Availability and use of antenatal services by tribal women in District Jhabua, Madhya Pradesh 2007

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CERTIFICATION

This is to certify that this dissertation, entitled **Availability and use of antenatal services by tribal women in District Jhabua, Madhya Pradesh 2007** submitted by **Dr. Rajesh Sisodiya**, in partial fulfillment of the requirements for the degree of Master of Applied Epidemiology, is the original work done by him and has not been submitted earlier, in part or whole for any other (Publication or Degree) purpose.

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Director

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Section 1

Dissertation

Availability and use of antenatal services by tribal women in district Jhabua, Madhya Pradesh 2007

1. Introduction

Promotion of maternal and child health has been one of the most important components of the Family Welfare Programme of the Government of India and the National Population Policy-2000[1]. The safe motherhood program is the important component of reproductive and child health programme[2]. Antenatal care includes care during pregnancy and should begin from the early stages of pregnancy. Women can access antenatal care services either by visiting a health center where such services are available or from health workers during their domiciliary visits. The fist one gives an idea about the voluntary utilization of the services by women while the second one is related to the quality aspect of the services. One of the most important components of antenatal care is to offer information and advice to women about pregnancy related complications and possible curative measures for early detection and management of complications. Further, antenatal visits may raise awareness about the need for care during delivery or give women and their families a familiarity with health facilities that enable them to seek help more efficiently during a crisis. Antenatal care is an important determinant of maternal mortality rate and one of basic component of maternal care on which the life of mother and babies depends.[2] Every minute a women dies as a result of pregnancy thus loss per annum 500,000 women.[3] Globally tribal women are venerable population due to lack of access to antenatal services and care available to the tribal people[4].

One-third of maternal deaths occurred in south east Asia [7]. Current estimate suggest over 37 million women give birth every year and of those, nearly 1,74,000 mothers die each year.

They constitute 8.08% (2001 Census) of the country's total population.

Tribal population (about 70 million) in India is socio-economically the most disadvantaged group[4]. Maternal deaths are high in tribal area compared to non tribal area in Madhya Pradesh.[3] Mothers receiving three antenatal check up was 24% and no antenatal check up was 31% in 2003[6] .

District Jhabua

Jhabua district is predominantly inhabited by tribal population and 91% of population lives in rural areas. The schedule tribe/schedule caste constitutes 89.5% of the population. District Jhabua's population was 13, 96,677 (census 20001) and at present in 2007 approximately 16,00,000. Birth rate was 36/1000 population and infant mortality rate was 97/1000 and maternal mortality ratio was795/100000 live births in 2006 district Jhabua. So high maternal mortality in the district Jhabua were considered for maternal services availability and use. Antenatal care is a part of maternal care for the health of both the mother and the child, it is important to analyze the availability (coverage) and their use of this service by tribal women, determine the possible factor affecting utilization of services and assess women knowledge towards antenatal services in the tribal district Jhabua.

2. Method

2.1 Study area

We conducted the study in Jhabua district, a tribal area of Madhya Pradesh. Population of the district was 1.6million in 2007.

2.2 Study population

We recruited tribal women of selected anganwadi centers (ICDS) of Jhabua district who had delivered a baby during the period November 2006-April 2007.

2.3 Operational definitions

Women using antenatal services: They are defined as women who received three antenatal check ups before delivery.

Women poorly using antenatal services: They are defined as women who received less than three antenatal check ups before delivery.

2.4 Study design

We conducted a cross sectional analytical study.

2.5 Sample size and sampling procedure

Using right size software, assuming antenatal checkup of 30 %, confidence coefficient95%, confidence interval ±5%, size of 10 per anganwadi center, we calculated the sample size of 300 women from 30 anganwadi canters.

2.6 Data collection

We conducted a cross sectional survey of the eligible women (who delivered a baby in past six months in Jhabua), covering various antenatal health issues including antenatal services. We randomly selected 30 anganwadi centers from the total of 1,959 anganwadi centers in the district for our study. We collected information about the women who delivered a baby in the past six months from the records of anganwadi workers. We collected information for 10 women from each anganwadi center between April 2007 and June 2007. Thus we collected information from 300 women who delivered a baby during November 2006-April2007 in district Jhabua .We trained the workers for interviewing the women and supervisors for maintaining quality control and help to anganwadi workers to carryout smooth field work.

2.7 Information collected

We used pretested, pre validated, open and close ended questionnaires for interview, regarding their knowledge and about what services they received from health facilities during past pregnancy, awareness about antenatal services, complication that could occur during pregnancy, their knowledge about utilization of antenatal care services and decision about place of delivery. The survey questionnaires were first prepared in English and then translated into regional languages. The questions pertaining to women's opinions, knowledge, attitudes etc. were open ended. Pilot testing of interview tools were done among women in a village to rule out any difficulty in understanding of the questions. We rectified all the problems in the final questionnaire. Women were interviewed at their homes by female interviewers. Only volunteered responses were recorded. There were no leading or suggestive questions in the questionnaire.

2.8 Human subject protection

The study was approved by the ethical committee of National institute of epidemiology. Written consent was obtained from the participating women. We maintained confidentiality by coding. We explained in detail regarding the purpose of interview and their right to not answer any question. They were also informed that they may quit the study at any time and were told that it would not affect their utilization of services from health facilities in the district. The women were not given any financial benefits. Consent form in the local language was given to them for reading or read in front of them by anganwadi workers. Written consent was taken from every woman. Each study women was interviewed for approximately 30 minutes.

