

Knowledge of Emergency Contraception in the Southern States of India

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ABSTRACT Awareness and knowledge about emergency contraception (EC) has been less among Indians. Usually southern states of India have better performance of family planning than northern states. Hence Andhra Pradesh, Karnataka, Kerala and Tamil Nadu have been considered for the study. District Level Health Survey-3 (2005) was the data source. Several socio-economic demographic variables have been considered as determinants. The analysis revealed that Kerala state has highest awareness followed by Karnataka, Tamil Nadu and lastly Andhra Pradesh. Logistic regression has revealed that Muslims had less knowledge of emergency contraception while Christians had better knowledge than Hindus. Scheduled caste/tribe respondents also had less knowledge of emergency contraception. Years of schooling of respondents/spouse also emerged as important variables affecting knowledge on emergency contraception.

INTRODUCTION

Emergency contraception is slowly gathering importance for use as a last resort for spacing between births. However, temporary contraceptives and sterilizations are favoured. Unprotected unions among married and unmarried couples happen frequently. Hence there is need for emergency contraception.

Emergency contraception is safe and most effective post coital contraceptive method. Emergency contraception (EC) is the post coital method of pregnancy prevention. The effectiveness rates ranges from 72% to 87% (Rodrigues et al. 2001; Ellertson et al. 2003) when used within 120 h after unprotected sexual intercourse, with EC reduces the risk of pregnancy by 60-94%. It may operate by inhibiting ovulation or preventing the implantation of a fertilized egg, however, it does not interfere with an established pregnancy (Glassier 1997). The efficacy of protecting pregnancy was around 73 per cent (Trussel et al. 2014) in studies conducted in USA.

Several Studies have confirmed that knowledge about EC is very scanty among women attending induced abortion at Chandigarh hospitals (Mehra et al. 2006). Awareness about ECP was very low among female college students of Chandigarh, especially regarding correct timing of its use and its side effects (Bhatia et al. 2007). Despite 65% literacy among females, only 2%

were aware of EC. Hence, EC is an area which needs to be publicized (Nigam et al. 2010). In Chandigarh, of women seeking abortion, only 1% knew of EC (Mehra et al. 2006) and in a New Delhi study, none was aware of EC (Tripathi et al. 2003).

According to NFHS-III, knowledge about various temporary and permanent methods among men and women ranges from 45% to 97%, which corroborates with the findings of this study, with the knowledge ranging from 73% to 87% about various methods. According to NFHS III, the knowledge about EC is 20% in men and 11% in women. Uttar Pradesh men and men had very less knowledge (2 per cent) about EC (Nigam et al. 2010).

The southern states of India have a better record of accepting family planning than northern states. Hence the present study is an attempt to know the determinants of the knowledge about emergency contraception among married women belonging to Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.

Rationale

Married women/men, who are trying to postpone pregnancies, may face shortage of supply of temporary contraceptives or may be forced to have sex. In such cases knowledge and source of supply of emergency contraception may prove beneficial.

METHODOLOGY

The data has been taken from District Level Health Survey 3 (2005). It has two variables: one on knowledge and another on usage. Socio-economic and demographic variables influence knowledge and usage. Knowledge about emergency contraception has been taken as a dependant variable. Several independent variables have been chosen to see the determinants of use. Contingent tables and logistic regression has been used to know the influence of different social and economic variables.

RESULTS AND DISCUSSION

This section consists of knowledge about emergency contraception.

Knowledge and Ever Use of Emergency Contraception

Knowledge about emergency contraception was very high among Kerala (70.01 per cent) women followed by Tamil Nadu (50.08), Karnataka (47.05) and lowest (20.33) in Andhra Pradesh.

Very negligible proportion of women used emergency contraception in all the states. Probably the awareness has led to better use of other methods of contraception (Table 1).

Knowledge of emergency contraception in relation to different socio-economic characteristics in different states of South India:

Husbands' Education

Only one-third (28.12 per cent) of husbands who attended school had knowledge about emergency contraception while it was 35.83 per cent in Tamil Nadu, half in Karnataka (52.9 per cent), and 70.91 per cent in Kerala. The figure was better among husbands in Kerala (39.48 per cent); Karnataka (25.29 per cent) Tamil Nadu

(21.96 per cent) compared to Andhra Pradesh (8.81 per cent) who have not attended school.

A similar profile was observed in the case of respondents' education too (Tables 2 and 3).

Caste Groups

A similar situation was observed in the case of scheduled caste/tribe with Kerala has the highest awareness followed by Karnataka, Tamil Nadu and Andhra Pradesh. Similar was the situation with no caste/tribe and none of the above categories.

