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Antenatal Care and Contraceptive Behavior in India: Some Evidence from the National Family Health Survey

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Introduction

Contraception as a behavioral phenomenon has been the focus of many population researches, during the last half a century. In fact, explaining contraceptive behavior is a complex theoretical effort. Learning, motivation, intention formation and experimentation - all in a social-cultural context contribute to the adaptation of contraceptive behavior. For its link with culture; religion; one's perception of self; and one's role in family, the neighborhood and the community, this adaptation is of major significance. Contraceptive behavior has been explained amply in terms of socio-economic characteristics at the individual as well as social level. But the propagation of contraception being a major responsibility of Governments in developing countries, the strength of the program has always been viewed as an important determinant of contraceptive behavior in a population A. In fact, it has been argued that a good quality supply of the services can engineer its own demand for contraception B. C. One important component reflecting the strength of a birth control program is the extent of its integration with other welfare services.

In India, during the first two decades of the family planning program, the program was carried out independently through family planning clinics, initially as a clinic-based program followed by the extension approach D. Integration of health, family planing and maternal and child health services was aimed at during the Fourth Five Year Plan (1969-74)* It was thought that instead of setting up an independent infrastructure for family planning services, it would be wiser to use the already existing infrastructure for providing health services. Another argument in favor of such an, integration was that it would lend credibility to the family planning program. The health personnel providing the welfare services would have better access and rapport with the community and hence would be in an advantageous position to propagate contraception.

Almost thirty years have elapsed since the integration but we still do not have enough evidence to understand whether this well-intentioned strategy of integrating family planning services with MCH services has had beneficial

implications in terms of synergising the two programs. A number of experimental studies have been conducted to examine the effectiveness of the integration of health and family planning services (for example, see Gwatkin et al. E.). In India, studies such as the one conducted in Narangwal in Punjab F. and the other in Jamkhed in Maharashtra, G. H. have shown that such integration can lead to a considerable reduction in the levels of fertility and mortality. However, such studies are rarely flawless; whether randomization is used in the selection of the treatment and the control areas and the extent to which matching is employed while making the comparison (between the outputs of treatment and control areas), it can have considerable influence on the results of the evaluation. Doubts have also been raised about the replicability of such studies.

Survey-based researches have also been attempted to understand the linkages between health and family planning programs. This is generally attempted by comparing fertility and contraceptive practice between women who utilize health services and those who do not. The integration of family planning with health services, especially maternal and child hearth services, was found to have a positive influence on the family planning program in India I. N.

Arguments have been put forth to support the benefits of integrated programs for health and family planning. Such arguments are mainly based on the presumption that attitude towards and practice of family planning would improve if family planning were integrated with health services. Such a hypothesis originates from the theoretical supposition that MCH can bring about a reduction in infant and child mortality which will lead to increased contraceptive practice because of attitude changes associated with the expectation that more children would survive. It has also been suggested that family planning and maternal health care strengthen one another in reducing maternal morbidity and mortality and hence should co-exist O.

There are, however, caveats in the integration of family planning with health services. Family planning should be a people's program. Integration means its being dominated by health personnel. Health professionals may have the credibility to run the program but may lack the ability to make it a people's program. Again, the integration might lead to a narrowing down of the focus of family planning. It might get geared to only those requiring MCH services and neglect those not in need of such services. It is true that any undue emphasis on one program will be detrimental to the other. It has been pointed out, in the context of the Indian program, that the integration, if anything, has resulted in the deterioration of MCH services due to the overemphasis on achieving family planning targets, particularly sterilization targets P. Q.

It would be of interest therefore to understand whether and to what extent the integration of family planning services with MCH might have led to better contraceptive behavior in the country. Provision of MCH services is expected to serve as an initial step in furthering the contact beneficiaries and program personnel, which might facilitate the extent of motivation towards the use of contraception. Understanding this aspect assumes greater significance in view of the fact that there has been a gradual but sustained emphasis on reproductive health care and the Child Survival and Safe Motherhood (CSSM) program which was introduced in the country since 1992. If it were true that the integration did promote family planning without hampering the MCH program, it would be all the more prudent to make the integration stronger and more fruitful. Otherwise, there is a possibility that such an, integration could actually result in lowering the potentiality of both these crucial programs. The recently conducted National Family Health Survey provides an opportunity to examine the possible linkages between the two programs.

