HEALTH SERVICES AVOIDANCE AND SELF-TREATMENT DURING THE COVID-19 PANDEMIC: EVIDENCE FROM RURAL INDIA

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ABSTRACT

OBJECTIVES:

This paper is one of the first studies that identifies factors that inhibit access to healthcare services and healthcare-seeking behaviour (HCSB) in rural India during the COVID-19 pandemic.

METHODS:

The data source was the household sample survey of the World Bank on 'COVID-19-Related Shocks in Rural India 2020, Rounds 1-3'. Binomial and multinomial regression analysis was carried out to estimate the determinants of health care avoidance and HCSB.

RESULTS:

Families belonging to low consumption quartiles not only delayed obtaining health care but also underutilized formal health resources at public and private facilities. The majority of non-agricultural households, as well as those that reduced their consumption during the outbreak, were forced to self-medicate through pharmacies. Family planning, immunization, child growth monitoring, and routine medical check-ups were among the services that were not availed during the pandemic.

CONCLUSION:

The findings of this study emphasize the need of removing financial obstacles to care during the COVID-19, as well as the importance of child-related care continuity (child development monitoring, antenatal care, and immunization) and routine check-ups.

KEYWORDS

Healthcare, avoidance, healthcare-seeking behaviour, COVID-19, India, poor

INTRODUCTION

The unprecedented health crisis caused by SARS Cov-2, known as COVID-19 overburdened the resource-constrained health infrastructure in India that experienced an acute shortage of intensive care unit beds, oxygen supply, ventilators, and personal protection equipment kits resulting in significant loss of lives. Also, non-COVID-19 care was delayed, resulting in negative health and well-being

outcomes, which could be caused by anxiety or fear of contracting the disease, government-imposed COVID-19 restrictions on people's freedom of travel, the use of teleconsultations, and required COVID-19 protocols that raise hospital bills.[1]

Several studies conducted during the epidemic, including those on SARS [2], Middle East respiratory syndrome [3], and Ebola [4, 5, 6] indicated a decline in timely access to health care services. Few researchers found a decrease in hospital-based care, particularly in paediatrics [1], non-communicable disorders, and immunizations. [7] A study from India observed a higher level of stress due to COVID-19 lockdown measures and the consequent loss of jobs and health. [8] A similar finding was reported in the United Kingdom. [9]

The factors that inhibit the rural population from accessing services during the COVID-19 in India have been relatively unexplored. An understanding of why some households avoid accessing health services and why they choose certain facilities and not others during the COVID-19 pandemic would assist current interventions aiming to improve access to quality health services and reduce mortality during pandemic times. The influence of COVID-19 on rural India's access to health care and healthcare-seeking behaviour (HCSB), as well as rural households' understanding of COVID-19 prevention procedures and symptoms, has not been studied. An understanding of HCSB would aid policymakers and healthcare planners in efficiently allocating and managing resources to improve health outcomes. The findings would provide insight into the unique barriers that rural Indians may face in accessing health facilities, allowing a more comprehensive and context-relevant strategy to service delivery to be developed.

LITERATURE REVIEW

Access to health services is determined by financial or non-financial restraints that limit one's ability to acquire health care when they are required.[10] The activities and decisions include deciding whether to seek health care in private (clinics, nursing homes, hospitals, mobile clinics) or public facilities (hospitals, mobile clinics, primary health centers), whether contemporary or traditional (Ayush) facilities, self-medication (pharmacy) or using home remedies. The contextual and individual factors categorized into predisposing, enabling, and need for care

explain HCSB.[11] Of these, individual determinants include age, gender, and religion, as well as education, caste, social relationships, and health beliefs.[11] The financial factors such as income and wealth, as well as travel time to health facilities, are enabling factors that directly influence access and utilization of health care, as well as the cost of proper diet, and basic cleanliness.[11,12,13]

The three A's that determine access to health care and type of care are availability, acceptability, and affordability.[14] The affordability of health care was determined by the people's income class, while the location of their domicile determined the availability of health care. The ill person's gender was used as a proxy for assessing the acceptability of care. The financial, structural, and cognitive barriers are intertwined and contribute to disparities in health outcomes.[15] These models emphasize poverty as a significant obstacle to healthcare access.[16,17,18] The 'capabilities approach' of Amartya Sen demonstrates that the access to health care services by poor households is well explained with the help of endowments and entitlements.[19] Deprived access to tangible and intangible assets (endowments) and lack of ability to translate these assets into 'entitlements' by the vulnerable rural households determine their capability to access health services and HCSB. These restrictions in accessing health services in rural areas have an impact on HCSB, whether it is a government facility, a private hospital, or a pharmacy.

