerning birth scheduling, information and services with particular techniques and technologies to enforce the prevention of unapproved and unplanned births. This was reinforced through a system of benefits and penalties (Doherty et al 2001:745- 747: Greenhalgh 2003:200). Through detailed observation and documentation as well as physical interventions in the bodies of women, the state regulated sexuality and interceded in sexual as well as reproductive behaviour (Yuehong Zhang 2005; Greenhalgh 1994, 2003: Anagnost 2000; Friedman 2000).

As implied above, a perusal of articles concerning China's family planning policy and related practices makes it evident that not only the control of the country's population growth was perceived as at stake. Family planning has a great deal to do with the state's aim of laying the foundation for the future through a programme of approved pregnancies, which result in a 'planned' and 'quality' citizenry (Greenhalgh and Winckler 2005; Greenhalgh 2003; Anagnost 2000). In this respect planned and approved offspring serve as the icon of a developing and rapidly modernizing China, as an emerging world power. A normative pregnancy results in a child that is preferably born within a stable, urban, marital family, with educated, modern and economically productive parents. The latter are the contemporary useful citizens who can optimally contribute to society and who can financially support this child of value, educate it, keep it healthy, well fed and -dressed. Such a child is constructed as a future citizen of worth who will contribute to the state's aim for China to achieve its rightful position in a globalised world. The planned child is thus represented as the sign of modernity and the redeemer of the nation

(Greenhalgh 2003:186).

The largely unacknowledged counterpart to the approved pregnancy that culminates in the birth of the planned child, is the concept of the birth that it is not supposed to happen and the offspring who should not come into being. In this regard, Zhou (2005:1) and Greenhalgh (2003:186) report that attention is progressively given in Chinese population policy to the increase in 'unplanned' and unregistered persons. These 'surfeit' bodies are produced as a result of intemperance, i.e. they are surplus to the birth plan and/or outside of marriage and are often not officially documented in the national household registration system. They are 'not supposed to be present' and are accordingly popularly portrayed as "black" persons or perceived as borderline or non-citizens, disruptive of the social order and a hindrance to the socio-economic development of China. They are liminal, largely outside the scrutiny of the state and thus have neither legitimation, full privileges as citizens nor entitlement to state benefits such as access to houses, schooling, jobs etcetera (Zhou 2005:1; Greenhalgh 2003:198).

Through population discourses and practices certain categorical norms of socially desirable ways of being sexual were therefore constructed, while others were excluded (Greenhalgh 2003). As argued above, the accent is on the married woman; the 'normal' woman. The normativity of marriage as the context within which reproduction is supposed to happen was emphasised by a discussion our research team had about the selection of research participants. It was strongly argued that a category of 'unmarried' women should be included, rather than that of 'single' women. Although there might seem to be little difference in this choice of terminology, the preference for 'un-married' highlighted the expectation that ultimately sexuality and reproduction belonged within conjugal relationships. The selection of the never married category was equally indicative of the way in which this kind of troublesome sexuality and its outcomes were viewed. From the response of the Chinese team, from our own research results and from prevalent literature it was apparent that marriage still served as the gold standard for the framework within which reproductive sex should take place (Friedman 2000). A great deal of state effort is consequently expended in producing and sustaining "conjugal, procreative sexuality" (Friedman 2000:14).

It comes as no surprise that in literature on Chinese birth policy and practice, sexually active women are (predictably) assumed to be married – thereby rendering the unmarried or never married as the largely unremarked, 'non-standard' or deviant grouping. According to Zhou (2005:17) one outcome is that never-married mothers are less likely to register births of offspring because these are 'illegitimate'. Since they lack a marriage certificate, the document through which their sexual reproduction would be legitimated, they are discouraged and prevented from registering their children. The peripheral position of sexually active unmarried women is further exemplified through their previous 'absence' from most official statistics related to sexuality and reproduction. As an object of knowledge, enumeration serves as a technique to identify and create regularities and homogeneity, which can become tools for analysis or objects for intercession. At the same time large scale data tends to smooth out the irregular (Desrosières 2001; Curtis 2002). According to Curtis (2002:507) population as an object of knowledge, is first and foremost statistically manufactured. It involves the organization of uniformity which connects it to regulation imposed through large numbers and thereby equally renders individual difference invisible. Routine procedures of documentation, for example fertility surveys, append individuals to administrative and epistemological categories that can be authorized, ranked, ignored or sanctioned.

The use of particular statistics in China is indicative of how counting and calculations serve as inventorial technique that simultaneously enumerates and hides (Greenhalgh 2003:1999). For example, unmarried sexually active females fall largely outside the population policy, as evidenced by the fact that they have been commonly excluded from Chinese national official surveys of fertility (Li and Newcomer 1996). Because China's family planning policy focuses mainly on married women, it emphasizes long-term or permanent methods of contraception, such

as IUD insertion and sterilization, thereby leaving a large part of the population unacknowledged, not provided for or protected from unwanted pregnancy.

The Chinese state's focus on marriage as the starting point of its concern with reproductive health and –control was further exemplified by the premarital examination couples had to 'pass' before they could get married. This legal requirement, which ended in 2003, equally underscored the state's concern with the production of 'quality' citizens. (Xu et alk 2004; Hesketh 2003). The main stated purpose was to screen for hereditary illnesses and conditions that could affect future offspring born within marriage. According to Hesketh (2003) psychiatric problems or low intelligence were viewed as factors that might affect future parenting ability, once more emphasising the state's preoccupation with the production of future citizens of value. After the examination, couples had to attend instruction on the production of healthy children and "how not to have more than the allotted number" (Hersketh 2003:278). Until quite recently for most young people -the instant where sex education started was thus at the point of intended conjugality – it was also here where the message of birth planning, but not necessarily sexuality and sexual health, was reinforced.

Couples who met the accepted health requirements were issued with the certificate of health for marriage. As one of our own key informants stressed: "Marriage makes the sexual relationship legitimate". The certificate for health serves as the official approval for normalized, i.e. conjugal sexual relations – albeit with the proviso of birth control. Couples who do not meet the necessary health indicators, have to postpone marriage, and assumedly sexual intercourse, to allow for treatment or counselling. A small number of couples have to agree to sterilization (Hersketh 2003)

As already introduced above, as objects of knowledge official statistics function also to categorize and identify the 'irregular' and the problematic. In the Chinese Press greater emphasis is currently given to the rising numbers of sexually active unmarried people, although the spotlight remains inexorably on the women (China Daily 2005; People's Daily Online 2004, 2003; Shanghai Star 2002). A similar trend is discernable in research where more attention is given to a higher prevalence of abortion among such females.

