Changes in the Determinants of Induced Abortion in Korea

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Despite the fact that national family planning program in Korea has accomplished its primary goals of fertility reduction and universal contraceptive use, the induced abortion is still high. This indicates that much of the current family planning program needs to be overhauled, so that the program quality could be better controlled, by preventing the number of unwanted pregnancies. This paper aims, therefore, to examine the determinants of induced abortion through the investigation of pregnancy outcomes and their changes over time in Korea. This study was based on the 1991 National Fertility and Family Health Survey conducted by KIHASA.

The abortion rate had increased rapidly until the mid-1980s when there were about the same number of abortions as live births. Thereafter, the abortion rate has been maintained at the maximum level. By parity it shows a much higher abortion rate for a higher parity at all time. From the first parity, the sex composition of previous children stands out as the most important factor in deciding the pregnancy outcome at all time. The probability of a pregnancy ending in an abortion increases substantially when parents already had a son. The decline of the desired family size and the sustained strong son preference has made the sex of children a more important factor in the determination of the pregnancy outcome. Woman's education has consistently positive effects on the probability of a pregnancy to end in an abortion, but the effect shows a steady decline over time. The premarital pregnancy and urban residence also increase the abortion probability.

This study implies that the main concerns of the family planning program should be shifted from current quantitative approach which focuses on fertility reduction to qualitative health approach which emphasizes a balanced sex ratio and prevention of induced abortions. In addition, the family planning program should be fully integrated with maternal and child health(MCH) services for the improvement of population quality, and the importance of family planning should not be underrated just because of low fertility rate.

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I. Introduction

During the last three decades, Korea has experienced rapid decline of fertility. The total fertility rate which was about six in 1960. Use of effective contraception has increased tremendously due to the changing socioeconomic rationale regarding childbearing and the continuous promotion of family planning programs by government. Even so, it has been evident that induced abortion has played a significant role in reducing the fertility rate in Korea. The number of abortions in Korea has increased continuosly over the last two decades. Although the absolute number of abortions has been declining recently¹⁾, it is still at a very high level compared to the developed western countries. In

fact, when computed as a proportion among the total pregnancies, the abortion rate has not decreased so far. As shown in Table 1, the live birth pregnancy rate had been decreasing persistently until 1977 when it leveled off at about 60 percent until 1981. Thereafter the decline resumed, reaching the minimum level at 49 percent in 1984. It has been maintained at slightly than 50 percent since then. By the five-year average, the abortion rate increased from 21 percent among the pregnancies up to 1974, to 38, 44 and 49 percent during the period of 1975 ~1979, 1980~1984, and 1985~1991, respectively.2) In the study of fertility it has become as important to know how each pregnancy ends as who becomes pregnant and when.

Table 1. Trend in pregnancy Outcome

V		Number of			
Year	Live Birth	Still Birth	Spont. Abortion	Induced Abortion	Pregnancies
1963-74	78.6	0.8	5.6	15.0	6,732
1975	64.7	0.7	5.7	29.0	1,058
1976	62.4	0.7	6.5	30.5	1,238
1977	59.8	0.3	6.4	33.6	1,195
1978	63.4	0.7	5.8	30.1	1,294
1979	61.7	0.7	7.7	29.8	1,257
1980	60.0	0.6	7.5	31.9	1,418
1981	59.0	0.5	7.0	33.5	1,379
1982	56.7	0.5	6.0	36.8	1,328
1983	54.4	0.5	7.6	37.9	1,329
1984	48.9	0.6	9.4	41.2	1,224
1985	52.7	0.5	8.2	38.6	1,120
1986	54.0	0.3	7.8	37.9	1,020
1987	53.3	0.2	7.9	38.6	1,074
1988	56.2	0.2	8.9	34.7	1,041
1989	52.2	0.7	10.7	36.4	1,061
1990. 7	52.0	0.2	9.2	38.6	686

This study examines the trend and the determinants of pregnancy outcomes in Korea during the period from early 1960s to 1990 using data from a retrospective survey of more than 25,000 pregnancies. First, pregnancy outcomes are compared between the subsamples which are divided by the year of pregnancy and by the number of existing children. Within each subsample, comparisons are also made according to premarital pregnancy, sex composition of existing children, women's education and the place of residence. The following section focuses on the pregnancy outcomes by the contraceptive method used when one became pregnant. Finally, selective abortions and their implications on fertility and the sex ratio are discussed.

