

## AWARENESS OF MATERNAL CARE AMONG REPRODUCTIVE WOMEN IN BARAMATI

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### ABSTRACT

*The main aim of this paper is to investigate awareness of maternal care among reproductive women in Baramati and to find factors which significantly affect the woman's maternal health during pregnancy. Data was collected through face-to-face interviews using questionnaire from 200 respondents. The findings are, on an average 72% of the reproductive women in Baramati are aware of maternal health care. Type of delivery may depend on the factors Mothers age, Living Area, Number of family members, Mothers age at marriage, Mothers sugar, Mothers weight, Pregnancy period till the delivery and Number of ANC visits. Baby's weight may depend on the Pregnancy period till the delivery. Number of ANC visits may depend on the Knowledge about danger sign of pregnancy. The study will further help the medical practitioners to improve upon the ways to aware the women regarding the Maternal Health care program undertaken by the Government of India.*

**Keywords:** Maternal Health Care Service, ANC, Reproductive Women.

### Introduction

The direct cause of the maternal deaths in India are due to the factors such as, excessive bleeding, infections, pregnancy induced hypertension, obstructed labor, and unsafe abortions. These factors arise in the delivery period due to lack of knowledge regarding the maternal health care programs for the reproductive women carried out in the hospitals.

Maternal mortality rate in India continues to be a National challenge despite of the various measures taken by the Indian government, nonprofit organizations in and outside the country including the World Health Organization.

Women's health throughout pregnancy, delivery, and the postpartum period is referred to as maternal health. One of the most important aspects of promoting healthy motherhood is antenatal care. Antenatal care (ANC) is prenatal health care provided by a doctor or other health professional at a medical institution or at home. Minimum four antenatal checkups are needed for pregnant woman.

The objective of the study is to find out the awareness of the maternal care among reproductive women in Baramati and to investigate factors which affect the time of ANC visits, factors which affect the weight of delivered baby, and factors which affect the type of delivery.

### Literature Review

Joanna Marie S.Alvaro & Ryan Michael F. Oducada (2015), carried out analysis and the study reveals that most of the respondents were highly aware of the Rural Health Unit (RHU) as a BEmONC facility and its services, most of them have utilized only the prenatal package also shows significant relationship between utilization of BEmONC services and employment status, income level, educational status, OB score, pregnancy status and awareness of services.

A.R.Johnson et.al (2015), carried out study which shows maximum awareness for maternal nutrition supplements under ICDS, the awareness of the schemes was significantly associated with education of mother, socio economic status of family, gestational age and parity index, awareness of schemes among antenatal mothers range from 0% to 83.6%.

W S Kingori et al. (2016), shows age, education, religion, marital status and employments have significant influence on awareness and level of education is the best predictor of awareness of maternal health systems initiatives, in the area of awareness of maternal health systems initiatives and FMS had the lowest awareness level.

### Methods

Discussions were carried out with various gynecologists from Baramati to form the questionnaire. The questionnaire contains 55

questions. Two well-known hospitals from Baramati namely Rui Hospital and Silver Jubeli Hospital consider for the study. 200 married women of reproductive age who had at least one child or had delivered the last child within two years from the period of data collection (during Nov 2015 to Dec 2015) were interviewed.

**Materials**

The data entry was done on MS-Excel and the statistical analysis was carried out by using R Software. Chi square test of independence and Binary Logistic model are used for the statistical analysis.

**Data Analysis**

Table 1: Chi-Square tests for Delivery Type (See Appendix)

Source: Primary Data

Table 2: Chi-Square tests for ANC Visits

Selected Variables		ANC Visits			χ <sup>2</sup> Cal	p-Value
		≤ 2	3 to 6	>6		
Living Area	Rural	28	33	93	0.112	0.946
	Urban	8	9	29		
Distance	< 10km	23	24	58	3.243	0.198
	≥ 10 km	13	18	63		
Knowledge about danger sign of pregnancy	Poor	17	16	21	16.021	0
	Better	19	26	101		