One such study was reported by Seville (2005). It was found that unmarried women in urban areas in China were more likely to have abortions than married women anywhere in the country. In our own study, a key informant also reported that most of the abortions performed were on unmarried women. This was expressed as an issue of concern because the women are youthful and should not be sexually active yet. Another hospital in our study reported that 30-40% of abortions done there involved unmarried women. Once more the high levels of abortion were negatively linked to the increased sexual activity of young women outside marriage.

> In our hospital the majority of patients coming for abortion are unmarried young women. I feel worried, most of them are young and should not be here (key informant).
>
> Nowadays young people care nothing about having sex. Yesterday a student came for a surgical abortion, which was her seventh abortion. Can you believe this? Now the university students are allowed to get the married during the study by the new law, I am very unhappy with this. Allowing them to get married will distract them from their study, and even worse they will make more abortions. Marriage will make them indulge even more in sex (key informant).
>
> So many unmarried are coming for abortions, it is not good the way things are changing (key informant)
>
> Unmarried women (who have sex) lack responsibility (Focus group discussion service providers)
>
> It is crazy to risk having a baby when you are unmarried (Focus group women)

As can be surmised from the quotes above, unmarried women who are sexually active are represented as indulgent, distracted, lacking responsibility, risk taking and involved in

dubious societal changes. They risk conceiving and then have to resort to abortion. In a similar vein a rising number of studies stress the growth in premarital sex and then attend to the increase in abortions and even repeat abortions among unmarried women. One such study is reported by Yan and Cleland (2003). According to the authors, data from a cohort study in two districts of Shanghai showed that twelve percent of recently married couples had been sexually active before marriage. In the majority of the cases the women fell pregnant and subsequently had an abortion. Similarly, a 2004 study by the Medical Center of Fudan University in Shanghai and the International Health Research Group related that the abortion rate among unmarried women was 'alarmingly' high (Sivelle 2005) . Another report on abortion rates in major cities such as Shanghai, Beijing and Tianjin indicated that 65 percent of abortions done in 2004 were for unmarried women – an increase on the 25 percent in 1999 (China Daily 2005).

The 'problem' of unmarried women having abortions had been raised in earlier studies as well. One was done among women who had an induced abortion at a gynaecological and obstetric hospital of Beijing, and it was found that 50 percent were unmarried (Anderson et al 1993). Out of 314 cases of induced abortion in a hospital in Anhui, 33.1 percent involved unmarried women (Israel and Webb 2001). In Shanghai, 29.6 percent and 31.4 percent of the induced abortion seekers were unmarried in 1999 and 2001 respectively. A study conducted in Nanjing showed that 16 percent of adolescent women had had an induced abortion (Family Health International Network 2002).

The above mentioned research conducted by the Medical Center of Fudan University in Shanghai and the International Health Research Group found that unmarried women in China's cities were more likely to have abortions than married women elsewhere in the country. The research team analyzed statistics compiled from eight studies, seven of which were conducted in China's urban areas. The researchers used statistical data collected from the pre-marital examinations of more than 17,000 women. As indicated before, such exams were compulsory, prior to October 2003, for all couples in China wishing to get married. The research indicated that, in some areas of China, the abortion rate among unmarried urban women was as high as 55 percent.

From the aforementioned above studies, four indicated that some of the unmarried women had had two or more induced abortions (Sivelle 2005). Similarly a recent research done among 4547 unmarried women seeking abortion in clinics in Beijing, Changsha and Dalian found that 33 percent had had a previous abortion (Cheng et al 2004). This is very similar to an earlier study among the unmarried adolescent women having an induced abortion, where the repeat rate of induced abortion was 28.6 percent in Henan (Ipas 1991) and 36 percent in Beijing (Henshaw et al 1999).

We surmise that one reason for the abortions stems exactly from the fact that, while the sexual activity of unmarried women is now more and more acknowledged, it is nevertheless seen not so much as a sexual choice but as being potentially problematic and deviant. We argue that this can be viewed as yet another kind of sexual and reproductive 'othering'. This is because the upward trend in abortions is almost always linked to the loosening of previous restraints on sexual activity outside marriage. Where social and sexual interaction between unmarried people were previously very vigilantly managed, it is no longer possible. At the same time, as Farquhar (2002:244) writes, despite the wide availability of, e.g. sexual imagery in China, few discursive formations touch on sexuality *per se*. This was exemplified by interactions observed in our study between health care staff and clients who presented for abortion. These were mostly educative 'talks' that were biologically, medically and technologically informed and had very little to say concerning sexuality. They also did not speak to the women's own understanding of their own bodies and of the effects of contraception on it either.

Contraceptive methods, its use and non-use

As in the case of abortion, the latest statistical studies show a trend towards a focus on unmarried women, but as an 'at risk' category. In this vein a great deal of attention has recently been given to statistical studies concerning particularly the non-use of (medically effective) contraceptive methods by sexually active unmarried women. For example, a 2004 Chinese study reported that most of the pregnancies of and abortions on unmarried women were not

anticipated, often because they were not knowledgeable about reproduction or contraception (Xu et al 2004). Similarly, a cross-sectional study of contraceptive use was conducted among never-married women in Beijing in 1999. A total of 306 unmarried women, aged 18 to 24 years who had requested pregnancy termination, were interviewed. Only 13 percent of the women had negotiated contraceptive use, 26 percent used it occasionally and 27 percent or never used contraceptives. Among 224 women who had used contraceptives during the previous 12 months, 49 percent mentioned condoms, 28 percent withdrawal and 16 percent the rhythm method. As mentioned above, one of the most important reasons for never having used contraceptives (73 percent) was not realizing the risk of conceiving. According to the study knowledge of contraception, the boyfriend's approval of contraceptive use, risk of getting pregnant, availability of contraceptive services and lack of discussion of contraception with a boyfriend were important indicators for a young woman's contraceptive utilization (Henshaw et al 1999).