II. Data and Method

The data used in this study are drawn from the 1991 National Fertility and Family Health Survey of Korea conducted by the Korea Institute for Health and Social Affairs(KIHASA). The sample is a stratified nationwide probability sample based on the sampling framework used in the 1985 Population Census(see Kong et al. 1991, for more details on sampling). A total of 11,540 households was surveyed. The data used in this paper is based on the interviews with 7, 384 married women aged between 15–49. The information collected are mainly about the respondent's marriage, pregnancy and birth, family planning and work status. In particular, the woman's fertility history is recorded retrospectively, and serves as the main data for this study.

Pregnancy outcomes are studied separately according to parity, that is, number of existing children. Since the effects of socioeconmic variables may vary over time, the sample is also separated into four cohorts which are divided according to the year of pregnancy: up to 1974, 1975~79, 1980~84, and 1985 or later. There were 25,458 pregnancies in total after deleting the pregnancies which started less than 9 months prior to the survey: 8,475 pregnancies at parity zero, 7,947 at the first parity, 5,358 at the second parity, and 3,437 at the third or higher parities.³⁾

¹⁾ According to the estimation by Hong and Oh(1992), the number of induced abortions has been decreasing from about 594,000 in 1981 to 495,000 in 1985 and to 402,000 in 1990.

²⁾ Considering that the number of abortions tends to be underreported in the surveys which collect information by interviews or self-reporting questionnaires, the actual number is likely to be higher. See, for example, Jone and Forrest(1992). In the case of Korea, an unofficial number of abortions which is estimated approximately from the average number of abortions per doctor goes up as high as twice the number of live births in recent years.

³⁾ Since the parity in this study denotes the number of existing children at the time of pregnancy, there may be more than one pregnancy for some women at a certain parity. For example, if a woman had an abortion between the first and the second live birth, she had experienced two pregnancies at the first parity.

III. Analysis of Pregnancy Outcome

Any pregnancy results in either a live birth. still birth, spontaneous abortion or induced abortion. While still births are very rare(less than one percent of total pregnancies), spontaneous abortions have not been trivial. What is surprising according to the data used in this paper, is the sharp increase in recent years in the reported proportion of pregnancies ending by a spontaneous abortion among all-girl families at the second parity. It is higher than 10 percent(41 out of 389) among the pregnancies since 1985, while it is only three percent(22 out of 718) among those with one or two male children. Considering the greater desire to have a son and to avoid another daughter among all-girl families, this differential might be due to a tendency among parents who had abortions of a female fetus(determined by a gender screening test such as amniocentesis or ultrasound test), to report these gender selective induced abortions as spontaneous abortions. It is conceivable that due to a genuine memory loss or some personal reasons (such as embarrassment) one might report incorrectly about the pregnancy

outcome, especially for still births, spontaneous abortions or induced abortions. This is the main reason why spontaneous abortions, induced abortions and still births are included in the category of abortion in this study.

Table 2a presents the abortion rates by parity and cohort, and in the tables 2b-2e the pregnancy outcomes are compared across the groups divided by premarital pregnancy, sex composition of existing children, education level and the place of residence. In general, the abortion rate increases with parity and time. Among the pregnancies since 1985, only 27 percent were aborted among the childless parents, while they were 46 percent among the families with one child and 81 percent among those with two children. For the pregnancies when there is no child, the abortion rate has increased from 10 percent prior to 1975 to 30 percent since 1985. This increase seems to be attributable mostly to the increased premarital pregnancies among the more recent cohorts. A more liberal social environment along with the delayed age at marriage is likely to increase the chance of an unmarried woman to be exposed to sexual activity and pregnancy.

