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Knowledge and practice of antenatal services among multipurpose health workers (F)

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Abstract

Background of The Study: Reproductive health is a crucial part of general health and a central feature of human development. More than three quarters of the population of our country live in rural areas. Maternal and neonatal mortality and morbidity continue to be high despite the existence of national programs for improving maternal and child health (MCH) in India. The primary health care services to rural areas of India are chiefly provided by Sub-Centre's (SC).SC is the most vital peripheral contact point between the health system and the community. The multipurpose health workers at the SC have to take care of all the basic health needs of the rural population and thus become back-bone of the public health delivery system. These health workers (HW) can improve the overall coverage and quality of health services. Hence, it is very important to assess the level of their knowledge and practice in relation to key aspects services delivered under reproductive and child health services.

Materials and Methods: Research design: This is a descriptive cross sectional study. The study subjects were health workers – female working in rural sub centers.

Setting: The study was conducted in Rural PHCs & SCs of the Nellore District, Andhra Pradesh.

Sample size: 224 Multi-Purpose HW-F working in all the 37 PHCs and the SCs under these PHCs the District were included for the study.

Sampling technique: stratified random sampling technique was adopted to select the subjects.

Tools and techniques: Data were obtained by using self-administered structured Questionnaire method to assess the knowledge & structured observational check lists regarding antenatal services.

Results: shows that that 214(95.5%) had knowledge regarding the minimum no of Antenatal visits, 171 (76.3%) regarding ideal time for 1st ANC,110 (98.7%), time for 2ND ANC, 203 (90.6%) about time of 1st dose of TT,218 (97.3 %)and 210 (93%) had knowledge about the timing of 2nd dose of TT. and 174 had knowledge about estimation of gestational age by using LMP. With regard to overall knowledge, majority of them 152 (67.9%) had moderately adequate knowledge and only 57 (25.4) had adequate knowledge and 15(6.7%) had inadequate knowledge. With regard to practice, majority of them, 213 (95.09%) had good practice and only 5 (2.23) had average practice

Conclusion: Majority of the multipurpose health workers (F)have moderately adequate knowledge.

Keywords: RCH services, knowledge, practice, antenatal services, multipurpose health workers,

1. Introduction

Maternal mortality & morbidity are significant health problems in developing countries. Improving maternal health has been an essential element for achieving health for all & in millennium developmental goals [1]. The primary health care services to rural areas of India are chiefly provided by Sub-Centre's (SC). SC is the most vital peripheral contact point between the health system and the community.

Pregnancy and childbirth are special events in women's lives, and, indeed, in the lives of their families. This can be a time of great hope and joyful anticipation. The primary aim of antenatal care is to achieve, at the of pregnancy, a healthy mother and a healthy baby. The quality of care is more important than the quantity. Pregnancy requires specialized care, generally agreed to be a preventive activity. The concept of healthy mother and healthy baby is an important aspect of Maternal and Child Health (MCH) [2].

Maternal mortality is one of the key indicators of the status of reproductive health care service delivery and utilization, but it also can be an indicator of women's status in a society. Maternal mortality, currently an issue of concern on the international health agenda, remains one of the most important public health problems in developing countries [3] Maternal and neonatal mortality & morbidity continue to beingh despite the existence of national programs for improving maternal and child health(MCH) in India.

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This could be related to several factors, an important one being non-utilization or under-utilization of maternal health-care services, especially amongst the rural poor and urban slum population due to either lack of awareness or access to health-care services [4].

Maternal mortality adds up to 600000 women each year. Every minute, at least one woman dies from complications of pregnancy and childbirth. Maternal mortality represents one of the widest health gaps between developed and developing nations, with 99 percent of all maternal deaths occurring in developing countries. That ≤ one percent of maternal deaths worldwide occur in developed countries indicates that maternal deaths could be avoided if the proper health resources and services were available to women in developing nations [5]. In addition to the number of deaths each year, over 50 million women suffer from maternal morbidity due to acute complications from pregnancy [6].