2.9 Data analysis

We conducted analysis of data collected from 300 women of 30 anganwadi centers. Data were analyzed using Epi info version 3.3.2. Variables were dichotomized for the analysis of factors associated with antenatal service use and non-use .We calculated the prevalence ratio and 95% Confidence intervals of various factors.

3. Results

3.1 Characteristic of study population

We surveyed 300 women aged 18-30 years from tribal areas of Jhabua .The median age was 25 years (range 18-30). Circumstances of visit along with husbands during antenatal checkups were present among 140(47%) women. Of the total 300 women interviewed 286 (95%) were schedule tribes, 262 (87%) had husbands who were farmers, 117 (37%) women were literate, 245 (82%) lived in kuccha houses (made of wood and mud) and 136 (45%) had their family monthly income below Rs1, 500 (Table-1).

The prevalence was higher among women below 25 years of age (prevalence ratio [PR] =3.4, 95% confidence interval [CI]=1.8-6.1), monthly income above Rs 1,500 (PR = 1.6, 95% CI=1.3-2.1), those women whose husbands were farmers (PR= 4.1, 95% CI=1.5-12), educated women below secondary school (PR= 1.4, 95% CI 1.2-1.8) and whose husbands were educated below secondary school (PR= 1.7, 95% CI=1.3-2.1) (Table-2).

3.2 Antenatal coverage

Of the 300 tribal women, 129(43%) received three antenatal check ups. Tribal women of Jhabua who received one dose of tetanus toxoid were 100(33%), two doses (full dose) of tetanus toxoid were 110(37%), iron tablets (adult dose ,100 tablets) from health facilities were 191(64%), iron tablets received from anganwadi centers were 21(7%), supplementary nutrition (180 gm) from anganwadi centers were 174(58%)(Table -2).

3.3 Social economic status

Antenatal services were more likely to be used by women who came from high social economic status. These include women whose family own motor cycle (PR=1.7, 95%CI=1.5-1.9), radio (PR=1.6, 95%CI: 1.3-1.9) and bullock cart (PR =2.2, 95%CI =1.5-4).(Table-2)

3.4 Living condition

Women who lived in kuccha houses were likely to receive less antenatal services (PR =0.4, 95%CI: 0.3-2.1) (Table-2). Antenatal use was higher among tribal women who had less than four adults in the family (PR=1.5, 95%CI: 1.2-2.0), and those who had children less than two in the family (PR=1.3, 95%CI: 1.0-1.6).

3.5 Distance

Women who reside less than five kilometer distance were more likely to use antenatal services (PR =1.6, 95%CI =1.0-2.6).

3.6 Knowledge

Of the total, women who reported that they had knowledge that antenatal check is necessary for pregnant women was 198 (65%), iron tablets is necessary was 192(64%), tetanus toxoid is necessary was 200(68%), need for three antenatal check up was 118(39%), first visit before three month was 79(26%), first visit any time was 193(64%), don't know importance of visit was 103(34%), place of delivery for pregnant women should be at home was181(60%) and at health facilities was 119(40%) and referral site for complication was 114(38%).

3.7 Place of delivery

The number of women who reported reasons for home delivery was familiarity with the traditional birth attendants (TBAs)/ *dais* 59 (20%), no transportation facility was 58 (19%),frequency of going out side the village for farming/labour was 24(8%)

The number of women who reported possible reasons for hospital delivery was that hospitals had all the facilities 48(16%) and that they receive free tablets/ injections and money for delivery 24(8%). (Table-3)

4. Discussion

Our study of tribal women of Jhabua indicated that less than half were availing antenatal services. Antenatal services were more likely to be utilized by women of higher socioeconomic status than those who were poor. Distance from the health facility was inversely associated with availability of antenatal services.

Antenatal converge was significantly associated with high socioeconomic status. This was in agreement with a study conducted in Varanasi, Uttar Pradesh, India[14] and other studies[15,16,18,20,24,28,].

Our findings of low coverage of antenatal services (43%) were similar to the findings of National family health survey-3 (NFHS-3) in rural areas of Madhya Pradesh [5]. The reasons for low coverage could be that women did not utilize antenatal service as it was not offered (lack of antenatal service) or that they did not utilize the available services due to poor knowledge of available services[17, 26]. Poor knowledge could be due to low education of women and low antenatal counseling given to pregnant women. Low education was the barrier in understanding the importance of antenatal visits. It was seen that the proportion of antenatal care increased with increased counseling during antenatal visit[18].

A study in Pakistan reported higher antenatal coverage, namely, 57%. The study, however, was conducted in an urban area of Islamabad while our study was conducted in a tribal area of a district in India

The higher utilization of antenatal services by women with higher economic status could be due to the women having spare time to visit health centers. Whereas, women

from low socioeconomic status could not do so as they have to earn for their living and were less likely to use antenatal services[10].

The reason for low coverage for women who reside far away from the health centers could be that they could not afford the money and time to travel to health centers to avail the antenatal services. Similar findings were reported from other studies [11, 21, 22.27,28] . Moreover non-availability of transport facilities may prevent the women from visiting health centers[21, 22, 23]. Having joint family and more children also prevents the women from visiting the health centers as they have to perform family chores and look after the children and may not have time available for themselves[17].

