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A study on usage of spacing methods by reproductive women in field practice area of Kurnool Medical College using Health Belief Model.

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Abstract: **Background**: India is the second most populous country of the world. Though the Government of India was the first to launch family welfare program in 1952, there still exists a great challenge for unmet needs of family planning and especially there is a need for the desired attitudinal and behavior changes among women for the use of spacing methods.
Objective: To assess the knowledge regarding family planning, and the current practice of spacing methods among the participants of the study and to identify the factors predicting the use of spacing methods using health belief model.
Materials and Methods: This study was carried out over a period of two months (September-October) using a pre-structured questionnaire based on health belief model among reproductive women aged 15-45years in rural field practice area and urban area of Kurnool Medical College, Kurnool i.e., Nagalapuram and Sriramnagar respectively with a total of 100 respondents.
Statistical Analysis: Data were entered in MS Excel and analyzed in SPSS version 22 using percentages, Mann Whitney test etc., with P value <0.05 considered as statistically significant.
Results: Majority of the respondents were within the age group of 20-24 years. Though most of the women have heard about spacing methods, a greater proportion of the respondents were not using any contraceptive. However, a handful of the respondents who used contraceptive methods were using only IUD (16% in rural area and12% in urban area).Self efficacy for practicing spacing methods was found to be significantly higher for urban women compared to rural women.
Conclusion: This study highlights the need for a constant interaction of health functionaries with the eligible couple for boosting family planning program. Strengthening BCC activities and improving knowledge, attitude, and practice among community are steps toward family planning practices. Further programmes to expand or increase the contraceptive use among women should more extensively address reduction of barriers of contraception and improve self efficacy of women.There is need to promote spacing methods by policy makers and field workers and motivate couples to accept them.

Key Words: spacing methods, reproductive women, health belief model.

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1. INRODUCTION

India is the second most populous country of the world. Due to the impact of population growth on the quality of healthcare services, education, welfare, immigration and other socioeconomic issues, governments in different countries put in place various rules and regulations to modify population elements. The overall policy observed in all population strategies focuses on establishing a balance between population and the available resources.[1] In April 1976 India formed its first "National Population Policy" and it was modified in 1977. National population policy 2000 is the latest in this series.[2] According to studies by John Hopkins University, extensive use of family planning programs in developing countries may save some 58 million lives annually. It is estimated that currently 10.5 million children and 450 thousand mothers expire in developing countries. [3]

Furthermore, one woman dies every minute in the world as a result of pregnancy or its associated complications. In addition, some 80 million women encounter unwanted or unplanned pregnancy every year, among which 20 million are at risk of miscarriage, and 68000 expire. [4] The Census of India has found that the population of India had crossed 1.21 billion as of April 2011 and with the current schedule of fertility and mortality the country is adding about 16 million people to its population every year. This growth of population is considered to be the main impediment to our socio economic development. Among various factors, the low female literacy, low age at marriage, strong son preference and low acceptance of family planning methods are recognized as the main causes of high population growth.[2] As per National Family Health Survey - 4, prevalence of contraception in India is 54 percent which has come down from 56.5 percent from NFHS - 3 and in Andhra Pradesh is 70 percent. Permanent methods though successful in permanent methods not achieving target no Intergenerational gap Although contraceptive methods are available for free through the public health system at the village level, promotion of spacing methods is not considered important by health workers. Studies suggest that providers tend to focus their counseling on limiting methods and find it challenging to counsel young couples about spacing methods.[5-9] In addition, the lack of decision-making power about contraceptive use among young women makes providers view this counseling as futile. [8, 9] Consequently, the inter pregnancy interval has remained short. The median birth interval in India is 31months; it is only 25 months for women aged 15–19 years.[10]

Cognitive parameters play a pivotal role in shaping health behaviors [11]. The health Model (HBM) has been used extensively to assess health-related beliefs regarding protective behaviors. It is a cognitive model attempting to identify patterns of health behaviors [12]**.** HBM consists of six components namely perceived susceptibility, severity, barriers, benefits,cue to action and self efficacy. Finally, it was assumed that diverse demographic, sociopsychological, and structural variables might, in any given instance, affect the individual's perception and thus indirectly influence health-related behavior.

