

In Modern Era of Intrauterine Foetal Therapy, Rural, Tribal Young Women's Awareness and Perceptions, Preconception, During Pregnancy and Antenatal Care Seeking-Community Based Study.

S. Chhabra

Emeritus Professor, Obstetrics Gynaecology, Mahatma Gandhi Institute of Medical Sciences, Sevagram
Officer on Special Duty, Dr. Sushila Nayar Hospital, Utavali, Melghat, Amravati, Chief Executive Officer, Akanksha
Shishugruha Kasturba Health Society, Sevagram, Wardha, Maharashtra

Article Info

Received: January 08, 2021

Accepted: February 10, 2021

Published: February 18, 2021

***Corresponding author:** S. Chhabra, Obstetrics Gynaecology, Mahatma Gandhi Institute of Medical Sciences.

Citation: S. Chhabra, In Modern Era of Intrauterine Foetal Therapy, Rural, Tribal Young Women's Awareness and Perceptions, Preconception, During Pregnancy and Antenatal Care Seeking-Community Based Study. International J of Clinical Gynaecology and Obstetrics, 2(1); DOI: <http://doi.org/03.2021/1.1007>.

Copyright: © 2021 S. Chhabra. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Background

Antenatal care is key entry point for pregnant women to receive nutrition advocacy, prevention, detection and treatment of anaemia, other preexisting illnesses' diagnosis and therapy of pregnancy specific disorders, monitoring baby's growth, abnormalities, birth preparedness, complications readiness, whole science of pregnancy care. It is an opportunity to get screened and learn about future health too. It is essential that women are aware preconception.

Objective

Community based study was carried out to know rural, tribal women's awareness, attitude towards antenatal care, preconception, during pregnancy and care seeking.

Material and Methods

After institute's ethics committee's approval, study was carried out in 100 villages in tribal communities where mother, child care activities were initiated after creation of health facility in one village, with 24 hrs 7 days services, specially for mothers, babies. Information about awareness regarding antenatal care, preconception, during pregnancy was collected through pretested tools. Study subjects, 15 to 45 years old, minimum 20, total 2400 preconception women, minimum 10 pregnant women from each village 1040, were randomly included.

Results

Of 2400 preconception women, 42.83% did not perceive antenatal care necessary. Those who said it was needed, had scanty ideas about contents and advantages of basic antenatal care. Of 1040 pregnant women, 957 (92%) sought antenatal care, 174 (18.2%) were told about abnormality without any details.

Conclusion

Many rural tribal women of low resource region did not think ANC was needed. Those who said it was needed had scanty awareness of contents, advantages of antenatal care. Many pregnant women had AN checkup but not all, some only once. There was lack of proper communication from health providers who needed to ensure to provide quality care with proper communication.

Keywords: antenatal care, preconception, pregnancy, awareness, perception, practice

Background

Antenatal care around which revolves the whole science of pregnancy care¹, is the key entry point for pregnant women to receive a range of health services, nutrition advocacy, prevention, detection and treatment of anaemia and other preexisting illnesses, in addition to timely diagnosis and therapy of pregnancy specific disorders, monitoring of the baby's growth and abnormalities and also get screened for disorders which affect future life. It is also an opportunity to promote birth preparedness, complications readiness (BPCR) and become aware of necessity of skilled attendance at birth and postpartum care for women and newborns. This is also ideal time to counsel about the appropriate breastfeeding as well as



contraception. So it is essential that women have positive attitude towards antenatal care, not only when they are pregnant but preconception too. Johnson et al² also reported that pregnancy-related outcomes can be improved preconception by finding out women's knowledge, perceptions about antenatal care and advocacy accordingly.

Objective

Community based study was carried out to know about rural tribal women's awareness and attitude towards antenatal care preconception, during pregnancy and antenatal care sought by pregnant women.

Material and Methods

After ethics committee's approval study was conducted in tribal communities of 100 villages of hilly forestry Melghat region of Amravati, Maharashtra, India. In these 100 villages community based mother and child care activities were initiated after having developed a health facility for 24 hrs 7 days services in one of these villages. After consent information was collected through pretested tools in the language which they understood, with some questions for yes or no answers and others open ended for short answers. It was decided to include minimum 20 preconception women of 15-45 years in each village randomly, making a total of 2400 study subjects. Interviews included information about awareness regarding antenatal care. Amongst 1040 pregnant women information included awareness as well as antenatal care seeking.

Results

Of 2400 preconception women interviewed, 42.8% did not even think that antenatal care was necessary. Though 1372 (57.2%) women did say that antenatal care was necessary, their knowledge was scatchy. Some said it was for maternal wellbeing (14.07%), others said fetal wellbeing (14.9%), preventing complications (15.7%), getting advice about diet (11.09%), hygiene (15.7%) and medication (27.6%), with some overlap. Out of those women who said ANC was needed, 20% said that only one antenatal visit was enough, 19.33% said 2-3 visits, 20.25% said 4-5, and only 18.54% said more than 5 visits were necessary. When asked about contents of the care, their ideas were scatchy, 19.96% women opined that urine should be tested, 14.17% said height should be measured, 15.53% said weight, 19.25% Hemoglobin, 16.17% said Blood pressure and 18.13% said sugar should be tested, with some overlap. Overall only 58.75% women said that additional or special food was required during pregnancy, of which 36.24% said four times meals, 28.44% women said that green vegetables were needed, and only 35.32% said milk was necessary. A total 1040 pregnant women were interviewed, of which 957 (92%) had antenatal care, one to six visits. Overall 783 (81.8%) women were not told about any abnormalities, however 174 (18.2%) were told that something was wrong without any details, as nothing was told to them about abnormalities. Of 1040 women, overall 323 (31.05%) were of 15-19 years and of them 306 (94.7%) had antenatal care, 148 (48.4%) had 1 to 2 visits, 96 (31.4%) 3-4 visits and 62 (20.3%) 5-6 visits. Of 306 pregnant women 14 (4.6%) were told that everything was not normal but what was abnormal they did not know.