Data and Objectives

The information collected in the nationwide National Family Health Survey, 1992-93 (NFHS) R. have been utilized in this paper. The survey interviewed a total of 89,777 ever-married women in the age group of 1349 from 25 states covering more than 99 per cent of India's population. The data collection was carried out in three phases during April 1992 and September 1993. The survey was based on a systematic, multistage, stratified sample design. The major topics covered in the NFHS include fertility, marriage pattern, family size preferences, the level of unwanted fertility, knowledge and practice of family planning, the potential demand for contraception, utilization of antenatal services, breast-feeding and food supplementation services, child health and nutrition, vaccination, and infant and child mortality. In this paper, we restrict our analysis to the 14 major states, which comprise 94 per cent of India's population according to the 1991 census, and 76 per cent of the interviewed women in the survey.

An effort has been made in this paper to examine the possible linkage between the utilization of antenatal care (ANC) with contraceptive behavior. In other words, an attempt has been made to compare the contraceptive behavior between two groups of women, one of which received ANC services and the other did not. A health worker, the auxiliary nurse midwife (ANM) is supposed to identify pregnant women in her area and provide ANC services to them at home. A pregnant woman can also receive ANC either by visiting the health center or any private health professional. The purpose here is not to evaluate the program as such but to emphasize the role that ANC can play in bringing about positive contraceptive behavior. Therefore, no distinction has been made between women who received ANC from the official program or from a private

facility, because a woman receiving ANC from the latter is also likely to get an opportunity to know about family planning.

Contraceptive behavior is characterized in terms of four parameters namely, knowledge of contraception, current contraceptive use, future intention to use contraception and desire for additional children. Knowledge of contraception is defined as complete knowledge (awareness) of all the four official methods of family planning (sterilization, the IUD, oral pill and condom). There is no single method that is suitable for all and it is therefore pertinent to make the choice as wide as possible. In fact, knowledge is considered as a basic parameter of contraceptive behavior. It has been observed that couples who are aware of all the four methods are much more likely to contracept than those who are aware of fewer methods S.

Antenatal care is expected to facilitate a greater degree of closeness between the two programs, and yield wider awareness about the various methods of family planning. A woman's desire for additional children can reflect her future childbearing intentions and therefore can be another parameter of contraceptive behavior suggesting a family-limiting tendency among couples. It is true that the agreement between such an intention and actual family planning practice may not be perfect. Such a linkage will depend on the conviction with which a woman responds to her desire and/or on the attitude of her husband and other members of the family and the community, as also on the accessibility of family planing services. This, as an indicator of contraceptive behavior, is measured separately for two groups of women with parity less than three and three and above.

In addition to these two parameters, current contraceptive use as well as future intention to use contraceptives also indicates the other dimensions of contraceptive behavior. Current contraceptive use is assessed in terms of overall contraceptive prevalence. Further, the information on future intention to use a contraceptive is also analyzed between ANC acceptors and non-acceptors of ANC for validating the hypothetical link between acceptance of ANC and future intention to practice contraception. In fact, while examining the association between acceptance of ANC and contraceptive behavior, the level of education, residential background and children ever born to women have-been controlled to focus better on the differential contraceptive behavior between acceptors and non-acceptors of ANC.

Results and Discussion

As a prelude, Table 1 presents a few indicators to understand the extent of knowledge and prevalence of contraception along with the spread of ANC services in the 14 states.

