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Original Research Article

Comparison of Knowledge and Utilisation of Services of Mobile Health Units in Rural and Tribal Areas of East Godavari District, Andhra Pradesh

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Abstract:

Background: Mobile Medical units are operational in the state of Andhra Pradesh since 2008 under different names like 104 Fixed Day Health Services, Chandranna Sanchara Chikitsa.

Aim and Objectives: To assess Socio-demographic profile of beneficiaries, factors influencing the knowledge, utilisation pattern of beneficiaries among Rural and Tribal areas.

Method and Materials: A cross-sectional study conducted at service points of fixed day Mobile Health units. Data collection was done from July to September 2016 by using Pre designed, semi structured questionnaire. Out of total 26 MHUs, 16 were selected from five revenue divisions using stratified random sampling technique. Of the beneficiaries attending each MHU 30 were short listed (randomly selected) for the study giving a total sample of 560 beneficiaries. Data was entered in MS EXCEL 2013 and analysed using SPSS 20. Appropriate statistical tests P value of 0.05% applied where ever necessary.

Results: Mean age of the beneficiaries was 45.97yrs±20.53 years. Majority of beneficiaries were females 67%. 54% beneficiaries are illiterates and 52% are unemployed. 77.7% of the beneficiaries belong to lower SES.55.5% of rural beneficiaries knew about the knowledge of visit and 89.3% of tribal beneficiaries on the day of visit.66.66% of the rural beneficiaries and 42.9% tribal beneficiaries knew about the range of services provided by MHU.

Conclusions: There is no difference in the perception of rural and tribal beneficiaries regarding the services provided by MHUs. The tribal beneficiaries have lower knowledge about the frequency of the visit and the range of services provided by MHUs.

Keywords: MHUs, Knowledge, Utilization, Beneficiaries.

Introduction

Mobile health clinics/ Units (MHU) have become a popular means of providing care to low-resource areas in high-, middle- and low-income countries. In an effort to take health care to the door step of the public in rural areas especially in under - served areas, the government has approved Mobile Health Units under NRHM.[1] Government of Andhra Pradesh (Go AP) has decided to accelerate the pace of Health care delivery especially to the poor and out of reach population through mobile outreach services. There will be at least one visit in a month in all the villages which are 3 Km away from a PHC by MHUs. The Fixed Day Health Service scheme offers services to each village on a 'fixed' day of every month complementing the existing public health system to create a framework for comprehensive and easily accessible health care delivery. The study was conducted with the Aim of Assessing the knowledge and utilization of services at MHU among beneficiaries among Rural and Tribal areas.

Material and Methods

A cross-sectional study was conducted at service points of fixed day Mobile Health units, for the duration of three months from July 1st to September 30, 2016. East Godavari district in Andhra Pradesh is one of the largest district with population of 50,00,000. For easy administration the district is divided into five revenue divisions (both rural-4and tribal-1). The study was conducted at service points

of fixed MHUs in the district. Prior approval from the Institutional Ethics Committee has been obtained. All the prerequisite permissions and requirements for the study has been obtained. Verbal informed consent is obtained from study subjects. Confidentiality was guaranteed by not writing names on the study tools. The approval from the District nodal officers & District Operations Manager was obtained.

Inclusion criteria

- Beneficiaries attending the MHU.
- Beneficiaries willing to participate in the study

Exclusion criteria

- Seriously ill patients

Sampling

East Godavari district having 26 MHUs distributed in four rural and one tribal revenue divisions. Effort has been made to include all the divisions in the study. In the study 12 MHUs from four rural divisions and four MHUs from one tribal division were included. At each MHU 30 beneficiaries representing different complaints (MCH, CD, NCD, etc.,) were selected for the study giving a total sample size of 560. From the rural areas 420 beneficiaries and remaining 140 were from tribal areas.

Method

Study tools

Pre designed, semi structured questionnaire, Road maps of MHUs and list of health functionaries at service centres.

Study Variables

Age, Sex, Education, Occupation, income (BG Prasad Socio-economic classification), frequency of visiting health facility, presenting illness, frequency of attending MHU, knowledge regarding MHUs (day of visit of MHU, range of services provided by MHU, Monthly visit of MHU),source of information, frequency of visit of MHU, adequacy of medicine , opinion regarding services.