Similarly, a study among 1520 women seeking abortion in 8 hospitals in Zheng Zhou City, Henan province, in 1996 indicated that 77.1 percent had used at least one contraceptive method previously. But at first sexual intercourse, only 19.7 percent used a contraceptive method. Most women (57.6 percent) had previously used condoms, followed by the rhythm method (31.7 percent). While 16.8 percent of females had used contraceptive pills, but 56 percent of them failed to take them correctly (Benson et al 1992).

Another study in Shangai found that 12 percent of couples reported that they had had sexual intercourse before marriage. Only one-third of those exposed to premarital risk of conception were protected by some form of contraception, mostly by withdrawal and periodic abstinence. It is argued that, as a consequence, a majority of couples conceived, prompting rapid marriage in most cases and induced abortion among one-fourth of them. The above data is used to argue that a wider choice of method, including hormonal contraceptives, should be provided to meet couples' needs. It is also recommended that family planning programmes focus more on sexually active unmarried individuals (WHO 1998).

While the aforementioned studies use statistics to argue in favour of expanding family planning programmes to cater for single women, the decision to use contraceptive technology ultimately has a great deal to do with the way in which women perceive their bodies and reproduction. This may differ considerably from the medical discourse surrounding population planning and contraceptive techniques. For many unmarried women in our study the issue of contraceptive technology seldom arose in the first instance because they were concerned about its effect on their future fertility. The vast majority of unmarried women used ‘natural’ methods like withdrawal or having sex during the ‘safe’ period in their menstrual cycle, vaginal douching or using traditional Chinese medicines. They also reported some use of condoms, which were viewed as ‘clean’ (having no chemical substances in it), ‘not bad for your body’ and ‘not affecting the body’. Its effective use nevertheless depended on male control. Condoms were also experienced as not enhancing sexual pleasure, which seemed to be linked with an increasingly individualised sense of self.

At the same time the unmarried women in our study all accepted abortion as necessary to prevent the birth of an unwanted child. The power of the state discourse on birth planning was evident in their acceptance that one has to be ‘ready’ before one has a child – i.e. be married (or planning to be marry), thus having the required state and societal ‘authorization’, be able to afford the child, educate it, take care of and raise it properly. Having a child whilst being unmarried was presented as not economically viable and as being careless with one’s own future. The women stressed that they still wanted to further their studies, get a good job, find a proper place to stay and such. In this regard they largely subscribed to state discourses concerning the obligation to produce a quality, planned child. This was not merely presented as the self- evident way to think about future offspring, but was also constructed as a responsibility towards the collective.

While medical discourses and policy seemed to have largely excluded unmarried women, the ways in which the females in our own study talked about contraceptive technologies,

indicated that they were to some extent informed by notions of health emanating from traditional Chinese medicine. The theory of yin and yang is inherent in its cosmology and it views everything as having two opposite, but interdependent aspects. Keeping yin and yang in harmonious balance within a person is essential for the maintenance of good health (Maciocia 1989). According to Farquhar (1994: 24-5) :

> Chinese medicine heals in a world of unceasing transformation. This condition of constant change, this fluidity of material forms, stands in sharp contrast to a (modern western) commonsense world of discrete entities characterised by fixed essences, which seem to be exhaustively describable in structural terms.

This is quite different from the medical discourse of population planning which is highly medicalized and emphasizes the intervention with contraceptive 'modern' technology to prevent unplanned births. As discussed earlier, medical technology has been introduced into women's bodies in particularly invasive ways in China as part of population control. In medical discourse contraceptives are represented in terms of suitability, efficacy and possible side effects.

Contrastingly Chinese medicine is more concerned with balance and simultaneously classifies contraception within a hot-cold dichotomy, with e.g. contraceptive drugs, contraception and abortion viewed as cold or cooling (Rigdon 1996:548). Interviews with women in our study indicated that IUD's are considered as extremely inappropriate for unmarried women because it is 'bad for your body' 'not appropriate', 'painful', and a 'metal thing' inserted into the body. It is perceived as resulting in changes in menstrual patterns, abdominal pain, vaginal discharge and possible infections. A regular menstrual flow is perceived as healthy and indicative of a woman's ability to have a child in the future. Studies done in Vietnam, a country where Chinese medicine is very popular and which has an equally stringent birth control policy and a very high abortion rate, have shown that the IUD is similarly viewed as an alien substance which is inserted into the womb. Because it has a cooling effect it can disturb the balance in the body, which can be manifested by the discharge from the vagina (Pham 2005). The single women in our study accordingly did not view the IUD as 'suitable' for their bodies, but rather as disruptive.

While short term contraceptive technology like the contraceptive pill is available in China, it is mostly a high dosage medication that is taken once per month. Unmarried women in our study did not use it. They were concerned that it would affect their menstruation, a sign of health and fertility. At the same time the pill is viewed as a substance which is 'not clean', 'not safe', 'toxic', has 'bad' 'things' in it like 'hormones' that, because it has to be taken regularly, 'builds up', affects the 'shape' of the body, 'remains' in it, 'disturbs (bodily) levels' and affects the body's healthful balance.

The question is why unmarried women, who view contraceptives as having negative effects on the balance in the body, should resort to abortion and sometimes to emergency contraception. While they preferred 'natural' methods, neither emergency contraception nor abortion were viewed as healthy for the body or mind. Surgical abortion was seen as 'harmful', hurtful' and as 'thinning the womb'. More preferable was the medical abortion which was apparently viewed as a single 'intervention' that, through the medicines ingested, disturbed the balance in the body, while simultaneously restoring some kind of balance by returning the menstrual flow. By 'taking care' of oneself, avoiding 'chills, 'wind' 'cold water' and such and through the ingestion of the correct food, fluids and herbs the balance in the womb and also in the body as a whole, could be restored. This was presented as preferable to a long-term accumulation of imbalance through the use of contraceptives. Medical abortion was constructed as 'usual', a 'solution' and 'getting rid of a problem'. The decision to have an abortion was ultimately preferred to having a child that was not sanctioned and for which one could not provide.

Conclusions

This paper highlights some of the conundrums faced by sexually active unmarried women who are at once both inside and outside the purview of China's formidable family planning

policy and its implementation. It was shown that the ambiguous position of unmarried woman had to be deconstructed from a social and historical perspective by attending to the ways in which they were and still are 'othered' in family planning policy and practice.

The paper argues that unmarried women as a category for medical intervention is a fairly recent development and as such is representative of shifts happening in discourse around sexual and reproductive health. In a Foucaultian sense the bio-politics aimed at the prevention of 'unauthorized' and unplanned children, i.e. *inter alia* to unmarried women as a 'problematic category, has been paralleled by increased attention to techniques to control the individual bodies of such women through 'modern' contraceptives.