Religion

All religious groups had equal knowledge about emergency contraception in Andhra Pradesh. Christians and Muslims of Karnataka were more aware of emergency contraception than that of Hindus. Similar was the situation in Tamil Nadu too, whereas it was Christians, Hindus and Muslims in Kerala.

Wealth Index

Knowledge of emergency contraception has been on the increase from low wealth index to high wealth index in all the states (Tables 2 and 3).

Current Use of Contraception and Awareness about Emergency Contraception

A good proportion of respondents were unaware of emergency contraception in spite of using different contraceptives. This proportion was very high in Andhra Pradesh (79.2 per cent). On the other hand, Kerala (71.3 per cent) has highest awareness among users of different contraceptives followed by Karnataka (48.5 per cent), and Tamil Nadu (34.3 per cent). Temporary method users were more in Kerala than Karnataka, Tamil Nadu and Andhra Pradesh in that order. Users of temporary methods have good

Table 1: Knowledge and ever use of contraception in selected southern states of India

State	Knowledge of emergency contraception			Ever use of emergency contraception		
	Yes	No	Total	Yes	No	Total
Andhra Pradesh	4417 (20.33)	17313 (79.67)	21730 (100)	35 (0.79)	4379	4414
Karnataka	13111 (47.05)	14753 (52.95)	27864 (100)	196 (1.5)	12894	13090
Kerala	8653 (70.01)	3707 (29.99)	12360 (100)	46 (0.53)	8606	8652
Tamil Nadu	8905 (50.08)	17780 (49.92)	26685 (100)	43 (0.48)	8857	8900

Table 2: Knowledge about emergency contraception according to states and important socio-economic characteristics of Andhra Pradesh and Karnataka

	<i>Knowledge about emergency contraception</i>					
	<i>Andhra Pradesh</i>			<i>Karnataka</i>		
	<i>Yes</i>	<i>No</i>	<i>Total</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
<i>Husband Ever Attended School</i>						
Yes	3646 (28.12)	9318 (71.88)	12964 (100)	9980 (52.79)	8926 (47.21)	18906 (100)
No	761 (8.81)	7878 (91.19)	8639 (100)	3077 (35.29)	5642 (64.71)	8719 (100)
DK	10	116	126	50	176	226
Total	4417 (20.3)	17312 (79.7)	21729 (100)	13107	14744	27851 (100)
<i>Respondent Ever Attended School</i>						
Yes	3473 (34.05)	6728 (65.95)	10201 (100)	9117 (56.92)	6899 (43.08)	16016 (100)
No	944 (8.19)	10584 (91.81)	11528 (100)	3988 (33.7)	7845 (66.3)	11833 (100)
Total	4417 (20.33)	17312 (79.67)	21729 (100)	13105 (47.06)	14744 (52.94)	27849 (100)
<i>Caste Group</i>						
SC	806 (16.29)	4141 (83.71)	4947 (100)	2032 (40.52)	2983 (59.48)	5015 (100)
ST	203 (8.78)	2110 (91.22)	2313 (100)	983 (38.67)	1559 (61.33)	2542 (100)
No caste/tribe	2081 (20.55)	8045 (79.45)	10126 (100)	7508 (49.62)	7624 (50.38)	15132 (100)
None of the above	1316 (30.62)	2982 (69.38)	4298 (100)	2475 (50.37)	2439 (49.63)	4914 (100)
Total	4406 (20.32)	17278 (79.68)	21684 (100)	12998 (47.09)	14605 (52.91)	27603 (100)
<i>Religion</i>						
Hindu	3723 (20.02)	14873 (79.98)	18596 (100)	11269 (40.83)	13065 (59.17)	24334 (100)
Muslim	362 (24.34)	1125 (75.66)	1487 (100)	1506 (50.3)	1488 (49.7)	2994 (100)
Christian	324 (20.12)	1286 (79.88)	1610 (100)	205 (65.29)	109 (49.7)	314 (100)
Total	4409 (20.32)	17284 (79.68)	21693 (100)	12980 (46.96)	14662 (53.04)	27642 (100)
<i>Wealth Index</i>						
Poor	342 (7.42)	4268 (92.58)	4610 (100)	3259 (33.85)	6369 (66.15)	9628 (100)
Moderate	786 (12.15)	5684 (87.85)	6470 (100)	3122 (43.05)	4130 (56.95)	7252 (100)
Rich	3289 (30.88)	7361 (69.12)	10650 (100)	6672 (61.4)	4194 (38.6)	10866 (100)
Total	4417 (20.33)	17313 (79.67)	21730 (100)	13053 (47.04)	14693 (52.96)	27746 (100)

