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Original Research Article

Assessment of patients satisfaction with mobile medical clinics in the two districts of north Bengal, India

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ABSTRACT

Background: Patient satisfaction is an important indicator to measure the quality of healthcare services and plays a crucial role in enhancing the quality of health service delivery. The aim of the study was to assess the patient's satisfaction level with the quality of health care delivered at the mobile medical clinics (MMC) in two districts of north Bengal, India.
Methods: A cross-sectional survey was done using a purposive sampling method, and total of 294 samples were recruited. A questionnaire (PSQ-18) was used to assess the patient satisfaction level. Chi-square tests were used for categorical variables. F-test and t-test were used for mean differences between the variables. Linear regression analysis was done to examine the linear effect of social factors on patient satisfaction.
Results: The present study shows that overall satisfaction was 74.04%, with a mean value of 3.702. In the Jalpaiguri district, 27.5% of patients are highly satisfied, whereas 17.0% are in Alipurduar. Alipurduar district has a higher low satisfaction rating (39.7%) than Jalpaiguri district (19.7%), and a district-wise significant association was found ($p<0.001$). Overall satisfaction level effects by occupation ($p<0.001$), population and socio economic status ($p<0.05$).
Conclusions: Policymakers may consider that MMCs could be an effective strategy to improve primary health care in remote, underserved areas where there are no public health care facilities.

Keywords: Mobile medical clinics, North Bengal, Patient satisfaction

INTRODUCTION

Patient satisfaction is an essential and widely used indicator for assessing the quality of healthcare services. Patient satisfaction is thus a proxy tool but a highly effective indicator to assess the success of health outcomes and plays a crucial role in improving the quality of health service delivery.[1] "Patient satisfaction" refers to the proportion or levels to which health care services meet patient expectation.[2] Numerous factors, such as admission procedures, diagnosis and technical services, access, health personnel, financing, waste disposal, government policy, communication, the interpersonal manner of physicians, accessibility, and convenience, influence patient satisfaction and dissatisfaction with health care services.[3] Patient satisfaction is also important in research because it can help to detect the quality gap and practices preventing quality care.

Mobile medical clinics are an alternative source for providing basic health support for health services in rural and tribal areas, specifically those where government and other medical facilities are not available. Since 2007, the tribal reproductive and child health (TRCH) program in West Bengal has provided primary, reproductive, and child health care through an NGO with support from the

Department of Health and Family Welfare, Government of West Bengal. The programme was revised in 2012, when it became the mobile medical clinic with basic diagnostic and x-ray facilities. To improve access to tribal populations, the world bank identified the following as barriers: a lack of knowledge about health conditions; a lack of health care facilities in remote locations; a lack of emergency transportation; discriminatory conduct by health care personnel; and financial constraints.[4] MMCs can increase access to care, minimize health disparities, and promote health equity.

In India, access to health care in rural and urban areas is extremely unequal. Rural residents have substantially fewer options than urban residents, who can choose between public and private providers.[5] The majority of patient satisfaction studies in recent years have been conducted in various cities across India in hospital-based care of a government or private hospital.[6-8] Only two studies were found on patient satisfaction in West Bengal.[9,10] To the best of our knowledge, no specific studies have been conducted, particularly in the tribal context. No previous study was found on any mobile medical clinics in this area, so our present study first investigates patient satisfaction with the quality of health services provided at the mobile medical clinics in Alipurduar and Jalpaiguri districts of North Bengal, India. This study uses a pre-tested questionnaire to assess their approach to comprehensive primary health care in terms of accessibility, affordability, availability, and acceptability.

METHODS

Study area and people

The present study focused on the patient satisfaction levels among those who are using services from mobile medical clinics in the Alipurduar and Jalpaiguri districts in West Bengal. The majority of the population are scheduled tribes who primarily work as labourers on tea estates, often referred to as "bagan workers". The present study was covered in tea garden labours because they are a vulnerable and marginalized group of workers who face various health challenges due to their socio-economic and environmental conditions. Figure 1 depicts a study setting location map for the districts of Alipurduar and Jalpaiguri.

Sample size and sampling

The sample size for this study was calculated to be 267 participants. The sample size was calculated using an online sample size calculator with a 95% confidence level and a 6% confidence interval for the total population of Alipurduar and Jalpaiguri districts according to the 2011 census.[11] This was further classified based on the block population and male-to-female ratio. Overall 294 patient data were collected by using purposive random sampling by following the inclusion and exclusion criteria.