Table 2a. Abortion Rate(%) by Parity and Cohort

Parity	Year of Pregnancy						
ranty	~1974	1975~79	1980~84	1985~90.7			
0	13.6(2,636)	19.1(1,681)	20.3(2,071)	25.6(2,087)			
1	17.2(2,004)	26.5(1,667)	33.9(2,010)	43.6(2,266)			
2	32.1(1,326)	50.3(1,395)	67.7(1,530)	79.9(1,107)			
3+	45.6(766)	64.3(1,256)	75.9(1,031)	80.2(384)			

Note: sample size in parenthesis

Table 2b. Abortion Rate(%) by Premarital Pregnancy

Conceived No. of months before	Year of Pregnancy						
marriage	~1974	1975~79	1980~84	1985~90.7			
8+	41(129)	63(104)	62(77)	83(92)			
5–7	21(77)	23(48)	36(80)	29(72)			
1-4	5(166)	6(145)	14(220)	16(210)			
after marriage	11(2,264)	16(1,384)	19(1,694)	24(1,713)			

Table 2c. Abortion Rate(%) by Sex Composition of Existing Children

Damita. '	No. of		Year of Pregnancy					
Parity	boys	~1974	1975~79	1980~84	1985~90.7			
1	None	16(694)	32(725)	30(910)	39(1,147)			
1	One	19(1,040)	30(942)	37(1,100)	48(1,119)			
	None	23(326)	28(334)	46(372)	59(389)			
2	One	32(628)	54(711)	72(784)	90(508)			
	Two	37(372)	64(350)	80(374)	94(210)			
	None	26(118)	40(179)	52(217)	63(112)			
3+	One	34(256)	55(461)	78(420)	84(166)			
	Two^+	59(392)	78(616)	87(394)	92(106)			

Table 2d. Abortion Rate(%) by Woman's Education

Domitus	Dr. Education		Year of Pregnancy				
Parity	By Education	~1974	1975~79	1980~84	1985~90.7		
	Primary	8(1,305)	19(422)	20(278)	37(102)		
0	Middle	16(681)	18(598)	20(610)	25(412)		
U	High	18(534)	18(540)	20(980)	26(1,270)		
	College ⁺	20(116)	19(121)	25(203)	19(303)		
	Primary	12(1,076)	18(530)	27(333)	39(175)		
1	Middle	18(260)	26(532)	32(649)	52(587)		
1	High	26(206)	34(488)	38(851)	46(1,247)		
	College ⁺	37(86)	32(117)	37(177)	42(257)		
	Primary	23(772)	38(584)	53(424)	72(148)		
2	Middle	40(304)	56(416)	70(530)	79(379)		
2	High	46(206)	63(321)	76(480)	82(496)		
	College	52(44)	59(74)	77(96)	87(84)		
	Primary	37(534)	59(798)	71(542)	75(183)		
3+	Middle	66(149)	74(260)	82(274)	87(99)		
J	High	61(67)	70(168)	80(172)	82(87)		
	College ⁺	56(16)	83 (30)	91(43)	87(15)		

Table 2e. Abortion Rate(%) by Place of Residence

Donites	D D	Year of Pregnancy					
Parity	By Region	~1974	1975~79	1980~84	1985~90.7		
	Nonmetro	10(1,425)	16(842)	18(1,084)	24(1,073)		
0	Metro	15(1,211)	20(839)	23(987)	28(1,014)		
1	Nonmetro	14(1,084)	21(828)	30(1,031)	42(1,189)		
	Metro	20(920)	31(839)	38(979)	46(1,077)		
2	Nonmetro	22(729)	43(717)	62(830)	75(594)		
	Metro	42(597)	58(678)	75(700)	86(513)		
3+	Nonmetro	37(485)	57(825)	70(641)	75(261)		
	Metro	61(281)	77(431)	85(390)	90(123)		

Premarital Pregnancy

A considerable proportion of first pregnancies in Korea starts before marriage, and this proportion is likely to increase over time. By education, it shows a slightly higher premarital first pregnancy rate among the middle or high school graduates than the primary or college educated women. While more than half of the premarital pregnancies among the women with better than primary education were conceived within 4 months prior to marriage, for the primary or lower educated women the pregnancies conceived earlier than 5 months prior to their marriage are relatively more common.