Overall 56 (5.38% of 1040) were illiterate, 34 (60.7%) sought antenatal care, 16 (47.1%) once or twice, 16 (47.1%) three to four times, only 2 (5.9%) five or six times. Sixteen women (47.1%) said that they were told that all was not well but what was the abnormality they did not know. Of 321 (30.86%) high school educated women, 285 (88.8%) had sought antenatal care, 131 (46%) had 1 to 4 visits, 103 (36.1%) had 3 to 4 visits and 51 (17.9%) 5 to 6 visits and 31 (10.9%) were told that there were problems but they did not know what was the abnormality.

Of 1040 pregnant women, 804 (77.30%) were of economically low or low middle class, 790 (98.25%) had sought antenatal care, 355 (44.93%) once or twice, 307 (38.86%) 3-4 visits and 128 (16.20%) had 5-6 visits. And a total of 82 (10.37%) women were told that all was not well but they did not know anything more than that. And of the remaining 193 (18.55%) women of lower middle and middle class 165 (85.49%) women had sought antenatal care, 80 (41.45%) once or twice, 65 (33.67%) 3-4 visits and 20 (0.36%) had 5-6 visits. Total 14 (7.25%) were told of abnormalities with no details.

Of 943 housewives (90.6%) out of 1040 pregnant women, 882 (93.5%) had sought antenatal care, 303 (34.4%) had ANC once or twice, 461 (52.3%) 3-4 visits and 118 (13.4%) 5 to 6 visits and 3 (0.3%) were told that there were abnormalities without women knowing any details.

Of 1040 women, 117 (11.25%) were primigravida and 60 (51.3%) of them had sought antenatal care, 34 (56.7%) once or twice, 11 (18.3%) 3 to 4 visits and 15 (25%) had 5 to 6 visits and 3 (5%) were told that all was not well but they did not know what was wrong. Of 820 (78.84%) women with 3 or more births, 813 (99.14%) had antenatal care, 578 (71.9%) had ANC once or twice, 178 (21.89%) 3-4 visits and 57 (7.1%) had 5-6 visits. Total 160 (19.68%) were told that there were problems with no details. Overall of 1040 pregnant women, 957 women (92%) had antenatal care either by nurse midwives or by medical officers at primary health centres. But only 234 (22.5%) of 1040 had done registration for place of delivery and 81 (34.6%) of those who registered did registration only at Aaganwadi, 100 (42.7%) at Subcentres and 53 (22.6%) at PHCs. Of 1040 pregnant women, 83 (8.0%) women did not seek ANC. When asked reasons for not seeking antenatal care 34 (41.0%) said they had no money, 23 (27.7%) had fear of going to medical facility, 12 (14.5%) said there was no medical facility around, 8 (9.6%) had family restrictions and 6 (7.2%) did not give any reason for not seeking antenatal care. When asked about knowledge about tetanus toxoid during pregnancy 992 of 1040 (95.4%) knew but 48 of 1040 (4.6%) were not aware. A total of 919 of 1040 (88.4%) had some knowledge of hygiene during pregnancy.

Discussion

Hill et al³ reported that health professionals and policy makers should actively pursue opportunities to improve knowledge of reproductive age women through ANC clinics. Actually researchers found that 57% women knew about importance and the benefits of antenatal care. Getachew et al⁴ and Kawungezi et al⁵ reported that around 30% women considered antenatal care a waste of time and delays in antenatal clinics were worrisome. However researchers also reported that mother's experience of abortions and stillbirths increased the probability of using antenatal care.

Onasoga et al⁶ reported only 58% women received regular



antenatal care and 56% got registered in the first trimester, around 40% women did know about possible complications. In the present study overall of 2400 preconception women, 1028 (42.83%) did not even think that antenatal care was needed. Among those women who said yes, also knowledge was low, and scatchy. Overall 27.6% said ANC was for medicines, 15.7% for learning about hygiene and prevention of complications, 14.9% for fetal wellbeing, 14.07% for maternal wellbeing and 11.9% said for getting advice about diet. About minimum visits required for ANC, 21.88% women said it was not required at all, 20% said only once, 19.33% said 2-3 times, 20.25% said 4-5 times, 18.54% said more than 5 times. On asking about investigations also the information was scatchy, 19.25% said hemoglobin estimation, 18.13% said sugar, 16.96% urine test, 16.17% blood pressure and 15.33% weight and 14.17% said height should be measured during ANC visits. Overall only 58.75% women said additional food was required during pregnancy, 35.32% said milk and 28.44% said vegetables were needed. Total 41.25% women said no additional food was needed.