There is limited knowledge on factors influencing contraceptive behavior .So the current study aims at assessing knowledge on spacing methods why on spacing and to identify factors influencing contraceptive behavior among reproductive women

2. MATERIAL and METHODS

A cross-sectional survey was carried out among reproductive women for a period of two months during September-October of 2015 in Nagalapuram,a rural field practice area of Kurnool Medical College, Kurnool and urban area, Sriramnagar of Kurnool town.

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Inclusion criteria:
Both unmarried and married women aged between 15 and 45 years, who have not yet adopted permanent methods of contraception and willing to give informed consent were included in the study.

Exclusion criteria:
Women who were currently pregnant or wish to become pregnant and not willing for the study were excluded.

Sample size and Sampling Procedure:
According to NFHS 4, contraceptive prevalence rate in Andhra Pradesh is 70 %.[6] Taking p as 70, with 95 percent confidence interval and allowing 14 percent error sample size comes to around 87.5 for cross sectional study. To our convenience we planned our sample size to 100. In urban area, Sriramnagar, five streets were randomly selected and in each street 10 households were randomly sampled for a sample size of 50. Similarly, in rural area, sample size of 50 is taken following same sampling procedure. Thus a total of 100 reproductive age women were enrolled and participated.

Data collection: Data were collected using a structured questionnaire which was interviewer-administered to respondents. The questionnaire comprised of questions on socio-demographic characteristics, knowledge of contraception, attitude of respondents towards contraception, utilization of contraceptives among respondents and questions on Health Belief Model constructs which include factors favoring and inhibiting the usage of spacing methods like contraceptive and non contraceptive benefits, side effects, opposition from family**,(**perceived benefits, susceptibility, barriers**)**, reasons for using spacing methods(cue to action) and questions on self efficacy.

Data analysis: Data was entered in MS Excel and analyzed in SPSS version 22 using appropriate statistics, Mann Whitney test with P value <0.05 considered as statistically significant.

3. RESULTS

Table 1. Sociodemographic characteristics of participants

Variable	Rural(n=50)	Urban(n=50)
Age		
15-19	2(4%)	1(2%)
20-25	30(60%)	25(50%)
26-29	15(30%)	23(46%)
30-35	3(6%)	1(2%)
Religion		
Hindu	42(84%)	43(86%)
Christian	6(12%)	3(6%)
Muslim	2(4%)	4(8%)
Marital status		
Married	46(92%)	42(84%)
Unmarried	4(8%)	8(16%)
Education(Wife)		
Illiterate	9(18%)	13(26%)
Primary	7(14%)	4(8%)
secondary	21(42%)	10(20%)

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Higher secondary	3(6%)	12(24%)
Graduate and above	10(20%)	11(22%)
Education(Husband)		
Illiterate	9(18%)	7(14%)
Primary	8(16%)	6(12%)
secondary	12(24%)	8(16%)
Higher secondary	7(14%)	10(20%)
Graduate and above	14(28%)	19(38%)

A total of 100 questionnaires were analyzed and among them 50 were from Nagalapuram and 50 were from Sriramnagar. As shown in Table 1, majority of respondents were in the age group of 20-25 years (60% rural, 50% urban) followed by 26-29 years (30% rural and 46% urban). Most of the participants were married(92% rural and 84% urban) and belong to Hindu community (84% rural and 86% urban). In rural area majority were with secondary education(42%) and in urban area majority were illiterate(26%) while their husbands were graduates(28% rural, 38% urban).

Table 2- Awareness on spacing methods

Variable	**Rural(n=50)**	**Urban(n=50)**
Ideal age of marriage	41(82%)	43(86%)
Ideal gap between marriage and1st child	36(72%)	37(74%)
Gap between 1st and 2nd child necessary	100(100%)	100(100%)
Ideal gap between 1st and 2nd child	40(80%)	45(90%)
Known methods of spacing		
IUD	38(76%)	43(86%)
OC Pills	23(46%)	30(60%)
Emergency contraception	9 (18%)	16(22%)
Condom	40(80%)	41(82%)
Don’t know	4(8%)	2(4%)
Awareness on proper use of spacing methods		
IUD	8(16%)	5(10%)
OC pills	2(4%)	10 (20%)
Condom	1(2%)	2 (4%)
Source of availability		
Pharmacy	44 (88%)	45 (90%)
Private hospital	28 (56%)	30 (60%)
Government hospital	15 (30%)	6 (12%)
Doctor	4 (8%)	11 (22%)

Table 2 shows that 82% rural and 86% urban women know the ideal age of marriage, 72% rural and 74% urban women know the ideal gap between marriage and 1st child. Everyone knew that gap between first and second child is necessary. Most of the women knew about Intrauterine devices(IUD) (76%, 86%) and condom(80%,82%) as spacing method in both rural and urban areas respectively while majority of the women do not know how to use them. Only 16% of rural and 10% of urban women know how to use IUD and 4% of rural and 20% of urban women know how to use OC pills. Majority of the women know that

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spacing methods are available in pharmacy (88% rural and 90% urban) followed by Private hospital (56% rural and 60% urban).