The paper highlights the effect that state discourse has on the normalisation of abortion and on the subsequent decision of unmarried women to prevent an unwanted birth. The perceptions of contraceptive methods affected the hesitancy shown by women in availing themselves of it – assuming it was available and accessible in the first place. The most important concern of women was that contraceptive technologies would affect their fertility and health in the long term. A healthy body was one which is in balance, and 'modern' contraceptives seem to be viewed as potentially affecting the body in negative ways.

While 'natural' methods were viewed as somehow 'neutral' to the health of the body, medical discourse construct these as highly problematic and inefficient. Ultimately abortion, and particularly medical abortion, offered a solution when natural methods failed. By utilising 'natural' methods, with medical abortion or emergency contraception as expedient solution in the case of failure, the balance in the body was first disturbed and then restored. In the same way abortion could probably be interpreted in the case of unmarried women as restoring the societal imbalance caused by the possibility of giving birth to a child one did not want and could not care for. At the same time the 'imbalance' with the Chinese state that came into being through the unauthorised pregnancy was repaired.

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Annex 8: Draft article on quantitative study results

Integration of family planning with abortion services in three cities of China: a cluster randomized trial

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Abstract

Objectives: To compare two different packages for introducing post-abortion family planning services in urban areas in China aiming at increasing use of more effective contraceptive methods, improving user adherence, and thus reducing rates of unwanted pregnancies and induced abortions.

Methods: A total of 24 hospitals from three cities of China were paired and randomly assigned to either of the two intervention packages: A and B. Package A included provision of limited information and referral to existing family planning services, and Package B included face-to-face counseling, provision of free contraceptive methods, and male involvement, in addition to Package A. Women seeking abortion at these hospitals were interviewed at the time of the abortion and six months later. At the interview six months later, women were asked about use of contraceptive methods and abortion during the follow-up period. Data were collected both before and after implementation of the intervention. This analysis was based on women younger than 25 years seeking abortion at the 16 hospitals (8 pairs) that followed the centralized randomization.

Results: A total of 2336 women (1189 before, and 1147 after implementation of the intervention) were followed up after six months. Both packages increased the use of any contraceptive methods, and consistent use and correct use of condom, and Package B also increased the use of effective methods. Package B had more than doubled the impact of Package A on consistent condom use (odds ratio 2.32, 95% confidence interval 1.55-3.46), correct condom use (2.78, 1.81-4.26), and consistent and correct condom use (5.68, 3.39-9.53). The rates of unwanted pregnancy and repeat abortion were reduced after either of the intervention packages, with no significant difference between them.

Conclusions: A comprehensive approach in family planning services may be superior to a simple approach for increasing use of effective contraceptive methods and user adherence among abortion-seeking couples.

Introduction

An estimated 10 million induced abortions is performed annually in China, with two-thirds as a result of contraceptive failure and one-third from non-use of contraception.[1,2] About one-third of all abortions are repeat abortions.[2] Induced abortion has been seen as a backup method for failure of contraception and for unplanned pregnancies after unprotected intercourse, in particular in light of the one-child family policy. Nearly all unmarried women who become pregnant will end up with an induced abortion.[3]

Family planning services in China have been based on a national network of family planning clinics, which is independent of the health care system.[1] The integration of family planning services within abortion clinics or hospitals is a new concept. The introduction of post-abortion family planning is known to be an effective strategy to reduce the number of repeat abortions.[4,5] However, no randomized trials have been performed regarding the impact of post-abortion family planning services on use of contraceptive methods and abortion rate. Furthermore, the interventions have to be adapted to the Chinese socio-cultural context and the rapid economic development,

as well as the huge migration from rural areas to cities.[6]

In this trial, we compared two ways of introducing post-abortion family planning services in urban areas in China to increase the use of more effective contraceptive methods, improve user adherence, and finally reduce the rates of unwanted pregnancies and repeat induced abortions among women who experienced an induced abortion. In the project protocol, we stated that the use of contraception 6 months after the induced abortion would be the most important primary indicator for monitoring the effect of the intervention than the rates of unwanted pregnancies and repeat abortions due to a short research period.

Methods

Study design

An overview of the cluster randomized trial is shown in Figure 1. The trial commenced in 2005 and ended in 2007. Public hospitals within each city were selected and matched in pairs. One hospital within each pair was randomized to an essential intervention Package A, and the other to a comprehensive intervention Package B. Package A included provision of limited information and referral to existing family planning services, and Package B included face-to-face counseling, provision of free contraceptive methods, and male involvement, in addition to Package A. Women seeking abortion at these hospitals were interviewed twice, at the time of the abortion (exit interview) and six months later (follow-up interview). At the follow-up interview, women were asked about use of contraceptive methods and abortion during the follow-up period (about six months after abortion). Data were collected twice, before randomization and after implementation of the intervention, respectively.

Study cities and hospitals

The trial was carried out in three large cities in China: Beijing, Shanghai, and Zhengzhou. In each city, 8 abortion clinics (department of gynecology in hospital) were included. They were matched on the criteria: characteristics of abortion departments (total number of abortion in the previous year, staff availability for counseling, staff availability for group education, and possibility in provision of family planning methods) and characteristics of abortion-seeking women (age, education, marital status, previous use of contraceptive methods, and history of induced abortion). Since the baseline survey of abortion-seeking women (exit interview before randomization) indicated no substantial differences in characteristics of abortion-seeking women among hospitals, we thus matched hospitals in pairs on the characteristics of abortion departments, especially the volume of abortion in 2005.

A total of 24 hospitals were matched in pairs and randomly assigned to either of the two intervention packages. The randomization used coin tossing with standard procedure by a person who was not involved in the study in one research center. However, 5 hospitals did not follow the protocol, resulting in 4 pairs of hospitals not eligible for data analysis. As a result, we had 8 pairs of hospitals available for data analysis (2 pairs from Beijing, 4 pairs from Shanghai, and 2 pairs from Zhengzhou). The total numbers of abortion in these hospitals in 2005 are shown in Table 1.