The earlier the pregnancy starts prior to marriage, the higher is the chance for a pregnancy to end by an abortion. The abortion rate among the first pregnancies is 55 percent for the pregnancies started at least 8 months before marriage, while it is only 25 percent for those started 5 to 7 months and 15 percent for those started less than 5 months prior to marriage. The abortion rate is particularly high for the pregnancies started earlier than 7 months before marriage among the higher educated and most recent cohort.

Sex Composition of Existing Children

Traditionally, Korean parents have shown strong son preferences due to various reasons, such as old-age support, provision of farm labor, carrying on the family line, and the practice of ancestor worship. Since a child's gender is not controllable, a problem facing parents at

⁴⁾ There were many studies which show the son preferences in Korea using various methods. For example, Park(1983) compares the parity progression rates and the sex ratio of the last child. Bumpass et al.(1986) examines the birth interval, and Ahn(1991) attempts to measure the value of children by the sex and age of children which underlies parental gender preferences. The former two studies used the 1974 Korean National Fertility Survey(Korean WFS), and the last study used the 1980 Korean population and Housing Census. Also, see Arnold(1985).

each parity is to decide what kind of contraceptive methods(or no method) to use and, when pregnant, whether to have an abortion or not. Pregnancy outcome is compared by the sex composition of existing children for each parity and cohort. More than two boys are combined into the two-boy category. Given the strong preferenc for sons among Korean parents, the number of boys is expected to have a positive association with the chance for a pregnancy to end by an abortions.⁴⁾

Form the first parity, the sex composition of existing children stands out as the most important variable in the determination of pregnancy outcome. At first parity, the existence of a son increases the abortion probaility by 3 percent for the earliest cohort, but it grows to 9 percent for the most recent cohort. The strengthening gender effect at low parities indicates the changing preferences toward smaller families while the son preferences are maintained. The effects are much larger at the second and third parities, and they remain substantial at all cohorts. Abortion probability is particularly high among the families with at least one son, and more so in recent years. Among the pregnancies conceived since 1985, less than 10 percent were carried to term among those with a son, while more than 40 percent of those with two daughter were given live births. At the third parity the families with two or more boys among the earliest cohort are 33 percent more likely to end the subsequent pregnancy by an abortion than those without a son. In recent years, although the high parity pregnancies are becoming scarce, the differentials in abortion rate by sex composition is becoming larger among the low parity pregnancies. If this trend continues the sex composition of children in a family is likely to become very different between small families and large families. There would be at least one boy among most families who have only one or two children, while most of the children in large families would be girls.

Woman's Education

Woman's education is divided into 4 categories; less than 9, 9-11, 12-13, and more than 13 years of education. The negative effect of woman's education on fertility is well documented across the world(see Cochrane, 1983; Jain, 1982: Kim. 1987). This relationship is often believed to be due to the higher opportunity costs and the better knowledge of effective contraceptive methods associated with education. However, it is not obvious with the effect of education on the probability of abortion. If education improves the knowledge of effective contraception, better educated women would be less likely to have unwanted pregnancies, with therefore a lower likelihood to have abortions. On the other hand, the better educated women seem less likely to use the most effective contraception method, sterilization, therefore raising the risks of contraception failure.

Education shows different effects on the pregnancy outcome between the parity zero and the higher parities. The abortion probability at parity zero before 1975 increases by about 8 percent as the woman's education moves up from primary level to a higher level. This effect disappears during the period between 1975 and 1984, the effect returns after 1984 but the sign turns negative. The education higher than primary level reduces the abortion probability by 12 to 18 percent. Since the aborted first pregnancy is usually a premarital pregnancy, this reversal of the education effect indicates the higher likelihood of premarital pregnancy among the women with primary or less education than those with a higher education among recent cohorts.

For the pregnancies at parities beyond zero, woman's education has significant positive effects on the probability of abortion. The effect is particularly large among the early cohorts. Among the pregnancies conceived before 1975, compared to primary or lower educated women the abortion rate is higher by 3 percent for high school graduates and by 25 percent for college graduates. Similar differences are also noticed at higher parities. However, the difference has gradually reduced over time at all parities.