Table 3: Knowledge about emergency contraception according to states and important socio-economic characteristics of Kerala and Tamil Nadu

	<i>Knowledge about emergency contraception</i>					
	<i>Kerala</i>			<i>Tamil Nadu</i>		
	<i>Yes</i>	<i>No</i>	<i>Total</i>	<i>Yes</i>	<i>No</i>	<i>Total</i>
<i>Husband Ever Attended School</i>						
Yes	8489 (70.91)	3482 (29.09)	11971 (100)	7866 (35.83)	14088 (64.17)	21954 (100)
No	122 (39.48)	187 (60.52)	309 (100)	1017 (21.96)	3615 (78.04)	4632 (100)
DK	42 (52.5)	38 (47.5)	80 (100)	22 (22.22)	77 (77.78)	99 (100)
Total	8653 (70.01)	3707 (29.99)	12360 (100)	8905 (33.37)	17780 (66.63)	26685 (100)
<i>Respondent Ever Attended School</i>						
Yes	8491 (71.08)	3455 (28.92)	11946 (100)	7417 (37.79)	12208 (62.21)	19625 (100)
No	162 (39.13)	252 (60.87)	414 (100)	1488 (21.08)	5572 (78.92)	7060 (100)
Total	8653 (70.01)	3707 (29.99)	12360 (100)	8905 (33.37)	17780 (66.63)	26685 (100)
<i>Caste Group</i>						
SC	737 (62.25)	447 (37.75)	1184 (100)	1932 (28.61)	4822 (71.39)	6754 (100)
ST	134 (51.34)	127 (48.66)	261 (100)	98 (21.08)	367 (78.92)	465 (100)
No caste/tribe	5316 (68.14)	2486 (31.86)	7802 (100)	6723 (35.15)	12401 (64.85)	19124 (100)
None of the above	2449 (79.49)	632 (20.51)	3081 (100)	133 (45.08)	162 (54.92)	295 (100)
Total	8636 (70.05)	3692 (29.95)	12328 (100)	8886 (33.36)	17752 (66.64)	26638 (100)
<i>Religion</i>						
Hindu	4677 (70.85)	1924 (29.15)	6601 (100)	7739 (32.52)	16058 (67.48)	23797 (100)
Muslim	2339 (61.68)	1453 (38.32)	3792 (100)	558 (36.57)	968 (63.43)	1526 (100)
Christian	1633 (83.23)	329 (16.77)	1962 (100)	594 (44.97)	727 (55.03)	1321 (100)
Total	8649 (70)	3706 (30)	12355 (100)	8891 (33.37)	17753 (66.63)	26644 (100)
<i>Wealth Index</i>						
Poor	125 (43.25)	164 (56.75)	289 (100)	991 (22.74)	3367 (77.26)	4358 (100)
Moderate	661 (58.29)	473 (41.71)	1134 (100)	2081 (26.59)	5745 (73.41)	7826 (100)
Rich	7867 (71.93)	3070 (28.07)	10937 (100)	5833 (40.22)	8668 (59.78)	14501 (100)
Total	8653 (70.01)	3707 (29.99)	12360 (100)	8905 (33.37)	17780 (66.63)	26685 (100)

knowledge about emergency contraception in descending order: Kerala, followed by Karnataka, Tamil Nadu and Andhra Pradesh (Table 4).

Unmet Need for Family Planning

Unmet need for family is of two types: spacing and limiting. A small proportion of women (4.4 per cent) with unmet need for spacing methods of contraception were aware of EC in Andhra Pradesh (Table 5). However, women with no unmet need for spacing methods were more aware of EC than women with unmet need for spacing.

Similar was the situation with regard to limiting methods in all the states. However, couples belonging to Tamil Nadu seem to have better knowledge than couples of other South Indian states.