Intervention packages and implementation

To develop post-abortion family planning service packages adapted culturally and socio-economically to the specific needs of the Chinese women, existing national and international literature was reviewed during the first phase of the trial, and a situation analysis (qualitative research) was carried out. The results of the literature review and the qualitative research have been published or will be published elsewhere. Two intervention packages were then developed: an essential Package A and a comprehensive Package B.

Package A consisted of: 1) training of abortion service providers and provision of service guidelines, according to a standard training schedule (1 day) and training module, 2) provision of information to women (group education), and 3) referral of women after induced abortion to existing family planning services. Package B consisted of: 1) training of abortion service providers and provision of service guidelines, according to a standard training schedule (2 days) and training module, 2) provision of information to women (group education), 3) individual counseling to women (including introduction of contraceptive methods and recommendation of the most suitable methods), 4) provision of free contraceptive methods [including condoms, oral pills, intrauterine devices (IUD), implants], 5) male involvement in services, and 6) referral of women after induced abortion to existing family planning services.

The intervention packages ran in hospitals from May to November 2006. Due to the fact that most gynecologists or abortion service providers have a busy schedule, only a limited number of gynecologists or abortion service providers were trained to provide family planning services as an additional procedure. The intervention was supervised and monitored by research team members in each city.

Data collection

Before matching hospitals, we registered all abortion-seeking women who visited the selected hospitals during a period of about two months. For women who were less than 25 years old and in the first trimester pregnancy (after intervention women who were 25 years old or more were also included), their consent was sought for participating in the interview. If given, they were then asked about their socio-demographic information, use of contraceptive methods 3 months before abortion (history of use of contraception), knowledge of contraception, reproductive history, and family planning services they received during their abortion at the hospital (exit interview; mostly self-administrated). After six months, they were asked about use of contraceptive methods and abortion during the six months follow-up period (follow-up interview; mostly by telephone interview). The main reason for dropout was that participants provided invalid telephone numbers. Structured questionnaires were used to collect these data, and research team members for each city supervised and monitored the data collection.

When the intervention activities were implemented and ran smoothly in each hospital, we collected data once more (registration, exit interview and follow-up

interview). Questionnaires were slightly modified to capture basic information on intervention that abortion-seeking women received during their visit to the hospitals. Interviews were not blinded to interviewers regarding intervention packages provided to the women.

Endpoints

We included these primary indicators (information collected in the follow-up questionnaire) for the trial.

(a) Use of contraceptives [use of any contraceptive methods, including condom, natural methods (periodic abstinence or withdrawal), IUD, contraceptive pills, emergency oral contraceptives, sterilization, injection, implant, diaphragm, spermicide, etc] among sexually active women during the 6 months follow-up period.
(b) Use of effective contraceptives (use of condom, contraceptive pills, IUD, and implants) among sexually active women during the follow-up period.
(c) Consistent use, correct use, and both consistent and correct use of condom among condom users during the follow-up period.
(d) No neglect among contraceptive pill users during the follow-up period.
(e) Pregnancies among all follow-up women during the follow-up period.
(f) Unwanted pregnancies including induced abortion during the follow-up period and unwanted ongoing pregnancies for which women did not want to give birth to a baby among all follow-up women during the follow-up period.
(g) Repeat induced abortions among all follow-up women during the follow-up period.

We defined the last three indicators such that if a woman had more than one event, we counted her only once, since very few women had more than one pregnancy, unwanted pregnancy, or induced abortion during the six months follow-up period.

We also looked at these secondary indicators (information collected in the exit questionnaire) for the trial.

(h) Knowledge of contraception among all follow-up women: we summed 13 knowledge questions on contraception as a summary score with a correct answer scored 1 and a wrong answer or an answer of "don't know" scored 0.
(i) Post-abortion family planning services received during abortion among all follow-up women, including group education, individual counseling, free contraceptives, referral to other family planning services, and satisfaction regarding abortion and family planning services.

Data analysis

We used conditional logistic regression accounting for hospital matching to calculate odds ratios for all the primary indicators, and we used linear regression to calculate differences in the knowledge of contraception, which we used hospital matching as a variable to account for cluster. By restricting analysis to hospitals randomized to intervention package A and comparing women seeking abortion before intervention with women seeking abortion after intervention at these hospitals, we estimated the

effect of package A; similarly by restricting analysis to hospitals randomized to intervention package B, we estimated the effect of package B. By including all women and including an interaction term between intervention packages and a variable indicating before or after intervention, we estimated the effect of package B accounting for the effect of package A as well as any baseline difference between hospitals allocated to different intervention packages.

Potential confounders included women's birth place, age, education, occupational status, marital status, previous induced abortion and parity, as well as men's age, education and occupational status. Since no significant differences were seen in women's age, marital status, previous induced abortion, and parity, as well as in men's age and education, we only included women's birth place, education and occupational status, and men's occupational status as potential confounders in the final models. For outcomes on contraception use, we also adjusted in the models for the history of use of the same contraception as it was observed at baseline.

We examined the differences in post-abortion family planning services received during abortion between before and after intervention and between packages by χ^2 test.

Sample size calculation

We used simulations to estimate the needed sample size. The exit interview before randomization indicated that 64% women had unwanted pregnancy and induced abortion because of non-use of contraception. We thus assumed that 45% patients with the minimal intervention would use effective contraceptive methods, whereas 55% patients with the comprehensive intervention would use effective contraceptive methods; i.e., 10% difference in contraceptive use between the two packages. Furthermore, the follow-up rate after six months was expected to be about 60%. For a range of settings, 10,000 random datasets were generated for each setting after which each dataset was analyzed with logistic regression. The percentage of datasets leading to a statistically significant result was then the estimated power of that setting.

Three scenarios were studied. In one scenario, all hospitals in each treatment arm were assumed to have identical rates of contraceptive use, and in two others the success rates for Package A were assumed to follow a normal distribution with a mean of 45% with a spread of 5 or 10% points, respectively. The success rate of each hospital in the intervention Package B was equal to the matched hospital in Package A plus 10% points. We varied the number of included women from 40 to 70 at each hospital, and also the effect size from 5% to 12.5%. When analyzing the datasets we used logistic regression with robust variance estimation which allowed for clustering at the hospital level.

We found that including 60 women or more had a power above 80% when effect size (difference in use of contraceptives) was above 10%. The results showed very little sensitivity to varying success rates between hospitals. We thus needed $60 \times 24=1440$ patients in total. If we further inflated sample size by 25% considering incomplete follow-up and different numbers of patients from different hospitals, we needed 1800 young

patients recruited at exit interview, 900 in Package A and 900 in Package B. We would then have 1080 patients interviewed at follow-up, 540 in Package A and 540 in Package B.