The higher abortion rate among the better educated women indicates that the better educated women desire to stop their childbearing earlier or they desire longer birth intervals compared to the less educated women, but they do not necessarily use more effective contraceptive methods. In fact, the proportion who had a surgical sterilization operation, is much higher among the less educated women. For example, among the women with two children, about 63 percent of those with less than high school education were surgically sterilized while only 47

percent of the college educated women were. Better educated women instead rely more often on less effective methods, such as condom or rhythm method, resulting in higher risks of unwanted pregnancies. Although the question why better educated women in Korea use less effective methods is an interesting issue, it is out of the scope of this paper.

Place of Residence

The place of residence has been shown consistently across the world to be an important factor which affects fertility. It is often argued that the greater knowledge and easier access to modern birth control methods in urban areas lead to a higher abortion rate in urban areas. This variable as used in this study, however, needs a note of caution since it records the residence only at the time of survey. Although a more detailed residence history is desirable, the current residence is used due to the lack of data.

In general, the residence in metropolitan areas is associated with higher chances of abortion. The difference by residence is minimal at the parities of zero and one. At higher parities the difference becomes more noticeable although the difference is decreasing over time. For example, among the pregnancies conceived prior to 1975 at parity tow, the abortion rate was 20 percent higher in the metropolitan areas than nonmetro areas, but the difference is reduced to 11 percent among those conceived since 1985. A similar trend is detected at the third or higher parities.

Contraception Failure and Abortion

In general, the greater the desire to avoid pregnancy, the more women will use more effective contraceptive methods. Therefore, if one becomes pregnant, the pregnancy is more likely to be aborted among the women who were using supposedly more effective contraceptive methods before the pregnancy. Table 3 presents the live birth percentages among the pregnancies following each contraceptive method used. While the pregnancies after male or female sterilization are very rare, almost 90 percent of them were terminated by abortions. About 15

percent of the pregnancies conceived while using IUD or pill were carried to term, and it was about 18 percent among those who were using condom, Jelly or rhythm methods, On the other hand, among the pregnancies occurring while using no method, 68 percent were carried to term. The probability of a pregnancy to end in a live birth has been decreasing over time, and the decrease has been particularly large among those conceived while using IUD or pill. Among the 185 pregnancies conceived since 1985 while using IUD or pill, only 15(or 8%) were carried to term.

Table 3. Percentage (%) of Live Birth Pregnancy by Contraceptive Method Used Before Pregnancy

Method	A 11]	By Years of Education				By Year of Pregnancy		
Method	All	~8	9~11	12~13	14+	~1979	'80~'84	1985~	
No use	68	72	65	66	69	74	62	61	
IUD	19	22	14	20	21	27	21	7	
Pill	13	14	14	11	5	18	11	9	
Condom	21	28	20	19	19	24	19	20	
Jelly	13	9	14	14	_	_	_	12	
Rhythm	17	13	16	19	18	24	15	15	
Coitus Interrupt	24	17	_	23	-	21	_	_	
Condom & Jelly	25	_	_	-	_	_		_	
Condom & Rhythm	16	3	13	14	29	13	17	16	
Rhythm & Interrupt	11	_	7	7	-	_			

Note: Cells with less than 20 pregnancies are not reported.

Since more than 80 percent of pregnancies occurring while using any type of contraception are terminated, it is apparent that more careful use of contraception could reduce considerably the number of abortions in the Korean society.

Yet, in absolute term, much larger number of abortions are practiced among the pregnancies conceived while using no method, since about 90 percent of the total pregnancies are to no-users. To reduce the number of abortions it should

also on promoting effective use of contraception among the no-users who would have abortions when pregnant.

Selective Abortion, Fertility and Sex Ratio

The modern technology which gives parents the ability to determine the fetal gender has added a new dimension to the problem of fertility choice (Bennett and Mason 1983; Bloom and Grenier 1983; Kobrin and Potter Jr. 1983; Ahn 1991). For parents who prefer to have children of one sex rather than the other, this ability may lead to selective abortions, Frequent abortions performed selectively on a certain sex

result in a change in the sex ratio.

