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**Family Planning Beliefs Index among eligible couples of two underserved districts in Odisha: a surrogate marker to evaluate Family planning counseling in rural Odisha, India**

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[doi:10.48047/AFJBS.7.5.2025.1202-1212](https://doi.org/10.48047/AFJBS.7.5.2025.1202-1212)**Abstract:**-A cross-sectional observational descriptive study design was adopted to interview a sample of eligible couples from selected villages from sampled blocks of the districts of Odisha. Study's objective was to validate a composite index (Family Planning Belief Index) that scores people's dependency on myths and misconceptions.**Methods:**Family Planning Belief Index (FPBI) that inquired into the 6 most prevalent myths and misconceptions was asked of the eligible couple and scored on a 3-point scale (1-agree, 2-unsure, 3- disagree), the index score range being 6-18. A lower score was proxy for inadequate counselling and poor awareness.**Results:**A total of consenting eligible couples participated in the study, 480 from Koraput and 570 from Boudh. Belief's index mean scores were 12.76±2.91 (Range 6-18) for Koraput and 13.45±1.54 for Boudh (Range 8-18), which hinted at compromised counselling for Family Planning (FP) services. High Odds of poor acceptance were associated with being from Koraput district (5.720, 95% CI 3.583±9.130), if the couple were tribal or lower caste (1.851, 95% CI 1.173±2.921) and less education levels of female partner (1.687, 95% CI 1.055±2.698) were significant at p<0.05.

Higher AOR values for counseling steps by ground-level workers ie ASHA, when regressed against low FPBI scores, were seen when she did not offer or explain the basket if choice (3.170 at 95% CI 0.130±7.191; p=0.002)

**Conclusion:**The study brings out an essential felt need of the community regarding its continued reliance and dependency on the female ground-level worker on delivery of contraceptive services. **Keywords:** Eligible couples; Family Planning Belief index, myths and misconceptions in Family Planning, Total Fertility Rate (TFR)

## Introduction

India is currently the habitat for one of the largest populations in the world. The current scenario was anticipated even in the early years of independence, which caused the policymakers to implement the Family Planning programme in 1952. Supported by need and a strong political will, the country formulated a National Population policy in 2000, offering a policy framework with diverse approaches towards Reproductive and Child Needs, integrated with achieving a stable Total Fertility Rate (TFR) of 2.1 by 2010. Results of these endeavours reaped dividends with National Family Health Survey 5 (NFHS) reporting a National TFR of 2.0, a further dip from 2.2 reported in NFHS 4. [1] However, the flip side of the story is that still wide variations are noted among and within states in terms of TFR. Odisha, a state in Eastern India with an overall TFR of 1.9, has 30 districts, of which at least 5 districts have a TFR over 2, of which the highest is that of Boudh and Koraput 2.9 and 2.5 respectively as per Annual Health Survey 2014. Traditionally, the districts are heavily dependent on the permanent method of sterilization, that too for females, mostly, i.e., tubectomy. [2,3] Hence, an ad hoc Indian Council of Medical Research (ICMR) grant was awarded to the proposal, which aimed to review male participation in family planning and suggest interventions to improve the same. The current article presents details of the baseline study that was done in sample-eligible couples of selected blocks in the district, which would throw light on myths and misconceptions regarding contraceptive use. A scale was developed which was an adapted version of the Family Planning Belief Index (FPBI) used in a study in Kenya. [4] The scale was structured as per Indian context, translated into the local language, and validated, so that the scores would offer an idea about the barriers to family planning usage in the area.

## Objectives:

1. To validate a Family Planning Belief Index (FPBI) among eligible couples in the sampled villages of 2 districts in Odisha
2. To determine the factors attributed to low scores of FPBI, which would generate evidence to improve the family welfare services in select areas.

## Methodology

The study design is a cross-sectional community-based survey done as a part of a baseline survey by an Indian Council of Medical Research (ICMR) funded ad hoc proposal (5/10/FR/42/2020-RBMCH; Date- 23/12/2021); ethically cleared by the Kalinga Institute of Medical Sciences Institutional Ethics Committee (KIIT/KIMS/IEC/270/2020 dated 25/4/2020)

The **Total Fertility Rate (TFR)** indicates *the average number of children expected to be born per woman during her entire span of reproductive period*. In India, as per the census 2011 it was 2.4 per woman. As per recent studies and surveys, the majority of Indian state's fertility rate has fallen well below the replacement level of 2.1 and the country is fast approaching the replacement level itself.