Table 1: Few indicators of contraceptive knowledge and use and maternal care in India by State, 1992-93

States	Percent receiving ANC	Percent knowing		Contraceptive Prevalence Rate (CPR)	Percent contribution of sterilization to CPR
		Any FP method	All four official FP methods		
Andhra Pradesh	86.3	96.7	31.6	47.0	95
Assam	49.3	97.5	45.2	42.8	34
Bihar	36.8	94.9	35.0	23.1	81
Gujarat	75.7	96.6	52.1	49.3	83
Karnataka	83.5	98.9	44.8	49.1	87
Kerala	97.3	99.7	74.1	63.3	76
Madhya Pradesh	52.1	88.1	32.0	36.5	86
Maharashtra	82.7	97.8	48.2	53.7	86
Orissa	61.6	92.9	26.4	36.3	87
Punjab	87.9	99.8	73.3	58.7	58
Rajasthan	31.2	87.5	29.3	31.8	87
Tamil Nadu	94.2	99.4	51.6	49.8	79
Uttar Pradesh	44.7	95.7	44.1	19.8	66
West Bengal	75.3	99.1	51.6	57.4	53

Except in Rajasthan, Bihar, Uttar Pradesh and Assam, the majority of the mothers in all the other states had received ANC. Although knowledge of contraceptives was universal, it was so only in terms of knowing any one method of family planning. When knowledge of all the four official methods was considered, the level of knowledge reduced drastically. In Orissa, only one-fourth of the women (married women of age 13-49) knew of all the four methods. Except in Kerala and Punjab, where about three-fourths of the women had knowledge of all the four methods, the spread of knowledge was dismally low, reflecting the extent of method choice available in the program. The focus of the program on sterilization also becomes obvious from the contribution that this method makes to overall contraceptive prevalence. Except in Assam, West Bengal and Punjab (in the former two states, the use of traditional methods is substantially high), the contribution of sterilization to overall contraceptive prevalence was more than 60

per cent in all the other states. Some studies carried out by researchers in Kerala T. and Gujarat U. during the 1990s have also drawn similar conclusions.

Table 1 also indicates that the higher percentage of women receiving ANC in a state, the greater is the likelihood of its contraceptive prevalence rate being higher. The correlation coefficient between these two indicators is 0.87 (which is significant at 1 per cent level). However, it is not true that the higher the ANC coverage in a state, the better will be the spread of family planning knowledge.

Antenatal Care

Before initiating a discussion on antenatal care and its linkage with the contraceptive behavioral components, it would be relevant to look into the provision pattern of antenatal care. This has been examined with respect to certain parameters such as the percentage of women given ANC at home visits, the frequency and timing of the visits, and the percentage of women who obtained ANC without being visited at home by the ANM/health worker (HW). The results are presented in Table 2.

Table 2: Percent distribution of women by maternal care indicators

States	Percent visited at home by worker (HW)	Percent not paid home visit but went herself for ANC	Percent paid home visit by HW during 1st trimester	Percent paid at least three home visits by HW
Andhra Pradesh	41.2	47.1	9.6	28.3
Assam	6.8	45.4	1.4	2.0
Bihar	11.4	26.6	2.7	4.7
Gujarat	35.5	41.8	13.6	25.7
Karnataka	42.2	43.4	18.4	30.2
Kerala	27.7	70.4	12.5	16.4
Madhya Pradesh	20.2	33.5	5.3	8.0
Maharashtra	24.1	60.3	7.2	14.9
Orissa	32.3	31.8	8.5	14.0
Punjab	7.3	80.7	2.2	3.5
Rajasthan	11.6	21.2	2.8	4.5
Tamil Nadu	40.5	54.3	11.4	29.8
Uttar Pradesh	17.2	30.1	3.4	6.5
West Bengal	14.4	62.6	3.2	4.9

* All percentages are based only on the last birth.

HW = Health Worker.

Table 2 indicates that although the reach of the program in terms of providing ANC services at home was quite unsatisfactory, there is a definite concern among women to receive ANC. In most states, the percentage of women who took the initiative (and had not received a home visit from the health worker) to receive ANC was much higher than the percentage of women who were paid a home visit. For instance, a large proportion of women ranging from 21 per cent in Rajasthan to 81 per cent in Punjab seemed to have utilized ANC services on their own. (Table 2).

In Kerala, almost all the mothers had received ANC (98 per cent), though in terms of the reach of the program (that is, women who were paid a home visit), three other South Indian states (Karnataka, Andhra Pradesh and Tamil Nadu) fared much better. The quality of ANC is reflected by the timing and frequency of home visits. Most of the women reported that they had not been paid any visit for ANC during the first trimester of pregnancy. Park and Park V. have recommended a minimum of four antenatal visits during pregnancy. The program is way behind attaining this norm. In a relative sense, it appears that the program has worked better in the three South Indian states mentioned above.

