KNOWLEDGE, ATTITUDES, PRACTICES ON FAMILY PLANNING AMONG INDUCED ABORTION USERS IN AN URBAN SETTING

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The main objectives of the study were to investigate the current knowledge, attitude towards family planning and practice on family planning and induced abortion among women who are currently undergoing induced abortion, factors associated with knowledge about contrceptive methods and repeated induced abortion .

The sample size, which covers the objectives of the study, was 363.

Statistical methods included descriptive analysis, univariate analysis, politomous logistic and logistic regression was used to describe characteristics of induced abortion users and to estimate the association between potential risk factors and knowledge of contrceptive methods and repeated induced abortion.

Knowledge on contraceptive method, use and ever use among induced abortion users were relatively high (90 percent, 58 percent, and 87 percent respectively). Sixty eight percent knew at least one modern method. 55 percent of the induced abortion users were repeaters indicating that this practice was common. Repeat aborters also had good knowledge on contraceptive methods and were mostly older, married and well educated.

The main reason repeating are incorrect use and lack of availability of effective and releasable contrceptive methods. Among contrceptive methods users 42 percent used only traditional contraceptive methods such as rhythm , douche and withdrawal and commonly in combinations (46 percent). If used in combination with a modern method, that method was condom (98 percent). Induced abortion users have positive attitude to contrceptive methods and knew the negative effect of induced abortion on health.

History of previous induced abortion positively associated with higher KAP on contraceptive method. Other factors associated with knowledge on contrceptive methods were age, occupation, residency, marital status and attitude to induced abortion.

1. Introduction

After legalization of induced abortion in end of 1989 induced abortion ratio rapidly increase. Comparing the abortion ratio (per 1000 births) from 1990 to 1993 with that in 1988 shows an increase of twice. The number abortions that were performed increased 80-95 percent since the time abortions were legalized.

In order to describe a characteristics of induced abortion users and predictors of induced abortion a Hospital based crossectional study was done in two Maternity hospitals in Ulaanbaatar, Mongolia between July and September, 1994.

Objectives

1. To investigate the current knowledge, attitude towards family planning and practice on family planning and induced abortion among women who are currently undergoing induced abortion .

2. To explore the factors associated with knowledge about contraceptive methods.

3. To investigate the effects of previous induced abortion on subsequent contraceptive practice.

4. To identify factors influencing repeated induced abortion.

2. Results

2.1 Characteristics of induced abortion users

During study period 827 women were admitted to 3 participating maternity hospitals of Ulaanbaatar for induced abortion. A total of 420 subjects were randomly recruited in the study. Forty eight subjects were excluded according to exclusion criteria, and nine excluded because information was incomplete. The remaining 363 cases were included in the analysis.

Most of the women (94 percent) were between 20-39 years old, and married. All women were literate. More than half had a college level education or higher. The most common occupation was laborer (36 percent), followed by approximately equal number of housewife and officer.

Most came from households which had a TV, radio or refrigerator. About 2/3 of households had central heating. Thus, the population of induced abortion users was generally well educated, married and had a reasonably high standard of living.

More than half the women (57 percent) had had four or more pregnancies and 90 percent had at least one child.

The distribution of parity was very different from that of from gravidity. Percentage of women with more than four gravidity was three times and the means twice the means of parity.

Eleven percent had lost children and about half (55 percent) of the women had had at least one previous induced abortion. The highest number of previous abortions was 7.

Also nearly half (44 percent) of the women said they did not want any more children.

2.2 Attitude and knowledge of induced abortion users on family planning and induced abortion .

Attitude and knowledge on contraception and induced abortion

Most women (93 percent) stated that they would use a contraceptive method to avoid a subsequent unwanted pregnancy. Ninety eight percent approved of using contraceptive methods.

The most common reason for the current induced abortion was to have no more children. The majority of women (72 percent) knew about the negative effect of having induced abortion and had positive attitude towards legal status of induced abortion (76 percent).

Knowledge attitude and practice on family planning

Overall most women knew, or had experience with, at least one method.

Rhythm method was the most commonly known and commonly used contraceptive method. The next most commonly known methods were condom, IUD and douche, but douche method was second among ever used methods (Table 1).

By contrast, very few people had ever heard about injectable, Norplant and female sterilization and thus almost none had had any experience with these methods.

