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RESEARCH ARTICLE

A STUDY ON UTILIZATION OF MATERNAL AND CHILD HEALTH CARE SERVICES IN RURAL FIELD PRACTICE AREA OF KHAJABANDANAWAZ INSTITUTE OF MEDICAL SCIENCES, KALABURAGI-KARNATAKA

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Abstract

Background: In any community, mothers and children constitute a priority group. In sheer numbers, they comprise approximately 71.14% of the population of the developing countries. In India, women of the childbearing age (15-44 years) constitute 22.2% and children under 15 years of age about 35.3% of the total population. Together, they constitute nearly 57.5% of the total population. Mothers and children not only constitute a large group, but they are also a 'vulnerable' or special-risk group. The main aim of MCH Services remains to ensure that, throughout pregnancy and puerperium, every mother maintain optimal health, and at the end of pregnancy, a healthy mother and a healthy baby and promote the child health throughout the infancy and childhood.

Methodology: A community based cross sectional study was done among 400 pregnant and lactating mothers having infant residing in rural field practice area of Aurad, department of Community Medicine of KhajaBandanawaz Institute of Medical Sciences, Kalaburagi from January -December 2017 for a duration of one year. A predesigned and pretested proforma was used to collect the sociodemographic details, utilization of Mother and child service at Aurad .

Result: Majority of the subjects 184 (46.0%) were in age group 21-25 years and the mean age of mothers in present study is 24.53 ± 2.85 years. While, 30% Utilized ANC service and around 56% Utilized PNC service. Religion and utilization of antenatal services was found to be statistically significant.

Conclusion: The better utilization of the maternal health services can be achieved by overall socio-economic development including focus on women empowerment and education, incorporation of religious norms and faiths in the health policies

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Introduction:-

Maternal healthcare remains a significant global challenge to the health system worldwide. Although the graph of the global maternal mortality rate between 2000 and 2017 declined by 38% , the incidence of maternal death continued to remain unacceptably high in lower-middle-income countries representing the gaps in accessing quality health care across the world. According to the World Health Organization (WHO), the number of deaths of women due to pregnancy-related complications in 2017 was around 229 thousand . In India, although the maternal mortality rate (MMR) was reduced from 370 in 2000 to 145 per 100,000 live births in 2017, the country accounts for 20% of the world's share in terms of maternal mortality ¹ . To prevent maternal mortality, the Sustainable Development Goals (SDGs) formed a new strategy to reduce the global MMR to less than 70 per 100,000 live births by 2030. ²

Utilization of maternal health care services in India is a significant concern. Several studies have focused on demographic and socioeconomic factors, as well as inequality in the distribution and utilization of these services between rural and urban communities. However, there is a paucity of studies focusing on urban slums ³. The utilization of maternal health care services among respondents in urban slums was found to be unsatisfactory, with low rates of full antenatal care utilization and skilled attendance at birth ⁴. Similarly, a study conducted in rural areas of Kanpur Nagar district found that while a high percentage of participants had at least one antenatal visit, there is room for improvement in postnatal care and treatment of infant diseases ⁵. Another study highlighted the need for better information and awareness about maternal health services to improve utilization, particularly in rural areas ⁶. Overall, improving socioeconomic status, education, and access to information are crucial factors in enhancing the utilization of maternal health care services in India.

According to the National Family Health Survey 2019-20 (NFHS-5) only 58.6% mothers had antenatal check-up in their first trimester in India, where as 70% in Karnataka and 59% in Gulbarga district. Mothers who had full antenatal care were around 58% in India, 70% in Karnataka and 53% in Gulbarga. ⁷ Since, the problems affecting mother and children are multifaceted and multi-factorial and continue to remain of serious magnitude. The main aim of MCH Services remains to ensure that, throughout pregnancy and puerperium, every mother maintain optimal health, and at the end of pregnancy, a healthy mother and a healthy baby and promote the child health throughout the infancy and childhood. ⁸ Much of the sickness and deaths among mothers and children is largely preventable. By improving the health of mothers and children, we contribute to the health of the general population. The content of maternal and child health (MCH) care will vary according to the demographic, social and economic patterns. ⁹ The purpose of this study to focus on the the utilization of maternal and child health care services in rural field practice area of Aurad, KhajaBandanawaz Institute of Medical Sciences, Kalaburagi.