Table 3: Percent distribution of women by reason for not availing of antenatal care

States	Lack of knowledge	Poor quality service	Not necessary/not customary	Fin. Cost/ No time/ Inconvenient	Home visit paid by HW	Other
Andhra Pradesh	4.8	0.2	40.1	16.9	37.1	0.8
Assam	15.2	6.6	65.2	7.9	1.4	3.6
Bihar	15.5	0.9	62.6	11.6	9.2	0.2
Gujarat	3.5	0.3	59.9	3.4	31.1	1.7
Karnataka	3.8	0.8	64.5	10.4	19.5	1.0
Kerala	0.0	0.0	52.8	8.3	30.6	8.3
Madhya Pradesh	7.2	0.5	65.6	15.4	10.9	0.4
Maharashtra	4.5	1.8	51.6	5.9	33.5	2.7
Orissa	8.2	0.5	60.3	15.5	14.0	1.5
Punjab	4.6	3.3	71.1	9.2	11.2	0.7
Rajasthan	6.8	3.0	71.9	14.9	2.7	0.7
Tamil Nadu	3.4	0.0	27.6	17.3	49.7	2.0
Uttar Pradesh	12.2	0.5	58.5	13.8	14.4	0.7
West Bengal	5.7	1.4	69.3	15.3	6.0	2.3

* The figures are based only on the last births of the women.

Table 3 presents the percent distribution of women by the reason for not availing of ANC services. The findings show that the majority of the mothers who did not receive ANC were not convinced about the importance or need for the services. This indicates that the women had not been adequately informed or educated about the importance of pregnancy care. In the two largest states of Bihar and Uttar Pradesh where the majority of the women had not received any ANC services, the most cited reason was the lack of concern and absence of knowledge about ANC.

Knowledge of Family Planning And Antenatal Care

Knowledge of family planning is expected to be better among the literate as compared to the illiterate, and hence the association between the acceptance of ANC and knowledge of contraception was examined with respect to literacy. The findings are presented in Table 4.

Table 4: Knowledge of family planning by use of antenatal care

State	Percent having knowledge of family planning					
	Illiterate		Literate		Total	
	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC
Andhra Pradesh	18.6 (930)*	9.4 (436)	63.5 (436)	61.9 (21)	32.9 (1366)**	14.9 (201)
Assam	36.9 (385)**	25.7 (614)	73.5 (442)**	49.4 (156)	56.5 (827)**	30.5 (770)
Bihar	32.6 (656)**	21.3 (1662)	77.2 (413)**	62.6 (163)	49.9 (1068)**	25.0 (1825)
Gujarat	36.2 (538)**	18.5 (298)	77.9 (596)**	47.8 (46)	58.1 (1134)**	22.4 (344)
Karnataka	30.2 (934)**	11.5 (253)	71.9 (697)	62.5 (32)	48.0 (1631)**	17.2 (285)
Kerala	46.4 (138)	41.2 (17)	79.1 (1350)	46.2 (13)	76.1 (1488)**	43.3 (30)
Madhya Pradesh	26.1 (1018)**	15.8 (1232)	73.8 (526)**	37.9 (124)	42.4(1544)**	17.8 (1356)
Maharashtra	31.9 (615)**	17.3 (214)	73.6 (828)**	47.5 (59)	55.8 (1443)**	23.8 (273)
Orissa	17.7 (667) **	10.2 (519)	54.5 (484)	46.0 (137)	33.2 (1151)**	17.7 (656)
Punjab	60.9 (440)*	50.0 (12.4)	91.7 (555)	76.9 (13)	78.1 (995)**	52.6 (137)
Rajasthan	31.2 (509)**	17.7 (1511)	74.8 (266)	54.7 (139)	46.2 (775)**	20.8 (1650)
Tamil Nadu	31.5 (590)	20.7 (58)	73.7 (732)	60.0 (15)	54.8 (1322)**	28.8 (73)
Uttar Pradesh	43.7 (1933)*	30.8 (3122)	83.0 (1057)	(52.6 (363)	57.6 (2990)	33.03 (3485)
West Bengal	37.9 (614)**	29.1 (309)	74.0 (745)**	55.9 (102)	57.7 (1359)**	35.7 (412)

1. Knowledge has been assessed by per cent of women having knowledge of all the four official methods of family planning.