4.1 Limitation

Our first-stage sampling units are anganwadi centers. There may be intra-class correlation between women within an anganwadi center and we have not adjusted our sample size to accommodate for design effect. However, implication of it on the estimates was minimal, as reflected in narrow confidence intervals of all the estimates. Also, we did not carryout stratified or multivariate analyses for adjusting possible confounders. We conducted the study only on tribal women of Jhabua and the study findings may not represent the scenario of rural or urban areas of Madhya Pradesh.

We have taken care of selection bias by following two-step random sampling procedure. First, we selected randomly anganwadi centers form all anganwadi centers in the district, than we randomly selected women from those anganwadi centers in our study. We took care of information bias by employing standardized questionnaire, standardized interviewer, and standardized interview procedure. We structured and pre-tested the questionnaire for interview .We trained the anganwadi worker, maintained quality control by supervision of work by anganwadi supervisors.

5. Recommendation

Based on the findings of the present study we recommend the following measures to take to improve use of the antenatal services by the pregnant women. Improve planning and implementation of antenatal services for the pregnant tribal women in Jhabua under RCH II. Formulate realistic development health plans based on needs as felt by tribal women, open more antenatal clinic spots closer to tribal settlements. Promote health education among pregnant tribal women for better coverage, especially among of low socioeconomic group. Health education during antenatal visit could focus on counseling regarding complication of pregnancy, advantage of antenatal care, antenatal benefits from the government. For the difficult to reach areas provide out reach services by ANM and utilize available financial resources available under RCH II, NRHM .Use fund to provide incentive and reimbursement of transportation charges to women for availing antenatal check up in the health facilities.

6. Conclusion

Less than half of the tribal women availed antenatal checkup poor socioeconomic status, low literacy level and long distance to travel were associated with poor coverage. We recommended measures to improve the coverage by better planning and implementation of RCH II and NRHM.

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Table 1: Characteristics of tribal women with recent deliveries, Jhabua district, Madhya Pradesh, India, 2008

Characteristics		#	95% CI	(%)
Age	**18-21**	36	8.5-16.2	11
	22-25	179	53.9-65.3	60
	26-29	84	23.0-33.4	28
	30+	1	0.0-1.8	1
Occupation of woman	**Labourer**	38	9.1-17.0	13
	Farmer	262	83.0-90.9	87
Occupation of husband	**Labourer**	38	9.1-17.0	13
	Farmer	262	83.0-90.9	87
Education of woman	**None**	183	57.3-68.5	63
	Primary	104	29.3-40.3	35
	Secondary	7	0.9-4.7	2
Education of husband	**None**	144	42.2-53.8	48
	Primary	100	28.0-39.0	33
	Secondary	56	14.4-23.5	19
Number of adults in house	**4+**	108	30.6-41.7	36
	< 4	192	58.3-69.4	64
Number of children in house	**2+**	156	42.2-53.8	52

Characteristics		#	95% CI	(%)
	< 2	144	46.2-57.8	48
Household monthly income	**< 1500 Rs**	136	39.6-51.2	45
	> 1500 Rs	164	48.8-60.4	55
Housing	**Hut**	39	9.4-17.3	13
	Kucccha	245	76.8-85.9	82
	Pucchka	16	3.1-8.5	5
Cast	**ST**	286	92.3-97.4	95
	BHEEL	254	84.6-92.2	85
	Bhillala	29	6.9-14.2	10
Hospital within 5 km	**Yes**	162	70.5-82.3[¥]	76
Past pregnancies	**2 or less**	138	40.3-51.8	46
	> 2	162	48.2-59.7	54
Past deliveries	**2 or less**	143	42.2-53.8	48
	> 2	157	46.2-57.8	52
Abortions	**0**	288	93.1-97.9	96
	1	10	1.6-6.0	3
	2	2	0.1-2.4	1
Live births	**2 or less**	110	42.2-53.8	37
	> 2	190	46.2-57.8	63

Characteristics		#	95% CI	(%)
ANC[1] registration	**Aaganwadi center**	45	15.9-27.4	15
	Health facility	167	72.6-84.1	56
	Total	212		71
	ANC card available	152	44.9-56.5	51
ANC visits	**None**	88	24.2-34.8	30
	One	39	9.4-17.3	13
	Two	44	10.9-19.2	14
	Three	69	18.4-28.2	23
	Four	60	15.6-25.0	20
Timing of first visit	**Second month**	9	1.4-5.6	3
	Third month	73	19.6-29.6	24
	Fourth month	60	15.6-25.0	20
Knowledge of key care	**ANC necessary**	198	60.3-71.3	66
	IFA necessary	192	58.3-69.4	64
	TT necessary	200	61.0-72.0	68
Knowledge about ANC				
	Need of 3 visits	118	52.7-66.8	39

[1] Antenatal care
¥ Denominator women who registered

Characteristics		#	95% CI	(%)
	No need of visits	103	30.2-41.4	34
	1st visit before third month	79	21.3-31.4	26
	1st visit before fourth month	19	3.9-9.7	6
	1st visit anytime	193	58.6-69.8	64
Perceived best delivery site	**Home**	181	54.6-65.9	60
	Health care facility	119	34.1-45.4	40
Circumstances of visits	**Husband present**	140	40.9-52.5	47
TT[2] received	**No doses**	90	24.9-35.5	30
	One dose	100	28.0-39.0	33
	Two doses	110	31.2-42.4	37
	Three or more doses	13	2.3-7.3	4
Place where TT was given	**Aaganwadi center**	37	8.8-16.6	12
	Sub-centre	151	44.5-56.1	51
	PHC [3]	22	4.7-10.9	7
Number of IFA tablets [4]	**Not received**	92	25.5-36.2	31
	15	6	0.7-4.3	2