The attitude was positive in 69.6% women in the study by Dulla et al⁷. Faye et al⁸ reported that women receiving antenatal care knew the importance of acceptable intake of protein, vegetables, fruits and milk during pregnancy and that green leafy vegetables and meat prevented anaemia. Takelab et al⁹ reported that utilization of at least one antenatal care visit by a skilled provider reduced the risk of neonatal mortality by 39% in Sub-saharan African countries. Grenier et al¹⁰ reported that ANC was associated with higher facility delivery rates in Nigeria.

Grenier et al¹⁰ also reported that low quality and low frequency of antenatal care were associated with lower uptake of facility based deliveries, believed to be a key intervention to reduce maternal and neonatal mortality. In the present study of rural tribal preconception women of reproductive age, 52% women were aware about anaemia, 43.3% women were aware that prevention and treatment of anaemia before pregnancy could prevent pregnancy complications like giddiness (34.6%), swelling (29.4%) and excess blood loss during delivery (36%). Overall 42% women were not even aware of that additional micronutrients were required during pregnancy and lactation, 41.65% said that calcium and iron supplements were needed and 58.51% said that high protein and high fibre supplements were sufficient. Patel et al¹¹ did a study to determine the level of knowledge, attitude, and practice of ANC among pregnant women attending the antenatal clinic at a Tertiary Care Hospital and reported that 58% women had adequate knowledge of ANC. Researchers found that almost all the variables such as age, education, occupation, parity, type of family, and socioeconomic status (SES) had a significant association with awareness about ANC.

In the present study of 1040 pregnant study subjects, 957 (92.0%) had sought antenatal care but 653 (68.2%) women had only once or twice, 201 (21.0%) three to four times and only 103 (10.8%) five to six visits. Out of those who received ANC, of them 174 (18.2%) said they were told that all was not well but, they did not know about the problems. Rest did not know anything. So quality care is essential. Lack of communication affects their care, may discourage for revisit and others to seek services. Overall 83 (8%) women had no ANC. Of 1040 women 957 (92%) who received ANC, many did not even have basic investigations like urine, albumin, sugar and hemoglobin. Of 1040 pregnant women, when asked about registration for birth only 234 (22.5%) had done, 53

(22.6%) at PHC, 100 (42.7%) at Sub Centre and 81 (34.6%) just at Aaganwadi Accredited Social Health Activists (ASHA) were to decide other things. A big number 806 (77.5%) had not planned place of delivery. Of 83 (8%) study subjects, when asked about not having antenatal care, 34 (41.0%) said they had no money, 23 (27.7%) had fear of going to medical facility, 12 (14.5%) said no medical facility was nearby and 6 (7.2%) said they were not aware. Of 1040 pregnant women, 48 (4.6%) had no knowledge about pregnancy care, 121 (11.6%) had no knowledge of cleanliness during pregnancy. Hijazi et al¹² reported that taking women's experience of ANC as a key reporting for quality care is more likely to lead to increased utilization of ANC services by women in highly disadvantaged communities. Afulani et al¹³ reported that quality of ANC was suboptimal in both service provision and experience domains, with disparities in demographic and socioeconomic factors and facility type. More efforts are needed to improve quality of ANC and to eliminate the disparities. Awasthi et al¹⁴ reported that low education and lack of awareness among mothers, low socioeconomic condition, early marriage and pregnancy, inappropriate antenatal check-up, and cultural taboos were significant factors affecting the satisfactory utilization. Akowuah et al¹⁵ reported that to ensure adequate utilization of services, the government and other stakeholders should offer support to the less-privileged mothers. Gupta et al¹⁶ reported that the age, literacy status, socioeconomic status (SES), and type of family had significant association with the utilization of ANC services. Their study revealed that maternal literacy remained a key factor in the better utilization of antenatal services. Yadav¹⁷ reported that 50% women had good knowledge. 40% had average knowledge. In the present study knowledge regarding antenatal care in pregnant mothers and utility was much less in primi gravida and low socio-economic status and low educational level too affected antenatal care seeking. Ali et al¹⁸ reported that various factors associated with utilization of antenatal care have not been synthesized collectively. So group [antenatal care](#) was being advocated in which women attended a health facility at regular intervals with about 10 pregnant peers. The antenatal care provider, usually a nurse or midwife, performed brief but thorough exam in privacy while the women socialized and helped one another checked their vital signs. The provider facilitated discussion of important pregnancy education topics. Research suggested that model, which offered education and support as well as recommended clinical care, had the potential to improve perinatal outcomes in some populations. Byerley et al¹⁹ reported that African-American women who participated in group antenatal care in the United States demonstrated a significantly reduced risk of preterm births. Studies of the effects of group antenatal care revealed improvements in blood sugar control among pregnant women with diabetes, smoking cessation and decreases in rapid repeat pregnancy²⁰. Strengthening counseling during antenatal care services that involved men together with partners is being recommended. Their involvement in antenatal care is identified as important in maternal health²¹.

Conclusion

Even in the present era quite a few preconception tribal rural women of low resource region did not think ANC was needed. Those who said it was needed also had scatchy knowledge. Of those pregnant women quite a few had ANC but some had only once and they had scatchy knowledge. Also information revealed



that there was lack of proper communication between health providers and pregnant women which is essential to have impact and quality care.

Conflict of Interest- No conflict of Interest.