Majority of the women heard spacing methods from mass media (62% rural and 84% urban) followed by friends (78% rural and 36% urban)(Figure 1). Majority of the women, both from rural and urban area are not practicing any spacing methods, only 18% and 20% of rural and urban women were using one or the other spacing method. In those who are practising only16% of rural and 12% of urban women are practising IUD, 2% of both rural and urban women are practising OC pills and 6% of urban are practising condom according to Figure 2.

Figure 1.Source of information chi square

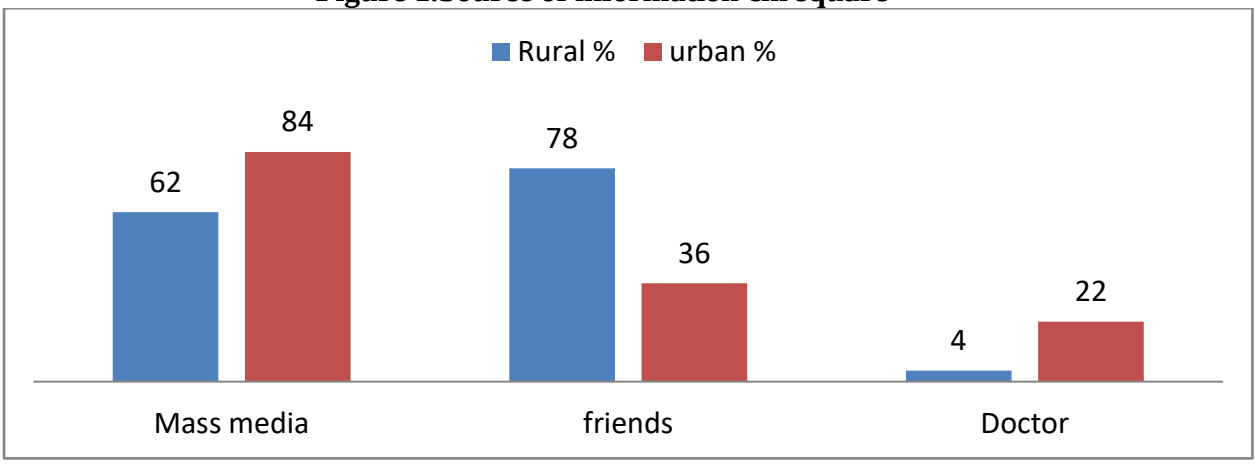
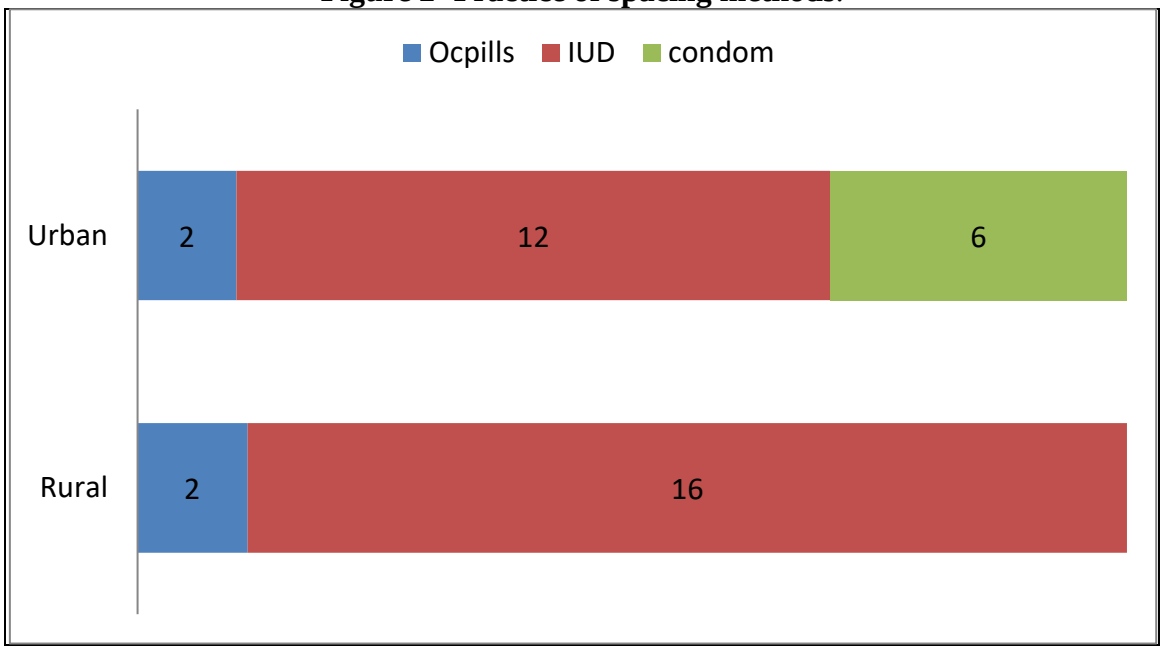