[2] Tetanus toxoid
[3] Primary health centre
[4] Iron and folic acid

Characteristics		#	95% CI	(%)
	30	64	26.8-26.4	21
	40	22	4.7-10.9	7
	50	35	8.3-15.9	12
	60	49	12.3-21.0	16
	90	32	7.4-14.7	11
Site of IFA distribution	**Received from anganwadi**	21	4.4-10.5	7
	Received from sub center	170	50.9-62.4	57
	Received from PHC	21	4.4-10.5	7
Service received	**Abdominal check up**	190	57.6-68.8	63
	Weight check up	194	59.0-70.1	65
	Urine check up	44	10.9-19.2	15
	Blood pressure measured	124	35.7-47.1	41
	Blood check up	75	20.2-30.3	25
	Vaginal examination	42	10.3-18.4	14
Supplementary nutrition	**Received from anganwadi**	174	52.0-63.5	58
Advice received	**Breast feeding**	95	26.4-37.3	32
	Keeping baby warm	78	21.1-31.4	26
	Cleanliness during delivery	114	32.5-43.8	38
	Family planning	118	40.6-52.2	39
	Deliver in a hospital	132	38.3-49.8	44
	Nutrition	94	26.1-36.9	31
	Referral site for complications	114	33.1-44.4	38
Symptoms	**Night blindness**	7	0.9-4.7	2

Characteristics		#	95% CI	(%)
	Bleeding	13	2.3-7.3	4
	Fatigue	95	26.4-37.3	32
Delivery place	**Home**	173	51.9-63.3	58
	Government	121	34.7-46.1	40
	Private hospital	6	0.7-4.3	2
	Doctor	37	21.4-37.9$^{\pi}$	29
Delivery facilitator	**Sister**	75	51.0-67.7$^{\pi}$	59
	ANM [5]	9	3.3-13$^{\pi}$	7
	LHV [6]	6	1.8-10$^{\pi}$	5
	Traditional birth attendant	160	87.5-95.9[7]	92
	Relatives	13	4.1-12.5	8

[5] Auxiliary nurse // midwife
[6] Lady health worker
[7] Denominator women who delivered in health facilities
π denominator hospital delivery

Table 2: Prevalence of three and more ANC visits among women with or with out selected characteristics, Jhabua district, Madhya Pradesh, India, 2007

		Prevalence of 3 or more ANC visits							
		Among those exposed			Among those not exposed			Prevalence ratio	95% confidence interval
Characteristics		#	Total	%	#	Total	%		
Demographics	Age <25 years	120	169	71	9	43	20	3.4	1.8-6.1
	<2 children in family	77	113	68	52	99	53	1.3	1.0-1.6
	< 4 adults in family	95	137	69	34	75	45	1.5	1.2-2.0
	Woman educated	62	83	75	67	129	52	1.4	1.2-1.8
	Husband educated	86	116	74	43	96	45	1.7	1.3-2.1
	Husband having a business(farmer)	126	193	65	3	19	16	4.1	1.5-12
Income	Monthly household income > 1500	88	120	73	41	92	45	1.6	1.3-2.1
Housing / residence	Kucha housing	118	201	59	7	11	64	0.4	0.3-0.7
	Less than 5 km from hospital	39	113	35	21	99	21	1.6	1.0-2.6
Ownership of items	Cycle	59	70	85	70	142	49	1.7	1.4-2.1
	Motorcycle	8	8	100	121	204	59	1.7	1.5-1.9
	Radio	42	49	86	87	163	53	1.6	1.3-1.9
	Bull cart	21	41	51	39	171	23	2.2	1.5-4

Table 3: Reported reasons for preference for a delivery site among women with recent deliveries, Jhabua district, Madhya Pradesh, India, 2008

Reported preferences	Reported reasons	#	95% CI	%
Home delivery	Familial traditional birth attendant	59	15.3-24.6	20
	No transportation facilities	58	15.0-24.3	19
	Frequently out side the village for farming	24	5.2-11.7	8
Hospital delivery	Hospital all facilities	48	12.0-20.6	16
	Injection +tablets +money	72	28.8-42.0	24

Section 2

Review of Literature

Review of Literature

Introduction

Pregnancy is a special event, and the family and community should treat a pregnant woman with particular care. During Antenatal visit Pregnant women know the danger signs which may arise during pregnancy, labour, delivery, and after delivery so that help for the mother and the baby can be sought early from the most appropriate place. Also they receive iron/folic acid supplementation, tetanus toxoid vaccination and advise on good nutrition during the contact. So woman can improve her own health and that of her child, and the risks of maternal and prenatal complications can be reduced. Antenatal visits promoting healthy behaviors in women and increasing knowledge about pregnancy complications among women, they become life-saving, however. Dialogue between the woman and her health care provider should augment the information that the family has already learned from health promotion messages in the community, so that she and her family may make the most appropriate decision about the place and conditions for delivery[1].

The Technical Working Group recommended a minimum of four antenatal visits for a woman with a normal pregnancy. Problems may arise at different times during pregnancy, so the assessment for risk factors and complications must be an ongoing process throughout pregnancy, labour, delivery, and the postpartum period. Some women will require more visits than others.