Variables	Total	Awareness of ANC				Importance of ANC												
		No	%	Yes	%	Maternal Well being	%	fetal well being	%	Prevent complications	%	Advice about diet	%	Hygiene Advice	%	Medicines	%	
Age																		
15-19	336	143	42.5	193	57.4	10	5.18	21	10.9	44	22.8	20	10.4	16	8.29	82	42.5	
20-24	828	346	41.7	482	58.2	97	20.12	79	16.4	104	21.6	46	9.5	41	8.51	115	23.9	
25-29	736	371	50.4	365	49.6	34	9.315	60	16.4	36	9.86	73	20	50	13.7	112	30.7	
30-34	333	103	30.9	230	69.1	42	18.2	41	17.8	24	10.4	18	7.8	105	45.7	0	0	
35-39	93	45	48.3	48	51.6	10	20.8	4	8.33	0	0	6	12.5	4	8.33	24	50	
40-45	74	20	27.0	54	73	0	0	0	0	8	14.8	0	0	0	0	46	85.2	
Total	2400	1028	42.8	1372	57.2	193	14.0	205	14.9	216	15.7	163	11.9	216	15.7	379	27.6	
Education																		
Illiterate	953	413	43.3	540	56.7	92	17.0	57	10.6	76	14.1	81	15	56	10.4	178	33.3	
Primary	850	336	39.5	514	60.5	67	13.0	99	19.3	80	15.6	61	11.9	76	14.8	131	25.5	
Secondary	506	254	50.2	252	49.8	21	8.33	22	8.73	54	21.4	7	2.78	6	2.38	142	56.3	
Higher Secondary	91	25	27.4	66	72.5	13	19.7	4	6.06	5	7.58	2	3.03	3	4.55	39	59.1	
Total	2400	1028	42.8	1372	57.2	193	14.0	205	14.9	216	15.7	163	11.9	216	15.7	379	27.6	
Profession																		
Housewife	275	193	70.1	82	29.8	12	14.6	15	1.83	4	4.88	28	34.1	13	15.9	10	12.2	
Labourer	958	411	42.9	547	57.1	117	21.39	73	1.33	39	7.13	55	10.1	43	7.86	220	40.2	
Own Farm Labourer	468	154	32.9	314	67.1	13	4.14	35	1.11	40	12.7	43	13.7	28	8.92	155	49.4	



Work Away Form Our Village	699	22.4	32.0	475	68	51	10.7	59	1.24	133	28	37	7.79	57	12	138	29.1
Total	2400	10.28	42.8	1372	57.2	193	14.0	205	1.49	216	15.7	163	11.9	216	15.7	379	27.6
Economics																	
Upper	147	66	44.9	81	55.1	18	22.2	16	19.8	6	7.41	13	16	4	4.94	30	37
Upper Middle	183	94	51.3	89	48.6	15	16.8	15	16.9	26	29.2	11	12.4	0	0	22	24.7
Middle	544	207	38.0	337	61.9	20	5.93	35	10.4	113	33.5	27	8.01	26	7.72	116	34.4
Upper Lower	662	290	43.8	372	56.2	59	15.8	36	9.68	24	6.45	39	10.5	69	18.5	145	39
Lower	864	319	36.9	545	63.1	81	14.8	80	14.7	47	8.62	73	13.4	42	7.71	222	40.7
Total	2400	10.28	42.8	1372	57.2	193	14.0	205	14.9	216	15.7	163	11.9	216	15.7	379	27.6
Parity																	
P0	105	9	8.7	96	91.4	12	12.5	14	14.5	6	6.25	16	16.6	29	30.21	19	19
P1	411	201	48.9	210	51.9	51	24.2	60	28.5	35	16.6	36	17.1	14	6.67	14	14
P2	672	246	36.6	426	63.4	57	16.2	48	11.3	125	31.2	34	11.7	116	10.3	46	19.2
P3	453	208	45.9	245	54.1	22	8.98	35	14.3	25	10.2	21	8.57	17	6.94	125	51
P4	250	113	45.2	137	54.8	18	13.1	20	14.6	8	5.84	25	18.2	15	10.9	51	37.2
P5 Above	509	251	49.31	258	50.7	33	12.7	28	10.9	17	6.59	31	12	25	9.69	124	48.1
Total	2400	1028	42.83	1372	57.2	193	14.07	205	14.9	216	15.7	163	11.9	216	15.7	379	27.6

Table I: Preconception Awareness about Antenatal Care

Variables	Total	Antenatal Care									
		Only once	%	2-3	%	4-5	%	>5	%	Not required	%
Age											
15-19	336	48	14.29	43	12.8	80	23.81	91	27.08	74	22.02
20-24	828	163	19.69	179	21.62	154	18.6	154	18.6	178	21.5
25-29	736	180	24.46	154	20.92	160	21.74	120	16.3	122	16.58
30-34	333	53	15.92	62	18.62	69	20.72	54	16.22	95	28.53