Methodology:-**Study area:**

The present study was carried out in Aurad Rural Field Practice area, KhajaBandanawaz Institute of Medical Sciences, Kalaburagi city.

Study design:

Community based cross sectional study.

Study period:

January 2017 - December 2017.

Study subjects:

All pregnant and lactating mothers having infant residing in rural field practice area of Aurad, Department of Community Medicine of KhajaBandanawaz Institute of Medical Sciences, Kalaburagi.

Inclusion Criteria:

All pregnant and lactating mothers having infant.

Exclusion Criteria:

All mothers who are not willing and who do not give consent for the study.

1) Ethical Clearance: Ethical clearance was obtained from the Institutional Ethical Committee of KBNIMS Kalaburagi. Ref.no: KBNIMS/ IEC/2016-17/58 dated 23-11-2016.

Sampling Technique:

The study was carried out in the rural field practice area of Aurad, Department of Community Medicine KBNIMS, Kalaburagi. It covers 14 villages, and total population of 22,249. By using simple random sampling technique method, seven villages were selected randomly by random number technique of population around 10,701. From these seven villages the mothers will be selected by systemic random sampling (total population of randomly selected seven village / sample size desired $10701/358 \approx 30^{\text{th}}$) where every 30th house of mothers will be selected for the study.¹⁰

The study was carried out until the decided sample size was reached.

Sample size: The sample size has been chosen with the formula.¹¹

$$\begin{aligned} 2) \quad N &= \frac{4Z^2P(1-p)}{W^2} \\ &= \frac{4 \cdot (1.96)^2 \cdot 37(100-37)}{10^2} \\ &= 358.19 = 400. \text{ (Rounded off to the nearest round figure).} \end{aligned}$$

Where:

$$P = 37 \text{ (Based on previous study)}^{12}$$

$$Q = 1 - P = 100 - 37 = 63$$

$$Z_{\alpha} = 1.96 \text{ (For 95\% confidence level)}$$

$$\begin{aligned} 3) \quad W &= 10\% \text{ (Total width of the confidence interval)} \\ &= \text{Sample size.} \end{aligned}$$

Method of collection of data:-

After taking consent, data was collected by a pre-designed, pre-tested questionnaire was used to collect the information. The subject will be interviewed after obtaining informed consent. The answers therefore obtained will be coded and quantified. A pre-designed, pre tested questionnaire will be used to collect the information. The subject will be interviewed after obtaining informed consent. The answers therefore obtained will be coded and quantified.

Statistical Analysis: Data collected was compiled, entered using excel sheet, presented in the form of tables, diagrams, charts, graphs & analyzed using SPSS version 20.0. Analysis of association between immunization coverage and various socio-demographic variables was done using Chi-square test. $p > 0.05$ was considered insignificant, $p < 0.05$ was considered significant.

Microsoft office word and Microsoft office excel have been used to generate the tables and graphs.

Result:-

The table-1 shows that the majority of the subjects, 184 (46.0%), were in the age group of 21-25 years. This was followed by the age group of 26-30 years with 152 (38.0%), and the least number of subjects were in the age group of <20 years with 64 (16.0%). The mean age of mothers in the present study is 24.53 ± 2.85 years. The majority of the study subjects belonged to the Hindu religion with 352 (88.0%), followed by Muslims with 48 (12%). The table also revealed that the maximum number of mothers, 145 (36.25%), studied till high school, and around 85 (21.25%) were found to be illiterate. Most of them 78% were homemakers, while 22% were working. The majority of the study subjects belonged to the lower class with 248 (62.0%), and 243 (60.75%) belonged to joint families..

Table-2 shows that, the mean age at menarche was 13.25 ± 1.24 years. The mean age at marriage was 18.14 ± 3.39 years. Mean age at 1st conception was 20.13 ± 3.08 years.

The table-3 shows that the majority of study subjects had more than 3 antenatal visits, which were 284 (71.0%), and 114 (28.5%) had less than 3 antenatal visits, respectively. In the majority of the study subjects, antenatal check-ups were done by doctors, which accounted for 391 (98.24%).

The antenatal check-ups received at the Government hospital were 318 (79.90%), and 80 (21.10%) received them at a private hospital. The majority of the study subjects, 235 (59.05%), had taken one dose of TT injection, and 163 (40.95%) had taken 2 doses of TT injection. Whereas only 10.05% had consumed >100 IFA tablets during the ANC period, whereas 89.95% consumed <100 IFA tablets.