Figure 2- Practice of spacing methods.



For health belief model constructs, Likert scale was used. The response for the questions was given as score of 1 for strongly disagree, 2 for Disagree, 3 for Neutral, 4 for Agree, 5 for strongly agree. The scores were summated and then categorized into low (<75%), medium (76%-84%) and high (>85%). In table 4, higher scores in case of perceived susceptibility, represent their positive attitude on becoming pregnant and feeling of the pregnancy

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interfering with their life goals, family income; higher scores for perceived barriers represent more inhibition for practicing spacing methods, while higher scores for self efficacy represent higher positive attitude for contraceptive use. In the current study there is statistically significant difference in perceived barriers for rural and urban women (P<0.0015) and also for self efficacy (P<0.0054). Perceived susceptibility i.e., positive attitude towards pregnancy was low, perceived barriers for using spacing methods were low and even self efficacy to use them were also low in the present study.

Table 3 Health belief model constructs

Variable	Rural	Urban	Mann–Whitney test
Perceived susceptibility			U=1274.5 P = 0.4325
Low(<75%) in methods	43(86%)	42(84)	
Moderate (76%-84%)	1(4%)	0(0)	
High (>85%)	2(8%)	0(0)	
Perceived barriers			U=818.5 P = 0.0015*
Low (<75%)	37(74%)	39(78%)	
Moderate (76%-84%)	2(4%)	5(10%)	
High (>85%)	7(14%)	6(12%)	
Self efficacy			U=879.5 P = 0.0054*
Low (<75%)	24(48%)	21(44%)	
Moderate (76%-84%)	16(32%)	14(28%)	
High (>85%)	10(20%)	15(30%)	

Table 4: Awareness on non contraceptive benefits

variable	Rural(n=50)	Urban(n=50)
Improves health of mother	29(58%)	32(64%)
Improves health of child	44(88%)	47(94%)
Stabilizes family income	7(14%)	16(32%)
Regaining strength	3(6%)	1(2%)

The most common reason expressed for using spacing methods was to prevent pregnancy and their strong attitude that properly spaced pregnancies have a positive impact on women's social and economic development. It is clear that majority of the women felt that using spacing methods can improve health of child and mother apart from mere spacing of child birth(Table 4). The driving force for opting spacing methods in rural and urban area is fear of becoming pregnant after delivery and missed periods.

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4. DISCUSSION

The present study was undertaken with the aim of assessing the knowledge of reproductive women regarding spacing methods, to know the prevalence of contraception and to understand the contraceptive behavior of the respondents using health belief model.