The multipurpose health workers at the SC have to take care of all the basic health needs of the rural population and thus become back-one of the public health delivery system. These health workers (HW) are more accessible and acceptable to the clients in their community and thus can improve the overall coverage and quality of health services. Hence, it is very important to assess the level of their knowledge and practice in relation to key aspects services delivered under reproductive and child health services. The present study was carried out to assess the knowledge and practice of ANMs regarding antenatal services in RCH Program.

1.1. Statement of the Problem
A study to assess the knowledge and practice of Multipurpose Health Workers(F)regarding antenatal services in selected rural subentries.

1.2. Objectives.
1. To assess the knowledge regarding antenatal services Multipurpose Health Workers(F)
2. To assess the practice regarding antenatal services Multipurpose Health Workers(F)
3. To find the association between the level of knowledge and the socio demographic variables of multipurpose health workers(F)

2. Materials and Methods
2.1. Research design: This is a descriptive cross sectional study, conducted in rural areas of Nellore District, Andhra Pradesh. The study subjects were health workers – female working in rural sub centers.

2.2. Setting of the study: Rural PHCs & SCs of the Nellore District, Andhra Pradesh. All the 224 Multi-Purpose HW-F working in all the 37 PHCs and the SCs under these PHCs the district were included for the study.

2.3. Sampling technique: stratified random sampling technique was adopted to select the subjects. All the health workers who participated in the study gave their consent to be part of the study & the response rate was 100%.All the available documents including Indian Public Health Standards (IPHS) 3 & HWs training modules describing the expected performance of basic healthcare workers in India were reviewed**.** A pre tested structured in-depth instrument for data collection was developed in context to antenatal services provided by the HWs.

**2.4 Tools and techniques**: Data were obtained by using the following methods:
A) Self-administered structured Questionnaire method was used to assess the knowledge regarding antenatal services.
B) Through on site observation for evaluation of their practices regarding antenatal services by using structured observational check lists.

The study period was one year, from June 2013-June 2014.. The data entry & analysis was done by using the Microsoft excel 2007.Results were presented as percentage of number of HWs with correct responses & their 95% Confidence Intervals (CI).

2.5. Ethical Clearance Certificate: Ethical clearance certificate was obtained from author's affiliated Institutional ethics Committee.

2.6. DMHO: A formal written permission was obtained from the District Medical and Health Officer, Nellore District, A.P and a copy of the permission from DM&HO letter was sent to all the selected PHCs for the study.
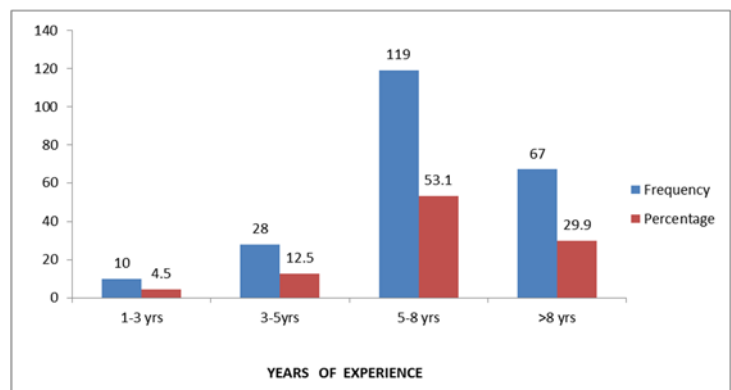
3. Results
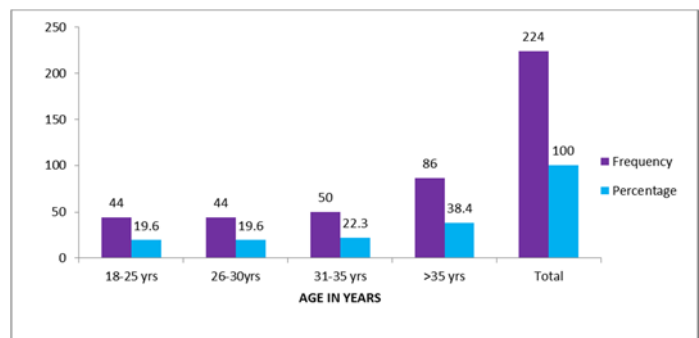
Fig 1: Frequency and Percentage Distribution of Based on Age of the multipurpose health workers (F)
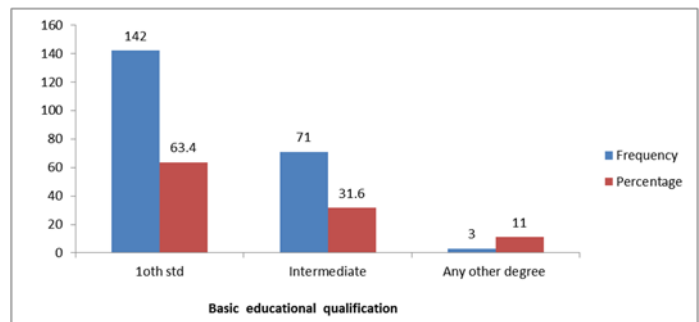
Fig 2: Frequency and percentage distribution of based on education of the multipurpose health workers (F)