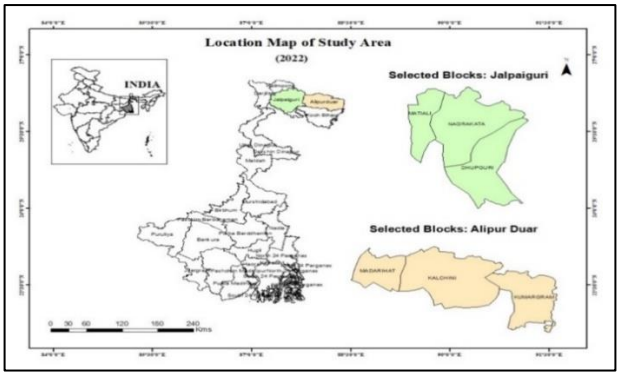

Figure 1: Study setting location Map of Alipurduar and Jalpaiguri district, West Bengal, India.

Study design

The present observational studies were conducted in two districts (Alipurduar and Jalpaiguri) of West Bengal, India. The present study covered Kalchini I and II, Kumargram, Madarihat blocks from Alipurduar districts and Dhupguri, Nagrakata and Mataiali blocks from Jalpaiguri district. The clinics are open for six hours each day and offer one fix-day, one fix-location, one fix time service. The study was conducted in one month (March 2022) using a patient satisfaction related standard questionnaire (PSQ-18) among the population who use mobile medical clinics.[12] The present research addressed the Declaration of Helsinki, a set of guidelines published by the World Medical Association (WMA) to ensure the safety of human participants in medical research.

Inclusion and exclusion criteria

Patients who used MMCs to visit the mobile clinic during the study day and were ≥16 years old were included in the current study. Patients above 60 and those who refused to consent to participate in the trial were excluded from consideration. If the questionnaire is not completed at the time of administration, the sample was excluded for analysis.

Assessment of patient satisfaction level

This study used the patient satisfaction questionnaire (PSQ-18), developed by Marshall and Hays in 1994, to study the level of patient satisfaction attending the mobile clinics.[12] PSQ-18 is a Likert scale questionnaire consisting of 18 questions divided into 7 domains ranging from stronly agreeing to strongly disagreeing.[13] This domain consists of general satisfaction (questions no. 3 and 17), interpersonal (questions no. 10, 11), communication (question no. 1, 13) technical quality (questions no. 2, 4, 6, 14), financial aspects (question no. 5, 7), time spent with physician (questions no 12,15), accessibility and convenience (questions no 8, 9, 16, 18). All items were scored from one to five, so that high scores reflect satisfaction with health care. The scoring system was given by Table 1.

Table 1: Scoring different questions were using in standard questionnaire (PSQ-18).

Scoring of different items of PSQ-18		
Item numbers	**Original response value**	**Scored value**
1, 2, 3, 5, 6, 8, 11, 15, 18	1	5
	2	4
	3	3
	4	2
	5	1
4, 7, 9, 10, 12, 13, 14, 16, 17	1	1
	2	2
	3	3
	4	4
	5	5

PSQ-18: Patient satisfaction questionnaire-18

Table 2: Calculation of level of satisfaction pin terms of different domains of patient satisfaction.

Domains	Items	Maximum possible score	Maximum mean	Level of satisfaction (%)
General satisfaction	3+17 (A)	10	5	A/10 ×100
Technical quality	2+4+6+14 (B)	20	5	B/20 × 100
Interpersonal manner	10+11 (C)	10	5	C/10 × 100
Communication	1+13 (D)	10	5	D/10 × 100
Financial aspects	5+7 (E)	10	5	E/10 × 100
Time spent with doctor	12+15 (F)	10	5	F/10 × 100
Accessibility and convenience	8+9+16+18 (G)	20	5	G/20 × 100
Overall satisfaction (OSAT)	All 18 Scales	90	5	OSAT/90 × 100

After scoring, the scale score was calculated based on a study conducted by Holikatti et al on patient satisfaction with psychiatric services in Cuttack.[14]