According to the National Family Health Survey 2019-21 (NFHS-5), the total fertility rate of India stands at 2 as of 2021. In rural areas of India, the Fertility rate is 2.1, and in Urban areas of India, it's 1.6.

The study objective was to determine the baseline for reasons for the denial or not use of contraceptives in the two selected blocks. Eligible couples are defined as couples who are in wedlock i.e currently married, where the female partner is in the reproductive age group of 15-49 years [5] The sampling frame included 4 blocks of Koraput and 2 blocks of Boudh wherefrom 1 CHC each in case of Koraput and 2 CHCs in case of Boudh and thereon the lowest unit of health care delivery i.e 6 sub-centers each were selected, from which 6 villages were taken up. From each village, at least 20-25 eligible couples were randomly picked up after informed consent and included in the baseline data collection. These districts also had the added advantage of having around 50.56% tribal population, especially Koraput and Boudh with 12.5% of its population being tribal. [6] The study period was from March 2022 to September 2022. Given a modern method, a contraceptive prevalence rate of 45% [7] as reported in National Family Health Survey-4(2015-2016), with an allowable error of 10% at a 95% confidence interval sample size calculation is reached at 381, and adding a 15% non-response rate, the final sample estimate was nearly 440. Given the field-level restrictions of a just-receded Covid pandemic, 480 and 570 couples from the sampled districts consented to participate in the survey.

The survey tool was a predesigned pretested questionnaire developed after a detailed review of Literature [8,9,10,11] with sections eliciting information on sociodemographic profile, age of marriage of either partner, number of living children and their beliefs regarding available contraceptives besides other parameters, which are not dealt with in this analysis.

Family Planning Belief Index was developed which enquired about the 6 prevailing myths and misconceptions regarding the modern methods available under the programme and scored on a 3-point scale (1-Agree, 2-Unsure, 3-Disagree), the INDEX SCORE range being 6-18. A lower score would indicate poor information or a proxy score for poor counseling during family planning. The answers were drawn after consensus from the couple, as the study also had an alternate objective to assess male participation in decision-making. However, in India Family planning discussions and queries are often replied to by the female partner predominantly emerged from the study, even if the males have a say in the final decision making.

The survey tool was translated and back-translated into the local language by skilled translators and the construct was verified by a psychologist and local public health manager to validate the questions in terms of content and items. A team was hired under the project, separately for both districts, who were conversant with the local population and language and appropriately skilled to conduct the survey. After the requisite permission from the KIMS Institutional Ethics Committee as well as the state and district-level health authorities, the survey was started. The team worked in cohesion with the ground-level health worker Accredited Social Health Activist (ASHA), a cadre developed in India in 2005 under the National Rural Health Mission to help render primary health care, especially under maternal and child health, to the people. This helped in icebreaking for the couples and their easy acceptability towards the survey team. To start with, it was planned to elicit the FPBI scores separately from males and females, however, no male conceded to reply to the queries on the score alone and thus it was decided to be asked by the couple, together in unison.

**Patient and Public Involvement:** The participants were not patients and had no involvement in the design, or conduct, or reporting, or dissemination plans of the research.

The survey data was collected only after the informed consent of both partners of the participating eligible couple and the consent was taken in the presence of the health worker of the village. (supplementary file of consent details added)

The data thus collected from both districts was collated into SPSS version 25.0 and descriptive statistics were applied to the state results.