Fig 3: Frequency and percentage distribution based on experience

Table 1: Frequency And Percentage Distribution based on Knowledge Regarding the Concept and Aim of RCH Services among multipurpose health workers (F)

Concept and aim of RCH services	Frequency(f)	Percentage(%)
1. The concept of reproductive and child health services	215	96
2.The current national programmer on maternal and child health services	216	96.4
3.The main the goals of NRHM	221	98.7
4. Janani SurakshaYojana (JSY) scheme	217	96.8
5. The fund provided to sub centre under NRHM	218	97.3
6.cash assistance provided in Janani Suraksha Yojana (JSY) to beneficiaries	224	100

Tab.No-1, shows the knowledge distribution of ANMs regarding concept and aim of RCH services. It shows that 216(96%) had knowledge about the meaning of services, 216(96.4%) were aware of the current program, 221(98.7%) had knowledge about the aim of NRHM,217 (96.8) know about JYS,218 (97.3 %) know regarding fund given to Sub center and 224 (100%) had knowledge about the cash assistance provided under JSY scheme.

Table 2: Frequency And Percentage Distribution based on Knowledge Regarding the antenatal Services among the multipurpose health workers (F)

Antenatal Care Services	Frequency(f)	Percentage(%)
1.Time of registration of pregnancy	170	75.9
2. The minimum number of Antenatal visits recommended	214	95.5
3. Ideal timing of the first antenatal visit	171	76.3
4. Theidealtime recommended for the2nd visit Antenatal visit	110	49.1
5. The time of first dose of Tetanus Toxoid	203	90.6
6. Time of The 2nd dose of Tetanus toxoid	210	93.8
7.LMP refers	159	71
8. Correct Estimation of gestational age	174	77.7
9.The ideal weight gain during pregnancy	202	90.2
10.The weight gain after the first trimester	131	58.5
11.The additional calorie requirement in pregnancy	105	46.9
12.Knowledge regarding the Danger signs of toxemia of pregnancy	133	59.4
13.Knowledge regarding Signs of Imminent eclampsia	82	36.6
14. Knowledge regarding Signs of severe anemia.	152	67.9
15.The uterus become an abdominal organ	97	43.3
16.The estimation of gestational age (in weeks) from the fundal height	38	17
17. The reason for increase in the height of the uterus that is more than indicated by the period of amenorrhea	192	85.7
18.Thepossible reason for the height of the uterus that is less than indicated by the period of amenorrhea	177	79
19. The normal fetal heart rate (FHR)	52	23.2
20. Features of hypertensive disorder of pregnancy	52	23.2
21.Managementof Bleeding P/V, after 20 weeks of gestation	110	49.1
22. Knowledge regarding Signs of fetal distress	82	36.6
23. Knowledge of Hb level considered to be Anaemia during pregnancy.		
24.Knowledge about Therapeutic dose of Iron and folic acid during pregnancy	48	21.4
25.Knowledge regarding the tests done during pregnancy	188	83.9
26. Knowledge regarding Complications arising during pregnancy	154	68.8
27. Knowledge regarding Referral services	107	47.8
28.Knowledge regarding Identifying risk pregnancy	158	70.5
29.Dangerous symptoms during pregnancy	155	69.2