Data Collection

Data collection was done by using interview technique using Pre designed, semi structured questionnaire. The interview was conducted after explaining them the purpose of the study, taking their verbal consent at a venue acceptable to the beneficiary. Information regarding beneficiaries aged < 14 years was obtained from their attendants. Five point Likert scale was used to measure the beneficiary opinion regarding services of MHU. (1-Very good, 2- Good, 3- Average, 4- Bad, 5-Very bad).

Statistical Analysis

Data was entered in MS excel 2013 and analysed in SPSS. Percentages, Means and Proportions are used for descriptive variables. Chi square tests are applied where ever necessary. P value of 0.05% is taken as statistically significant.

Results

Mean age of the beneficiaries was 45.97yrs ±20.53 years. Table.1 depicts Socio-demographic details of beneficiaries. Of the beneficiaries 46.8% were aged 55 years and above. Majority of beneficiaries were females 67%. Of the beneficiaries attending MHUs 54% are illiterates and 52% are unemployed. Most (77.7%) of the beneficiaries attending MMUs are from lower socio economic status. Significant differences were observed for age distribution, occupation and socio-economic status among beneficiaries from tribal and rural areas.

Table 1: Distribution of Socio demographic profile of study subjects

Variables	Rural (n=420)	Tribal (n=140)	Total(n=560)	Chi-square	P - value
Age distribution(n=560)					
0-5 Years	18 (4.3%)	17 (12.1%)	35 (6.2%)	45.641 (DF - 7)	<0.001
6-14 Years	8 (1.9%)	11 (7.9%)	19 (3.4%)		
15-24 years	32 (7.6%)	17 (12.1%)	49 (8.8%)		
25-34 years	33(7.9%)	19(13.6%)	52 (9.3%)		
35-44 years	43(10.2%)	21 (15%)	64 (11.4%)		
45-54 years	62 (14.8%)	17 (12.1%)	79 (14.1%)		
55-64 Years	108(25.7%)	20 (14.3%)	128(22.9%)		
65 and above	116(27.6%)	18 (12.9%)	134(23.9%)		
Gender					
Female	281(66.9%)	95 (67.9%)	376(67.1%)	0.O43 (DF-1)	0.835
Male	139(33.1%)	45 (32.1%)	184(32.9%)		
Education (n=523)					
Illiterate	215(53.6%)	68 (55.7%)	283(54.1%)	1.25(df=3)	0.741
Primary	90 (22.4%)	28 (23%)	118(22.6%)		

Secondary	77 (19.2%)	23 (18.9%)	100(19.1%)		
Inter & above	19 (4.7%)	3 (2.5%)	22 (4.2%)		
Occupation (n=560)					
Unemployed	247(58.8%)	46 (32.9%)	293(52.3%)	43.460 (df=5)	<0.000
Unskilled	137(32.6%)	67 (47.9%)	204(36.4%)		
Semi-skilled	6 (1.4%)	0	6 (1.1%)		
Skilled	2 (0.5%)	4 (2.9%)	6 (1.1%)		
Semi-professional	4 (1%)	0	4 (0.7%)		
Others	24 (5.7%)	23 (16.4%)	47 (8.4%)		
Caste					
BC	194(46.2%)	25 (17.9%)	219(39.1%)		
OC	162(38.6%)	7 (5%)	169(30.2%)		
SC	64 (15.2%)	9 (6.4%)	73 (913%)		
ST	0	99 (70.7%)	99 (17.7%)		
Socio-economic					
Upper	5 (1.2%)	0	5(0.9%)	59.137 (df=4)	<0.001
Upper middle	18 (4.3%)	0	18 (3.2%)		
Lower middle	93(22.1%)	9 (6.4%)	102(18.2%)		
Upper lower	201(47.9%)	51 (36.4%)	252 (45%)		
Lower	103(24.5%)	80 (57.1%)	183(32.7%)		

Table 2: Distribution of Knowledge and Utilisation patterns of study subjects regarding MHU services