143	93	13	13.98	23	24.73	13	13.98	15	16.13	29	31.18
40-45	74	23	31.08	3	4.054	10	13.51	11	14.86	27	36.49
Total	2400	480	20	464	19.33	486	20.25	445	18.54	525	21.88
Education											
Illiterate	953	178	18.68	163	17.1	224	23.5	233	24.45	155	16.26
primary	850	178	20.94	136	16	186	21.88	135	15.88	215	25.29
Secondary	506	108	21.34	158	31.23	62	12.25	64	12.65	114	22.53
Higher secondary	91	16	17.58	7	7.692	14	15.38	13	14.29	41	45.05
Total	2400	480	20	464	19.33	486	20.25	445	18.54	525	21.88
Profession											
Housewife	275	86	31.27	44	16	40	14.55	25	9.091	80	29.09
Laborer	958	208	21.71	174	18.16	158	16.49	163	17.01	255	26.62
Own farm laborer	468	93	19.87	80	17.09	125	26.71	77	16.45	93	19.87
Work away form our village	699	93	13.3	166	23.75	163	23.32	180	25.75	97	13.88
Total	2400	480	20	464	19.33	486	20.25	445	18.54	525	21.88
Economics											
Upper	147	21	14.29	25	17.01	26	17.69	34	23.13	41	27.89
upper middle	183	81	44.26	17	9.29	31	16.94	11	6.011	43	23.5
Middle	544	149	27.39	151	27.76	129	23.71	75	13.79	40	7.353
Upper lower	662	106	16.01	84	12.69	176	26.59	157	23.72	139	21
Lower	864	123	14.24	187	21.64	124	14.35	184	21.3	246	28.47
Total	2400	480	20	464	19.33	486	20.25	445	18.54	525	21.88
Parity											
P0	105	14	13	187	11	35	33.3	28	21.3	246	15.24
P1	411	110	27	464	23	48	11.7	105	18.54	525	13.38
P2	672	195	28.02	12	12.05	118	16.07	110	18.6	16	24.26
P3	453	52	11.48	93	17.22	75	24.28	89	22.52	55	24.5
P4	250	36	14.4	51	20.4	71	28.4	36	14.4	56	22.4
P5 Above	509	77	15.13	161	31.63	139	27.31	77	15.13	55	10.81
Total	2400	480	20	464	19.33	486	20.25	445	18.54	525	21.88

Table II: Preconception Women's Opinion of Number of Prenatal Visits

Variables	Total	Contents of ANC											
		Weight	%	Height	%	Urine test	%	Sugar test	%	Blood Pressure	%	HB test	%
Age													
15-19	336	47	13.99	39	11.61	56	16.67	64	19.05	67	19.94	63	18.75
20-24	828	145	17.51	101	12.2	127	15.34	103	12.44	133	16.06	219	26.45
25-29	736	115	15.63	122	16.58	133	18.07	123	16.71	129	17.53	114	15.49
30-34	333	35	10.51	55	16.52	71	21.32	71	21.32	47	14.11	54	16.22
35-39	93	12	12.9	11	11.83	13	13.98	42	45.16	6	6.452	9	9.677
40-45	74	14	18.92	12	16.22	7	9.459	32	43.24	6	8.108	3	4.054



Total	2400	368	15.33	340	14.17	407	16.96	435	18.13	388	16.17	462	19.25
Education													
Illiterate	953	179	18.78	157	16.47	153	16.05	190	19.94	185	19.41	89	9.34
Primary	850	135	15.88	124	14.59	183	21.53	131	15.41	141	16.59	136	16.00
Secondary	506	49	9.684	49	9.684	63	12.45	88	17.39	56	11.07	201	39.72
Higher Secondary	91	5	5.495	10	10.99	8	8.791	26	28.57	6	6.593	36	39.56
Total	2400	368	15.33	340	14.17	407	16.96	435	18.13	388	16.17	462	19.25
Profession													
Housewife	275	23	8.364	36	13.09	54	19.64	110	40	25	9.091	27	9.818
Laborer	958	219	22.86	97	10.13	178	18.58	149	15.55	155	16.18	160	16.7
Own Farm Laborer	468	38	8.12	124	26.5	74	15.81	76	16.24	65	13.89	91	19.44
Work Away Form Our Village	699	88	12.59	85	12.16	101	14.45	98	14.02	143	20.46	184	26.32
Total	2400	368	15.33	340	14.17	407	16.96	435	18.13	388	16.17	462	19.25
Economics													
Upper	147	38	25.85	17	11.56	27	18.37	26	17.69	16	10.88	23	15.65
upper middle	183	50	27.32	26	14.21	62	33.88	20	10.93	10	5.46	15	8.197
Middle	544	148	27.21	64	11.76	32	5.882	70	12.87	95	17.46	135	24.82
Upper lower	662	56	8.459	137	20.69	88	13.29	149	22.51	115	17.37	117	17.67
Lower	864	76	8.796	96	11.11	198	22.92	170	19.68	152	17.59	172	19.91
Total	2400	368	15.33	340	14.17	407	16.96	435	18.13	388	16.17	462	19.25
Parity													
P0	105	28	26.7	17	16.2	13	12	17	16.2	14	13	172	15.2
P1	411	109	26.5	57	13.9	50	12	42	10.2	74	18	462	19.2
P2	672	98	14.29	50	9.524	180	26.79	160	16.67	56	6.845	158	25.89
P3	453	73	16.11	108	23.84	52	11.48	55	6.62	88	24.94	77	17
P4	250	24	9.6	33	13.2	33	13.2	61	24.40	53	21.2	46	18.4
P5 Above	509	66	12.97	75	14.73	92	18.07	87	17.09	103	20.24	86	16.9
Total	2400	368	15.33	340	14.17	407	16.96	435	18.13	388	16.17	462	19.25