Ethical considerations

The study was approved by the ethical committee of the University Hospital of Gent (22 December 2005). Written informed consent was obtained from all abortion-seeking women participated in the interviews.

Results

A total of 2336 women younger than 25 years old (1189 before, and 1147 after the intervention) were followed up after six months, 59.0% of those interviewed during the abortion. There were no significant differences in characteristics of couples between before and after intervention, and between intervention packages, except for a slight difference in women's education and occupational status, and men's occupational status (Table 2).

During the follow-up period, 2077 women (88.9%) had sexual intercourses. Both packages increased the use of any contraceptive methods, and consistent use and correct use of condom, with a stronger effect for Package B, and Package B also increased the use of effective methods (Table 3 and Table 4).

After intervention, the rates of unwanted pregnancy and induced abortion were slightly reduced for both packages (Table 5 and Table 6).

Both packages did not change women's knowledge on contraception (Table 7).

Almost all women who sought abortion at hospitals where intervention Package B were implemented reported having received the intended intervention activities, except with respect to referral to other existing family planning services. They also reported more satisfaction with medical staff's attitude and service contents, while no significant change was seen for women who sought abortion at hospitals implemented intervention Package A (Table 8).

Discussion

The results demonstrated that an essential intervention Package A consisting of group education and referral of existing family planning services increased the use of any contraception after abortion, consistent and correct use of condom, and a comprehensive intervention Package B consisting of individual counseling, provision of free contraceptive methods, and limited male involvement, in addition to Package A, had a much stronger effect on couples' behavior change in use of contraception after abortion, in particular consistent and correct use of condom.

The trial originally consisted of 24 hospitals (12 pairs), but only 8 pairs of hospitals strictly followed the centralized randomization and could thus be included in the analyses. We did, however, obtain a sample size similar to the calculated. The dropout rate was high, as the follow-up rate of 59% was close to the proposed rate of at least 60%. We expected this as difficulties in tracking young people in the dynamic economic and work environment in China could be anticipated. Compared with those followed up, those lost to follow-up were younger, and more were students, both for women (21.5±1.9 years *vs* 21.8±1.8 years, and 15.8% *vs* 11.4%, respectively) and men (24.2±3.8 years *vs* 24.4±3.6 years, and 11.1% *vs* 8.1%, respectively). However, the participation among students or people younger than 20 years was independent of intervention and packages.

The accuracy of self-reported data on sensitive issues such as sex and use of contraception can also be questioned, but substantial bias between the two arms seems unlikely, as indicated by the before intervention comparison of the two arms. China is a large country, and therefore we used the strategy of matching hospitals within each city to minimize the difference in characteristics of hospitals and abortion-seeking women. The reported prevalences of use of any contraceptive methods and effective methods were slightly higher than reported in previous studies in China,[1] since our study population had at least one induced abortion and we used the prevalence during a six months period.

The baseline characteristics of couples were rather similar between two intervention groups, but, before intervention, the rates of pregnancy, unwanted pregnancy, and induced abortion during the six months follow-up period among women seeking abortion at hospitals allocated to Package B were already lower than those of hospitals allocated to Package A. We believe this could be due to chance since these data were collected before the randomization.

Some variation arose in the intervention implementation. Shanghai had already had some integration of family planning with abortion services at hospitals, which would reduce the difference between Package B and Package A. On the other hand, Beijing and Zhengzhou had little or no integrated family planning with abortion services at hospital when the trial started. The already high workload is a major constraint for health providers to provide quality individual counseling. Men are usually not allowed to access the department of gynecology in China. In some hospitals, male partners were allowed to counseling room after negotiation with the directors of abortion clinics, and thus the couples got counseling together, while in other hospitals, male partners just got some educational materials.

As expected, the statistical power to measure the real and full impact of the intervention on unwanted pregnancies and repeat abortion rates is somewhat limited due to a rather short follow-up period. Comparison of abortion rates in many countries shows that increase in contraceptive prevalence is associated with a reduction in the number of abortions.[7-9] Post-abortion family planning intervention, including provider training, family planning counseling, and provision of free contraceptives, has been shown to be effective in decreasing unwanted pregnancies and abortions in Zimbabwe.[5] Family planning with husband participation has shown an effect in reducing pregnancy and abortion rates in a previous study in China.[10] The current national family planning programme in China exclusively targets married couples, and rarely reaches migrants and unmarried people. The post-abortion care setting is an important and probably the only opportunity for offering family planning counseling and services for

migrants and unmarried couples. Moreover, the need for effective contraceptive use after an induced abortion is immediate, since, in most cases, ovulation occurs within two weeks after a first-trimester abortion.[11] Many women may not be aware of this, in particular because it differs from the usual postpartum delay in return to fertility.

Our results showed that both packages did not change knowledge of contraception. Individual counseling and provision of contraceptive methods could thus be the most important part of the comprehensive intervention package that may have had a strong impact on couples' behavior change, ie, to use more effective contraceptive methods.

Conclusion

This trial indicates that a comprehensive approach in family planning services may lead to an increase in use of effective contraceptive methods and user adherence among abortion-seeking couples. Abortion-seeking couples may be more ready to use effective contraceptive methods after face-to-face counseling and getting access to free contraceptive methods at hospitals.