Antenatal care should address both the psychosocial and the medical needs of the woman, within the context of the health care delivery system and the culture in which she lives. Periodic health check-ups during the antenatal period are necessary to

establish confidence between the woman and her health care provider, to individualize health promotional messages, and to identify and manage any maternal complications or risk factors. Antenatal visits provide essential services that are recommended for all pregnant women, such as tetanus toxoid immunization and the prevention of anemia through nutrition education and provision of iron/folic acid tablets. The early initiation of antenatal care is important to prevent and treat anemia, to screen and treat syphilis, and to identify and manage women with medical complications. Early care also allows for the development of interpersonal relationships between health care providers and the pregnant woman so that her particular needs and wants are known and expressed in a plan for delivery. Where abortion is legal, early contact with the health system allows women with unwanted pregnancies to be referred for safe abortion services. Providing time for each woman to discuss her personal needs and for the health care worker to respond appropriately may mean reorganizing the "traditional" pattern of services. It is anticipated that, particularly for the first visit, when a full history has to be taken and an individual birth plan started, an average of about 20 minutes will be required to provide the level of care recommended. This amount of time is feasible, even where birth rates are high[30]. In District Jhabua birth rate 36/1000 live birth in year 2006.Antnatal services provided by 45 government hospitals. Antenatal is the services important part of RCH II programme. RCH-II (the second phase) of the programme is being implemented from 2005-2010, and the Indicative size is about Rs 40,000 crores. It is being partially funded by the development partners. The Government of India has entered into a Development Credit Agreement with the World Bank for financial assistance of US $ 350 million, and DFID is providing an assistance grant of £ 250 million[9].

To identify the articles related to factors associated with availability and use of antenatal services , we used Medline 2000-2007 databases with key words antenatal

care, antenatal coverage, factor that affect utilization of services ,socioeconomic and distance and education.

Coverage of antenatal services [17]

Quality of Care of Maternal Health Services in India

We reviewed the fact sheet on maternal mortality and morbidity. Every 5 minutes, one woman somewhere in India dies from complications of childbearing, 15 percent of all pregnant women in India develop life-threatening complications, 65 percent of deliveries occur at home, Only 41 percent of women have a skilled birth attendant at the time of delivery 60 percent of all maternal deaths occur after delivery but only 1 in 6 women receive postnatal care. The risk of maternal death is one in 37 in India while it is one in 230 in neighboring Sri Lanka compared to one in 5000 in Singapore and one in 7300 in Norway With 16% of the world's population, India accounts for over 20% of the world's maternal deaths. The maternal mortality ratio, defined as the number of maternal deaths per 100,000 live births, is incredibly high at 408 per 100,000 live births for the country (GOI 1997), All of these estimates imply that more than 125,000 women in India die every year from causes related to pregnancy and childbirth[17].

In Madhya Pradesh Percentage of pregnant women registering in first trimester 26,2 Percentage of pregnant women receiving full ANC care 51.2,3 Percentage of deliveries attended by Skilled Birth Attended 30.0,4 Percentage of Home Deliveries 79.0[35] Percentage of Institutional Deliveries 21.0 6 out of ten women availed antenatal check-up, more than half received two or more tetanus toxoid injections and 8 out of 10,women have received IFA tablets or syrup during pregnancy for three or more months[35].

The India's National Rural Health Mission (NRHM), launched in 2005, should lay greater emphasis on improving the quality of antenatal care, among other things, to increase utilization of antenatal care and achieve better maternal health outcomes.[23, 35]

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House hold survey 2003 we reviewed. Pregnant women Consumed 2 or more IFA tablets regularly18.5,Received 100 or more IFA tablets8.4,Women who utilized government, health facility for Antenatal care26.3,Treatment of complications during pregnancy35.8,Treatment of post-delivery complications36.8,Treatment for RTI/STI (vaginal discharge) 35.3,No Antenatal check-up36.8,Any Antenatal check-up63.2,Three or more Antenatal check-up23.5,Antenatal at home14.2 [12]

Pregnancy is one of the most special and also the most critical phase in a woman's life. Antenatal care, the care a woman receives throughout her pregnancy, helps in supervising the health of the pregnant woman, as well as the health and development of the fetus. The objective of Antenatal care is to ensure the delivery of a healthy baby, with a healthy mother[1].

Change in the demographic scenario is being witnessed in developing countries like India. There are indications that family size is declining. Accordingly, the profile of pregnant women also seems to be changing. It is important to document such changes in order to give feedback to the planners. Government of India has launched reproductive and child health-II (RCH-II) program. One of its main focus is on quality of antenatal care (ANC). It is also vital to document the existing quality of ANC in various parts of India. Such information helps in indirectly gauging the progress and impact of the program. Against this background this study was done with an objective to ascertain the fate of pregnancies registered in the study area in order to study the profile of pregnant women and the quality of antenatal care received by them.