One notable situation exists in Korea. According to the report of 1992 Korean Vital Statistics (National Statistical Bureau, 1991), during the 1980s the male-female birth ratio in Korea has increased dramatically. In 1990 there were 117 male births for each 100 female births. This biased sex ratio at birth is apparently due to the gender-selective abortions and can be verified by the comparisons of sex ratio parity⁵⁾ For example, in 1990, among the children born of the third or higher birth orders, the male-female ratio exceeds two when it is normally less than 1.1(that is, 1.1 males to 1.0 female).

Table 4. Male-Female Birth Ratios by Birth Order in Korea

— Year	Total	Birth order						
1 ear		1	2	3	4	5+		
1990	1.17(626,861)	1.09(334,442)	1.17(246,606)	1.96(36,934)	2.34(6,471)	2.15(2,408)		
1989	1.13(613,240)	1.05(328,044)	1.14(241,249)	1.90(34,794)	2.17(6,551)	2.14(2,605)		
1988	1.14(620,316)	1.08(335,449)	1.14(238,279)	1.70(35,880)	1.99(7,402)	1.87(3,306)		
1987	1.09(613,556)	1.05(333,111)	1.09(230,097)	1.37(37,523)	1.50(8,474)	1.63(4,351)		
1986	1.13(613,703)	1.08(325,517)	1.12(229,794)	1.43(42,294)	1.61(10,406)	1.61(5,685)		
1985	1.10(636,621)	1.06(328,212)	1.08(241,201)	1.33(47,228)	1.57(12,778)	1.54(7,191)		
1984	1.09(660,234)	1.07(326,720)	1.08(250,939)	1.19(55,585)	1.32(17,188)	1.34(9,793)		
1983	1.08(757,930)	1.06(339,091)	1.06(291,298)	1.13(84,508)	1.21(27,225)	1.28(15,801)		
1982	1.07(840,279)	1.06(351,335)	1.06(299,408)	1.10(124,383)	1.13(40,708)	1.18(24,442)		
1981	1.07(864,958)	1.06(354,298)	1.07(290,228)	1.07(142,096)	1.13(47,913)	1.15(30,347)		
1980	1.04(888,355)	1.06(351,213)	1.04(278,814)	1.03(149,015)	1.02(59,370)	0.96(49,859)		

Note: Number of births are in parentheses.

Data: Annual report on the Vital Statistics (1992), National Bureau of Statistics.

⁵⁾ Infanticide or discriminatory child care which leads to differential mortality rate by sex could also cause the biased sex ratio. In the context of Korea these cases are believed to be trivial compared to the case of selective abortion. See Hull(1990) and Johansson and Nygren(1991) for the Chinese cases.

As shown in Table 4, the selective abortions seem to occur mostly at high birth orders. In general, parents seem to leave the sex of the first two children to chance. Only those who were "unlucky" in their first two births seem to be practicing selective abortion. This might be due to the high costs of screening test(or abortion) relative to income, or only a small gain from the selective abortion for the first couple of pregnancies. 6) After the first two children, the women who are most likely to become pregnant are those with only girls. Many of the pregnant women after two daughters are likely to have a test to ascertain the gender and many women who conceive a female child have abortions. To compute the approximate number of gender-selective abortions, suppose that among the pregnancies which are tested for gender, only female fetuses are aborted. If the chance of any pregnancy to be a girl is 0.485(or 106 boys for 100 girls), then in 1989 the number of gender-selective abortions performed because of their feminine gender was about 19,0007. About half of the pregnancies of female children after two living children are terminated because of their gender.

The sex ratio at birth is already at an unprecedently high level in Korea. Unless the strong policy measures to control the selective

abortion are followed, it is likely to go up even higher as more and more gender-selective abortions are practiced at the first and second parities where more than 90 percent of pregnancies occur.

IV. Summary and Conclusion

The major demographic transition in Korea took place in the midst of rapid socioeconomic developments betweem 1960 and 1990. Many studies suggest that among abortion, and rising age at marriage have shared substantial responsibility for fertility decline in Korea during the last three decades. Despite the fact that the nation's contraceptive practice rate has reached 79.4 percent in 1991, therefore, to examine the determinants of induced abortion and their changes over time by analyzing the determinants of pregnancy outcomes during the corresponding period, in an effort to suggest future policy directions for reducing the number of induced abortions.