Results:

Table 1 Socio-demographic details of the sample of eligible couples(n=1050)

Variables		Frequency	Percentage
Education of Female partner	Illiterate	196	18.66
	Just Literate	99	9.42
	Primary	300	28.57
	Secondary	310	29.52
	Higher Secondary	98	9.33
	Graduate & Above	47	4.47
Education of Male partner	Illiterate	106	10.09
	Just Literate	86	8.19
	Primary	383	36.38
	Secondary	302	28.76
	Higher Secondary	99	9.42
	Diploma/ Graduate & Above	74	7.04
Caste	SC	248	23.61
	ST	243	23.14
	OBC	462	44
	General	95	9.04
	99	2	0.19
Type House	Kutcha	251	23.90
	Semi-Pucca	408	38.85
	Pucca	389	37.04
	99	2	0.19

Type Family	Nuclear	653	62.19
	Joint	295	28.09
	Three Generation	99	9.42
	99	3	0.28
Religion	Hindu	1050	100

Table 1 gives the sample characteristics of the 1050 eligible couples participating in the study, wherein female illiteracy was 18.6% and literacy among both men versus women in the high, secondary, and above category was 16% compared to 13%. 62.7% lived in kutchha or semi-pucca houses and 62% belonged to nuclear families. All couples were Hindu. The sample for all variables is normally distributed and checked for outliers and missing data.

Table 2. Item-wise statistics of the Family Planning Belief Index (n=1050 couples)

FPBI parameters (n=1050)	Mean	Std. Deviation	
Contraceptives cause disabilities/ birth defects in children	2.41	.649	
The string on the IUD hurts during sexual intercourse	1.88	.728	
An IUD can move around inside a woman and hurt her	1.88	.712	
Use of Contraceptives diminishes sex drive	2.41	.604	
Continuous use of pills can lead to infertility by reducing the size of the uterus	2.19	.730	
Lubricants used in condoms can cause diseases	2.37	.649	
<b>SCALE STATISTICS</b>			
<b>Mean</b>	<b>Variance</b>	<b>Std. Deviation</b>	<b>N of Items</b>
13.14	5.307	2.304	6

			Cronbach alpha= 0.591
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Table 2 shows the individual scores for the prevalent myths and misconceptions regarding contraceptive use in India for the cumulative sample of both districts, with the Cronbach alpha value 0.591, meaning thereby, that the index holds nearly good and can be applied in population settings. The mean value of the index was 13.14±2.304, suggesting that in the sample as a whole the myths and misconceptions are mostly clarified, suggesting better awareness on contraceptives, especially the spacing methods. High myths were associated with the use of intrauterine devices, which is evident from only 2.4% of IUD acceptance among couples.

Results showed that lower values of the index are more reported by couples in Koraput with values as low as 6, while Boudh has more couples reporting values 12 and onwards. However, the highest value of 18 is reported among Koraput couples. This suggests wide variation in district Koraput regarding awareness regarding contraceptives from very low to very high. Taking the mean as 13.14, the score was dichotomized as <13 as low and 13-18 as high/ good.

Couples with two children scored high on FPBI, meaning they are thereby least biased by myths and misconceptions regarding family planning acceptance. This difference has a p<0.048 for districts, i.e. significant, with the variations are more pronounced in Koraput, i.e. higher scores for those with 3 and above children, compared to statistics of Boudh. The acceptance of modern family planning methods was highest for female sterilization and condoms at 29.3 to 25% in both blocks. The newer contraceptive introduced in the system ie Chaya(Centroman) had a lukewarm acceptance in Koraput ie 23% of the couples reported using it, however data on continuation of the use was not available. Antara had a low visibility in Boudh district and that too among the educated.

Table 3. Low and High FPBI scores as per sampled districts

District	Category scoring FPBI		Total
	12 and less (Low score)	13-18 (High score)	
Koraput (1)	330 (68.8%)	150 (31.3%)	480 (100%)
Boudh (2)	151 (26.5%)	419 (97.35%)	570 (100%)
Total	481 (45.8)	569 (54.2%)	1050 (100%) Eta value =42%

42% of the district-wise difference in FPBI scores among the couples can be attributed to myths and misconceptions regarding contraceptive methods as shown in Table 3. The FPBI scores were dichotomized into low and high scores based on mean of normally distributed data, such that variables that are associated with low scores can be regressed and inferences drawn.

Table 4. Log Odds of socio-demographic characteristics in terms of low FPBI scores among couples.