Logistic Regression

The emergency contraception is coded as 1: Yes and 2: No. Two models have been attempted. The variables included in the first model were: husbands and respondents years of schooling, respondents' age at marriage, total number of

Table 4: Knowledge about emergency contraception in relation to current use of different contraceptives

Method used	Knowledge about emergency contraception					
	Andhra Pradesh			Karnataka		
	Yes	No	Total	Yes	No	Total
Female sterilization	2486 (20.4)	9731 (79.6)	12217 (100)	6831 (46.5)	7860 (53.5)	14691 (100)
Male sterilization	138 (17.2)	666 (82.8)	804 (100)	27 (49.1)	28 (50.9)	55 (100)
Temporary methods	139 (56.3)	108 (43.7)	247 (100)	890 (73)	329 (27)	1219 (100)
Total	2763 (20.8)	10505 (79.2)	13268 (100)	7748 (48.5)	8217 (51.5)	15965 (100)
	Kerala			Tamil Nadu		
Female sterilization	4002 (69.8)	1734 (30.2)	5736 (100)	4496(32.9)	9159 (67.1)	13655 (100)
Male sterilization	61 (66.3)	31 (33.7)	92 (100)	16 (24.6)	49 (75.4)	65 (100)
Temporary methods	1297 (76.9)	390 (23.1)	1687 (100)	643 (48.5)	683 (51.5)	1326 (100)
Total	5360 (71.3)	2155 (28.7)	7515 (100)	5155 (34.3)	9891 (65.7)	15046 (100)

Table 5: Per cent distribution of unmet need for spacing and limiting methods of contraception versus knowledge about emergency contraception in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu

EC	Unmet need for spacing methods			Unmet need for limiting		
	Yes	No	Total	Yes	No	Total
<i>Andhra Pradesh</i>						
Yes	4.4 (194)	95.6 (4223)	100 (4417)	3.6 (160)	96.4 (4257)	20.3 (4417)
No	3.6 (624)	96.4 (16689)	100 (17313)	3.6 (627)	96.4 (16686)	79.7 (17313)
Total	3.8 (818)	96.2 (20912)	100 (21730)	3.6 (787)	96.4 (20943)	100 (21730)
<i>Karnataka</i>						
Yes	6.9 (903)	93.1 (12208)	100 (13111)	6.9 (899)	93.1 (12212)	100 (13111)
No	7.4 (1099)	92.6 (13654)	100 (14753)	5.7 (838)	94.3 (13915)	100 (14753)
Total	7.2 (2002)	92.8 (25862)	100 (27864)	6.2 (1737)	93.8 (26127)	100 (27864)
<i>Kerala</i>						
Yes	7.0 (607)	93 (8046)	100 (8653)	8.0 (691)	92 (7962)	100 (8653)
No	6.0 (224)	94 (11529)	100 (3707)	8.9 (330)	91.1 (3377)	100 (3707)
Total	6.7 (831)	93.3 (11529)	100 (12360)	8.3 (1021)	91.7 (1139)	100 (12360)
<i>Tamil Nadu</i>						
Yes	5.5 (484)	94.5 (8421)	100 (8905)	11.6 (1036)	88.4 (7869)	100 (8905)
No	4.7 (836)	95.3 (16944)	100 (17780)	11.7 (2079)	88.3 (15701)	100 (17780)
Total	4.9 (1320)	95.1 (25365)	100 (26685)	11.7 (3115)	88.4 (23570)	100 (26685)

live births, wealth index, religion and type of locality in the first model. Two-fifths cases were included in the analysis for Andhra Pradesh where as it was half in Karnataka (48.8 per cent), 94.8 per cent in Kerala and 67.5 per cent for Tamil Nadu.

In the second model the variables included were: number of live births, husband and respondent ever attended school, respondents' age at marriage, wealth index and religion and respondents' caste group. Almost all the respondents were included in the analysis.

In general, the awareness about emergency was very low among Muslims whereas it was high among Christians in comparison to Hindus in all southern states. The results are significant with Kerala only.

As expected no caste/ tribe, and none of the above category has higher knowledge of emergency contraception in comparison to Scheduled caste in Andhra Pradesh and Kerala only. The difference among this category was not significant in Karnataka and Tamil Nadu. However, couples of Karnataka have higher unawareness at none of the above category. In general scheduled tribe has lesser knowledge of emergency contraception, but it was not significant in Karnataka. This variable has been included in the second model.

Wealth index of couples has been positively related to awareness of emergency contraception in all the states.

Age at marriage of the respondent has shown increasing awareness of emergency contraception with the increase in age at marriage in all states in the two models except in model 1 of Andhra Pradesh.

Awareness about emergency contraception has increased with Husbands' years schooling in all the states except in Kerala in the model 1. This variable is considered in the Model 1 only.

The variable husband ever attended school, considered under Model 2. Most of the husbands who have attended school do have higher awareness of emergency contraception except in Tamil Nadu. It may be an artefact.

Respondents' years of schooling also showed higher awareness of emergency contraception with the progression of education.

It was also proved that women who have more children have lesser knowledge of emergency contraception.

Lastly urban residents have better knowledge of emergency contraception than rural residents (Tables 6a and 6b).