Source: Primary Data

Table 3: Chi-Square tests for Baby's weight

Selected Variables		Baby's Weight		χ <sup>2</sup> Cal	p-Value
		< 2.5	≥ 2.5		
Family Type	Joint	29	99	0.568	0.443
	Nuclear	13	59		
Mothers weight	< 45	13	44	0.157	0.692
	≥ 45	29	114		
Pregnancy Period	274-281	35	106	4.21	0.04
	<274 and >281	7	52		
New born baby's sex	Female	24	65	3.441	0.064
	Male	18	93		
Child Order	1	18	77	5.061	0.08
	2	21	72		
	3 and 4	5	5		
USE	≥ 3	20	70	0.147	0.701
	> 3	22	88		

Source: Primary Data

Table 4: Logistic Model by considering all the predictors: Type of delivery

Predictor	Coef	SE	Coef	Z	P	Ratio	Lower	Upper
Constant	-19.543	9.462	-2.07	0.039**				
MOTHERS Age	0.3295	0.1322	2.49	0.013**	1.39	1.07	1.80	
LIVING Area	1.5027	0.4603	3.26	0.001***	4.49	1.82	11.08	
FAMILY Type	-0.4693	0.5624	-0.83	0.404	0.63	0.21	1.88	
FAMILY Member	-0.1604	0.1158	-1.39	0.166	0.85	0.68	1.07	
WORKING Status	0.0988	0.4677	0.21	0.833	1.10	0.44	2.76	
FATHERS Age	-0.00481	0.08100	-0.06	0.953	1.00	0.85	1.17	
MARRIAGE Age	-0.2602	0.1336	-1.95	0.052*	0.77	0.59	1.00	
MOTHERS Age at Marriage	-0.3186	0.1394	-2.29	0.022**	0.73	0.55	0.96	
MOTHERS Hb	-0.3128	0.1386	-2.26	0.024**	0.73	0.56	0.96	
MothersSugar	-0.01686	0.01168	-1.44	0.149	0.98	0.96	1.01	
MothersWeight	0.07261	0.02162	3.36	0.001***	1.08	1.03	1.12	
PREG. PER	0.06348	0.03315	1.91	0.056*	1.07	1.00	1.14	
CHILD Order	0.2147	0.3304	0.65	0.516	1.24	0.65	2.37	
BABY WEIGHT	0.3093	0.3489	0.89	0.375	1.36	0.69	2.70	
ANC Visits	0.23345	0.06746	3.46	0.001***	1.26	1.11	1.44	
USE	-0.0047	0.1422	-0.03	0.974	1.00	0.75	1.32	
PLANNED Preg	0.3856	0.4568	0.84	0.399	1.47	0.60	3.60	
VACCINAT	0.2685	0.4743	0.57	0.571	1.31	0.52	3.31	
KNOWLEDG Abt	-0.4598	0.4731	-0.97	0.331	0.63	0.25	1.60	

Danger Sign Of Pregnancy

Log-Likelihood = -97.337  
 Test that all slopes are zero: G = 63.989, DF = 20, P-Value = 0.000  
 (ANC: Antenatal care \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant)

Source: Primary Data

Table 5: The Logistic Model is: Type of Delivery

=-19.543+0.3295*Mothers Age+1.5027*Living Area-0.4693*Family Type-0.1604*FamilyMembers+0.0988*Working Status-0.00481*Fathers Age-0.2602*Marriage age -0.3186*Mothers age at marriage -0.3128*Mothers Hb -0.01686*Mothers Sugar + 0.07261* Mothers Weight +0.06348*Pregnancy Period +0.2147*Child order +0.3093*Baby's Weight + 0.23345*ANCVisits-0.0047*USE+0.3856*Planned Pregnancy +0.2685*Vaccination -0.4598*Knowledge about danger sign pregnancy.
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Source: Primary Data

Table 6: Logistic Model by Considering the Significant Predictors from Model I: Type of Delivery