Tab.No-2, shows the knowledge distribution of ANMs regarding Antenatal care and services. It shows that 214(95.5%) had knowledge regarding the minimum no of Antenatal visits,171 (76.3%)regarding ideal time for 1stANC,110 (98.7%), time for 2ND ANC, 203 (90.6%) about time of 1st dose of TT,218 (97.3 %)and 210 (93%) had knowledge about the timing of 2nd dose of TT.159(71%) had correct understanding of Last menstrual period, and 174 had knowledge about estimation of gestational age by using LMP. Regarding the dosage of iron supplements,48(21.4%) had knowledge and regarding the tests done during pregnancy 188(83.9%) had knowledge.

Table 3: Distribution of overall Level of Knowledge Among the multipurpose health workers(F) Regarding Antenatal Services

knowledge	Level of knowledge	Frequency(f)	Percentage(%)	Mean	SD
Antenatal services	Inadequate	15	6.7	23.1026	4.7512
	Moderately adequate	152	67.9		
	Adequate	57	25.4		

Tab no.3 shows the distribution of overall level of knowledge regarding components of Antenatal services. Regarding antenatal services majority of them, 152 (67.9%)had moderately adequate knowledge and only 57 (25.4) had adequate knowledge and 15(6.7%) had inadequate knowledge.

Table 4: Frequency and Percentage Distribution of Practice Based on antenatal Services among the multipurpose health workers(F)

S. No	Type of services/counseling provided	Frequency(f)	Percentage(%)
1.	Registers pregnancy	222	99.11
2.	Reviews and updated obstetrics records	205	91.52
3.	Records date of LMP and EDD	202	90.18
4.	Identification of high-risk pregnancy	140	62.5
5.	Asks about h/o complications	220	98.21
6.	Asks about chronic illness	208	92.86
7.	Asks about addiction/drug abuse	206	91.96
8.	Look for pallor,- AND jaundice	221	98.66
9.	Check pulse	221	98.66
10.	Check respiration	205	91.52
11.	Check for edema	215	95.98
12.	Measure BP	206	91.96
13.	Measures weight	205	91.52
14.	Measures height	222	99.11
15.	Examines and / provides Information about Danger signs	218	97.32
16.	Conducts breast examination	216	96.43
17.	1.Check the abdomen for any scars.if any find out if it is from CS or any other uterine surgery	51	22.77
18.	Measure the fundal height in centimeters and note it in the ante natal card.	175	78.12
19.	Listen to the fetal heart (second and third trimesters) with a foetoscope	220	98.21
20.	Administered TT injection, if applicable	220	98.21
21.	Give Iron-folic acid (IFA) tablets for iron supplementation	217	96.88
22.	Investigation for Hb/urine/sugar/ albumin	220	98.21
23.	Advises regarding nutrition and rest	222	99.11
24.	Advises regarding general and personal hygiene	220	98.21
25.	Explains about JSY	220	98.21
26.	Motivated for institutional delivery	222	99.11
27.	Reminded for next visit	196	87.5

Table 5: Frequency and Percentage Distribution of Practice Based on RCH Services

Level of Practice	Poor		Average Practice		Good		MEAN	SD
	f	%	f	%	f	%		
Antenatal Services	6	2.68	5	2.23	213	95.09	95.93	2.49

Tab no.5 shows the distribution of overall practice regarding components of antenatal services. Regarding antenatal services majority of them, 213(95.09%) had good practice and only 5 (2.23) had average practice and 6(2.28%) were poor.