Note: * and ** denote the significant of likelihood ratio at 5% and 1% level of significant respectively and figures in parenthesis

Refer to number of cases.

As expected, a convincing differential with regard to knowledge of family planning was detected between users and nonusers of ANC among illiterate women in almost all the states except Kerala and Tamil Nadu. Thus, in Karnataka, illiterate women who had utilized ANC were almost three times as knowledgeable with respect to family planning as those who had not. In the two former states, the spread of knowledge cut across all women suggesting thereby that the program in these states strives to propagate family planning knowledge uniformly and no extra effort is made to disseminate it specially during ANC service delivery. The number of women not availing of ANC is also quite low in the two states. It may be noted that the level of knowledge was highest in Punjab, which also had the maximum prevalence of modern spacing method use.

Family planning knowledge differentials were also evident among ANC acceptors and non-acceptors in the literate group of women, though they were significant only in Assam, Bihar, Gujarat, Madhya Pradesh, Maharashtra and West Bengal. It is true that literate women have access to other more effective information channels such as the media, and contacts with health professionals need not be an important source of family planning knowledge for them. On the whole, Table 4 spells out a strict association between the acceptance of antenatal care and a wider knowledge of contraceptive methods in most of the states. Secondly, that this association is stronger among illiterate women provides an argument for the acceptance of ANC as an important channel of family planning knowledge transmission among this group of women. This, to some extent then, strengthens the proposition that provision of ANC can always operate as a primary channel to make the program reach a few more women.

To have a better idea about the specific effect of ANC on knowledge of contraceptives, it was thought worthwhile to control a few more variables such as literacy, place of residence, age and work status of the women. This was achieved with the help of logistic regression considering knowledge of family planning or its absence as the dependent variable. The results of the analysis are presented in Table 5*.

The results confirm the observation made above. For example in Karnataka, the odds of knowledge (ratio of number of women possessing family planning knowledge to those who do not) was 2.8 times higher among ANC acceptors as compared to those who did not avail of ANC services. Again, such an association was absent only in Kerala and Tamil Nadu.

Current Contraceptive Use and Antenatal Care

Efforts for increasing contraceptive prevalence have always been the focus of the program, which necessitates changing strategies in program implementation. In fact, a common and immediate reflection expected of any strategic change in the program is that of increasing, contraceptive prevalence. Hence, contraceptive prevalence is, expected to be influenced by the use of ANC services as it serves as an initial exposure of clients to health personnel. Thus, differentials in contraceptive prevalence would strengthen the argument that ANC users have a better contraceptive attitude in contrast to non-users of ANC. However, as contraceptive use is always a function of current age and attained parity of women, differentials in contraceptive prevalence with regard to the use of ANC were studied separately among women of parity equal to two or less, and those of parity three or more. The results are presented in Table 6*.

Table 6 shows that on the whole, irrespective of parity, ANC use resulted in a significant increase m current use of contraception in most of the states with the exception of Andhra Pradesh, Kerala, Tamil Nadu and West Bengal.

More noticeable differences in contraceptive prevalence were observed among lower parity women. For example, in Karnataka, Gujarat, Punjab, Bihar and Uttar Pradesh, among women of parity less than three, contraceptive prevalence among ANC acceptors was almost three times higher than among non-acceptors. Since the practice of temporary methods is relatively higher among younger couples, this suggests that better integration between the two programs could promote the use of temporary methods of family planning.

In Kerala and Tamil Nadu, utilization of ANC being widespread, there were very few non-acceptors of ANC, thereby resulting in a masking of the significance of this hypothesis. In Andhra Pradesh, the contraceptive use differentials between ANC, acceptors and non-acceptors were significant only in the case of higher parity women, the reason being the state's heavily sterilization oriented program; 95 per cent of the total users are sterilization acceptors (see Table 1). And, in West Bengal, though contraceptive prevalence was higher among ANC users as compared to non-users, it was statistically insignificant. In this context, it may be noted that the use of traditional methods is substantially high in the state and ANC use need not necessarily be a precedent to contraceptive motivation W.