The calculation of patient satisfaction levels in terms of the various domains represented in Table 2. The overall patient satisfaction score was divided into three categories: poor (<25th percentiles), satisfactory (25th-75th percentiles), and good/ highly satisfactory (>75th percentiles). Similar techniques were used in earlier research studies to calculate the patient satisfaction score and categorize it by using percentile.[15]

Statistical analysis

Data was collected, cleaned, and organised using Microsoft Excel 2019, and then analysed using statistical software (SPSS version 27). Socio-economic status is evaluated using the revised Kuppuswamy socio-economic status scale (updated for January 2021).[16]

Chi-square tests were used for district wise association with socio-demographic characteristics and patient satisfaction level. The mean differences between the variables were calculated using the F test and t-test. Linear regression analysis was done to measures the linear effect of social factors on patient satisfaction.

RESULTS

District-wise socio-demographic profiles and patient satisfaction levels are reported in Table 3. In both districts, most patients were middle-aged (40-59 years old), female, Hindu, tribal, illiterate, unskilled workers, and from low socioeconomic backgrounds. Overall, 19.7%, 57.8%, and 22.4% of patients were low, moderate, or highly satisfied. Compared to Jalpaiguri district (19.7%), Alipurduar district exhibited a larger percentage of low satisfaction ratings (39.7%). In the Jalpaiguri district, 27.5% of patients were highly satisfied, compared to 17.0% in Alipurduar. District-wise, all socio-demographic variables and patient satisfaction levels showed a significant statistical association ($p<0.05$) (except gender and socio-economic status). Table 4 displays the distribution of the study population according to socio-demographic characteristics, various patient satisfaction domains, and overall patient satisfaction. The age category and gender-wise mean value of overall satisfaction fluctuated, and no significant difference was observed ($p>0.05$). Patients belonging to the Hindu religion showed a higher mean value in all domains of patient satisfaction than other religions. District-wise, all domains of patient satisfaction were high in Jalpaiguri district, with statistically significant ($p<0.01$) differences observed (except accessibility and convenience). Unskilled worker patients show a higher satisfaction level

than the others, and statistically significant differences ($p<0.01$) were observed (except in two domains). In the case of tribal people, the overall satisfaction level is higher than that of non-tribal people, and significant differences are observed. Socioeconomic status-wise, mean satisfaction values fluctuated in all domains, and no significant differences were found.

Table 3: District wise association with socio demographic characteristics and patient satisfaction level among the studied patients.

SDV and Satisfaction level	Category	Alipurduar (n=141)	Jalpaiguri (n=153)	Overall (n=294)	Chi-square Value (χ^2)
Age in years	16-39	52 (36.9)	27 (17.6)	79 (26.9)	χ^2=14.07; (p<0.001)
	40-59	54 (38.3)	72 (47.1)	126 (42.9)	
	60 and above	35 (24.8)	54 (35.3)	89 (30.3)	
Gender	Female	94 (66.7)	92 (60.1)	186 (63.3)	χ^2=1.35; (p>0.05)
	Male	47 (33.3)	61 (39.9)	108 (36.7)	
Religion	Hindu	116 (82.3)	151 (98.7)	267 (90.8)	χ^2=23.73; (p<0.001)
	Others	25 (17.7)	2 (1.3)	27 (9.2)	
Population	Tribal	86 (61.0)	114 (74.5)	200 (68.0)	χ^2=6.16; (p<0.05)
	Non tribal	55 (39.0)	39 (25.5)	94 (32.0)	
Education	Illiterate	77 (54.6)	103 (67.3)	180 (61.2)	χ^2=6.16; (p<0.05)
	Secondary	41 (29.1)	27 (17.6)	68 (23.1)	
	HS and above	23 916.3)	23 (15.0)	46 (15.6)	
Occupation	Unskilled	97 (68.8)	143 (93.5)	240 (81.6)	χ^2=44.12; (p<0.001)
	Semi skilled	40 9 (28.4)	2 (1.3)	42 (14.3)	
	Skilled	4 (2.8)	8 (5.2)	12 (4.1)	
Socio economic status	Upper middle level	2 (1.4)	-	2 (0.7)	χ^2=2.21; (p>0.05)
	Middle	6 (4.3)	6 (3.9)	12 (4.1)	
	Lower middle	133 (94.3)	147 (96.1)	280 (95.2)	
Patient satisfaction level	Poor (<25th percentile)	56 (39.7)	2 (1.3)	58 (19.7)	χ^2=68.36; (p<0.001)
	Satisfactory (25th to 75th percentile)	61 (43.3)	109 (71.2)	170 (57.8)	
	Good (>75th percentile)	24 (17.0)	42 (27.5)	66 (22.4)	

Table 4: Distribution of study population (mean±SD) according to socio demographic variables and different domains of patient satisfaction (n=294).