Table III: Preconception Perceptions of Contents of Antenatal Care

Variables	Total	Additional Nutrition Requirement During Pregnancy				If yes					
		No	%	Yes	%	Four meals a Day	%	Vegetables	%	Milk	%
15-19	336	154	45.83	182	54.17	46	25.27	93	51.1	43	23.63
20-24	828	354	42.75	474	57.25	240	50.63	81	17.09	153	32.28
25-29	736	322	43.75	414	56.25	117	28.26	132	31.88	165	39.86
30-34	333	95	28.53	238	71.47	86	36.13	70	29.41	82	34.45
35-39	93	49	52.69	44	47.31	13	29.55	12	27.27	19	43.18



40-45	74	16	21.62	58	78.38	9	15.52	13	22.41	36	62.07
Total	2400	990	41.25	1410	58.75	511	36.24	401	28.44	498	35.32
Education											
Illiterate	953	399	41.87	554	58.13	224	23.50	173	18.15	381	39.98
Primary	850	350	41.18	500	58.82	201	23.65	113	13.29	387	45.53
Secondary	506	211	41.7	295	58.3	74	14.62	97	19.17	124	24.51
Higher Secondary	91	30	32.97	61	67.03	12	13.19	18	19.78	31	34.07
Total	2400	990	41.25	1410	58.75	511	21.29	401	16.71	498	20.75
Profession											
Housewife	275	139	50.55	136	49.45	25	18.38	26	19.12	85	62.5
Laborer	958	335	34.97	623	65.03	252	40.45	196	31.46	175	28.09
Own Farm Laborer	468	288	61.54	180	38.46	61	33.89	30	16.67	89	49.44
Work Away Form Our Village	699	228	32.62	471	67.38	173	36.73	149	31.63	149	31.63
Total	2400	990	41.25	1410	58.75	511	36.24	401	28.44	498	35.32
Economics											
Upper	147	56	38.1	91	61.9	50	54.95	23	25.27	18	19.78
Upper Middle	183	56	30.6	127	69.4	55	43.31	30	23.62	42	33.07
Middle	544	179	32.9	365	67.1	143	39.18	92	25.21	130	35.62
Upper Lower	662	425	64.2	237	35.8	48	20.25	80	33.76	109	45.99
Lower	864	274	31.71	590	68.29	215	36.44	176	29.83	199	33.73
Total	2400	990	41.25	1410	58.75	511	36.24	401	28.44	498	35.32
Parity											
P0	105	15	14.3	90	85.7	18	20.0	32	36	40	44.4
P1	411	205	49.9	206	50.1	77	37.38	57	28	72	35
P2	672	334	49.7	338	50.3	170	51.78	131	38.76	67	9.467
P3	453	163	49.98	290	64.02	93	32.07	71	25.17	126	42.76
P4	250	136	54.4	114	45.6	32	28.07	44	38.6	38	33.33
P5 Above	509	137	26.9	372	73.08	121	32.07	96	25.81	155	41.67
Total	2400	990	41.25	1410	58.75	511	36.24	401	28.44	498	35.32

Table IV: Knowledge Of Additional Nutrition Requirement During Pregnancy

Variables	Total	Antenatal care				If YES Number of Visits						Any Abnormalities			
		NO	%	YES	%	One to Two	%	Three to Four	%	Five to Six	%	YES	%	NO	%
AGE															
15 to 19	323	17	5.3	306	94.7	148	48.4	96	31.4	62	20.3	14	4.6	292	95.4
20 to 24	536	58	10.8	478	89.2	266	55.6	126	26.4	86	18.0	51	10.7	427	89.3
25 to 29	109	8	7.3	101	92.7	66	65.3	21	20.8	14	13.9	11	10.9	90	89.1
30 to 34	68	0	0.0	68	100	36	52.9	19	27.9	13	19.1	4	5.9	64	94.1
35 to 39	4	0	0.0	4	100	2	50.0	2	50.0	0	0.0	0	0.0	4	100.0