The table-4 shows that the majority, 40.06% of mothers, received more than 3 postnatal visits. Visits done by Nurse/ANM were around 48.05%, whereas 7.23% have not received any postnatal visits. The reasons for not receiving postnatal visits were unawareness, which accounted for the majority at 32.65%, followed by employment at 26.57% and not being accessible at 12.24%, respectively..

The table-5 shows that the majority, 66 (35.87%) of the aged group 21-25 years, have completely utilized antenatal services when compared to the other age groups. The association between mother's age and utilization of antenatal services is found to be not statistically significant.

The table -6 shows that the majority, 61.11%, of the study subjects belonging to the age group of 21-25 years have utilized postnatal services completely when compared to the other age group. The relation between the mother's age and postnatal care was found to be not statistically significant.

The graph -1 shows that the majority of the infants, 292 (87.95%), were partially immunized, followed by 32 (9.64%) who were fully immunized. The number of unimmunized infants was 8 (2.41%).

Discussion:-

In the present study, the majority of the subjects (184, 46.0%) were in the age group of 21-25 years, followed by the age group of 26-30 years (152, 38.0%), and the least in the age group of <20 years (64, 16.0%) respectively. Similar findings were seen in a study done by Sruthi M. V. et al.¹³, which showed that mothers aged between 21-25 years were 121 (42.3%). Another study done by Nidhi Sharma et al.¹⁴ shows that mothers in the age group of 20-24 years were 331 (50.2%).

Similar findings were seen in a study done by Neeta P. N et al.¹⁵, where mothers belonging to the Hindu religion were around 82.9%. Another study done by RenukaBiyalaet al.¹⁶ showed that 91% of mothers belonged to the Hindu religion.

A similar study done by Shital S et al.¹⁷ showed that mothers who studied till high school were 36.36%, whereas a study done by Narayana M R et al.¹⁸ showed that high school-educated mothers were 32.0%.

A similar study done by Kuldeep J Dabade and Sheetal K Dabade shows that 79.6% of mothers were homemakers and 20.04% were involved in some kind of work.¹⁹ Another study done by Narayana M. R et al.¹⁹ showed that 8.5% were housewives and 11.5% were working mothers (with the majority being coolie workers).

A similar study done by Kulkarni MV Durge PM shows that 88.89% of mothers belonged to socio-economic class IV-V and 11.11% belonged to class I-III.²⁰

A similar study done by Nishant R. Bhimani and Pushti V. Vachhani showed that 57.07% belonged to a joint family and 42.93% belonged to a nuclear family.²¹

In a study conducted by Singh²² in Chandigarh, it was revealed that 31.6% of mothers were married before the age of 18 years and the age at first pregnancy was less than 20 in 33.4% of mothers. This was almost similar when compared with our study. In another study done in Aligarh, Uttar Pradesh, it was found that mean age at marriage was 17.94 years.²³ Additionally, in another study the mean age at first pregnancy was 20.67 years. In 23% of women, the age at first conception was less than 18 years.²⁴ This was almost similar when compared with our study.

A cross-sectional study conducted by Sachin S Mumbare showed that 64.76% of pregnant women utilized the minimum four ANC checkups, which is similar to our study.²⁵

A longitudinal study was conducted to assess the utilization of maternal and child health care in different areas of Wardha district in 2007. It found that 86.2% in rural areas and 91.75% in urban areas received more than five ANC visits. Our study had fewer ANC visits compared to this study.²⁶

A study conducted in Meerut on the maternal health scenario in the slums of Uttar Pradesh showed that the overall coverage of complete ANC was only 6%. 53.2% of pregnant mothers received at least one ANC check-up, and only 27.2% received more than three ANC check-ups. 72.5% of women received ANC from private health facilities.²⁷

A study conducted by JhaRanjit K et al²⁸ on the utilization of maternal health care services in Kancheepuram District, Tamil Nadu showed that 99.05% of mothers had institutional delivery, with 71.77% of deliveries conducted in government hospitals/PHCs and 28.23% in private hospitals/nursing. Only two home deliveries were conducted, one of which was conducted by a trained birth attendant. In comparison to our study, institutional delivery in the government setup was more common.

According to a study by DJ Bhandari et al²⁹, TT coverage of pregnant women was 85%. Iron tablets were consumed by 48.3% of women.