Variable	Rural (n=420)	Tribal (n=140)	Chi-square	P-value
Knowledge regarding monthly visit of MHU				
Know	348 (82.9%)	82 (58.6%)	34.742(df=1)	<0.001
Don't know	72 (17.1%)	58 (41.4%)		
Knowledge regarding services				
Know	279 (66.4%)	60 (42.9%)	24.42(df=1)	<0.001
Don't know	141 (33.6%)	80 (57.1%)		
Knowledge about day of visit of MHU				
Before the day of visit	43 (10.2%)	0	54.260 (df=2)	<0.001
On the day	232 (55.2%)	125(89.3%)		
Regular visit	145 (34.5%)	15(10.7%)		
Source of information on the day of visit				
Family & neighbours	191 (45.5%)	53 (37.9%)	107.539 (df=3)	<0.001
Health worker	181(43.1%)	57(40.7%)		
Dandora	48 (11.4%)	0		
Siren	0	30 (21.4%)		
Frequency of visit to MHU				
First	120 (28.6%)	51 (36.4%)	40.010 (df=2)	<0.001
Occasional	70 (16.7%)	52 (37.1%)		
Regular	230 (54.8%)	37 (26.4%)		
Presenting illness to MHU				
< 5 years	18 (4.3%)	17 (12.1%)	75.77(df=5)	<0.001
ANC	28 (6.7%)	16 (11.4%)		
Chronic diseases	267 (63.6%)	32 (22.9%)		
Musculoskeletal	30 (7.1%)	29 (20.7%)		
Skin related	7 (1.7%)	7 (5%)		
Others	70 (16.7%)	39 (27.9%)		
Adequacy of Medicines				
Adequate	289 (68.8%)	100 (71.4%)	0.340 (df=1)	0.56
Inadequate	131 (31.2%)	40(28.6%)		
Opinion of beneficiaries regarding services				
Average	105 (25%)	40 (28.6%)	1.048 (df=2)	0.592
Good	294 (70%)	95 (67.9%)		
Very good	21 (5%)	5(3.6%)		

Knowledge regarding MMU services and utilisation pattern were given in Table.2. Of the study subjects 77% have knowledge about the monthly visits of MMU but 63.7% came to know about the visit on the day of visit only. Of the beneficiaries 60.5% have knowledge regarding services. It is observed knowledge regarding MHU services is higher among beneficiaries of rural area compared to tribal area and this difference is statistically significant. Source of information is mainly from family & friends (43.5%) and from health workers (42.5%). From the rural area 54.8% of the beneficiaries had a regular visit to MMU as compared to 26.4% from the tribal area this difference is statistically significant. Regular attendees were analysed for alternate preferred facility in the absence of MHU (Figure no.1) which suggests that majority preferred government facility followed by over the counter purchase of medication. From rural areas 63.6% are attending MHUs for chronic diseases. Antenatal mothers, <5 and patients with Musculoskeletal complaints and skin related problems are attending MHUs in tribal areas and this difference in utilization of services is statistically significant. The reasons for utilization of MHUs include accessibility of service, availability of free medication (Figure no.2). Among Rural area 75% of beneficiaries felt the services were good or very good as compared to 72% of tribal beneficiaries. 69.5% beneficiaries received adequate medicine.