Table 1. **Knowledge attitude and practice on Family planning (n=363)**

Type of contraceptive method	Ever heard		Have knowledge		Ever use		Use at currant pregnancy	
	yes	%	yes	%	yes	%	yes	%
Pill	244	67.2	101	27.8	60	16.5	11	4.4
IUD	345	95.0	152	41.9	81	22.3	6	1.7
Condom	332	91.5	187	51.5	144	39.7	54	14.9
Injectable	8	2.2	1	0.3	0	0.0	0	0.0
Norplant	3	0.8	0	0.0	0	0.0	0	0.0
Famale sterilization	5	1.4	3	0.8	0	0.0	0	0.0
Rhythm	347	95.6	277	76.3	239	65.8	157	43.5
Withdrawal	70	19.3	60	16.5	48	13.2	8	2.2
Douche	170	46.8	151	41.6	148	40.8	108	29.7
Any method	358	98.6	327	90.1	314	86.5	209	57.6

2.3 Source of information and availability of contraceptive methods

One important issue for family planning policy and program is to know from where the people get information and knowledge about contraceptive methods and availability.

The main sources of knowledge on contraceptive methods were family planning publications (83 percent) and radio and TV programs (65 percent), but very few women had obtained the knowledge from the husband (10 percent) or relatives (8 percent) (Table 2).

Table 2. **of knowledge on contraceptive methods (n=231)***

Source	Medical person	Husband	Friends	Radio & TV	Relatives	Books & magazine	Others
yes	123	23	82	151	19	192	15
%	53.2	9.9	35.5	65.4	8.2	83.1	6.5

** percent was calculated among the subjects who gave answer to the question*

The main available contraceptives at the time according to the response of induced abortion users were condom (73 percent), IUD (64 percent) and OC (25 percent). (Table 3)

Table 3. **Availability of CM (n=354)***

Available	OC	IUD	CON	BTL	INJ	NOR	DCH
yes	90	233	266	1	6	0	77
%	24.8	64.2	73.3	0.3	1.7	0.0	21.2

**excluded 9 subjects who did not answer*

2.4 Predictors of knowledge on contraceptive methods.

Characteristics of women with different knowledge levels

In the study contraceptive knowledge was grouped into three categories to simplify analysis: no method, traditional only and at least one modern method.

There were no differences between women with knowledge of only traditional and those knowing at least one modern method, in respect of age, marriage, parity, gravity, number of children, death of children, desire for more children, previous abortion, and attitude to abortion (Table 4).

However higher education, occupation as officer, student and others and residency in central heating home were significantly more common among those with knowledge of at least one modern method.

When the no knowledge group was compared to the knowing a modern method group, all demographic characteristics, reproductive history and attitude toward induced abortion were statistically significantly different except number of children who had died and desire for more children.

Table 4. **Univariate analysis of relation between knowledge of contraceptive method and socii-demographic variables**

VARIABLE	*KNOWLEDGE OF CONTRACEPTIVE METHODS*				
	none		only traditional		at least one modern
	(n)	*– Odd ratio (95percent contraceptive methods)	(n)	*– Odd ratio (95percent contraceptive methods)	(n)
AGE (years)					
20-24	18	1	17	1	46
25-34	17	**3.45 (1.64-7.14)**	45	1.23 (0.65-2.38)	150
>35	2	**10.0 (2.17-50.0)**	17	1.11 (0.51-2.43)	51
MARITAL STATUS					
unmarried	10	1	6	1	10
married	27	**9.01(3.45-25.0)**	73	1.96 (0.68-5.55)	237
EDUCATION					
primary & secondary	28	1	40	1	98
high	7	**4.55 (1.82-11.11)**	3	1.25 (0.74-2.13)	107
higher		**5.88 (1.37-25.00)**	2 4	**4.35 (1.45-12.5)**	42
OCCUPATION					
housewife	20	**1**	24	1	57
labor	14	2.08 (0.97-4.55)	34	1.03 (0.55-1.92)	83
officer	1	**28.0 (3.66-217.0**)	15	**2.22 (1.08-4.76)**	80
student & others	2	**4.76 (1.03-22.2)**	6	**1.89 (0.69-5.26)**	27