A study on the coverage, utilization, and quality of maternal health care services by NeerajAgarwal et al³⁰ revealed that 90.6% of pregnant women received two doses of tetanus toxoid, and only 53.1% received less than 100 IFA tablets.

A study conducted in Meerut on the maternal health scenario in the slums of Uttar Pradesh showed that only 70% of pregnant women received at least one TT injection. Government health centers were the main providers of IFA tablets in 50% of mothers. When compared with the above studies, TT immunization coverage as well as IFA tablet consumption was lower in our study.²⁷

A similar study done by PakhareAbhijit P, FenandezSofiya D, et al. in³¹ shows that full immunization was 70.0%, partial immunization was 25.0%, and no immunization was 4.03%.

Similarly, a study done by Sachin S Mumbare and RekhaRege showed that 65% of complete antenatal services utilization is seen in the under 20 years of age group, and around 48% in the 20-25 years of age group. The association between mother's age and utilization of antenatal services was found to be not statistically significant in this study.²⁵

In another study done by Neeta P N et al. in¹⁵, it was found that 68.2% of complete antenatal services utilization is seen in the 21-30 years of age group, and around 67% in the 31-40 years of age group. The association between mother's age and utilization of antenatal services was found to be not statistically significant in this study.

More than half (58.8%) of the mothers in the study had completed antenatal care (ANC) in³². Another study showed that 83.5% of the antenatal mothers had taken the recommended two doses of T.T with a complete booster dose. 87.1% of the antenatal mothers were aware of family planning services. 97.8% of antenatal mothers were aware of immunization in³³.

Whereas, only 22.5% of females received full antenatal care (≥ 4 visits) in eastern Uttar Pradesh, India³⁴.

The majority of the study subjects (90.1%) were aware of postnatal services, and 88.2% of them utilized postnatal services.³⁵ A similar study conducted by Dillee Prasad Paudel et al³⁶ (shows that mothers aged 20-35 years had a utilization rate of 79.1%, while those aged ≤ 19 and > 35 had a utilization rate of 76.4%. However, only 19.2% of study subjects belonging to the age group < 25 years utilized postnatal services compared to other age groups³⁷. All postnatal mothers consumed iron and folic acid during pregnancy, with 96.2% continuing until childbirth. The majority of postnatal mothers received counseling on danger signs (90.2%)³⁸.

Conclusion:-

87.95% of the mothers were full term pregnant and 71% were had more than 3 antenatal visits. Only 40.06% of mothers received more than 3 post-natal visits, where as 7.23% have not received any postnatal visits and reason for

not receiving postnatal visits were unawareness 32.65% followed by employment 26.57% and not accessible 12.24% respectively. Therefore counseling of mother about early registration during first trimester, importance of full ANC services at individual level and also at community level by public awareness and behavioural change communication will support to encourage to full service utilization.

Tables and Graphs

Table No. 1:- Distribution of Study subjects according to their socio demographic variables.

Age (Years)	Number	Percentage
< 20	64	16
21-25	184	46
26-30	152	38
Mean age 24.53 ± 2.85 years		
Religion		
Hindu	352	88
Muslim	48	12
Education		
Illiterate	85	21.25
Primary school	44	11
Middle school	61	15.25
High school	145	36.25
Intermediate or diploma	36	9
Graduate	27	6.75
Post graduate	2	0.5
Occupation		
House maker	312	78
Working	88	22
Socio Economic Status		
Middle Class	16	4
Lower Middle	136	34
Lower Class	248	62
Type of family		
Nuclear	142	35.5
Joint	243	60.75
Three Generation	15	3.75
Total	400	100

Table No 2:- Distribution of study population based on age at menarche, marriage and age of first conception.

Age	Mean	SD
Age at menarche	13.25	1.24
Age at marriage	18.14	3.39
Age at first conception	20.13	3.08

Table No3:- Distribution of the study subject according to antenatal care.

Variables		Frequency (n=400)	Percentage
Number of antenatal visits	None	2	0.5
	≤ Three	114	28.5
	≥ Three	284	71.0
		400	100
		Frequency	

		(n=398)	Percentage
ANCcheckupdoneby	Doctor	391	98.24
	Nurse	7	1.76
		398	100.00
ANCcheckup Received at	Private	80	20.10
	Govt	318	79.90
		398	100.00
TTdosetaken	One	235	59.05
	Two/booster	163	40.95
		398	100.00
IFAtabletsconsumed	<100	358	89.95
	>100	40	10.05
		398	100.00
Timeof firstantenatalvisit	1 st Trimester	127	31.91
	2 nd Trimester	256	64.32
	3 rd Trimester	15	3.77

Table No 4:- Distribution of the study subject according to postnatalservices.