Socio demographic variables (n)	General satisfaction	Technical quality	Inter personal manner	Communication	financial aspects	Time spent with doctor	Accessibility and Convenience	Overall Satisfaction
16-19 years age (79)	3.72±0.50	3.70±0.35	3.99±0.40	3.89±0.52	3.89±0.38	3.80±0.46	3.31±0.42	3.70±0.24
20-39 years age (126)	3.79±0.42	3.72±0.31	3.92±0.38	3.98±0.48	3.84±0.43	3.83±0.46	3.31±0.41	3.72±0.22
≥60 years age (89)	3.76±0.47	3.71±0.31	3.97±0.42	3.94±0.49	3.85±0.39	3.75±0.56	3.24±0.36	3.69±0.20
Gender	F=0.48NS	0.15NS	0.87NS	0.97NS	0.46NS	0.70NS	1.05NS	0.47NS
Male (108)	3.7±0.73	3.70±0.73	3.99±0.63	4.01±0.87	3.84±0.61	3.83±0.71	3.32±0.87	3.72±0.79
Female (186)	3.75±0.72	3.72±0.71	3.93±0.62	3.90±0.89	3.86±0.55	3.78±0.70	3.27±0.89	3.69±0.79
Religion	T=0.49NS	-0.71NS	1.19NS	1.72NS	-0.39NS	0.90NS	0.94NS	1.05NS
Hindu (267)	3.77±0.70	3.72±0.71	3.96±0.62	3.96±0.86	3.86±0.55	3.80±0.71	3.29±0.88	3.71±0.78
Others (27)	3.67±0.50	3.62±0.34	3.87±0.40	3.74±0.61	3.76±0.54	3.74±0.40	3.22±0.37	3.61±0.25
Districts	T= 1.03NS	1.54NS	1.12NS	2.27*	0.99NS	0.78NS	0.98NS	2.14*
Jalpaiguri (153)	3.84±0.56	3.79±0.55	4.04±0.46	4.18±0.65	3.99±0.36	3.95±0.48	3.26±0.86	3.79±0.69
Alipurduar (141)	3.68±0.85	3.62±0.86	3.86±0.75	3.69±1.02	3.72±0.71	3.64±0.86	3.32±0.91	3.61±0.88
Occupation	T=2.98**	4.64***	3.83***	9.52***	5.64***	5.56***	-1.31NS	7.31***
Unskilled (240)	3.78±0.70	3.75±0.67	3.99±0.60	4.01±0.85	3.90±0.52	3.86±0.66	3.31±0.88	3.74±0.76
Semi-Skilled (42)	3.63±0.82	3.49±0.92	3.76±0.72	3.60±0.98	3.61±0.76	3.44±0.84	3.20±0.92	3.51±0.88
Skilled (12)	3.95±0.57	3.64±0.84	3.95±0.57	3.77±0.87	3.95±0.57	3.91±0.61	3.29±0.93	3.71±0.79
Caste	F=2.24NS	13.63***	5.88**	14.24***	9.80***	14.29***	1.48NS	26.46***
Tribal (200)	3.75±0.71	3.71±0.70	3.99±0.61	4.00±0.83	3.88±0.56	3.87±0.65	3.30±0.88	3.72±0.77
Non-tribal (94)	3.77±0.73	3.79±0.75	3.86±0.64	3.82±0.97	3.81±0.60	3.64±0.80	3.26±0.89	3.65±0.82

Continued.