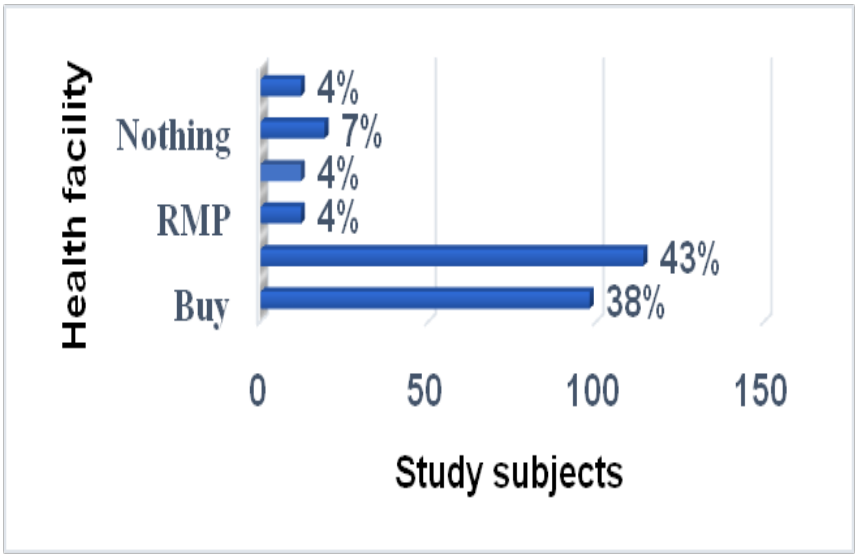

Figure 1: Frequency Distribution of study subjects attending alternate facilities in the absence of MHU's (n=267)

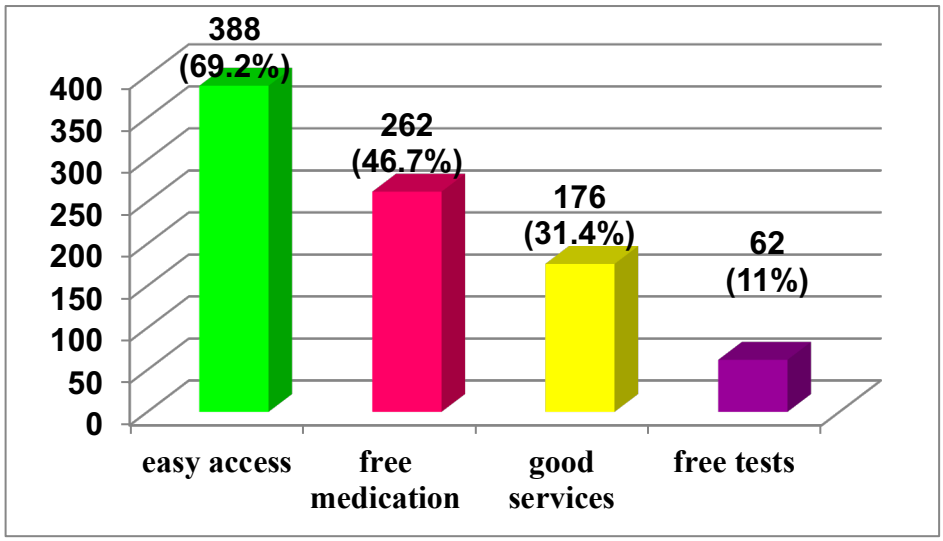

Figure 2: Distribution of study subjects versus reasons for choosing MHU (n=560)

Discussion

In the present study 46.8% of the beneficiaries were aged 55 years plus and 6.2% were under-five children. In rural area 53.3% of beneficiaries were aged above 55 years as compared to 27.2% in tribal area. A study conducted in USA by Nelson (2020) [2] observed that 41% of clients were aged between 0 to 18 years. Lindsey Hiebert and Gracia Vargas (2015)[3] in their study at Dominican Republic" observed that 55.5% were between 25-45 years and 8.1% were more than 60 years. Data from Mobile Health clinic in U.S.A in 2013[4] suggests that 50% of beneficiaries were aged between 18-65 years , followed by 41% under the age of 18years. Gender distribution in the present study shows that 67% of beneficiaries were females (both rural and tribal areas). Similar observation has been made by Nelson(2020)[2] where 55% of beneficiaries are females, Rothermel, L.[5] in their study in Haryana (2012) observed that 64% (156) were females, data from Mobile Health clinic (2013)[4] of united states observed that 54% were females and A. J. Manarkattu in a study conducted in (2009)[11, 6] in Srikakulam district of Andhra Pradesh observed that 56.2% were females. Dr. G. C. Kar, L. Sarangi (2007) [7] observed that 22 % were females in their study in KBK districts of Orissa. In the study 54% of beneficiaries were illiterates as compared to 23% of the beneficiaries with primary level schooling, 19% up to secondary level schooling. Lindsey Hiebert and Gracia Vargas (2015) from Dominican [3] Republic reported that more than 70% of the beneficiaries attending mobile health clinics did not complete primary school education. Dr. G. C. Kar Sri, L. Sarangi (2007)[7] in KBK districts of Orissa reported that 71 % of beneficiaries were illiterates. Melissa Mendes Campos (2012)[8] in California, USA reported 25% of study subjects did not complete high school diploma. In this study 77.7% of beneficiaries belong to lower SES (class IV & V) and 21.2% of population to middle SES.A. J. Manarkattu (2009)[6] in their study done at Srikakulam district of Andhra Pradesh reported 89% households have a white ration card. Melissa Mendes Campos (2012)[8] at California, U.S. observed that 30% of the population was below twice the federal poverty level. Dr. G. C. Kar, L. Sarangi (2007)[7] in KBK districts of Orissa found that 72 % of the beneficiaries were BPL households.