ACCOMMODATION					
no cent.heating	24	**1**	39	1	83
central heating	13	**3.70 (1.78-7.69)**	40	**1.92 (1.15-3.22)**	164
PARITY					
none	23	1	32	1	83
1-3	7	**5.0 (2.04-12.50)**	31	1.56 (0.89-2.78)	125
4-8	7	**1.54 (0.61-3.85)**	16	0.94 (0.46-1.92)	39
GRAVITY					
first	11	**1**	5	1	12
1-3	16	**4.76 (1.72-12.5)**	31	1.07 (0.35-3.33)	80
4-12	10	**14.28 (5.05-40.0)**	43	1.51 (0.50-4.55)	155
NUMBER ALIVE CHILDREN					
none	24	**1**	33	1	88
1-3	6	**5.88 (2.32-14.8)**	31	1.56 (0.89-2.78)	129
4-8	7	1.18 (0.46-3.03)	15	0.75 (0.36-1.56)	30
DEATH OF CHILDREN					
no	33	1	70	1	220
yes	4	1.02 (0.33-3.12)	9	0.95 (0.43-2.13)	27
DESIRE OF CHILDREN					
want more	11	1	26	1	81
no more	12	1.30 (0.54-3.12)	33	1.11 (0.62-2.0)	114
depends	14	0.50 (0.21-1.19)	20	0.84 (0.42-1.67)	52
PREVENTION OF PREGNANCY					
will use CM	15	**1**	5	1	5
wouldn't use CM	22	**33.30 (10.9-99.3)**	74	3.33 (0.92-12.5)	242
HISTORY OF PREVIOUS IA					
No	28	**1**	39	1	95
yes	9	**5.0 (2.27-11.11)**	40	1.56 (0.94-2.63)	152
HAVING KNOWLEDGE OF BAD	EFFECT ABORTION				
No	17	**1**	19	1	64
yes	20	**2.44 (1.20-5.01)**	60	0.91 (0.50-1.64)	183
ATTITUDE TO LEGAL IA					
negative	19	**1**	15	1	53
positive	18	**3.85 (1.89-7.69)**	64	0.86 (0.45-1.61)	194
NUMBER OF IA					
none	28	**1**	39	1	95
one	8	**4.17 (1.78-9.10)**	30	1.54 (0.88-2.63)	111
two & more	1	**12.5 (1.59-92.6)**	10	1.69 (0.77-3.70)	41

**Odd retio was calculated as odds for exposure in "at least one modern"/odds for exposure in "only traditional" or "none"*

Multivariate analysis for predictors of knowledge

The final polytomous logistic regression model has six groups of statistically significant predictors, viz age group, occupation, marital status,

accommodation, history of induced abortion and attitude towards induced abortion (Table 5).

All six factors show statistically significant odds ratios when the group without any knowledge on contaceptive methods was compared with that knowing at least one modern contraceptive methods. Women who had no knowledge of any contraceptive method tended to be teenagers, housewives or laborers, unmarried, living in a residence without central heating, had negative attitude toward induced abortion and no previous experience of an induced abortion .

When the group knowing only traditional method is compared with the group knowing at least one modern method statistically significant odds ratios were observed only for occupation and accommodation, indicating that

many factors had effects on increase knowledge on contraceptive method from none to any modern method, but only occupation and accommodation had an effect to increase knowledge from only traditional methods to modern methods.

Table 5. **Adjusted odds ratio for study factor and covariates associated with knowledge of contraceptivr methods among induced abortion users**

Variable	Levels	No knowledge Odd retio (95 percent)	Only traditional method Odd retio (95 percent))	P value
Age (in years)	16-19	1		
	20-24	17.24 (1.07-280.1)	1.15 (0.09-13.88)	0.1740
	25-34	23.81 (1.32-427.3)	1.30 (0.10-16.66)	
	> 35	37.03 (1.37-961.5)	0.82 (0.06-11.23)	
Occupation	housewife	1		
	labor	2.40 (0.95-6.06)	1.07 (0.56-2.04)	0.0001
	officer	18.52 (2.24-154.5)	2.40 (1.10-5.26)	
	students & oth	29.41 (2.76-304.8)	2.14 (0.69-6.67)	
Marital status	unmarried	1		
	married	6.41 (1.59-25.7)	1.99 (0.66-6.02)	0.0327
Accommodation	no cent.heating	1		
	central heating	3.58 (1.49-8.57)	1.80 (1.06-3.06)	0.0035
History of previous induced abortion	never	1		
	ever	3.35 (1.29-8.73)	1.67 (0.93-2.96)	0.0181
Attitude to induced abortion	negative	1		
	positive	3.43 (1.45-8.13)	0.81 (0.42-1.59)	0.0079

Note: 1. Reference group: of knowledge at least one modern method.
2. based on difference in -2 log likelihood on omission of the factor from the model

Women who had had previous induced abortion were more likely (Odd ratio=1.8, CI=1.15-2.92) to have use a contraceptive method at the current pregnancy (Table 6) Presence of any induced abortion in last two years was defined as history of previous induced abortion .