A literature on Women's Health, Western Pacific Regio*n Improving the quality of health care in reproductive health* (A Pacific Island Countries 'Perspective) We observed pregnant mothers are routinely screened in the antenatal care (ANC) and family planning clinics for a selected number of STIs, breast and cervical cancers. However, this screening programme depends heavily on the availability of the necessary supplies.[14]

A Country Case Study: Chad, June 2001, *Constraints to Scaling Up Health* Intensity of use of pre-natal consultations 2.1,For pre-natal consultations, 123,000 pregnant women were recorded and visited the service on average 2.1 times. The number of child deliveries assisted by health service providers reached 26,000 in 1999, which corresponds to a coverage of approximately 7% of all expected child births. Within Chad, however, the variations in the use of medical services are considerable. For example a better coverage with assisted deliveries is observed in the South of the country,[15]

Background Papers of the National Commission on Macroeconomics and Health,2005.Above all, the spirit of primary health care has been reduced to just primary level care. The health reports and plans mostly concentrated on building the health services infrastructure and even this lacked a sense of integration. Most of the policy reports miss out on the importance of a strong referral system. Instead, there has been more emphasis on building the primary level care and even that has lacked proper implementation. The Bhore committee report and later, the Primary Health Care Declaration discussed the operational aspects of integrating the other sectors of development related to health.[16]

Story in Africa, since over two-thirds of pregnant women (69 percent) have at least one ANC constrengthen ANC should focus on universal coverage by addressing financial and cultural barriers to reaching vulnerable groups, quality improvement to increase women's satisfaction and reduce drop out, and integration of programme to maximize the contact between the woman and the health services.2005

A study on utilization of Antenatal Care in a Nigerian Teaching Hospital .The aim of this study was to ascertain the utilization (timing and quantity of care obtained) of antenatal care in a Nigerian teaching hospital. The sample included 300 Nigerian pregnant women. Consecutive (starting with the last)records of the antenatal clinic at Obafemi Awolowo University Teaching Hospital, Ile Ife, were analysed until a sample of 300 attendees had been identified. Trimester for first antenatal attendance (timing) was determined from the date of first attendance and estimated date of delivery. Frequency of antenatal visits. Only 62 women (21%) attended during the first trimester (90 days). Most women (47%) only attended during the third trimester. Ninety-four percent came for a subsequent visit: 77% thrice,76% four times, 74% five times and 73% six times. There was no relationship between age and attendance of antenatal clinic. In this study, almost half (47%) of the women started attending the

antenatal clinically in the third trimester. In a sample of South African antenatal clinic attendees, it was found that 75% had already attended either in the first (7%) or second trimester (68%). found among rural Zimbabwe antenatal clinic attendees that only 21.6% started antenatal clinic in the first trimester and 62% made five or less antenatal visits. Late and low utilisation may be explained by costs as one of the major barriers to utilisation of antenatal care.[30].

Community-based health workers extend the provision of antenatal care to total areas. Women's autonomy and personal hygiene are related to antenatal care use[24].

Coverage -

A literature on subject the struggle to reduce maternal mortality decreasing maternal mortality is the key to improving the health of the population. Every day 1600 women die during pregnancy, 90% of whom live in developing countries.[25]

Socioeconomic, distance (transportation facilities) and coverage factors

We reviewed the Reproductive and Child Health Programme. Promotion of maternal and child health is most important component of the Reproductive and Child Health Programme. Provision of quality antenatal care (early registration, three antenatal checkups, two tetanus toxoid injections and IFA tablets) has been envisaged under the programme. In Madhya Pradesh, DLHS survey 2004 was reported that only 34.5% pregnant women have received three antenatal checkups (PW consuming 100 IFA tablet by 5.9% and 2 T.T. by 77.5%). The percentage of women receiving any ANC has increased from 52.4 (1998-99) to 74.1 (2004). 17.6% deliveries take place in govt. institutions and 10.6% in private institutions. Still 71.5% are domiciliary deliveries and 35.5% deliveries are attended by Skilled Birth Attendant. The percentage of safe delivery has gone up from 27.5 (1998-99) to 35.5 (2004).Coverage of antenatal care is

lower for women amongst the vulnerable groups. The Reproductive and Child Health Programme seeks to promote institutional delivery conducted by Skilled Birth attendants. The Survey has also noticed inter-district variations in the coverage of the antenatal care services. Strengthening Antenatal and Postnatal Services activities to improve the coverage and quality of ANÇ Rendering effective and quality ANC services through fixed day (Friday).clinic approach with focus on women of BPL/SC/ST, primigravidas and adolescent mothers. Anganwadi workers will be involved for improving the coverage. Orientation of community (integrated with BCC module).Skill training of ANMs in Obstetric First Aid with focus on emergency drugs approved for the use by ANM.200 Additional ANMs will be recruited in the year 2006-07 for SHCs and 321 ANMs of RCH I for SHC will be continued.313 Dai Sammelans are planned (one in each block) in the year 2006-07 for orientation of TBAs for promoting institutional deliveries and creating referral linkages with health system[10].

A study by ICMR on antenatal care among four south Indian states (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu) and four north Indian states (Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh) More than four antenatal care visits for utilization, and index of clinical, information and interpersonal quality of care. The study uses cross-sectional, nationally representative data from National Family Health Survey (1998–99). [3] Lower than desired quality of antenatal care was observed in both north and south Indian states, though the quality was significantly better in south India compared with north India, especially among the disadvantaged women. Significant socio-economic differentials in the quality of care were evident in both north and south India, but were more glaring in north India. A significantly positive relationship was observed between the quality and utilization of antenatal care in the rural areas from village-level multivariate analysis. Poor quality of antenatal care is likely to

reduce its utilization. Policy and program interventions to improve the quality of care of antenatal care, especially for the poor and other disadvantaged population groups, more so in north India, are essential to improve maternal health outcomes[3].