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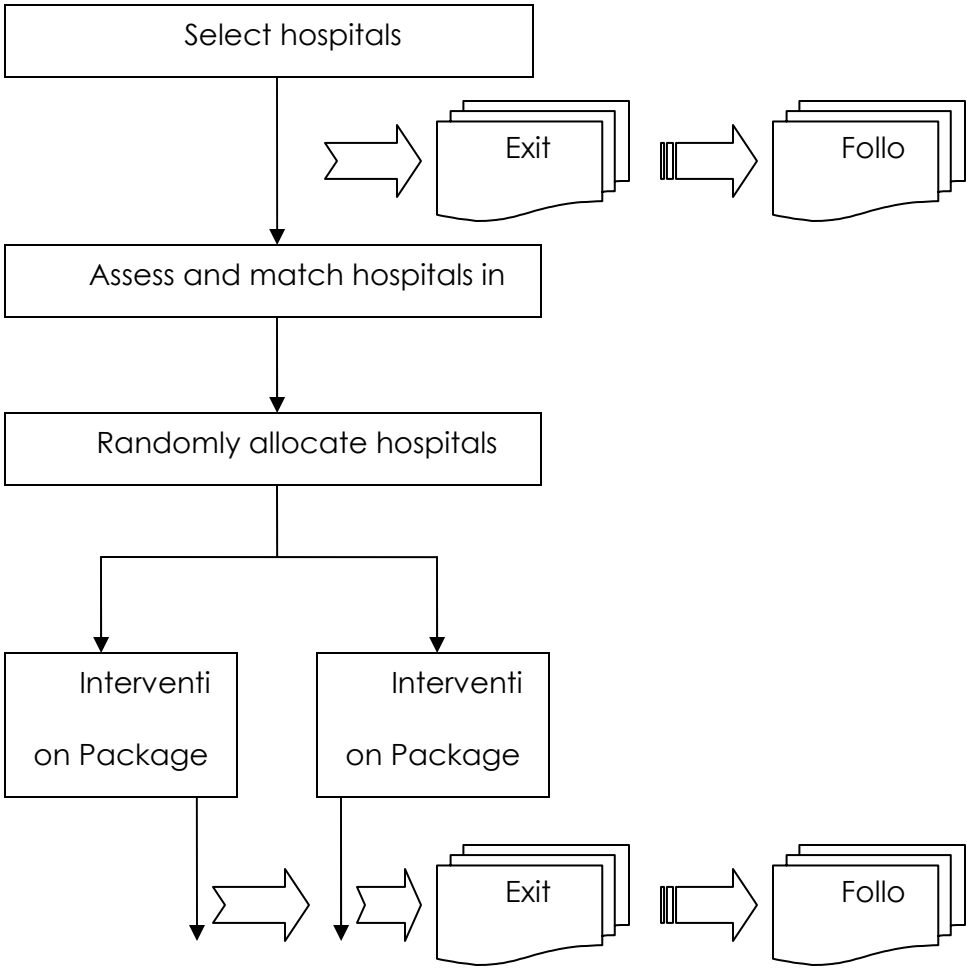

Figure 1 Trial profile with data collection among abortion-seeking women (exit interview at the time of abortion and followup

Table 1 Total number of abortions in each hospital in 2005

	Package A	Package B
Pair 1	3200	3500
Pair 2	1500	1200
Pair 3	2262	1940
Pair 4	1600	760
Pair 5	1080	1288
Pair 6	735	370
Pair 7	2200	3175
Pair 8	7000	7700

Table 2 Characteristics of study population, according to intervention and package

	Hospitals allocated to Package A				Hospitals allocated to Package B			
	Before intervention		After intervention		Before intervention		After intervention	
	n	%	n	%	n	%	n	%
Total	555	100.0	555	100.0	634	100.0	592	100.0
Women								
Birth Place								
City	186	33.5	217	39.1	283	44.6	274	46.3
Town	139	25.0	131	23.6	154	24.3	121	20.4
Country	229	41.3	206	37.1	195	30.8	197	33.3
Missing	1	0.2	1	0.2	2	0.3	0	0.0
Age (years)								
15-20	125	22.5	146	26.3	143	22.6	154	26.0

21-22	199	35.9	183	33.0	225	35.5	202	34.1
23-24	231	41.6	226	40.7	266	42.0	236	39.9
Education								
Secondary school or lower	137	24.7	119	21.4	128	20.2	118	19.9
High school	209	37.7	184	33.2	237	37.4	176	29.7
College or higher	209	37.7	252	45.4	269	42.4	297	50.2
Missing	0	0.0	0	0.0	0	0.0	1	0.2
Employment								
Unemployed	86	15.5	74	13.3	70	11.0	99	16.7
Employed	414	74.6	416	75.0	499	78.7	411	69.4
Students	55	9.9	65	11.7	64	10.1	82	13.9
Missing	0	0.0	0	0.0	1	0.2	0	0.0
Marital status								
Single	205	36.9	197	35.5	236	37.2	202	34.1
Cohabitant	205	36.9	196	35.3	229	36.1	200	33.8
Married	145	26.1	162	29.2	169	26.7	190	32.1
Ever given birth to a baby								
No	507	91.4	518	93.3	588	92.7	535	90.4
Yes	48	8.6	37	6.7	46	7.3	57	9.6
Previous Induced abortion								
0	356	64.1	360	64.9	395	62.3	371	62.7
1	140	25.2	145	26.1	181	28.5	167	28.2
2+	59	10.6	50	9.0	58	9.1	54	9.1
Men								
Age (years)								
16-20	48	8.6	64	11.5	65	10.3	76	12.8

21-22	109	19.6	114	20.5	124	19.6	102	17.2
23-24	150	27.0	150	27.0	172	27.1	164	27.7
25-34	233	42.0	217	39.1	258	40.7	238	40.2
35+	13	2.3	10	1.8	10	1.6	12	2.0
Missing	2	0.4	0	0.0	5	0.8	0	0.0
Education								
Secondary school or lower	88	15.9	74	13.3	80	12.6	72	12.2
High school	194	35.0	183	33.0	218	34.4	186	31.4
College or higher	271	48.8	298	53.7	336	53.0	334	56.4
Missing	2	0.4	0	0.0	0	0.0	0	0.0
Employment								
Unemployed	15	2.7	20	3.6	11	1.7	18	3.0
Employed	506	91.2	487	87.7	578	91.2	511	86.3
Students	33	5.9	48	8.6	45	7.1	63	10.6
Missing	1	0.2	0	0.0	0	0.0	0	0.0

Table 3 Use of contraceptive methods among sexually active women, according to intervention and package

	Hospitals allocated to Package A				Hospitals allocated to Package B			
	Before intervention		After intervention		Before intervention		After intervention	
	n	%	n	%	n	%	n	%
Use of any contraceptive methods	469	93.8	495	97.6	555	96.4	486	98.4
Use of effective contraceptive methods	436	87.2	453	89.3	518	89.9	475	96.2
Consistent use of condom	132	33.0	169	39.7	178	37.1	279	62.1
Correct use of condom	164	41.1	213	49.9	179	37.3	302	67.3
Consistent and correct use of condom	68	17.0	91	21.4	50	10.4	187	41.6
No neglect in use of contraceptive pills	39	83.0	30	62.5	53	89.8	27	77.1