Table 6. **Contraceptive method use at current pregnant and history of previous induced abortion**

Contraceptive method use at current pregnancy	History of IA during last 2 years		
	none	have	Total
No use	118	36	154
Use	134	75	209
Total	252	111	363

2.5 Characteristics of repeat aborters

Repeat aborters differed from single aborters in many characteristics (Table 7). Repeat aborters tended to be older, more likely to be married and more highly educated. There are no differences in occupation, residency and attitude to using contraception. However, history of induced abortion was positively associated with other variables including: increased parity and gravidity, higher number of living children, not having had any child die, better knowledge and use of contraceptive method.

Table 7. **General characteristics and univariate analysis of new aborters and repeat aborters (n=363)**

Variable		number	New aborter (n=162)	Repeating aborter (n=201)	Odd ratio	P value	95 percent
Age group	16-24	81(22.3)	65 (80.3)	16 (19.7)	1		
	25-34	212 (58.4)	84 (39.6)	128 (60.4)	**6.19**	**0.000**	**3.35-11.41**
	>35	70 (19.3)	13 (18.6)	57 (81.4)	**17.81**	**0.000**	**7.89-40.2**
Marital status	unmarried	26 (7.2)	19 (73.1)	7 (26.9)	1		
	married	337 (92.8)	143 (42.4)	194 (57.6)	**3.68**	**0.004**	**1.51-8.99**
Occupation	housewife	101 (27.8)	46 (47.5)	55 (52.5)	1		
	labor	131 (36.1)	60 (45.8)	71 (54.2)	0.98	0.969	0.58-1.66
	officer	96 (26.5)	34 (35.4)	62 (64.6)	1.52	0.149	0.85-2.70
	student & others	35 (9.6)	22 (62.9)	13 (37.1)	0.49	0.080	0.21-1.05
Education	pri.& se	166 (45.7)	89 (53.6)	77 (46.4)	1		
	high	149 (41.1)	60 (40.3)	89 (59.7)	**1.71**	**0.018**	**1.09-2.68**
	higher	48 (13.2)	13 (27.1)	35 (72.9)	**3.11**	**0.002**	**1.53-6.30**
Central heating at home.	no	146 (40.2)	68 (46.6)	78 (53.4)	1		
	yes	217 (59.8)	94 (43.3)	123 (56.7)	1.14	0.541	0.75-1.74
Parity	0-1	138 (38.0)	89 (64.5)	49 (35.5)	1		
	1-3	163 (44.9)	56 (35.6)	107 (64.4)	**3.47**	**0.000**	**2.15-5.58**

	4-8	62 (17.1)	17 (27.4)	45 (72.6)	**4.81**	**0.000**	**2.49-9.28**
Gravidity	first	28 (7.7)	28 (100.0)	0			
	2-3	128 (35.3)	88 (71.9)	39 (28.1)	1		
	4-8	207 (57.0)	46 (23.2)	162 (76.8)	**7.95**	**0.000**	**4.82-13.0**
Number of alive children	0-1	145 (39.9)	91 (62.8)	54 (34.5)	1		
	2-3	166 (45.7)	56 (33.7)	110 (66.3)	**3.31**	**0.000**	**2.22-5.65**
	4-8	52 (14.3)	15 (28.8)	37 (71.2)	**4.16**	**0.000**	**2.35-9.35**
Died children	yes	40 (88.9)	10 (25.0)	30 (75.0)	1		
	no	294 (11.1)	152 (47.1)	171 (52.9)	**2.67**	**0.010**	**1.26-5.64**
Attitude to prevent pregnancy	will not use contraceptive methods	25 (6.9)	18 (72.0)	7 (28.0)	1		
	will use contraceptive methods	338 (93.1)	144 (44.4)	194 (55.6)	**3.46**	**0.007**	**1.41-8.51**
Attitude to use contraceptive methods	negative	6 (1.6)	4 (66.7)	2 (33.3)	1		
	positive	357 (98.4)	158 (44.3)	199 (55.7)	2.52	0.290	0.45-13.92
Knowledge of contraceptive methods	no have	36 (9.9)	27 (75.0)	9 (25.0)	1		
	have	327 (90.1)	135 (41.3)	192 (58.7)	**4.26**	**0.000**	**1.94-9.36**
Use of contraceptive methods	never use	49 (23.5)	37 (75.5)	12 (24.5)	1		
	ever use	314 (86.5)	125 (39.8)	189 (60.2)	**4.66**	**0.000**	**2.36-9.18**
Current pregnancy use of contraceptive methods	no use	154 (42.4)	84 (54.5)	70 (45.5)			
	use	209 (57.6)	78 (37.3)	131 (62.7)	**3.25**	**0.001**	**1.32-3.08**

The final model which started with eight groups of variables has only two statistically significant predictors, viz. age and ever use of contraceptive method (Table 23). Knowledge of contraceptive method could be used in place of ever use of contraceptive method in the model with little change in the fit (p=0.06),reflecting the high correlation between ever use of a contraceptive and knowledge of contraceptive methods.