Table 7: Logistic regression coefficients showing the effect of ANC on current use of contraception for major states of India*

States	Regression Coefficient (b)	S.E. of b	Exp. (b)

Andhra Pradesh	0.43	0.18	1.54
Assam	0.32	0.12	1.37
Bihar	0.38	0.13	1.46
Gujarat	0.47	0.16	1.60
Karnataka	0.73	0.16	1.60
Kerala	0.32	0.39	1.38
Madhya Pradesh	0.52	0.10	1.69
Maharashtra	0.31	0.15	1.36
Orissa	0.45	0.13	1.57
Punjab	0.26	0.21	1.29
Rajasthan	0.47	0.12	1.59
Tamil Nadu	0.04	0.26	1.04
Uttar Pradesh	0.39	0.09	1.47
West Bengal	-0.07	0.12	0.94

* The other independent variables in the model were education of women, place of residence,

parity, whether a woman experienced a child loss, work status of women.

Modeling the current rate of contraceptive use with ANC use controlling for other relevant correlates of contraceptive acceptance like place of residence, parity, literacy, experience of child loss, and work status of women, it was observed that the odds of contraception (the ratio of number of users to non-users) were twice as high among ANC acceptors as compared to non-acceptors of ANC in Karnataka (Table 7).

It was also observed that the odds ratio was not significantly greater than one, that is, the odds of contraception were similar for both acceptors and non-acceptors of ANC services only in three states, namely, West Bengal, Tamil Nadu and Kerala.

Future Intention to Use Contraceptives And Antenatal Care

Actual practice of family planning for a couple at a given point in time depends on a variety of factors. It is important for the program to identify the group, which may not be currently practicing family planning but nevertheless intends to use a method in future. This provides an idea of the likely demand for family planning. An attempt is made here, considering current non-acceptors of family planning, to compare the demand between acceptors and non-acceptors of ANC (Table 8).

As can be seen from Table 8, the difference in the demand between the two groups, that using ANC and that without ANC, is not as distinct as in the case of family planning knowledge or current contraceptive use. However, in eight of the fourteen states, the difference was found to be statistically significant. In fact, the difference was significant in states in which contraceptive prevalence was relatively low. The intention to use family planning in future was higher among ANC users as compared to non-users of ANC in the larger states Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan where the overall contraceptive prevalence rate ranged between 20-37 per cent as against 41 for the country as a whole.

Table 8: Future intention of family planning use by use of antenatal care

State	Percent currently using any method					
	Parity < 2		Parity 3 or more		Total	
	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC
Andhra Pradesh	35.8	35.8	20.0	16.4	28.8	22.9
Assam	34.6	39.0	40.5	38.4	37.8	39.0
Bihar	30.6	23.2**	30.6	29.3	30.6	27.1*
Gujarat	51.5	39.4**	32.4	20.3**	43.4	28.2**
Karnataka	38.8	32.4	20.5	14.7	30.5	21.4**
Kerala	30.1	66.7	15.2	8.3	26.0	20.0
Madhya Pradesh	33.3	26.4*	28.3	17.7**	30.8	21.3**
Maharashtra	31.4	30.0	24.2	17.1*	28.1	21.6*
Orissa	39.0	26.1**	34.4	26.5*	36.9	26.4**
Punjab	42.0	50.0	31.5	32.3	37.4	38.0
Rajasthan	26.9	20.7*	25.4	23.7	26.5	22.5*
Tamil Nadu	34.2	31.8	19.1	21.6	29.0	24.7
Uttar Pradesh	22.3	16.1**	27.2	22.0**	24.9	20.1*
West Bengal	34.8	35.8	32.2	30.9	33.7	32.3

Note: * and ** denote the significant of likelihood ratio at 5% and 1% level of significant respectively.

An analysis of the association between future intention to contracept and acceptance of ANC with the help of a logical regression model, showed the use of ANC to induce a significant positive intention to practice contraception in five states namely, Gujarat, Karnataka, Madhya Pradesh, Orissa and Uttar Pradesh. In Gujarat, the odds of intention to use a family planning method (the ratio of those who intend to use and those who do not) was 82 per cent higher among ANC users as compared to non-users.