CONCLUSION

In general awareness about emergency contraception was better in all the south Indian states than other states except Punjab and Delhi. Muslims also seem to be less informed of emergency contraception compared to Hindus. Education also has emerged as an important variable.

RECOMMENDATIONS

Promotion of knowledge about emergency contraception seems to be a high priority issue. Couples who have knowledge about emergency contraception may be in a position help themselves and help other couples in need. Scheduled caste and Scheduled tribe populations have lesser knowledge than other caste groups. A few women of these populations are at risk owing to sexual exploitation. Further rural couples need information on Emergency contraception. Hence the personnel of Primary Health Centres and sub centres may be equipped with knowledge and supplies of emergency contraception.

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Table 6a: Logistic regression

Variable	Andhra Pradesh		Karnataka	
	Model I (n=8748 (40.3%))	Model II (n=21632 (99.5%))	Model I 13609 (48.8%)	Model II (n=27351 (98.2%))
<i>Religion (Ref: Hindu)</i>				
Muslim	1.225 (.020)	1.094 (.196)	1.060 (.297)	1.055 (.212)
Christian	0.856 (.108)	0.789 (.002)	0.722 (.029)	0.741 (.017)
<i>Caste of the Respondent (Reference: Scheduled Caste)</i>				
ST		1.152 (.119)		1.064 (.234)
No caste/tribe		0.878 (.015)		0.961 (.266)
None of the above		0.816 (.001)		1.137 (.004)
<i>Wealth Index (Reference: Poor)</i>				
Medium	0.750 (.021)	0.779 (.001)	0.756 (.000)	0.784 (.000)
High	0.636 (.000)	0.419 (.000)	0.540 (.000)	0.474 (.000)
Age at marriage (V118)	0.994 (.523)	0.923 (.000)	0.972 (.000)	0.977 (.000)
Husbands years of schooling (v111)	0.991 (.044)		0.997 (.245)	
<i>Husband Ever Attended School (Reference: Yes)</i>				
No		1.466 (.000)		1.139 (.000)
Respondents years of schooling (v113)	0.827 (.000)		0.955 (.000)	
<i>Respondent Ever Attended School (Reference: Yes)</i>				
No		2.969 (.000)		1.675 (.000)
Live births (v134)	0.973 (.204)	1.029 (.055)	1.024 (.088)	1.034 (.000)
<i>Type of Locality (Reference: Rural)</i>				
Urban	0.719 (.000)		0.750 (.000)	
Constant	19.874 (.000)	16.381 (.000)	2.922 (.000)	1.681 (.000)
-2 Log likelihood	10314.768 ^a	18710.100	17687.990	35477.440

Table 6b: Logistic regression

Variable	Kerala		Tamil Nadu	
	Model I (n=8748(40.3%))	Model II (n=21632(99.5%))	Model I 13609(48.8%)	Model II (n=27351(98.2%))
<i>Religion (Ref: Hindu)</i>				
Muslim	1.267 (.000)	1.395 (.000)	1.059 (.352)	1.065 (.268)
Christian	0.601 (.000)	0.609 (.000)	0.823 (.003)	0.746 (.000)
<i>Caste of the Respondent (Reference: Scheduled Caste)</i>				
ST		0.842 (.265)		1.189 (.146)
No caste/tribe		0.761 (.000)		0.963 (.253)
None of the above		0.715 (.000)		0.852 (.202)
<i>Wealth Index (Reference: Poor)</i>				
Medium	0.568 (.000)	0.678 (.006)	0.904 (.119)	0.904 (.026)
High	0.441 (.000)	0.420 (.000)	0.724 (.000)	0.593 (.000)
Age at marriage (V118)	0.968 (.000)	0.954 (.000)	0.991 (.091)	0.971 (.000)
Husbands years of schooling (v111)	1.822 (.000)		0.997 (0.414)	
<i>Husband Ever Attended School (Reference: Yes)</i>				
No		0.977 (.348)		1.211 (.000)
Respondents years of schooling (v113)		1.904 (.000)		0.908 (.000)
<i>Respondent Ever Attended School (Reference: Yes)</i>				
No		0.873 (.000)		1.630 (.000)
Live births (v134)	0.984 (.431)	1.081 (.000)	0.958 (.003)	1.033 (.004)
<i>Type of Locality (Reference: Rural)</i>				
Urban	0.850 (.357)		0.787 (.000)	
Constant	6.033 (.000)	2.469 (.000)	6.942 (.000)	4.083 (.000)
-2 Log likelihood	13160.847	14315.457	23170.574	32661.096

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