By parity it shows a much higher abortion rate for a higher parity at all time, since most women in Korea accept induced abortion to terminate fertility. From the first parity, the sex composition of previous children stands out as

⁶⁾ For example, if parents want at least one child of each sex, they would want to have the first child regardless of sex.

⁷⁾ The number of gender-selective abortions is computed by $SA = \frac{r-n}{n(1+r)}T$, where SA is the number of gender-selective abortions, r and n are respectively the actual and the natural sex ratio, and T is the total number of births.

the most important factor in deciding the pregnancy outcome at all time. The probability of a pregnancy ending in an abortion increases substantially when parents already had a son. The decline of the desired family size and the sustained strong son preferenc has made the sex of children a more important factor in the determination of the pregnancy outcome. Women's education has consistently positive effects on the probability of a pregnancy ending by an abortion, but the effects shows a steady decline over time. The premarital pregnancy and urban residence also increase the abortion probability. This study has also found that the effect of son preference has been to increase the sex ratio of population in the Korean society. This sex ratio imbalance of the third and higher parities has been partially attributable to the selective abortions.

In order to improve problems associated with induced abortion, the following areas are suggested for careful consideration in setting out future policy directions of the induced abortion.

First, the current family planning management system with its emphasis on sterilization for fertility termination should be reformulate, so that a wide choice of reversible methods which are sage, convenient and easily affordable can be made available primarily for birth spacing. Though the total abortion rate fell after its peak in 1979, the rate keeps on increasing for married women aged 20 to 24 and the rate for those aged 25 to 29 years still remains high. the recent situation where the younger age group(20~29) was practicing less

contraception but using more induced abortions, needs serious attention in the immediate future. Thus, the new contraceptive acceptors in their 20s or with low parity must be recruited for birth spacing and offered more choice of the reversible methods.

Second, the scope of the family planning program target population should be expanded to cover the unmarried population in order to prevent their premarital pregnancies. A recent survey has reveled that as many as 28 percent of the induced abortons in 1979 involved unmarried females, and the percentage increased to 33 percent in 1990. That is, the age at first marriage increases, a greater number of the unmarried are likely to be exposed to a variety of sexual stimulations for a longer period of time, resulting in a greater number of induced abortions.

Third, the present study has found that son preference has become a very important factor in the increase of the sex ratio of population through the selective abortions, of the sex ratio of population through the selective abortions, as well as in the determinants of Korean fertility. Thus the existing institutional and social support policies should be strengthened to weaken son preference value, and to prevent selective abortions for a balanced sex ratio.

In order to overcome problems associated with induced abortion and family planning as well as the many challenges of below replacement fertility, Korea should shift its policy directions from the current quantitative fertility-reduction oriented policies to qualitative health

and welfare aspects. The importance of current family planning should not be underrated just because of the low fertility rate.

REFERENCES

- Ahn, N. 1991, "Measuring the value of children using a life cycle model of fertility", Discussion Paper No. 640, Economic Growth Center, Yale University.
- Arnold, F. 1985, "Measuring the effect of sex preference on fertility: the case of Korea", Demography 22: 280-.
- Bennett, N. E. and A. Mason. 1983. "Decision Making and Sex Selection with Biased Technologies." pp. 101–112 in Sex Selection, ed. by N. G. 113–128 in Sex Selection, ed. by N. G. Bennett. New York: Academic Press.
- Bloom, D. E. and G. Grenier. 1983. "The Economics of Sex Preference and Sex Selection" pp. 113-128 in Sex Selection, ed. by N. G. Bennett. New York: Academic Press.
- Bumpass, L., R. Rindfuss, and J. palmore, 1986, "Determinants of Korean birth intervals: the confrontation of theory and data", *Population Studies* 40: 403–423.
- Cochrane, S. H. 1983, "Effects of education and urbanization on fertility", in Bulatao R. A. and R. D. Lee(eds), *Determinants of Fertili*-