This model shows that women who ever had induced abortion tended to be older and had experience of use contraceptive method.

Table 23. **Adjusted Odds Ratio for covariates associated with repeat abortion.**

Variable	Levels	New aborter	Repeat aborter	Odd ratio (95 percent)	p-value
Age (years)	15-24	65	16	1	
	25-34	84	128	5.53 (2.96-10.30)	0.000
	35-49	13	57	14.56 (6.38-33.22)	0.000
Use of contraceptive method	never	37	12	1	
	ever	125	189	3.07 (1.47-6.44)	0.003

3. DISCUSSION

3.1 Characteristics of the study sample

In our study, the ages of induced abortion users ranged from 16 to 46 years with a mean age of 29. The mean age is not different from data of the Statistical Office of Ministry of Health [40].

In a world review on induced abortion in 1990, Henshaw[22] noted that in most Western European countries about half of all abortions were obtained by young, unmarried women seeking to delay a first birth, while in Eastern Europe and the developing countries, abortion is more common among married women with two or more children.

The findings of our study appear to conform to this pattern for developing countries: Most of induced abortion users were married (93 percent), highly educated and 60 percent had history of previous induced abortion. Also, they had multi gravidity (4), but low number of parity and children (2.19 and 2.06 respectively). The knowledge of contraceptive methods and history of practice contraceptive methods were high (90 percent; 87 percent respectively) and 60 percent resided in central heating apartment. However their distribution was not compared with those of the entire population.

Forty four percent of induced abortion users did not want any more children and this was the main reason (34 percent) motivating the induced abortion. This last subgroup was rechecked and it was found that on average, they had 2.5 children and had twice the number of previous induced abortions (71 per 100 women) than other groups. They were therefore good candidates for long effect or permanent contraceptive method. If this method was not offered, they would still bear considerable risk for unwanted pregnancy.

Very few only about 7 percent of women in this study were single. For single women the main reason motivating them to have induced abortion was that they were single. In addition, some were still studying. Skjeldestad et. al[41]. identified the prospect of single parenthood as the strongest determinant for choosing abortion, independent of age and parity. He suggested that in order to find out the importance of other social factors and attitudes in the decision making process regarding pregnancy outcome, adjustments must be made for marital status, age and parity.

Many (34 percent) women had socio-economic motivation for using induced abortion. They were mostly housewives (42 percent) or labourers (38 percent). This can be explained by the difficult economy of the country during

the study period. In favour of this explanation an experience from Japan shows the effect of socio-economic difficulties on induced abortion and fertility. Tsuya analyzed the effects of contraception and abortion on crude birth rate (CBR) and total fertility rate (TFR) in Japan from 1947-1980. The CBR declined from 34.3 in 1947 to 17.3 in 1957, and the TFR from 4.5 to 2.0 in the same period. This dramatic decline in fertility was initiated under the serious socio-economic difficulties of post-World War II Japan [42].

3.2 KAP on contraceptive methods

Knowledge on contraceptive method and main sources.

Prior to 1990 induced abortion and contraception use were allowed only by medical indications. At this time, the only modern contraceptive method available was IUD. Most other type of contraceptives was therefore largely unknown. Rhythm method, however, has been widely published in popular medical magazines and brochures. Thus, the finding that rhythm and IUD were the most well known and commonly used methods expected. Since 1990, when the new family planning policy started, radio and TV have been widely employed for family planning IEC and these media have become the main sources of knowledge. But of modern methods much low (68 percent) .

Knowledge of traditional contraceptive methods was high among induced abortion users. Effective modern methods such as injectable, Norplant, and male and female sterilization were almost unknown and not common. Male sterilization has not been introduced. Only in 1993 were injectable and Norplant used experimentally in a few hospitals with support from international organization such as WHO and UNFPA in order to assess their suitability and acceptability for Mongolian women.

Factors associated with knowledge on contraceptive method .

Altogether six statistically significant factors were independently associated with knowledge on contraceptive method: history of previous induced abortion, age, occupation, marital status, residency and attitude to induced abortion.