Table 6: Association between the level of knowledge regarding antenatal services and the demographic variables of the multipurpose health workers(F) (N=224)

Demographic Data	Inadequate		Moderately Adequate		Adequate		Chi Square
	f	%	f	%	f	%	
1. Age in yrs							
a.18-25 yrs	1	0.4	21	9.3	22	9.8	C=99.6789
b.26-30yrs	5	2.2	33	14.7	6	2.7	T=10.645
c.31-35 yrs	5	2.2	33	14.7	12	5.3	DF=6
d.>35 yrs	4	1.8	65	29.0	17	7.6	S
2. Education							
a. 1o^{th}std	7	3.1	95	42.4	40	17.9	C=3.18666
b. Intermediate	7	3.1	48	21.4	15	6.7	DF=4
c. Any other degree	1	0.5	9	4.1	2	0.8	T=9.488
							NS
3. Experience							
a.1-3 yrs	2	0.8	1	0.4	7	3.1	C=28.6097
b.3-5yrs	5	2.2	17	7.5	6	2.6	DF=6
c.5-8 yrs	7	3.1	90	40.1	22	9.8	T=12.592
d.>8 yrs	1	0.4	44	19.6	22	9.8	S
4. Marital status							
a. Married	11	4.9	132	58.9	44	19.6	C=5.0926
b. Unmarried	4	1.7	17	7.5	11	4.9	DF=4
c. Divorced/separated	0	0	3	1.3	2	0.8	T=9.488
							NS
5. INCOME							
a. Rps 10000-15000	12	5.3	133	59.3	48	21.4	C=2.3671

	Poor		Average		Good		Chi
	F	%	F	%	F	%	
b.Rps-15001-20000	3	1.3	17	7.5	9	4.01	DF=6
c.Rps20000-25000	0	0	1	0.4	0	0	T=12.592
d. above 25,000	0	0	1	0.4	0	0	
							NS
Place Of Residence a. Rural	3	1.3	40	17.8	20	8.	C=3.8548
b. Urban	12	5.3	108	48.2	37	16.	DF=6
c. Suburban	0	0	2	0.8	0	0	T=12.592
d. Slum	0	0	2	0.8	0	0	NS
7. Type Of Institution a. Govt	5	2.23	46	20.54	42	18.75	C=32.663
b. Private	10	4.46	106	47.32	15	6.70	DF=6
							T=12.592
							S
8.Refresher course attended on RCH/NRHM/ IMNCI							
a. YES	13	5.80	129	57.59	47	20.98	C=0.247
b. No	2	0.89	23	10.27	10	4.46	DF=2
							T=5.991
							NS
9. IF YES 1	12	5.3	122	54.4	44	19.6	C=0.7088
2	1	0.4	5	2.2	2	0.8	DF=6
3	0	0	2	0.8	1	0.4	T=12.592
							NS

Tabno.6 shows the association between the level of knowledge on antenatal services and socio demographic variables. There is a significant association between the level of knowledge and age, experience and type of institution studied at p= 0.05 level

Table 7: Association between the level of practice regarding antenatal services and the socio -demographic variables of the multipurpose health workers(F)