Predictor	Coef	SE	Coef	Z	P	Ratio	Lower	Upper
Constant	-18.478	9.253	-2.00	0.046**				
Mothers Age	0.3133	0.1302	2.41	0.016**	1.37	1.06	1.77	
Living Area	1.6867	0.4442	3.80	0.000***	5.40	2.26	12.90	
Fathers Age	-0.02154	0.08067	-0.27	0.789	0.98	0.84	1.15	
Marriage Age	-0.2218	0.1287	-1.72	0.085*	0.80	0.62	1.03	
Mothers age at marriage	-0.2958	0.1359	-2.18	0.030**	0.74	0.57	0.97	
Mothers Hb	-0.3043	0.1370	-2.22	0.026**	0.74	0.56	0.96	
MothersSugar	-0.01484	0.01155	-1.28	0.199	0.99	0.96	1.01	
MothersWeight	0.07125	0.02138	3.33	0.001***	1.07	1.03	1.12	
Pregnancy Per	0.05644	0.03214	1.76	0.079*	1.06	0.99	1.13	
Child order	0.1622	0.3171	0.51	0.609	1.18	0.63	2.19	
Baby's Weight	0.3083	0.3472	0.89	0.375	1.36	0.69	2.69	
ANC Visits	0.22792	0.06665	3.42	0.001***	1.26	1.10	1.43	
USE	-0.0250	0.1398	-0.18	0.858	0.98	0.74	1.28	
Planned Preg	0.4860	0.4439	1.09	0.274	1.63	0.68	3.88	
Vaccination	0.2347	0.4594	0.51	0.609	1.26	0.51	3.11	
Knowledge Abt	-0.4912	0.4648	-1.06	0.291	0.61	0.25	1.52	

Danger Sign of Preg

Log-Likelihood = -98.472  
 Test that all slopes are zero: G = 61.720, DF = 17, P-Value = 0.000  
 \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant

Source: Primary Data

Table 7: Descriptors of the Logistic Model

Type of Delivery = -18.478 + 0.3133 * Mothers Age + 1.6867 * Living Area - 0.02154 * Fathers Age - 0.2218 * Marriage Age - 0.2958 * Mothers age at marriage - 0.3043 * Mothers Hb - 0.01484 * Mothers Sugar + 0.07125 * Mothers Weight + 0.05644 * Pregnancy Period + 0.1622 * Child order + 0.3083 * Baby's Weight + 0.22792 * ANCVisits - 0.0250 * USE + 0.4860 * Planned Pregnancy + 0.2347 * Vaccination - 0.4912 * Knowledge about danger sign pregnancy.
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Source: Primary Data

Table 8: Logistic Model by considering the significant predictors from model II: Type of delivery

Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-20.047	8.851	-2.26	0.024**			
MOTHERS	0.2939	0.1129	2.60	0.009***	1.34	1.08	1.67
LIVING A	1.6126	0.4249	3.80	0.000***	5.02	2.18	11.53
MARRIAGE	-0.1914	0.1178	-1.63	0.104*	0.83	0.66	1.04
MOTHERS	-0.2748	0.1247	-2.20	0.028**	0.76	0.59	0.97
MOTHERS	-0.3271	0.1356	-2.41	0.016**	0.72	0.55	0.94
Mothers	0.06881	0.02028	3.39	0.001***	1.07	1.03	1.11
FREG.PER	0.05820	0.03106	1.87	0.061*	1.06	1.00	1.13
BABY WEI	0.2822	0.03887	0.83	0.405	1.33	0.68	2.08
ANTENATA	0.23223	0.06336	3.67	0.000***	1.26	1.11	1.43
VACCINAT	0.0789	0.4482	0.18	0.858	1.08	0.45	2.57
KNOWLEDG	-0.4785	0.4438	-1.08	0.281	0.62	0.26	1.48

Log-Likelihood = -99.995  
 Test that all slopes are zero: G = 58.674, DF = 12, P-Value = 0.000  
 \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant

Source: Primary Data

Table 9: Descriptors of the Logistic Model

Type of Delivery = -20.047 + 0.2939 \* Mothers Age + 1.6126 \* Living Area -0.1914 \* Marriage Age -0.2748 \* Mothers age at marriage -0.3271 \* Mothers Hb + 0.06881 \* Mothers Weight + 0.05820 \* Pregnancy Period + 0.2822 \* Baby's Weight + 0.23223 \* ANC Visits + 0.0789 \* Vaccination - 0.4785 \* Knowledge about danger sign of pregnancy.