Variables	Sig	AOR (95% CI)	Variables	Sig	AOR ,95% CI
Religion (Reference: Other religions)	0.977	1.000 0.418, 1.730	Family Joint (Reference: Extended Family)	0.003	0.414 0.230;0.748
District Koraput (Reference:2 <sup>nd</sup> district Boudh)	0.000	5.720 3.583, 9.130	Total family members	0.003	1.191 1.061; 1.336
Caste Scheduled Tribes (Reference: General/others)	0.008	1.851 1.173, 2.921	Overcrowding in house (Reference: Overcrowding absent)	0.016	1.444 1.070; 1.948
Caste SC (Reference: General/others)	0.518	1.128 0.782,1.628	Education female partner (Reference: higher secondary)	0.029	1.687 1.055,2.698
Family Nuclear (Reference: Extended Family)	.013	0.619 0.423, 0.906	Age marriage of female	0.999	1.000 0.896, 1.116

Table 4 shows the binary logistic regression and AOR of Variable(s) entered in step 1: Religion, district, caste, Type of family, total members, type of house, overcrowding, electricity, possess smartphone, age of male, age of female, education of male, education of. Female, age of marriage of male, age of marriage female, live children. Assumptions of multicollinearity and variance were excluded before fitting the model and the predicted logs were calculated for poor FPBI scores at a significance level of <0.05. The overall chi-square is 249.309; df=32, p<0.000; which suggests a good model fit. Type of district is Koraput, the couple belonging to scheduled tribes, larger family size, overcrowding, were present, and females with no or low level of education had higher odds of scoring low FPBI scores i.e. having high myths and misconceptions and were significant in the model. Being from either nuclear and joint families had low odds of low FPBI scores and both were significant, as now the proportion of the nuclear family are exceeding that of the joint family in the sample and both perhaps have their protective. Age of marriage for women has no association with FPBI scores.

Table 5. Association of Family Planning Services and FBPI scores(n=1033), log odds of estimates of service not being given(No) against being given (Yes)

Services (n=those who replied)	Yes	No	Significance; Regression AOR at 95% CI
ASHA contact immediately after marriage (n=1033)	564 (54.6%)	469 (45.4%)	0.000 0.197 (0.133±1.292)

ASHA informed regarding the basket of choice (n=975)	790 (76.5%)	185 (17.9%)	0.042 3.170 (.130±7.191)
Explain about methods using IEC charts (n=975)	500 (48.4%)	475 (48%)	0.009 1.704 (1.136±2.556)
Explain in length about Side effects of the product (n=975)	755 (73.1%)	220 (21,3%)	0.836 1.069(.567±2.017)
Maintains privacy (n=975)	791 (76.6%)	184 (17.8%)	0.413 1.434 (.606±3.394)
ASHA encourages questions and makes the subject comfortable (n=975)	818 79.2%	157 15.2%	0.533 0.681(.203±2.284)
ASHA replies satisfactorily to queries (n=975)	822 79.6%	153 14.8%	0.378 0.530 (.129±2.176)
Explained spacing methods (n=975)	829 (80.3%)	146 (14.1%)	0.628 1.267 (.483±3.321)
ASHA counsel at times of needs (n=975)	798 77.3%	177 17.1%	0.958 1.029 (.348±3.041)
Desired services made available as per need (n=973)	810 78.4%	163 15.8%	0.812 1.572(.095±26.122)
ASHA visits house to give stocks of contraceptives (n=1033)	996 (96.4%)	37 (3.6%)	0.598 6.436(1.456±3.561)
ASHA does follow up (n=1015)	643 (62.2%)	372 (36.0%)	0.005 5.162(.182±1.469)
Satisfaction with the services of ASHA for Family Planning	884 (85.6%)	149 (14.4%)	0.04 2.186(.919±5.201)

Table 5 outlines the service delivery components of Family Planning ground-level workers in Accredited Social Health Activist (ASHA) as described under the contraceptive service delivery and a simple linear binary regression model that offers the odds of service delivery attributing to low scores of FPBI. Results give evidence that ASHA contacts the couple immediately after marriage and has low odds of having poor scores of FPBI. This is being attempted now in India, to tide over the hesitancy to discuss contraceptives by newly weds. ASHA giving information regarding the basket of choice and explaining the usage of methods by using IEC charts have higher odds of having good scores of FPBI which is significant. Other parameters of service delivery by ASHA although met, as reported by above 75-85% of couples in all services but were not significantly affecting the FPBI scores. ASHA doing routine follow-up of the acceptors and self-reported satisfaction was also 5.162 and 2,186 times higher for high FPBI scores.