- ty in Developing Countries, Vol. II: 587-626, New York, Academic press.
- Hull, T. H. 1990. "Recent Trends in Sex Ratios at Birth in China." Population and Development Review 16(1): 63-83.
- Jain, A. K. 1981, "The effect of female education on fertility: A simple explanation", Demography 18: 577-96.
- Johansson, S. and O. Nygren. 1991. "The Missing Girls of China: New Demographic Account." Population and Development Review 17(1): 35-51.
- Kim, Doo-Sub, 1987, Socioeconmic Status, Inequality and Fertility, The Population and Development Studies Center, Seoul National University.
- Kobrin, F. E. and R. G. Potter, Jr. 1983. "Sex Selection through Amniocentesis and Selective Abortion." pp. 47–71 in Sex Selection ed. by N. G. Bennett. New York: Academic Press.
- Park, C. B., 1983, "Preference for sons, family size, and ratio: an empirical study of Korea", *Demography* 20: 333-352.

《국문초록》

人工姙娠中絶에 미치는 要因의 變化에 관한 分析

趙南勳*・安南基**

우리나라는 지난 30년에 걸친 家族計劃事業의 성공적인 추진으로 出產力 감소와 避姙實踐의 보편화라는 사업의 기본 목표를 달성했음에도 불구하고 아직도 우리나라의 인공임신증절은 매우 높은 수준을 유지하고 있다. 이는 원치 않는 姙娠을 사전에 예방할 수 있도록 기존사업의 질적 개선방안이 강구되어야 할 것이다. 따라서 본 연구는 1991년도 전국 출산력조사자료를 이용하여 임신결과에 관한 시계열적인 분석을 통하여 인공임신중절에 미치는 제반 要因의 변동추이를 규명하는데 목적을 두었다.

이 분석결과에 의하면 인공임신중절은 多子 女婦人層에서 높으며, 이는 인공유산이나 가족 계획이 모두 희망하는 수의 자녀를 두고난 후 斷產을 목적으로 수용되어 왔음을 의미한다고 하겠다. 출산 순위별로 보면 이전에 출생한 자 녀의 性構成은 임신결과를 결정하는 가장 중요 한 변수로 浮刻되고 있다. 즉 임신이 인공임신 중절로 歸着되는 확률은 부모가 이미 아들을 두고 있는 경우에 일관성 있게 증가되고 있다. 지난 30년에 걸친 우리나라의 출산력 감소는 남아선호관의 緩和速度보다 더욱 급진적으로 발전되어 남아선호도의 強度는 더욱 높아지게 되었고 따라서 자녀의 性은 임신결과를 결정하 는 주요변수로서뿐 아니라 아들을 갖기 위한 선택적인 인공임신중절로 인한 性比의 불균형을 초래하는 要因으로 작용하고 있음이 본 연구를 통하여 규명되었다. 한편 부인의 교육은 인공임신중절에 正的인 효과를 나타내고 있으나 시간이 경과됨에 따라 이 효과는 감소하는 경향을 보이고 있으며, 婚前姙娠이나 都市地域의 경우 임신이 인공임신중절로 처리되는 확률은 증가되고 있다.

우리나라는 이미 人口代置水準 이하의 낮은 출산율과 높은 피임실천율을 이룩했기 때문에 향후의 가족계획사업은 과거와 같이 출산억제 를 위한 量的인 人口學的 접근에서 性比의 균 형유지와 터울조절 목적의 피임실천 유도와 피 임의 효율적 실천으로 인공임신중절의 예방에 기여할 수 있도록 保健學的 접근으로 정책방향 을 전환해야 할 것이고, 동시에 가족계획은 모 자보건사업과 완전 통합운영하여 人口資質의 향상에 기여토록 해야할 것이다. 특히 성비의 불균형을 초래하는 선택적 인공임신 중절을 예 방하기 위한 제도적인 장치의 강화와 더부러 남아선호관을 불식시키기 위한 사회지원 시책 은 계속 강화되어야 한다. 따라서 인구목표가 달성되었다 할지라도 가족 계획의 必要性이나 當爲性이 評價切下 되어서는 안될 것이다.

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