Antenatal care, provision and inequality in rural north India study. The objectives of this paper are to examine factors associated with use of antenatal care in rural areas of north India, to investigate access to specific critical components of care and to study differences in the pattern of services received via health facilities versus home visits. used the 1998–1999 Indian National Family Health Survey of ever-married women in the reproductive age group and analysed data from the states of Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh (n=11,369). Overall, about three-fifths of rural women did not receive any antenatal check-up during their last pregnancy. Services actually received were predominantly provision of tetanus toxoid vaccination and supply of iron and folic acid tablets. Only about 13% of pregnant women had their blood pressure checked and a blood test done at least once. Women visited by health workers received fewer services compared to women who visited a health facility. Home visits were biased towards households with a better standard of living. There was significant under-utilisation of nurse/midwives in the provision of antenatal services and doctors were often the lead providers. The average number of antenatal visits reported in this study was 2.4 and most visits were in the second trimester. Higher social and economic status was associated with increased chances of receiving an antenatal check-up. The findings indicate substantial limitations of the health services in overcoming socio-economic and cultural barriers to access[22].

We reviewed a study on obstetric health care practices and the factors associated with the utilization of such care the Birbhum district of the State of West Bengal in India. The present analysis includes 495 adult married women of both rural and urban areas of nine Blocks of Birbhum district. In Birbhum district of West Bengal 65 percent

mothers go to doctors for antenatal check-up during their pregnancy, but only 26 percent mothers deliver their babies in institutions and 30 percent mothers get the help of professional health assistants during delivery. Educated women have emphasized role in the practice of obstetric health care. Husband's education and the standard of living of the family also have some effect on the practice of antenatal check up, place of delivery and assistance of health professional. While most of the family background variables have significant effect on the practice of antenatal check up, these variables do not have much effect on the choice of delivery or seeking assistance of health professionals. The status of literacy of mothers and standard of living of the family are of prime importance in improving the obstetric health care practices. [5]

The study sought to determine the feasibility, acceptability, and cost-effectiveness of incorporating men as active partners in their wives' antenatal and postnatal care[4].

A study on traditional beliefs and practices, to assess puerperal morbidity, (Available online 17 January 2004Astudy) and to understand care-seeking behaviors, a qualitative and quantitative study was conducted in low socio-economic settlements of Karachi, Pakistan. Five focus group discussions and 15 in-depth interviews were conducted in July and August 2000. 525 Muslim women, who were 6–8 weeks post-partum, were then interviewed at home. Maternal care was relatively good—more than three-quarters of recent mothers sought antenatal care and more than half (267/525) delivered in a hospital[6]

Adolescent pregnancy Unmet needs and undone deeds *A review of the literature and programmes.* WHO key priorities and its policy framework for poverty reduction. Reproductive health services, and care for pregnant adolescents. This review of the literature was conducted to identify (1) the major factors affecting the pregnancy outcome among adolescents, related to their physical immaturity and inappropriate or

inadequate healthcare-seeking behavior, and (2) the socioeconomic and political barriers that influence their access to health-care services and information..[13]

Education of women

A study on Antenatal Care of Pregnant Women in India, WHO method 30 cluster survey methodology with certain modifications incorporating information on female literacy and distance of the village has been used. The characteristics of sample households for pregnant women were broadly in proportion to the characteristics of the all India population. About 89% of the pregnant women availed antenatal visits of which 62% had received three or more ANC visits. Those receiving the second dose of TT or booster dose were about 78%. About 73% of the pregnant women received IFA tablets during their pregnancy. About 53% of the pregnant women had full package of ANC i.e. availed 3 or more ANC visits, both the doses of TT/boster and IFA tablets. The proportion of pregnant women who availed full ANC package was lower in rural as compared to urban areas, lowest for ST followed by SC; higher for literate women as compared to illiterate women. The proportion of Institutional deliveries managed by hospitals and health centres was about 41%, it being higher among literate women and in urban areas. The literacy of women is the key to improve antenatal care of pregnant women[32].

The tribal, small and inaccessible villages and the states of Bihar, Rajasthan, UP, MP and North Eastern states (combined) should be focused and targeted in the RCH programme[32]

This prospective study Provincial Specialist Hospital, Mongomo, Guinea Equatoria was carried out to evaluate the utilization of antenatal care at the Provincial Specialist Hospital, Mongomo, Guinea Equatoria,. Information was elicited from 200 pregnant

women attending the antenatal clinic using a questionnaire. Previous antenatal clinic attendance was high (92.5%). However, with increasing gestation, the percentage of those who never had antenatal care increased. Poor ANC attendance is associated with more abortions and poor obstetric performance. Higher levels of education generally improved ANC attendance, particularly early booking for ANC. Hospital workers, husbands and parents were the greatest influence on ANC attendance. Universal education of the women, improved health education, community involvement and integration of traditional birth attendants (TBAs) are significant suggestions made by the patients for improving the delivery of antenatal care.[33]

This paper examines the association of access to health services and women's status with utilization of prenatal, delivery, and postnatal care during the plan period. Women's status through education were able to explain the observed change in utilization[2]

Use of antenatal services and delivery care in entebbe, Uganda, a community survey, conducted a retrospective community survey among women using structured questionnaires to describe the use of antenatal services and delivery care. in total 413 women reported on their most recent pregnancy. antenatal care attendance was high with 96% attending once, and 69% the recommended four times. a significant improvement in the reported quality of antenatal services received was observed by year ($p < 0.001$). less educated, poorer mothers were more likely to have unskilled/no assistance. simple newborn care practices were commonly neglected. less educated, poorer women, commonly mediated by financial and transport difficulties and several simple post delivery practices were commonly neglected. These factors need to be addressed to ensure that high quality care reaches the most vulnerable women and infants[28].