Socio demographic variables (n)	General satisfaction	Technical quality	Inter personal manner	Communication	financial aspects	Time spent with doctor	Accessibility and Convenience	Overall Satisfaction
SES	T=-0.28NS	-0.13NS	2.56*	2.78**	1.30NS	3.56***	0.80NS	2.58*
Upper middle class (2)	3.25±0.96	3.87±0.03	4.25±0.50	3.75±1.26	4.00±0.00	3.25±0.96	2.75±0.89	3.53±0.94
Middle class (12)	3.87±0.74	3.56±0.82	3.96±0.55	3.87±0.80	3.96±0.62	3.75±0.74	3.21±0.94	3.67±0.82
Lower middle class (280)	3.76±0.72	3.72±0.71	3.95±0.63	3.95±0.88	3.85±0.57	3.80±0.70	3.30±0.80	3.70±0.79
Overall (294)	F=1.63NS	1.66NS	0.55NS	0.28NS	0.53NS	1.34NS	2.18NS	0.84NS
	3.76±0.72	3.71±0.72	3.95±0.63	3.94±0.88	3.86±0.57	3.80±0.71	3.29±0.88	3.70±0.79

*** means p<0.001; ** means p<0.01; * means p<0.05; NS means not significant.

Table 5: Linear regression analysis on overall satisfaction score with other socio demographic variables.

Socio demographic variables	Unstandardized coefficients		Standardized coefficients beta	95% CI	t	Sig
	B	SE	Beta			
(Constant)	90.506	5.645		79.40-101.62	16.034	0.000
Age	-0.188	0.376	-0.032	-0.928- 0.55	-0.500	0.617
Gender	0.989	0.549	0.107	-0.092- 2.07	1.801	0.073
Religion	-1.602	0.868	-0.104	-3.311- 0.11	-1.846	0.066
Population	-1.308	0.539	-0.137	-2.368- -0.25	-2.428	0.016*
Education	0.430	0.397	0.073	-0.350- 1.21	1.085	0.279
Occupation	-3.316	0.656	-0.378	-4.608- -2.02	-5.052	0.000***
SES	-2.677	1.282	-0.154	-5.201- -0.15	-2.087	0.038*

*** means level of significance (p)<0.001; * means level of significance (p)<0.05. R= 0.364, R square= 0.133

Table 5 displays the linear effects between the overall satisfaction score of the dependent variable and independent variables including age, gender, religion, population, education, occupation, and socioeconomic status. The model could explain 13.3% of the variation in overall satisfaction. The satisfaction of the unskilled worker was found to be significantly higher (p<0.001) compared to the skilled worker. The satisfaction of the tribal population was found to be significantly higher (p<0.05) than that of the non-tribal population. Satisfaction levels were found to be significant (p<0.05) across socio-economic status.

DISCUSSION

Patient satisfaction indicates the effectiveness and quality of healthcare.[1] According to the findings of our study, in both districts, the majority of patients attending the mobile medical clinic were elderly (aged 40-59), female, tribal, illiterate, unskilled workers, and had low socioeconomic status. A study conducted in the urban health care centre of Siliguri Municipal Corporation, West Bengal, showed similar results on the attendance of patients in the urban health centre.[9] In the present study, overall, 19.7%, 57.8%, and 22.4% of patients are dissatisfied, satisfied, and highly satisfied. Another study conducted on a tertiary hospital in Puducherry found that the overall satisfaction was 6%, 86%, and 8% for study subjects classed as good, satisfactory, and poor, respectively.[15] In the Jalpaiguri district, 27.5% of patients were highly satisfied, compared to 17.0% in Alipurduar, and a highly significant association was found (χ^2= 68.36; p<0.001). Jalpaiguri district showed a high satisfaction level due to this district composed high prevalence of tribal people (74.5%), illiterate (67.3%), and unskilled workers (93.5%). Moreover, the MMCs in Jalpaiguri have been giving special focus on the specific tribal needs as told by the workers. The tribal communities in both districts were consulted on a regular basis, and there is better proactive support from the tribal community enjoyed by the MMCs of Jalpaiguri.

The present study shows overall satisfaction was high, at 74.04%, with a mean score of 3.702. This score was higher than many studies in West Bengal and other states.[9,16-18] In the present study, the mean satisfaction score was high due to good interpersonal relationships (doctors are friendly and courteous), good communication (doctors listen to patients' problems sincerely and doctors explain the reason for a medical test), and financial aspects (patients get medical care and facilities without paying any money). District-wise, all domains of patient satisfaction had high mean values in the Jalpaiguri district, with statistically significant (p<0.01) differences observed (except accessibility and convenience). Patients who work as unskilled labourers show a higher satisfaction level (mean value) than the others, and statistically significant differences (p<0.01) were observed (except in two domains). In comparison to the non-tribal population, the tribal population's level of satisfaction was found to be significantly higher (p<0.05). Socioeconomic status-wise, linear effects were found on satisfaction level (p<0.05), compared to a study in West Bengal that found no significant relationship between

overall satisfaction and socio-demographic variables.[9]