The reason for not intending to use contraception in future has also been investigated in the NFHS. Apart from the desire for additional children or health reasons including actual or perceived sterility, the other reasons can be broadly classified as program related and non-program related reasons. The former include reasons for intended non-use which could be avoided through program communication like lack of knowledge, fear of side effects or perceived inaccessibility. Non program related reasons are more deep-rooted and include opposition to family planning either by self, husband or other members of the community or the feeling that it is against religion. Better exposure to information, education and communication activities would mean that the proportion of women citing program related reasons for their intended non-use would be small. It is therefore pertinent to compare the reasons for intended non-use among acceptors and non-acceptors of ANC services.

Table 9 reveals that compared to non-acceptors of ANC, those who utilized ANC services are much less likely to cite program related reasons for intended contraceptive non-use.

Table 9: Reasons for not intending to use family planning by use of antenatal care

State	Per cent not intending to use because of:			
	Lack of knowledge / fear of side effects		Opposition of self/ husband/others	
	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC
Andhra Pradesh	5.7 (972) *	14.8 (155)	2.2 (972)	3.2 (155)
Assam	4.5 (514)*	9.8 (470)	2.1 (514)*	4.7 (470)
Bihar	5.3 (741)**	15.2 (1331)	8.4 (741)*	12.6 (1331)
Gujarat	6.5 (642)**	18.2 (247)	5.6 (642)**	15.4 (247)
Karnataka	6.8 (1134)**	16.1 (224)	4.4 (1134)	8.9 (224)
Kerala	2.4 (1101)	4.2 (24)	6.3 (1101)	16.7 (24)
Madhya Pradesh	4.2 (1068)*	8.6 (1066)	2.2 (1068)	2.7 (1066)
Maharashtra	3.8 (1037)	6.1 (214)	4.7 (1037)	3.7 (214)
Orissa	7.2 (726)**	14.9 (493)	3.2 (726)	3.1 (483)
Punjab	0.8 (623)*	4.7 (85)	0.2 (623)	3.5 (85)
Rajasthan	5.8 (572)*	9.9 (1279)	4.5 (572)	5.0 (1279)
Tamil Nadu	4.9 (939)	7.3 (55)	2.3 (939)	5.5 (55)
Uttar Pradesh	6.2 (2244)*	10.1 (2785)	6.0 (2244)*	10.1 (12785)
West Bengal	1.1 (901)	1.8 (279)	3.1 (901)	6.5 (279)

Note: * and ** denote the significant of likelihood ratio at 5% and 1% level of significant respectively and figures in parenthesis refers to number of cases.

As the findings indicate, in Bihar, only five per cent of the ANC acceptors who did not intend to use family planning in future, gave program related reasons for nonuse. However, among non-acceptors of ANC, 15 per cent gave such reasons. In other words, women receiving ANC appear to be better informed about the side effects of contraceptive methods and ways to handle them. This was true of almost all the states except Kerala and Tamil Nadu where the difference in the proportion of ANC acceptors and non-acceptors who gave program related reasons for intended non-use of contraception was statistically insignificant (see Table 10).

Table 10: Logistic regression coefficients showing the effect of ANC on future intention to use FP for major states of India*

States	Regression Coefficient (b)	S.E. of b	Exp. (b)
Andhra Pradesh	0.13	0.18	1.14
Assam	0.05	0.11	1.05
Bihar	0.06	0.09	1.06
Gujarat	0.60	0.14	1.82
Karnataka	0.36	0.16	1.44
Kerala	-0.29	0.49	0.75
Madhya Pradesh	0.36	0.09	1.44
Maharashtra	0.24	0.17	1.28
Orissa	0.35	0.11	1.41
Punjab	0.03	0.20	1.03
Rajasthan	0.02	0.11	1.02
Tamil Nadu	-0.23	0.29	0.98
Uttar Pradesh	0.23	0.06	1.26
West Bengal	0.16	0.13	1.18

Women who availed of ANC were even less likely as compared to their counterparts who did avail of ANC to mention that they did not intend to use family planning because of opposition towards it. For example, in Gujarat, the difference in the proportion of women mentioning opposition as the reason for intended non-use of family planning was almost three times higher among non-acceptors of ANC as compared to acceptors of ANC.