TOTAL	1040	83	8.0	957	92.0	518	54.1	264	27.6	175	18.3	80	8.4	877	91.6
EDUCATION															
ILLITERATE	56	22	39.3	34	60.7	16	47.1	16	47.1	2	5.9	16	47.1	18	52.9
PRIMARY	321	36	11.2	285	88.8	131	46.0	103	36.1	51	17.9	31	10.9	254	89.1
SECONDARY	358	11	3.1	347	96.9	103	29.7	156	45.0	88	25.4	14	4.0	333	96.0
HIGHER SECONDARY	196	11	5.6	185	94.4	102	55.1	66	35.7	17	9.2	6	3.2	179	96.8
GRADUCATE	66	2	3.0	64	97.0	19	29.7	26	40.6	19	29.7	15	23.4	49	76.6
POST GRADUCATE	43	1	2.3	42	97.7	21	50.0	5	11.9	16	38.1	9	21.4	33	78.6
TOTAL	1040	83	8.0	957	92.0		0.0		0.0	957	100	91	9.5	866	90.5
ECONOMIC STATUS															
UPPER	43	41	95.3	2	4.7	2	100.0	0	0.0	0	0.0	0	0.0	2	100.0
UPPER MIDDLE	51	12	23.5	39	76.5	34	87.2	1	2.6	4	10.3	3	7.7	36	92.3
UPPER LOWER	142	16	11.3	126	88.7	46	36.5	64	50.8	16	12.7	11	8.7	115	91.3
LOWER MIDDLE	186	10	5.4	176	94.6	109	61.9	41	23.3	26	14.8	21	11.9	155	88.1
LOWER	618	4	0.6	614	99.4	246	40.1	266	43.3	102	16.6	61	9.9	553	90.1
TOTAL	1040	83	8.0	957	92.0	437	45.7	372	38.9	148	15.5	96	10.0	861	90.0
PROFESSION															
HOUSEWIFE	943	61	6.5	882	93.5	303	34.4	461	52.3	118	13.4	3	0.3	879	99.7
OWNFARM LABOUR	53	16	30.2	37	69.8	6	16.2	29	78.4	2	5.4	16	43.2	21	56.8
LABOURER	40	6	15.0	34	85.0	16	47.1	15	44.1	3	8.8	19	55.9	15	44.1
OTHERWORK	4	0	0.0	4	100	3	75.0	1	25.0	0	0.0	2	50.0	2	50.0
TOTAL	1040	83	8.0	957	92.0	328	34.3	506	52.9	123	12.9	40	4.2	917	95.8
PARITY															
P.1	117	57	48.7	60	51.3	34	56.7	11	18.3	15	25.0	3	5.0	57	95.0
P.2	103	19	18.4	84	81.6	41	48.8	12	14.3	31	36.9	11	13.1	73	86.9
P.3	155	5	3.2	150	96.8	91	60.7	41	27.3	18	12.0	12	8.0	138	92.0
P.4	204	2	1.0	202	99.0	166	82.2	15	7.4	21	10.4	22	10.9	180	89.1
P.5 Above	461	0	0.0	461	100	321	69.6	122	26.5	18	3.9	126	27.3	335	72.7
TOTAL	1040	83	8.0	957	92.0	653	68.2	201	21.0	103	10.8	174	18.2	783	81.8

Table V: Pregnant Women's Antenatal Visits

Variables	Total	Barriers to ANC required									
		Not aware	%	No medical facility	%	No money	%	Family restriction	%	Fear of going to medical facilities	%
15 to 19	17	6	35.3	3	17.6	6	35.3	2	11.8	0	0.0
20 to 24	58	9	15.5	16	27.6	13	22.4	13	22.4	7	12.1
25 to 29	8	2	25.0	1	12.5	4	50.0	1	12.5	0	0.0
30 to 34	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
35 to 39	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0



TOTAL	83	17	20.5	20	24.1	23	27.7	16	19.3	7	8.4
EDUCATION											
ILLITERATE	22	9	40.9	4	18.2	4	18.2	2	9.1	3	13.6
PRIMARY	36	13	36.1	11	30.6	7	19.4	4	11.1	1	2.8
SECONDARY	11	6	54.5	2	18.2	2	18.2	1	9.1	0	0.0
HIGHER SECONDARY	11	0	0.0	1	9.1	2	18.2	7	63.6	1	9.1
GRADUCATE	2	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0
POST GRADUCATE	1	0	0.0	0	0.0	0	0.0	1	0.0	0	0.0
TOTAL	83	28	33.7	18	21.7	15	18.1	16	19.3	6	7.2
ECONOMIC STATUS											
UPPER	41	1	2.4	2	4.9	6	14.6	11	26.8	21	51.2
UPPER MIDDLE	12	0	0.0	6	50.0	2	16.7	2	16.7	2	16.7
UPPER LOWER	16	1	6.3	4	25.0	7	43.8	3	18.8	1	6.3
LOWER MIDDLE	10	0	0.0	2	20.0	7	70.0	1	10.0	0	0.0
LOWER	4	0	0.0	0	0.0	3	75.0	0	0.0	1	25.0
TOTAL	83	2	2.4	14	16.9	25	30.1	17	20.5	25	30.1
PROFESSION											
HOUSEWIFE	61	4	6.6	6	9.8	9	14.8	11	18.0	31	50.8
OWNFARM LABOUR	16	2	12.5	9	56.3	1	6.3	1	6.3	3	18.8
LABOURER	6	1	16.7	1	16.7	4	66.7	0	0.0	0	0.0
OTHERWORK	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL	83	7	8.4	16	19.3	14	16.9	12	14.5	34	41.0
PARITY											
P.1	57	4	7.0	11	19.3	17	29.8	6	10.5	19	33.3
P.2	19	2	10.5	1	5.3	12	63.2	1	5.3	3	15.8
P.3	5	0	0.0	0	0.0	3	60.0	1	20.0	1	20.0
P.4	2	0	0.0	0	0.0	2	100	0	0.0	0	0.0
P.5 Above	0	0	0.0	0	0.0	0	0	0	0.0	0	0.0
TOTAL	83	6	7.2	12	14.5	34	41.0	8	9.6	23	27.7

Table VI: Barriers to Utilization of Antenatal Care

References:

- Lincetto O, Mothebesoane-Anoh S, Gomez P, Munjanja S. Antenatal care. Opportunities for Africa's newborns: Practical data, policy and programmatic support for newborn care in Africa. 2006:55-62.
- Johnson, K., Posner, S. F., Biermann, J., Cordero, J. F., Atrash, H. K., Parker, C. S., ... & Curtis, M. G. (2006). Recommendations to improve preconception health and Health Care—United States: report of the CDC/ATSDR preconception care work group and the select panel on preconception care. *Morbidity and Mortality Weekly Report: Recommendations and Reports*, 55(6), 1-CE.
- Hill B, Hayden M, McPhie S, Bailey C, Skouteris H. Preconception and antenatal knowledge and beliefs about gestational weight gain. *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2019 Oct;59(5):634-40.
- Getachew H, Tadesse Y, Shibeshi W. Drug dosage adjustment in hospitalized patients with renal impairment at Tikur Anbessaspecialized hospital, Addis Ababa, Ethiopia. *BMC nephrology*. 2015 Dec;16(1):158.
- Kawungezi PC, AkiiBua D, Aleni C, Chitayi M, Niwaha A, Kazibwe A, Sunya E, Mumbere EW, Mutesi C, Tukei C, Kasangaki A. Attendance and utilization of antenatal care (ANC) services: multi-center study in upcountry areas of Uganda. *Open journal of preventive medicine*. 2015 Mar 1;5(3):132.
- Onasoga OA, Afolayan JA, Oladimeij BD. Factors influencing utilization of antenatal care services among pregnant women in Ife Central Lga, Osun State, Nigeria. *Advances in Applied Science Research*. 2012;3(3):1309-15.
- Dulla D, Daka D, Waggari N. Antenatal care utilization and its associated factors among pregnant women in Boricha district, southern Ethiopia. *Divers Equal Heal Care*. 2017;14(2):76-84.
- Faye A, Niane M, Ba I. Home birth in women who have given birth at least once in a health facility: contributory factors in a developing country. *Acta obstetriciaet*



- gynecological Scandinavica. 2011 Nov;90(11):1239-43.
9. Tekelab T, Chojenta C, Smith R, Loxton D. The impact of antenatal care on neonatal mortality in sub-Saharan Africa: A systematic review and meta-analysis. *PloS one*. 2019 Sep 13;14(9):e0222566.
 10. Grenier L, Suhowatsky S, Kabue MM, Noguchi LM, Mohan D, Karnad SR, Onguti B, Omanga E, Gichangi A, Wambua J, Waka C. Impact of group antenatal care (G-ANC) versus individual antenatal care (ANC) on quality of care, ANC attendance and facility-based delivery: A pragmatic cluster-randomized controlled trial in Kenya and Nigeria. *PloS one*. 2019;14(10).
 11. Patel BB, Gurmeet P, Sinalkar DR, Pandya KH, Mahen A, Singh N. A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic at a Tertiary Care Hospital of Pune, Maharashtra. *Medical Journal of Dr. DY Patil University*. 2016 May 1;9(3):354.
 12. Hijazi HH, Alyahya MS, Sindiani AM, Saqan RS, Okour AM. Determinants of antenatal care attendance among women residing in highly disadvantaged communities in northern Jordan: a cross-sectional study. *Reproductive health*. 2018 Dec;15(1):106.
 13. Afulani PA, Buback L, Essandoh F, Kinyua J, Kirumbi L, Cohen CR. Quality of antenatal care and associated factors in a rural county in Kenya: an assessment of service provision and experience dimensions. *BMC health services research*. 2019 Dec 1;19(1):684.
 14. Awasthi, M. S., Awasthi, K. R., Thapa, H. S., Saud, B., Pradhan, S., & Khatri, R. A. (2018). Utilization of antenatal Care Services in Dalit Communities in Gorkha, Nepal: a cross-sectional study. *Journal of Pregnancy*, 2018.
 15. AKOWUAH, Jones Asafo; AGYEI-BAFFOUR, Peter; ASIBEY, Benedict Osei. A Qualitative Study on the Pathways to Evidence-Based Antenatal Care in Periurban Ghana. *Obstetrics and gynecology international*, 2018, 2018.
 16. Gupta RK, Shora TN, Verma AK, Jan R. Knowledge regarding antenatal care services, its utilization, and delivery practices in mothers (aged 15-49 years) in a rural area of North India. *Tropical Journal of Medical Research*. 2015 Jul 1;18(2):89.
 17. Yadav L. Assessment of the Knowledge Regarding Antenatal Care among Pregnant Women with a View to Develop Information Booklet at Selected Clinics of District of Punjab.
 18. Ali SA, Dero AA, Ali SA. Factors affecting the utilization of antenatal care among pregnant women: a literature review. *J Preg Neonatal Med* 2018; 2 (2): 41-45. 42 *J Preg Neonatal Med* 2018, 2. 2018;2.
 19. BYERLEY, Brittany M.; HAAS, David M. A systematic overview of the literature regarding group prenatal care for high-risk pregnant women. *BMC pregnancy and childbirth*, 2017, 17.1: 329.
 20. Musange SF, Butrick E, Lundeen T, Santos N, Firdaus HA, Benitez A, Nzeyimana D, Murindahabi NK, Nyiraneza L, Sayinzoga F, Ndahindwa V. Group antenatal care versus standard antenatal care and effect on mean gestational age at birth in Rwanda: protocol for a cluster randomized controlled trial. *Gates open research*. 2019;3.
 21. Pembe AB, August F, Mpembeni R, Axemo P, Darj E. Men's knowledge of obstetric danger signs, birth preparedness and complication readiness in rural Tanzania. *PloS one*. 2015 May 7;10(5):e0125978.