In the present study knowledge of any modern contraceptive method among respondents was found to be high.76% of rural and 86% of urban women knew about IUD,46% of rural and 60% of urban women knew about OC pills and 80% of both rural and urban women knew about condom. Similarly in MyoMyoMon's study[13] done in Myanmar, 94.9% were aware of OC pills and 91.9% were aware of 3 monthly injection. In Srivastava et al study[14] the most known (61.2%) temporary method of contraception was intrauterine contraceptive device (IUCD) followed by oral contraceptive pills (OCP) (60.5%) and condoms (53.7%).While in J Mao's study done in Manipur, respondents in the age group of 31-35 had knowledge of about only 34.9% on condom/ loop/ copperT[15]. In a similar North Indian study, three-fourths of the respondents (74.2%, *n* = 297) were aware of family planning methods. Most of the respondents who were aware of family planning methods had knowledge of condoms (87.9%), intrauterine devices (IUDs; 71.0%) and oral contraceptive pills (OCPs; 57.6%).[16]

In present study the main source of knowledge is mass media (62% rural and 84% urban) followed by friends (78% rural and 36% urban) while in J Mao's study the main source of information is friends (44%) followed by mass media (22%) and in MyoMyoMon's study health providers(36.9%) were the major source. In a study done in North India by Choudhary.D Television was reported to be their main source of information (47.7% respondents), followed by friends (34.2%). Other sources of information were radio (6.7%), magazines (4.5%), posters (3.5%), newspaper (2.3%), and pamphlets (0.7%).[16]

The most common method ever used by the couples was IUD (16% in rural and 12% in urban) followed by OC pills (2% in urban and 2% in rural) in the current study while in Srivastava et al study it is condom(34.5%) followed by natural methods(26.9%).[15]

Concerning Health Belief M perceptions there is variation of significant constructs to the individual seeking behaviors in different studies .The current study identified low perceived susceptibility, high perceived barriers and low self efficacy as strong predictors of contraceptive use. If women perceive that they are susceptible to pregnancy, they are more likely to use spacing methods. In contrast spacing methods are less likely used if they perceive barriers to obtain spacing methods. This finding was supported by previous study which reported an association of perceived barriers, perceived susceptibility and self efficacy with the use of birth control in teens with diabetes [17]. In addition when the intention to use birth control was measured, perceived barriers, cue to action and self efficacy were considered strong predictors of contraceptive use. [18] In Kenya a study showed that only perceived barrier was a significant factor predicting frequency of condom use. [19] As a result the effect of each perception depends to the seeking behaviors depends on the nature of characteristics of study participants, attitudes and social norms.

The most common perceived benefits of spacing methods in our study were to prevent pregnancy and for women's social and economic development, improve health of child and mother apart from mere spacing of child birth. In a North Indian study, the benefits of family planning, as conveyed by the respondents (*n* = 297) who were aware of family planning methods, were: Birth spacing (*n* = 275, 92.5%), limiting family size (*n* = 119, 40.0%), preventing unwanted pregnancy (*n* = 75, 25.2%), healthy mother and child (*n* = 30, 10.1%),

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reducing the risk of mother or newborn child (*n* = 11, 3.7%), and preventing over population (*n* = 14, 4.7%).[16]

Strengths of study: The strength of the study is application of behavioral theory of health belief model perception which is most useful for predicting health seeking behavior

Limitations of study: This study was a cross sectional study and used an interview method to identify contraceptive users and non users, thus it might be affected by answers from women. Respondent bias may also occur in this study, since contraception and birth spacing topics oftentimes involve sexual behaviors. Respondents may lie or provide inaccurate information in order to protect privacy. However we ensured the rapport and explained the objectives of the study before the interview. Another form of bias is that the questions in this study were only given to women. Since contraception decisions may be couple decisions rather than individual decisions, it will be important in the future to interview men and women in a relationship. It may be interesting to see if the answers are different if the men and women are interviewed separately and if either of their answers changes when they are interviewed together.

5. CONCLUSION AND RECOMMENDATIONS:

The perceptions measured by HBM strongly predicted the contraceptive practice of respondents in the current study. Perceived barriers to use spacing methods and self efficacy were two most influential constructs . All efforts should be made by government to empower women socially and economically, which can make them active decision makers toward family planning practices. Further programmes to expand or increase the contraceptive use among women should more extensively address reduction of barriers of contraception and improve self efficacy of women. This can be brought about by facilitating access to more information, education and communication with the reproductive age couples, and improved social and welfare services. These couples should be given information about contraceptives at every visit to the health services to motivate them. The most important factor is regular availability of contraceptives and adequate health care services at the peripheral level. This study highlights the need for a constant interaction of health functionaries with the eligible couple for boosting family planning program. Strengthening BCC activities within health department and non health department and improving knowledge, attitude, and practice among community are steps toward family planning practices. There is need to promote spacing methods by policy makers and field workers and motivate couples to accept them.

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Conflict of interest: None.

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