Postnatal visit within 42 days of delivery	Frequency(n=332)	Percentage
Nil	24	7.23
One	114	34.34
Two	58	17.47
Three or more	136	40.96
	332	100.00
Person Consulted for Postnatal visit=308		
Doctor	56	18.18
ANM/Nurse	148	48.05
ASHAs/AWWs	104	33.77
	308	100.00
Reason for not receiving ≥ 2 Postnatal visit(n=196)		
Not aware	64	32.65
Not accessible	24	12.24
Objection from family members	52	26.53
Employment	56	28.57
Total	196	100.00

Table No 5:- Association between mother's age and complete antenatal service utilization.

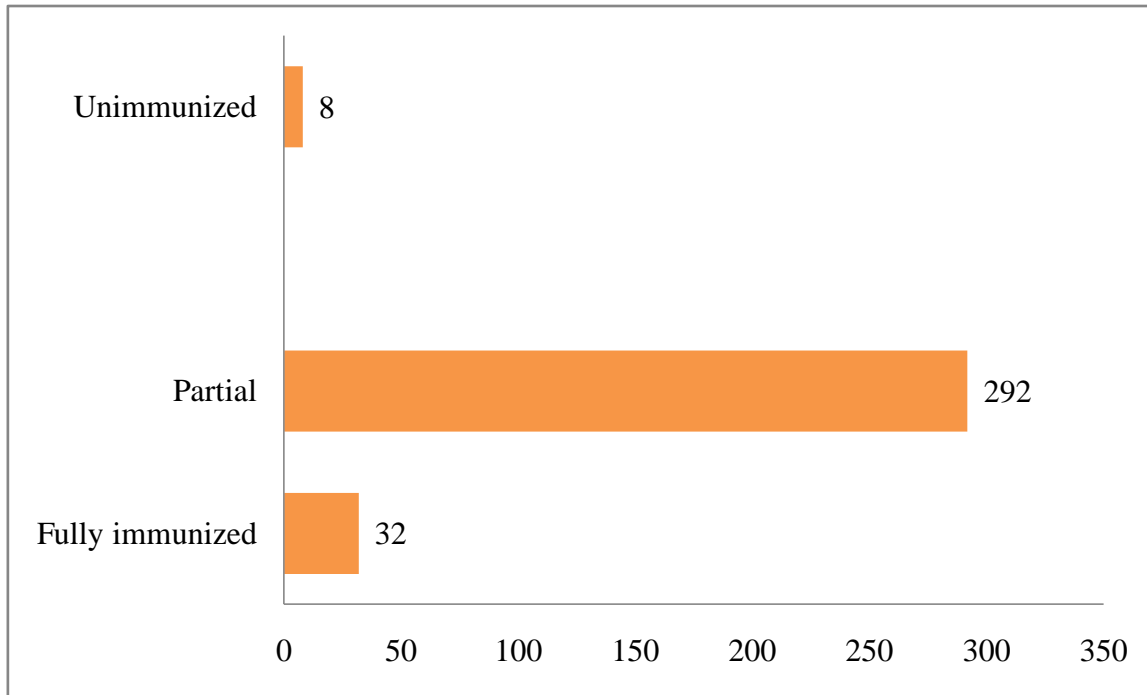
Age in Years	Complete Utilization		Partial Utilization		Total
	Number	%	Number	%	
<20	16	25.00	48	75.00	64
21-25	66	35.87	118	64.13	184
26-30	38	25.00	114	75.00	152
Total	120	30.00	280	70.00	400
Chi-square	5.59	df	2	p	0.0611

Table No 6:- Association between mother's age and postnatal service utilization.

	Complete Utilization n	Partial Utilization n	Total

Age in Years	Number	%	Number	%	Number	%
<20	29	58.00	21	42.00	50	100.00
21-25	99	61.11	63	38.89	162	100.00
26-30	58	48.33	62	51.67	120	100.00
Total	186	56.02	146	43.98	332	100.00
	Chi-square	4.66	df	2	p	0.0973

Graph No. 1:- Distribution of study subject based on Immunization status of infant.



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Conflict of interest:

None declared.

Ethical approval:

The study was approved by the Institutional Ethics Committee

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