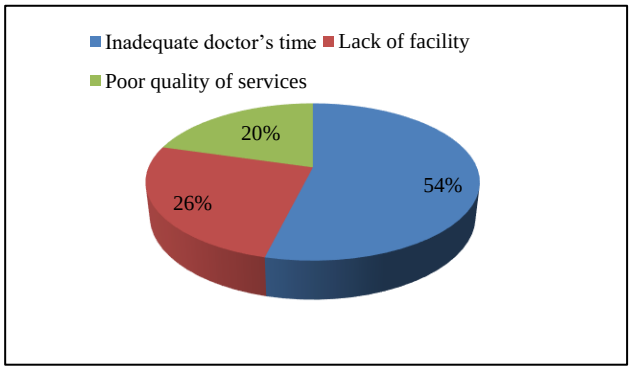

Figure 2: Distribution of dissatisfied study subjects according to the reasons of dissatisfaction.

A total of 78 patients (25.96%) reported being dissatisfied for various reasons, with the majority (42 patients, or 53.88%) blaming their inability to spend enough time with the doctor, possibly due to an increased inflow of patients. Poor quality of services (16 patients/20.5%) was another cause of dissatisfaction (Figure 2).

Another study finds 26.9% dissatisfaction in the urban health care centre of Siliguri Municipal corporation, West Bengal, and follows the similar reasons for dissatisfaction.[9] The current and previous studies show that the main reason for dissatisfaction is due to doctors not spending enough time with patients. The present study observed that some other factors of dissatisfaction were the lack of proper facilities (20 patients, or 25.6%) and the non-availability of some laboratory tests to which they were referred by the higher medical centres. The MMCs in certain places are seriously lacking proper facilities like toilets, waiting rooms, separate rooms for the doctor and the like. Another reason for dissatisfaction, these MMCs are recommended to be better equipped with better infrastructural facilities.

The current study found some limitations of mobile medical clinics, such as the fact that MMCs do not provide 24-hour care like hospitals and cannot accommodate emergency cases at night. Doctors cannot spend much time with each patient due to the high patient load. MMCs could not diagnose all diseases due to a lack of all required infrastructure, but they used to provide only basic health facilities as envisaged in terms of reference. The high expectation from the patients from the MMCs is also the reason for dissatisfaction.

Strength of the study

the present study focused on rural areas and mostly tribal populations to assess patient satisfaction in MMC and revealed district-wise significant results. In addition, this study used the PSQ-18 questionnaire, which is a standardised tool to measure service quality in different settings.

Future scope

In the future, mobile medical clinics maybe opted as the provider of health care services in rural and tribal areas as it would address the accessibility issues and thereby can promote health care-seeking behaviour of the last mile of the population. As a result, the MMC infrastructure and support system needs to be improved in order to provide better health care facilities in under-served areas.

CONCLUSION

"A satisfied patient is a practise builder," so satisfaction is important for health service development. The feedback results showed that high percentages (74.04%) of patients were satisfied, which is comparable to other government and private health centres. Patient satisfaction scores are significantly affected by occupation, tribe, and socioeconomic condition. Jalpaiguri district shows a highly satisfactory level than the Alipurduar district. This might reflect the quality of services being provided by the provider (MMCs). Policymakers should consider that mobile medical units in tribal communities provide a promising opportunity to increase access to primary health care in remote places, which are regarded as underserved areas without any public health care facilities nearby.

Recommendations

India is the largest democracy and second-most populous country on the globe, must continue to invest in its healthcare in general, rural and tribal healthcare in particular. Tribal health needs should be given due focus as the tribal health report of the government of India clearly stated that they have been alarmingly lagging behind in almost all health indicators in comparison with the other social groups in the country. Another study in Mysore found that mobile clinics are a viable and acceptable approach for delivering healthcare in rural India, providing education, prenatal care, and management of vertically transmitted illnesses.[17] Findings of our study, along with other similar studies, highlighted some key recommendations for future health care services in tribal-dominated areas in India.

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