Induced abortion users who have poor knowledge on contraceptive method were more likely to be younger, unmarried, less educated, housewives or laborer, resident in non central heating house, lower parity and gravidity, fewer number of children, ever used induced abortion, poor knowledge on bad effect of IA and negative attitude to legal induced abortion . Education program should place more emphasis on these groups.

Education was associated with knowledge of contraceptive method, as found in other studies. Experience from Singapore[28] and Belgium showed that more educated women are the more likely to use illegal abortion, and also more likely to use an effective contraceptive method when it is introduced. But in our study, after adjustment for other factors, education became non-significant.

Occupation was a factor strongly associated with knowledge. Occupation might be strongly related to psychology, attitude, opinion, needs for induced abortion and thus more strongly associated with knowledge on contraception than education.

Also, residency gives strong association in both analyses. Explanation may involve the following: houses with no central heating are more commonly located in the sub-rural part of the city. Hence they might have had less time for extra hours activities and be less exposed to radio and TV programmes. Also most of the women who had many children (64 percent of women who had more than 4 children) lived in non central heating houses. Hence they represent population with different socio-economic characteristics.

Age was strongly associated with knowledge on contraceptive methods as found in many studies. The odd retio increased with age.
Cumulative experience or exposure might explain this to contraceptive methods information.

In our study, 93 percent of women were married. Married women might be more concerned about contraceptive methods , because they are in stable relationship.

Availability of contraceptive methods and induced abortion

One important issue for family planning policy and programme is to know the attitude of population toward to family planning, it acceptability and availability for the people.

The most available contraceptive according to the responses of induced abortion users were condom (73 percent), IUD (64 percent) and pill (25 percent).

Modern methods such as pill, IUD, and condom were widely introduced after the change of government policy in 1991, followed one year late by legalization of induced abortion and contraceptive methods use. Considering that the study period (1994) occurred only three years after the introduction of modern contraceptive methods and that resource for IEC were limited, such coverage of contraceptive methods might be taken as satisfactory, although improvement is still needed.

As the medical services are well-developed and have enough manpower (450 population per one medical doctor) the induced abortion service was accessible and available.

There are two steps to achieve the goal of family planning policy, when it is introduced for the first time to a population:

1. giving the correct knowledge
2. providing proper service.

The second step takes longer time than first.

During the period of learning about family planning some women will get unwanted pregnancies. As induced abortion is widely available in Mongolia, most of them will use induced abortion to avoid unwanted births. The women firstly during visiting the maternity hospital for induced abortion they will provided IEC on family planning, secondly induced abortion is physical and psychological not simple procedure for women. After induced abortion they will be more highly motivated to find out about contraceptive methods. This conforms to the high use of contraceptive methods at current pregnancy among repeaters comparing with new aborters (Odd ratio=3.25, p=0.001). Also it shows **the lack** of correct practice.

At this time among induced abortion users accessibility of contraceptive methods is good (98 percent).

At the time when achieve good availability and correct practice of contraceptive methods , the prevalence of contraceptive methods use will increase and prevalence of induced abortion will decrease. Because the population is highly educated (literacy rate 95 percent, 1995) women are more likely to choose safe, effective and releasable method for regulation of family size. Experience of Singapore and Netherlands confirm this[28,29].

Attitude toward contraceptive methods and linduced abortion

In our study, most women had positive attitudes toward contraceptive use and knew the bad effects of induced abortion. However, among our study sample, there were some subjects whose knowledge on contraceptive methods was high and attitude towards contraceptive methods use positive, but their practice of contraceptive methods was very poor compared with their knowledge. To find the reason for gap between knowledge and practice is necessary. And this knowledge-practice gap must be improved. The gap might be due temporal effect as the pupil don't have good experience, they just starting practice contraceptive methods, or due to husband's low knowledge on family planning, because the most common used methods were rhythm and condom which demands knowledge from both husband or partner and women

Regarding the disparity between women's desire to use modern contraception to prevent unwanted pregnancies and their practice of having induced abortions to prevent unwanted births, Johnson[33] examined contributing factors and suggested that it is necessary to provide a wide choice of dependably available high-quality contraceptives; women need to be able to obtain information, counselling, and methods from a wide range of sources/health-care providers; both women's and men's perceptions about, and use of, modern contraception could be positively affected through sexual education started in secondary school. Failure of some of these provisions may occurred in our country.

Practice and failure of contraceptive method.