Desire For Additional Children and Antenatal Care

Table 11 presents the relationship between women not desiring additional children and use of ANC services.

Table 11: Percent distribution of women (who gave birth during last four years) not desiring additional children by use of antenatal care

State	Percent currently using any method					
	Parity < 2		Parity 3 or more		Total	
	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC	Availed of ANC	Nor availed of ANC
Andhra Pradesh	14.0	16.4	23.5	23.9	18.2	21.4
Assam	25.4	22.0	63.7	64.6	46.6	51.6*
Bihar	13.4*	8.7	42.2	46.1	27.2	32.5
Gujarat	24.8**	12.0	32.0	32.7	27.9	24.1
Karnataka	20.8	14.8	28.4	34.5	24.3	27.0
Kerala	18.7	0.0	23.0	33.3	20.0	26.7
Madhya Pradesh	17.6**	8.0	36.8*	29.9	26.9	20.8**
Maharashtra	26.1**	11.2	31.5*	22.9	28.6	18.7**
Orissa	21.2*	15.2	43.4	45.6	31.8	32.5
Punjab	40.0**	15.9	55.9	58.1	46.9	44.5
Rajasthan	20.0**	10.4	40.0	43.4	29.2	30.1
Tamil Nadu	24.1	27.3	33.6	35.3	27.4	32.9
Uttar Pradesh	15.8	8.2**	49.9	47.2	34.2	34.4
West Bengal	29.8	30.1	46.5*	55.0	36.6	47.3**

Note: * and ** denote the significant of likelihood ratio at 5% and 1% level of significant respectively.

This has been analyzed with respect to parity. In general, it was observed that women did not receive ANC had a stronger desire to have additional children as compared to those who had not availed of the services. This was particularly true for lower parity women (parity less than three). Thus, in Gujarat, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Uttar Pradesh, ANC users were almost twice as likely to not want additional children as were non-users of ANC. Differentials in fertility preference between acceptors and non-acceptors of ANC were not perceptible to the same extent among higher parity women. This reinforces the finding that the use of ANC services can and, in fact, has facilitated better contraceptive behavior among younger women.

Conclusions

The above analysis provides a few definite signals for the family welfare program in India. There is little doubt that there is scope for gearing up the family planning program by using maternal care services as a catalyst. The utilization of ANC services helps generate a salutary effect on family planning. Not only was contraceptive prevalence observed to be higher among acceptors of ANC services as compared to non-acceptors but the former were also more inclined to practice contraception in the future and more likely to adhere to the small family norm as opposed to the latter. Interestingly, the impact of the integration was observed to be higher among younger women suggesting that strengthening of such integration can effectively promote the use of spacing methods.

However, utilization of ANC itself is distressingly low in many states, particularly the larger states like Uttar Pradesh, Bihar and Rajasthan. On the basis of NFHS data, it is difficult to identify whether the family planning program has, in any way, hampered the progress of ANC services. Nevertheless, it was quite evident that a state, which has a poor provision for ANC services; performed poorly in family planning too. For instance, the excessive program thrust on sterilization was very evident in Andhra Pradesh, but its ANC performance is also commendable, at least compared to most other states. A more or less similar situation exists in Tamil Nadu, Karnataka and Gujarat. It seems that overall management and work culture are more important, and that the excessive emphasis on family planning has really affected the MCH program. In fact, there is every need to strengthen the MCH programmed and integrate it with the family planning program. The reach of the welfare program needs to be spread more widely. In Uttar Pradesh where only 17 per cent of the women had been paid home visits for ANC and a meager 38 per cent had received more than three visits during pregnancy.

Once the program is made universal, it would have a salutary effect, and the question of effectiveness of its integration with family planning will lose importance, as is the case in Kerala and Tamil Nadu where fertility transition is almost complete X. Y. Perhaps, the key to the success of the recent fertility decline in Tamil Nadu as also in Andhra Pradesh lies in the strengthening of MCH services in these states.

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