Source: Primary Data

Table 10: Logistic Model by considering the significant predictors from model III: Type of delivery

Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-18.442	8.695	-2.12	0.034**			
Mothers Age	0.3019	0.1094	2.76	0.006***	1.35	1.09	1.68
Living Area	1.6107	0.4168	3.92	0.000***	5.13	2.27	11.61
Marriage Age	-0.2105	0.1134	-1.86	0.064*	0.81	0.65	1.01
Mothers Age at marriage	-0.2979	0.1193	-2.50	0.013**	0.74	0.59	0.94
Mothers Hb	-0.3264	0.1353	-2.41	0.016**	0.72	0.55	0.94
MothersWeight	0.06592	0.01990	3.31	0.001***	1.07	1.03	1.13
Pregnancy Per	0.05623	0.03050	1.84	0.065*	1.06	1.00	1.12
ANC Visits	0.22303	0.06135	3.64	0.000***	1.25	1.11	1.43

Log-Likelihood = -100.914  
 Test that all slopes are zero: G = 56.836, DF = 8, P-Value = 0.000  
 \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant

Source: Primary Data

Table 11: Descriptors of the Logistic Model

Type of Delivery = -18.442 + 0.3019 \* Mothers Age + 1.6347 \* Living Area -0.2105 \* Marriage Age -0.2979 \* Mothers age at marriage -0.3264 \* Mothers Hb + 0.06592 \* Mothers Weight + 0.05644 \* Pregnancy Period + 0.22303 \* ANC Visits

Source: Primary Data

Table 12: Logistic Model by considering all the predictors: Baby's Weight  
 According to WHO new born baby is healthy if its weight is greater than 2.5, so we have categorized the baby's weight as less than 2.5 kg and more than 2.5 kg.

Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-15.950	7.769	-2.05	0.040**			
Mothers Age	-0.0326	0.1169	-0.28	0.781	0.97	0.77	1.22
Living Area	-0.2464	0.4863	-0.51	0.612	0.78	0.30	2.03
Family Type	1.2184	0.5980	2.04	0.042**	3.38	1.05	10.92
Family members	0.1684	0.1169	1.44	0.150	1.18	0.94	1.49
Working Type	0.4759	0.5028	0.95	0.344	1.61	0.60	4.31
Marriage Age	-0.0912	0.1244	-0.73	0.464	1.10	0.86	1.40
Mothers age at marriage	-0.0273	0.1305	-0.21	0.834	0.97	0.75	1.26
Mothers Hb	0.1164	0.1390	0.84	0.402	1.12	0.86	1.48
MothersSugar	-0.00201	0.01160	-0.17	0.862	1.00	0.98	1.02
MothersWeight	0.04725	0.02349	2.01	0.044**	1.05	1.00	1.10
Pregnancy per	0.05360	0.02530	2.12	0.034**	1.06	1.00	1.11
Child order	-0.6241	0.3340	-1.87	0.062*	0.54	0.28	1.03
New born baby sex	0.8983	0.4113	2.18	0.029**	2.46	1.10	5.50
ANC visits	0.10317	0.06701	1.54	0.124	1.11	0.97	1.26
Health problems	-0.6896	0.5694	-1.21	0.226	0.50	0.16	1.53
USE	-0.3484	0.1573	-2.22	0.027**	0.71	0.52	0.96
ABNORMAL	-0.0868	0.5505	-0.16	0.875	0.92	0.31	2.70

Log-Likelihood = -89.513  
 Test that all slopes are zero: G = 26.557, DF = 17, P-Value = 0.065  
 \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant

Source: Primary Data

Table 13: Descriptors of the Logistic Model

Baby's Weight = -15.950 - 0.0326 \* Mothers Age - 0.2464 \* Living Area + 1.2184 \* Family Type + 0.1684 \* Family Members + 0.4759 \* Working Status + 0.0912 \* Marriage age - 0.0273 \* Mothers age at marriage - 0.1164 \* Mothers Hb - 0.00201 \* Mothers Sugar + 0.04725 \* Mothers Weight + 0.05360 \* Pregnancy Period - 0.6241 \* Child order + 0.8983 \* New born baby's sex + 0.10317 \* ANC Visits - 0.6896 \* Health problem - 0.3484 \* USE - 0.0868 \* Abnormality