Of the beneficiaries 77% have knowledge about the monthly visits of MHU. 82.9% of beneficiaries from rural area and 58.6% from tribal area were aware of the monthly visits of MHU. U Dash(2008)[9] in a study on MHU in Orissa and Tamil Nadu observed that 46% of the population in Tamil Nadu reported that they knew about MHU visit twice a month, 81% of the population in Orissa reported at least a monthly visit. Dr. G. C. Kar. L. Sarangi (2007)[7] in KBK districts of Orissa they have observed that 90% were aware about the MHU operating in their locality. In the study 60.5% of our beneficiaries have knowledge regarding the range of services provided by MHU. The Tata Institute of social sciences (2013)[10]in their study at GAIL project sites of Madhya Pradesh found that the knowledge regarding availability of free medicines and other services among beneficiaries varied in different places- in Pata it was 60%, in Jhabua it was 28%, Kheda it was 73% and Vijaipur it was 67%.Source of information on the day of visit in this study is mainly from family & friends 43.5% followed by health workers (42.5%). Mithilesh Kumar et.al (2016)[1]in their study in Jharkhand observed that the source of information regarding the visit and timings of MHU in Ranchi was mainly by sahiyyas (ASHA) 40% ,AWW 40% . In Khunti it was 30% by sahiyyas as compared to, 80% by local people in Garhwa.

In the study 54.8% of rural beneficiaries had a regular visits to MHU as compared to 26.4% of tribal beneficiaries in our study. Melissa Mendes Campos (2012)[8] in California United states stated observed that 40% were regular visitors to MHUs. Of the factors influencing MHU utilization 69.2% of patients expressed that ease of access as a main reason followed by 46.7% for free medication in our study. Mithilesh Kumar et.al.(2016)[1] in Jharkhand observed that easy accessibility and free services were the main factors. Britton Gibson (2014)[11] U.S.A in their study on fixed mental health and substance use observed that the five factors influenced the access to healthcare (accessibility, affordability, acceptability, availability, and accommodation). In a study conducted by Melissa Mendes Campos (2012)[8] in USA 24% of study subjects stated that they would not have accessed services if not for the availability of services.

In the study 69% of beneficiaries received sufficient medicines for their complaints- 71.4% in tribal areas and 68.8% in rural areas. In their study U. Dash(2008)[9] in Orissa and Tamil Nadu stated that 93% received medicines in sufficient amounts for their complaints. Kumar A et.al (2009)[1]from Jharkhand reported that 100% of their beneficiaries received medication in adequate quantities in East Singhbhum and 97% each in Ranchi and Godda. Regarding services by MHU 69.5% of beneficiaries felt provided were good. Lindsey Hiebert and Gracia Vargas (2015)[3] in their study in Dominican Republic observed that 91.9% of beneficiaries felt that services offered were good or better. J. Manarkattu (2009)[6] in their study done at Srikakulam observed that 76.5% households responded positively to being satisfied with the services.

Conclusion

The present study suggests that there is no difference in knowledge of availability of MHUs among rural and tribal areas. Rural beneficiaries as compared to tribal beneficiaries knew about the monthly fixed visits. Beneficiaries in rural areas are accessing the MHU 2 times than the people in tribal areas. Beneficiaries in low SES are accessing the mobile health units due to increase accessibility and free availability of medication. Patients with chronic illness in rural areas are accessing the mobile health units predominantly as compared to range of services being accessed by tribal beneficiaries (<5,antenatal visits, musculoskeletal disorders etc.,).

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