The prevalence of contraceptive method use among study subjects at time of index pregnancy was 57.8 percent. Thus, contraceptive method failure contributes a large proportion of cases. Improving their knowledge on proper use of each specific contraceptive method could potentially prevent this. This finding is similar to those of some studies on contraceptive methods use among induced abortion users carried out Belgium. It was estimated that half the women undergoing induced abortion did not use any method, and the most commonly used contraceptive method were rhythm and condom. In that a study substantial number of women reported that they had become pregnant while using contraceptive method.

Even when using any contraceptive method, the effectiveness of contraception increases as couples approach their desired family size[43]. In our study subjects 33 percent desired more children.

The couple may not strictly adhere to contraceptive methods as a method of birth spacing when they still want some more children. In our study one third of the subject desired for more children but they still came for induced abortion . Thus birth-spacing couple might be a risk group for ineffective contraceptive methods and hence induced abortion. In summary,

contraceptive use, appears to be more related not only to its availability at the time and desired number of children in family also might be some other factors such as socio-economic factors. In our study the reason was 34 percent.

Ingolhammar et al [44] interviewed 404 women coming for induced abortion and compared them with 203 pregnant women. They concluded that side effects and "human failure" were causes of ineffective use. In the current study most subjects used traditional methods: therefore, side effect is unlikely to be an explanation. However, human factors such as forgetfulness irregular use and poor motivation to continually use the method can affect the specific situation. In our study, 67 percent of ever users of contraceptive methods did not use contraceptive methods at time of current conception .

Also Jones and Forrest[43] in their Analysis data of the 1988 National Survey of Family Growth, concluded that failure rates vary more by user characteristics such as age, marital status and poverty status than by method, suggesting the extent to which failure results from improper and irregular use rather than from the inherent limitations of the method.

Kim [45] in a review of South Korea's family planning program in 1992, found that, according to a logistic regression analysis, major factors which affect the outcome of pregnancy due to contraceptive failure were residence area, number of boys, educational level, duration of marriage, women's age and number of children.

In our study incorrect use and type of method they used mainly can explain the high contraceptive failure rate. Most of failures (90 percent) involved less effective traditional methods, such as rhythm, withdrawal and douche either alone or in combination with condom. In our study, 14 percent of subjects who answered that they knew about rhythm method gave an incorrect answer to a validation question.

While rhythm method and condom were the most common methods ever heard of, thereabout which the subjects had highest level of knowledge and the most commonly used in the past, they are also the methods which most commonly fail.

It is not possible to calculate method specific failure rates from this study because the denominator is not available. Thus, high usage or high failure rate can explain high number of failure from these two methods. However, many studies have pointed to the high failure rates of these methods.

One interesting finding is that although women may use a less effective method, they are more likely to use a combination (46 percent) of methods. The finding that many combination of methods were common in this study may suggest that they wanted to increase prevention of pregnancy or, on the other hand, they did not know how to properly use each method and just combined methods in a type of trial-and-error approach.

Rhythm, douche and withdrawal were the methods used most in the last 24 months . As mentioned above, IUD and rhythm method were introduced 20-30 years before this study, but condom use is the most commonly found method in this sample. Whether this is because they have knowledge and have additional attitude to prevent AIDS and STD is not known. However, Kristiansen et al[46] reported a relatively strong factor

favoring condom use is that this method provides protection from sexually-transmitted diseases including AIDS.

3.3 Association between history of induced abortion and contraceptive methods practice

We found that at the current pregnancy those who had a history of induced abortion, in comparison with new aborters, had a four-fold prevalence of CM knowledge, three-fold prevalence of positive attitude towards contraceptive method to prevent unwanted pregnancy and a 4.5 times prevalence of ever having used a contraceptive method .

One of main disputed problems is the order of induced abortion and contraceptive method, whether contraceptive methods use comes after or before induced abortion. Testing the hypothesis that induced abortion itself motivated women to be interested in family planning and use contraceptive method could approach this question.

Many studies show the positive effect of induced abortion on subsequent contraceptive practice[34,35,36,47,48]. Tollan[34] noted that among 234 women who were admitted for induced abortion at Hammerfest Hospital in France in 1983, only 29.4 percent had used contraceptive methods at the time of conception but 84 percent left the hospital with contraceptives prescribed, regardless of former contraceptive use.

In the current study, the direction of change after induced abortion was from non-user to user ($p=0.02$). A similar finding was reported by Chevrant-Breton et al[35]. They estimated the chances of contraceptive methods use after induced abortion. At the time of the conception which led to induced abortion, 94 percent of the women were not using contraception. One year later only 12 percent of them were still not using contraceptives.