Demographic Data	Poor		Average		Good		Chi
	F	%	F	%	F	%	
1.Age a.18-25 yrs b.26-30yrs c.31-35 yrs d.>35 yrs	3 1 2 3	1.3 0.5 0.9 1.3	3 1 2 3	1.3 0.5 0.9 1.3	37 42 47 80	16.5 18.8 20.9 35.7	C=2.8960 DF=6 T=12.591 S
2.Education a.1othstd b. Intermediate c. Any other degree	3 6 0	1.3 2.7 0	6 3 0	2.7 1.3 0	133 61 12	59.4 27.2 5.4	C=6.1930 DF=4 T=9.488 NS
3.Experience a.1-3 yrs b.3-5yrs c.5-8 yrs d.>8 yrs	0 5 2 2	0 2.2 0.9 0.9	1 1 4 3	0.5 0.5 1.8 1.3	9 22 113 62	4.1 9.8 50.5 27.7	C=17.2808 DF=6 T=12.591 NS
4.Marital status a. Married b. Unmarried c. Divorced/separated	8 1 0	3.6 0.5 0	7 2 0	3.1 0.9 0	171 30 5	76.3 13.4 2.2	C= DF=4 T=9.488 NS
5. Income a. Rps 10000-15000 b.Rps-15001-20000 c.Rps20000-25000 d. above 25,000	8 1 0 0	3.6 0.5 0 0	7 2 0 0	3.1 0.9 0 0	178 26 1 1	79.5 11.6 0.5 0.5	C= DF=6 T=12.591 NS
6.PLACE OF RESIDENCE a. Rural b. Urban c. Suburban d. Slum	1 7 0 1	0.5 3.1 0 0.5	3 6 0 0	1.3 2.7 0 0	59 144 2 1	26.33929 64.3 0.9 0.5	C= DF=6 T=12.591 S
7. TYPE OF INSTITUTION A. Govt B. Private	3 6	1.4 2.7	3 6	1.4 2.7	60 146	26.7 65.2	C= DF=2 T=5.991 NS
8. COURSE A. yes B.no	7 2	3.1 0.9	8 1	3.6 0.5	174 32	77.7 14.3	C= DF=2 T=5.991 NS
9. IF YES 1 2 3	5 1 1	2.6 0.5 0.5	1 7 0	0.5 3.7 0	168 6 0	88.8 3.1 0	C= DF=4 T=9.488 S

Tab.no.7 shows the association between the level of practice on antenatal services and socio demographic variables. There is a significant association between the level of practice and age, and no of refresher course attended, at p= 0.05 level.

4. Discussion
4.1. Description of back ground variables
With regard to age, 44(19.6%) belong to 18-25 yrs, 44(19.6%) belong to 26-30yrs, 50(22.3%) belong to 31-35yrs and,86(38.4%)belong to above 35yrs.With regard to education, 142(19.6%) studied 10thstd,71(31.6%) studied intermediate, and3(11%) studied degree. With regard to experience, 10(4.5%)have 1-3 yrs of experience, 28(19.6%) have 3-5yrs,119(53.3%) have 5-8 yrs and 67 (29.9%)have>8 yrs of experience. With regard to marital status, 187(83.5%)are married,32 (14.3%) are unmarried and 5(2.2%) are separated/widow. With regard to monthly income, 193(86.2%) earn Rps 10000-15000, 29(12.9%) earn Rps15001-20000,1(0.4%) earn Rps20000-25000 and 1 (0.4%) earn.>25000Rps.With regard to type of institution underwent ANM course, 66(29.5%) studied in Govt Institution and 158 (70.5%) studied in private Institutions.

4.2. Findings related to level of knowledge regarding antenatal services among multipurpose health workers.(f)
Tab no.3 shows the distribution of overall knowledge with regard to components of antenatal services and the mean and SD. With regard to overall knowledge, majority of them 152(67.9%) had moderately adequate knowledge and only 57(25.4) had adequate knowledge. The mean knowledge scores is 23.1026and the SD is 4.7512.
Tab.N0-2, shows the knowledge distribution of multipurpose health worker-Fs regarding Antenatal care and services. It shows that 214(95.5%) had knowledge regarding the minimum no of Antenatal visits,171 (76.3%)regarding ideal time for 1stANC,110 (98.7%), time for 2ND ANC, 203 (90.6%) about time of 1st dose of TT,218 (97.3 %)and 210 (93%) had knowledge about the timing of 2nd dose of TT.159(71%) had correct understanding of Last menstrual period, and 174 had knowledge about estimation of gestational age by using LMP. Regarding the dosage of iron supplements,48(21.4%) had knowledge and regarding the tests done during pregnancy 188(83.9%) had knowledge.
A study was conducted with the objective to assess the knowledge & practices of HW-Fs in relation to RCH services. This was a cross sectional descriptive study, conducted in rural areas of Jamnagar district. All the HW-Fs of the district were included in the study. The results revealed that **o**ut of 218 HW-Fs, only 71.56% were able to enumerate at least 5 criteria of at-risk mothers. Only 40.37% & 60% HW-Fs performed HB estimation & urine investigation of mothers. Only 27.98% knew at least 5 of the indications for referral of the mother in labour to higher centre. The study concluded that the knowledge & skills of HW-Fs was grossly lacking in many basic health care components. Negligence in essential health care practices was detected [7].