## Discussion

Family Planning services in India have been delivered in India under a programmatic banner, free of cost to rural and underserved populations since 1952. Substantial progress has been achieved in lowering the TFR from 5.904 to 1.9986 births in 2023.[12] However, the country's population woes continue. A distinct district-specific deviation toward higher TFR is seen in the smaller administrative units of the states, i.e., districts.

Family welfare services in India are now interwoven with Maternal and Child Health services and shouldered by ground-level health workers in ASHA, who are to ensure a continuum of the overall health of a woman from adolescence to the completion of her reproductive period.

This has worked well in terms of reaching out to women, but somewhere the worker is overburdened with the needs of the women and the programme. More so, as her performance and compensation are largely incentivized, the major focus remains maternal and child health, wherein an array of services are earmarked. In the family planning arena, her roles are cornered due to the strong family embankments, wherein some decisions are based on the experiences and opinions of elders, which are also seen in studies in other Asian and Mediterranean countries.[13,14,15] The worker in order to maintain cordiality often does not intrude into space, as it spells for a lot of patience and counselling, which is likely to hit her other service delivery and sometimes also due to lack of confidence to give definitive answers to the queries, as they are mostly based on scientific evidence. Similar qualitative findings have emerged from studies in Jharkhand.[16] The myths are sometimes seen in a suspicious context by the less educated, more because of the financial incentives attached to both the motivator as well as the acceptor, this is supported by some economic surveys done in the area of Family Planning in India. [17,18] This is coming out strongly in terms of most of the myths being regarding intrauterine devices, resulting in low figures in both intrauterine as well as postpartum IUD acceptance. [19,20,21] It is also hinted that there is a gender inequity in terms of the family planning acceptors as well as providers. This study, which has unlike most studies has tried to capture the perspective of the couples, although during the survey it was evident that mostly women were users and maybe men's participation was limited to only as making a surface decision regarding acceptance. [13,14] The ASHA worker being a female mostly shares all information with the women's partner and hands over the condoms to the female partner, thus its proper usage and effectiveness in the programme is not quantifiable. This is also supported by the fact that female sterilizations continue to be the mainstay of the programme among couples in both districts. This also is a proxy hint of willingness to accept contraceptives for limiting is exploited well, but the opportunities to use methods to space children and have small families are still being lost. The odds of 1.191 for a higher FPBI, when there is a unit rise in family size in the results are significant, which is because maybe every time the couple has a child, they get to go to the facility, get their doubts cleared on contraception and this is significant in the study. Similar results come from overcrowding and education of female partners which emerge as significant factors towards higher FPBI scores.

This score is an easy exercise to measure and explains the common prevailing myths and misconceptions, that is, a barrier to timely and apt contraceptive use. This would also serve as a tool to train ASHAs and empower them with scientific reasoning, which they can explicate and explain to the couples during their counselling or service encounters. As is evident from Table 4, the score can also be used to evaluate the ASHA's efforts, wherein the study it has been elucidated that when she meets the couple immediately after marriage, explains them all methods in detail by using IEC charts and follows up after offering a product, the FPBI scores are on the higher side. The client satisfaction is also achieved better, which is  $2.186(.919 \pm 5.201)$ , when FPBI is on the higher side.

The study offers a baseline inference to comprehend the matrix of service delivery and method acceptance in districts where contraceptive acceptance still needs further improvement. For well-informed choices and optimum results in contraception, enough studies have hinted at a requirement to understand the health belief model in the area. Myths and misconceptions are major barriers to contraceptive acceptance, and they need to be identified, measured, and corroborating efforts initiated to break their dominance in mind. For this, all stakeholders, i.e., both married partners, the ground-level worker, and the macro family environment need to be understood. FPBI index would help bridge some of this gap and can be done by supervisors or medical personnel to draw up contemporary strategies.

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