Table 4 Odds ratios of use of contraceptive methods, comparisons between before and after intervention and between intervention packages

	Package A			Package B			Package B *vs* Package A		
	Crude OR	**AOR**	**95% CI**	**Crude OR**	**AOR**	**95% CI**	**Crude OR**	**AOR**	**95% CI**
Use of any contraceptive methods[a]	2.62	2.45	1.22-4.95	2.50	2.55	1.00-6.46	0.82	0.81	0.27-2.40
Use of effective contraceptive methods[b]	1.36	1.19	0.79-1.81	2.78	2.35	1.33-4.17	2.13	2.03	1.04-3.98
Consistent use of condom[c]	1.42	1.37	1.01-1.85	2.93	2.75	2.05-3.68	2.33	2.32	1.55-3.46
Correct use of condom[c]	1.54	1.53	1.13-2.06	8.67	8.38	5.64-12.46	2.81	2.78	1.81-4.26
Consistent and correct use of condom[c]	1.40	1.36	0.93-1.97	8.43	8.01	5.46-11.77	5.71	5.68	3.39-9.53
No neglect in use of contraceptive pills[d]	0.96	1.33	0.29-6.16	0.49	0.64	0.10-4.13	0.19	0.19	0.03-1.38

[a]Adjusted for women's birth place, education, occupational status, and history of contraceptive use, and men's occupational status.

[b]Adjusted for women's birth place, education, occupational status, and history of effective contraceptive use, and men's occupational status.

[c]Adjusted for women's birth place, education, occupational status, and history of condom use, and men's occupational status.

[d]Adjusted for women's birth place, education, occupational status, and history of pill use, and men's occupational status.

Table 5 Pregnancies, unwanted pregnancies and induced abortions among all follow-up women,[a] according to intervention and package

	Hospitals allocated to Package A				Hospitals allocated to Package B			
	Before intervention		After intervention		Before intervention		After intervention	
	n	%	n	%	n	%	n	%
Pregnancy	46	8.3	41	7.4	27	4.3	16	2.7
Unwanted pregnancy	30	5.4	23	4.1	14	2.2	8	1.4
Induced abortion	26	4.7	18	3.2	12	1.9	7	1.2

[a]If a woman had more than one event, we counted only once.

Table 7 Knowledge of contraception among all follow-up women, according to intervention and package

	Hospitals allocated to Package A		Hospitals allocated to Package B	
	Before intervention	After intervention	Before intervention	After intervention
Mean±SD	7.1±2.9	7.3±3.1	6.9±3.0	7.6±3.4
Range	0-13	0-13	0-13	0-13

Package A: crude 0.2 (-0.4 to 0.8), and adjusted 0.0 (-0.6 to 0.6).

Package B: crude 0.7 (-1.2 to 2.6), and adjusted 0.6 (-1.4 to 2.6).

Package B vs A: crude 0.5 (-1.1 to 2.1), and adjusted 0.6 (-1.0 to 2.2).

Table 6 Odds ratios of having pregnancy, unwanted pregnancy and induced abortion, comparisons between before and after intervention and between intervention packages

	Package A				Package B				Package B *vs* Package A			
	Crude OR	**AOR**	**95% CI**		**Crude OR**	**AOR**	**95% CI**		**Crude OR**	**AOR**	**95% CI**	
Pregnancy	0.79	0.84	0.53	1.32	0.61	0.66	0.34	1.28	0.74	0.70	0.32	1.52
Unwanted pregnancy	0.65	0.66	0.37	1.18	0.55	0.61	0.24	1.53	0.87	0.84	0.29	2.39
Induced abortion	0.56	0.57	0.30	1.07	0.54	0.69	0.26	1.84	0.98	1.01	0.33	3.13

Adjusted for women's birth place, education, and occupational status, and men's occupational status.

Table 8 Family planning services received during abortion among all follow-up women, according to intervention and package

	Hospitals allocated to Package A				Hospitals allocated to Package B			
	Before intervention		After intervention		Before intervention		After intervention	
	n	%	n	%	n	%	n	%
Group education								
Did you receive information on different contraceptive methods?	348	62.7	332	59.8	362	57.1	584	98.6
Did you receive information on how to use the methods?	303	54.6	310	55.9	322	50.8	574	97.0
Did you receive information on pros and cons for each method?	280	50.5	306	55.1	325	51.3	577	97.5
Did you receive information on emergency contraceptives?	320	57.7	246	44.3	330	52.1	558	94.3
Individual counseling								
Did the doctor introduce you contraceptive methods?	235	42.3	192	34.6	250	39.4	572	96.6
Did the doctor recommend you a most suitable method?	203	36.6	169	30.5	231	36.4	559	94.4
Provision of methods								
Did the doctor provide you contraceptive at site?	126	22.7	144	25.9	105	16.6	575	97.1
Did the doctor provide you free methods?	99	17.8	143	25.8	73	11.5	565	95.4
Referral to other places								
Did the doctor recommend you other places for obtaining contraceptive methods?	109	19.6	358	64.5	105	16.6	521	88.0
Did the doctor recommend you other places for obtaining family planning services?	128	23.1	355	64.0	128	20.2	383	64.7
Satisfaction with services								

Are you satisfied with medical staff's attitude?								
Satisfied	406	73.2	440	79.3	468	73.8	583	98.5
Basically satisfied	144	25.9	111	20.0	159	25.1	9	1.5
Not satisfied	5	0.9	4	0.7	7	1.1	0	0.0
Are you satisfied with the services contents that medical staff provides?								
Satisfied	359	64.7	380	68.5	388	61.2	496	83.8
Basically satisfied	182	32.8	169	30.5	227	35.8	96	16.2
Not satisfied	14	2.5	6	1.1	19	3.0	0	0.0

Annex 9: Papers further do be developed for submission to international journals

1. Attitudes and Practice of Post Abortion Family Planning among abortion service provider in three cities of China-PAFP project, leader author: Zhang WH (ICRH team, Belgium)
2. Why women seek abortion in three cities of China, leader author: YM Cheng (Beijing, team, China).
3. The characteristics of women seeking abortion in three cities of China-PAFP project, leader author, ZC Xu (Shanghai team, China).
4. Attitudes and Practice of Post Abortion Family Planning among women seeking abortion in three cities of China-PAFP project, leader author, XM Chang (Zheng zhou team, China).