4.3. Findings related to the practice regarding reproductive and child health services.
Tab.no.4 shows the distribution based on practice of the multipurpose health workers(F)regarding RCH services.

With regard to overall practice among 224, 217 (96.9%) had good practice and 7(0.03%) had average practice.
Tab.no.5 shows the practice of antenatal services, among 224,213(95.08%) had good practice,5(2.23) had average practice.
A study was designed to assess the skill and knowledge of FHW in delivery of RCH services. A cross-sectional study was conducted in the Jamnagar district during. All female health workers (FHWs) (n = 63) of 10 randomly selected Primary Health Center, one primary health care (PHC) from each Talukas and Corporation area, were selected and their skills and knowledge were assessed by observing and interviewing by the pretested oral questionnaire method.

Results revealed that Antenatal care achieve impressive coverage of more than 95% with regards to antenatal registration, tetanus toxoid to pregnant women, and iron-folic acid (IFA) tablet prescription to expectant mothers [8].

4.4. Association between knowledge with socio demographic variables of the multipurpose health workers(F)
Tabno.6 shows the association between the level of knowledge on antenatal services and socio demographic variables. There is a significant association between the level of knowledge and age, experience and type of institution studied at p= 0.05 level
A study was conducted to explore the relationship between the knowledge of community health workers (CHWs)-anganwadi workers (AWWs) and auxiliary nurse midwives (ANMs) and their antenatal coverage and effectiveness of the home visits, in terms of essential newborn health care practices at the household level in rural India. Data was collected from 302 AWWs and 86 ANMs and data from 13 023 recently delivered women who were residents of the CHW catchment areas and gave birth to a singleton live baby. The results revealed that coverage of antenatal home visits and newborn care practices were positively correlated with the knowledge level of AWWs and ANMs [9].

4.5Associationbetween the practice and the socio demographic variables of the multipurpose health workers(F)
Tab.no.7 shows the association between the level of practice on antenatal services and socio demographic variables. There is a significant association between the level of practice and age, and no of refresher course attended, at p= 0.05 level.

5. Recommendations for Further Research.
1. A similar study can be replicated with the larger sample size and wider area coverage among ANMs in urban health centres.
2. A similar study can be replicated with the different populations like Anganwadi workers, Accredited Social Health Activists (ASHAs), and Registered Nurses.
3. A study can be undertaken on assessment of FHWs' competencies regarding IMNCI.
4. A comparative study between OSCE and actual practice observation in real life setting regarding skills on RCH SERVICES.
5. A comparative study between OSCE and actual practice observation in real life setting regarding skills on management of childhood illnesses can be carried out to

find out the suitable method of evaluation of skill among FHWs.

6. A study can be conducted to assess the effectiveness of different types of refresher programmers on knowledge, skills and competency among community health workers in rural and urban PHCs.

7. A study can be conducted to assess the effectiveness of skill training programmers on knowledge, skills and regarding neonatal resuscitation and new born care among female Multipurpose health workers in rural and urban PHCs.

6. Conclusion
The study reveals that Majority of the multipurpose health workers (F) have moderately adequate knowledge they have lack of knowledge in some of the components antenatal services and the coverage of antenatal services were 95%. The study indicates the need for training and refresher courses to improve the level of knowledge and the quality of services delivered.

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