Since early reporting of pregnancy in rural areas is rare, a detailed analysis was carried out on 5344 pregnant women with a gestation of more than 4 months. Of these, 73.9% had at least one antenatal contact with a auxiliary nurse midwife (ANM) or had visited a Government Health Facility for antenatal services or problems. There was a statistically significant reduction in the proportion of women obtaining antenatal care services with increasing age, parity, and number of living children. Awareness of care during pregnancy and knowledge of pregnancy related complications were associated with increased utilization of antenatal care services. However, knowledge of serious complications was found to be lacking even in women who availed of the care. In both the groups – those who availed of antenatal care services and those who did not – about 14% had not decided about the place of delivery. 51.7% of the women with antenatal care preferred institutional delivery as compared to 27.6% of those who had not availed antenatal care services[3].

Knowledge and coverage

The development of 111 women's groups in a population of 86 704 in Makwanpur district, Nepal is described. The groups, facilitated by local women, were the intervention component of a randomized controlled trial to reduce perinatal and neonatal mortality rates. Through participant observation and analysis of reports, we describe the implementation of this intervention, the community entry process, the facilitation of monthly meetings through a participatory action cycle of problem identification, community planning, and implementation and evaluation of strategies to tackle the identified problems. In response to the needs of the group, participatory health education was added to the intervention and the women's groups developed varied strategies to tackle problems of maternal and newborn care[2].

Distance (Lack of transportation) and lack of services

A study on Reproductive Health Problems of Women in Rural Uttar Pradesh, Observed from a Community Survey Delay in recognizing the problem (lack of awareness of danger signs), Delay in deciding to seek care (inaccessible health facility, fear of costs, lack of resources to pay for services, supplies and medicines) Delay in reaching the health facility (no transport available, unaware of appropriate Referral facility) Delay in receiving adequate treatment once a woman has arrived at the health facility (health facility not adequately equipped, lack of trained personnel, emergency medicines, blood).Female illiteracy, and low social status of women, Early marriage and pregnancy in adolescence, Lack of support from the male partner, Malnutrition, Harmful traditional practices Have no money/poverty 30.4, Treatment is costly 10.4, Problem is not so serious 28.4, Lady doctor not available 2.4, Place of treatment is far off 1.9,Other reasons 35.9.[18]

A study report on the responsiveness of health services to women's reproducive health needs

in Malawi April 2005 The study found that 63.2% of the women were not accompanied by anyone to the health facility whilst either a husband or relatives accompanied 30.8%[11].

Distance (Transportation facility) and Social economic factor

A study on antennal care Support care seeking behavior, including recognition of danger signs for the woman and the newborn as well as transport and funding plans in case of emergencies[19]

Semi-urban community in Entebbe Uganda and to examine the range of antenatal and delivery services received in health care facilities and at home. retrospective community survey among women using structured questionnaires to describe the use of antenatal services and delivery care. In total 413 women reported on their most recent pregnancy. Antenatal care attendance was high with 96% attending once, and 69% the recommended four times. Blood pressure monitoring (95%) and tetanus vaccination (91%). A significant improvement in the reported quality of antenatal services received was observed by year ($p < 0.001$). Financial and transport limitations are important factors in women's inability to access skilled delivery care and this will need to be addressed if we are to improve delivery service[20 2007]

A study in rural northern Ghana[26] In a multilevel logistic model, physical access factors {such as availability of public transport, odds ratio (OR) = 1.50 (1.15–1.94), travel distance to the district hospital [for 20+ km, OR = 0.31 (0.23–0.43)] as well as community perception of access to the nearest health facility [for highest quintile, OR = 4.44 (2.88–6.84)]} showed statistically significant associations with use of health professionals at last delivery. Women who knew that delivery care was free of charge were 4.6 times more likely to use health professionals. Physical access factors remain strong determinants of use of professional delivery care in rural northern Ghana[26]

Utilisation of antenatal care by country of birth in a multi-ethnic population: a four-year community-based study in Malmö, Sweden. The aim of this study was to investigate differences in use of antenatal care in a multi-ethnic population in Malmö, Sweden, over a 4-year period. A 4-year (2000-2003) retrospective community-based register study was performed. Low-risk singleton pregnancies (n=5,373) registered for antenatal care at 5 municipal clinics and at the delivery ward at Malmö University Hospital were included, and divided into 6 subgroups by country of origin.

Significantly increased odds of lower utilisation of planned antenatal care were found among some groups of foreign-born women. Women born in Eastern and Southern Europe, Iraq and Lebanon, and Asia had fewer antenatal visits than and had a late first visit compared to Swedish-born women. Approximately 50% of women had higher utilisation of care, by making unplanned visits to the delivery ward. some of these women do not receive the full benefits of planned routine antenatal care[29].

It was a descriptive type of study to find out the attitude of the women towards utilization of antenatal care facility at a newly commissioned hospital, Hayatabad Medical Complex, Peshawar, Pakistan[31] in the first year of its working. recorded 980 patients. The conclusion drawn was that the women living near the hospital used the facility. Antenatal care should be provided to the women at the doorstep of their house. There is a system of lady health workers that should be expanded to cover all areas.

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