Furthermore the odd ratio calculated from the two-by-two table, using data of contraceptive method use at two time-points of conception of the latest previous and current pregnancies, shows that women who had had history of previous induced abortion were nearly twice or likely ($p=0.01$) to have use a contraceptive method at the current pregnancy than women without a history of induced abortion .

From our study, women tended to use more contraceptive, mostly traditional method after an induced abortion. However, the effect of induced abortion on change of use must be interpreted with caution. The alternative explanation of increase of contraceptive methods use after induced abortion can also be explained by effect of IEC on family planning or time-trend effect which is independent of induced abortion.

3.4 Characteristics of repeat aborters

According to the experience of other countries on legalization of induced abortion, such as Singapore and Netherlands, the induced abortion rate increased in the first few years after legalization[28,29]. But the aims of the family planning policy, means of implementation and specific purpose differ from country to country. In Mongolia, four year after starting family planning policy the induced abortion is still legal and the induced abortion rate still high, while contraceptive method prevalence has not much increased[2,40,].

Repeat aborters in this study might not perfectly represent the repeat aborters in the community because only those who wanted induced abortion after conception were included.
However, looking at the characteristics of this subgroup in comparison with the new aborters may provide a clue to identify women who overused induced abortion and underused contraceptive methods.

As induced abortion is legal, its use is dramatically wide. Considering that 55 percent of the subjects in our study had at least one previous induced abortion, the overall risk posed by induced abortion to Mongolian women is therefore very high. The difference between gravidity (4.06) and parity (2.19) is most likely to be explained mostly by legal induced abortion. The difference between parity and number of live children (0.13) is due to high infant mortality rate (65 for 1000 births).

According to findings in Taiwan,[47] the small percentage of repeated abortion having induced abortion for the third time or more (4 percent) could be explained by a "learning effect" of induced abortion .

The fact that repeated induced abortion was very high suggests that many women did not take enough care to prevent unwanted pregnancy by using effective contraceptive method.

The combination of poor coverage and inadequate quality of modern contraceptive methods service, and wide availability of induced abortion may create situation where women to use induced abortion as a "first line" birth control instead of a "back up" method for contraceptive methods failure.

There were only two statistically significant factors independently associated with repeat abortion - age and history of use of contraceptive methods . High risk of these factors for repeat abortion might be explained by time-trend effect. The fact women who ever use contraceptive methods are more likely to have a had history of induced abortion confirmed the association between these two variables. However, the data do not indicate which comes first, induced abortion or contraceptive methods .

3.5 Summary of findings

1. Knowledge on contraceptive method, use and ever use among induced abortion users were relatively high (90 percent, 87 percent and 58 percent respectively). Sixty eight percent knew at least one modern method.

2. More then half of the induced abortion users were repeaters indicating this practice was common.
Repeat aborters also had good knowledge on contraceptive method and were mostly older, married and well educated.

3. Most induced abortion users used traditional contraceptive methods such as rhythm , douche and withdrawal and commonly in combinations (46 percent). If used in combination with a modern method,that method was condom.

4. Induced abortion users have positive attitude to contraceptive method and knew the negative effect of induced abortion on health.

5. History of previous induced abortion positively associated with higher KAP on contraceptive method. Other factors associated with knowledge on contraceptive method were age, occupation, residency, marital status and attitude to induced abortion.

4. Conclusion and recommendation

Conclusions

1. Modern methods such as pill, IUD, and condom were widely introduced after the change of government policy in 1991, followed one year late by legalization of induced abortion and contraceptive method use. Considering that the study period (1994) occurred only three years after the introduction of modern contraceptive method and that resource for IEC were limited, such coverage of contraceptive method might be taken as satisfactory, although improvement is still needed.

2. The main reason for having repeated abortions is incorrect use and lack of availability of effective and reliable contraceptive methods.

3. Mongolia is society in transition. Family planning services emphasizing modern contraceptive methods are becoming available in an organized way for the first time in a setting where induced abortion is already in wide use. As a result many women, although having some knowledge of modern contraceptive methods, still often depend on traditional methods. It can be expected that as experience with contraceptive methods and IEC expands, more women in this well educated population, will shift away from induced abortion and traditional methods towards modern contraceptive methods.

Recommendation

1. Regarding the desire of women for more children and the family planning policy the population needs to introduce not only delaying methods of family planning but also long-effect or limitation methods, such as injectable, Norplant and sterilization.

2. Availability and accessibility of contraceptive method, especially the introduction of contraceptive methods after abortion, should be improved.

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