Source: Primary Data

Table 14: Logistic Model by considering the significant predictors from model V: Baby's Weight

Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-11.152	6.183	-1.80	0.071*			
Family Type	0.4154	0.3948	1.05	0.293	1.51	0.70	3.28
MothersWeight	0.03893	0.02131	1.83	0.068*	1.04	1.00	1.08
Pregnancy pe	0.04295	0.02207	1.95	0.052*	1.04	1.00	1.09
Child order	-0.3960	0.2750	-1.44	0.150	0.67	0.39	1.15
New born baby sex	0.9188	0.3852	2.39	0.017**	2.51	1.18	5.33
USE	-0.3060	0.1380	-2.22	0.027**	0.74	0.56	0.97

Log-Likelihood = -95.407  
 Test that all slopes are zero: G = 14.769, DF = 6, P-Value = 0.022  
 \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant

Source: Primary Data

Table 15: Descriptors of the Logistic Model

Baby's Weight = -11.152 + 0.4154 \* Family Type + 0.03893 \* Mothers weight + 0.04295 \* Pregnancy Period - 0.3960 \* Child order + 0.9188 \* New born baby's sex - 0.3060 \* USE

Source: Primary Data

Table 16: Logistic Model by considering the significant predictors from model VI: Baby's Weight

Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-10.232	6.098	-1.68	0.093*			
MothersWeight	0.03695	0.02064	1.79	0.073*	1.04	1.00	1.08
Pregnancy pe	0.03746	0.02163	1.73	0.083*	1.04	1.00	1.08
New born baby sex	0.9050	0.3812	2.37	0.018**	2.47	1.17	5.22
USE	-0.2586	0.1339	-1.93	0.053*	0.77	0.59	1.00

Log-Likelihood = -96.868  
 Test that all slopes are zero: G = 11.846, DF = 4, P-Value = 0.019  
 \*\*\* (p<0.01) Highly Significant, \*\* (p<0.05) = Moderately Significant, \* (p<0.1) = Significant

Source: Primary Data

Table 17: Descriptors of the Logistic Model

Baby's Weight = - 10.232 + 0.03695 \* Mothers weight + 0.03746 \* Pregnancy Period + 0.9050 \* New born baby's sex - 0.2586 \* USE

### Discussion

1. Type of delivery may depend on the factors such as Mothers age, Living Area, Number of family members, Mothers age at marriage, Mothers sugar Mothers weight, Pregnancy period till the delivery, Number of ANC visits and Health problems whereas
2. New born baby's weight may depend on pregnancy period till the delivery.
3. Number of ANC visits may depend on Knowledge about danger sign of pregnancy.
4. Binary Logistic Model is developed with response as type of delivery using predictors Mothers Age, Living Area, Marriage age, Mothers age at

marriage, Mothers Hb, Mothers Weight, Pregnancy Period and ANC Visits.

5. Binary Logistic Model is developed with response as weight of the new born baby using the predictors such as Mothers Weight, Pregnancy Period, New born baby's sex and USE.

### Conclusion

The main aim of this paper is to investigate awareness of maternal care among reproductive women in Baramati and to find factors which significantly affect the woman's maternal health during pregnancy. Data was collected through face-to-face interviews using questionnaire from 200 respondents. The findings are, on an average

72% of the reproductive women in Baramati are aware of maternal health care. Type of delivery may depend on the factors Mothers age, Living Area, Number of family members, Mothers age at marriage, Mothers sugar, Mothers weight, Pregnancy period till the delivery and Number of ANC visits. Baby's weight may depend on the Pregnancy period till the delivery. Number of ANC visits may depend on the Knowledge about danger sign of pregnancy. The study will further help the medical practitioners to improve upon the ways to aware the women regarding the Maternal Health care program undertaken by the Government of India.

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