The efficiency of the healthcare system would be negatively affected when people resort to self-treatment including self-prescription when drugs are freely available in the market.[20] The choice and usage of public or private health care providers, as well as formal and informal health care providers including self-medication, has been associated with lack of access to professional healthcare, lack of government-sponsored health insurance coverage, and socioeconomic status related to lower education, age, living in rural areas, lower-income, cost of treatment, gender roles, and fewer assets.[21,22,23,24,25] Several studies have indicated that socioeconomic factors influence access to health services.[26,27,18] The low status of women within the household, low income, and literacy rates prevent them from voicing their health needs, and having less control over decisions involving allocation of resources for health prevents timely access to health care.[28,29] Income, age, chronic conditions, and gender were found to significantly influence HCSB. [25,30] The self-

help group (SHG) members in India were found to visit private providers for both outpatient and inpatient services [31] and maternal health services due to the social capital generated by women's participation in these community groups that would have a positive impact on health outcomes.[32] Another study from India observed women prefer informal care due to socio-cultural barriers whereas men considered cost and quality of treatment, accessibility, and health outcomes in choosing formal providers.[33]

METHODS

This paper is based on a household sample survey data of the World Bank on "COVID-19-Related Shocks in Rural India 2020, Rounds 1-3". The survey was conducted in six Indian states namely Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand, Rajasthan, and Andhra Pradesh in three rounds during the period May to September 2020. The survey framework was developed based on the information of the four completed projects of IDinsight and one site from the Ministry of Rural Development, Government of India. The detailed sampling design and final sample were selected for the survey are available on the World Bank website.[34]

The data was collected with the help of a computer-assisted telephone interview using the structured questionnaire. The study considered the sample households that are provided complete information on access to health services and HCSB of rural households across six Indian states. The study used consumption quartile instead of income due to the lack of income data of sample households, which has been used in earlier studies.[35] Logistic regression (binary and multinomial) methods are used to analyse the avoidance of health services and HCSB of rural households.

RESULTS

An analysis on the avoidance of seeking health care services during the COVID-19 pandemic considers 723 households that did not seek health services and 3955 households that accessed health services despite COVID-19. As depicted in Table 1, 45.1% of large households with 6-9 members, 59.5% of agricultural households and 42.3% of households who avoided seeking care had curtailed consumption (limited portion size, ran out of food, hungry but did not eat, or went without eating for a whole day) due to shortage of money.

TABLE 1: SUMMARY STATISTICS: HEALTH SERVICES AVOIDANCE DUE TO COVID-19

	No avoidance (%)	Avoidance (%)
Self-help group member	(N=3510)	(N=677)
Yes	48.1	48.3
No	59.9	51.7
Gender	(N=1983)	(N=475)
Male	84.2	81.5
Female	15.3	18.5
Ration card	(N=1983)	(N=1990)
Yes	81.9	80.3
No	18.9	19.6
Household size*	(N=3947)	(N=725)
1-3 members	9.4	7
4-5 members	38.4	36.1
6-9 members	39.9	45.1
10 members or more	12.3	11.8
Agriculture**	(N=3948)	(N=426)
Yes	57.1	59.5
No	42.9	40.5
Caste**	(N=3789)	(N=699)
General	14.4	13.4
Scheduled caste	27.7	29.3
Scheduled tribe	16.3	14.5
Other backward castes	40.3	40.2

Others	1.3	2.6
Religion*	(N=3877)	(N=715)
Buddhism	1.1	0.6
Christianity	5.1	3.1
Hinduism	85.7	89.9
Islam	7.5	5.3
Sikhism/Jainism	0.6	1.1
Education of head of the household Illiterate	(N=222)	(N=35)
Below primary	41.9	40
Primary	5.4	8.6
Higher primary	14	8.6
Secondary	17.6	17.1
Higher secondary	12.2	11.4
Graduate or higher	5	8.6
	3.2	5.7
Occupation of the head of household	(N=1651)	(N=280)
Did not work for income	2.5	4.3
Self-employed in non-cultivation	56.1	55.4
Salaried job in a private company	4.4	3.9
Salaried job in government sector	2.1	2.5
Daily wage labour in agriculture	11.6	13.2
Daily wage labour in non-agriculture	23.3	20.7
Consumption quartile	(N=3562)	(N=672)
Q1 (INR<=3000)	27.4	24.7
Q2 (INR 3001-5000)	28.2	29.9
Q3 (INR 5001-8000)	20.2	20.1
Q4 (INR >8000)	24	25.3
Area of residence	(N=171)	(N=31)
Rural	69.5	80.6
Urban	30.5	19.4
Reduction in consumption during the last seven days due to shortage of money* Yes No	(N=1591) 24.1 75.9	(N=246) 42.3 57.7
Reduction in consumption compared to pre-COVID 19 times Yes No	(N=3347) 47.1 52.9	(N=642) 44.4 55.6

1US Dollar=INR 73.64, as of 21 September 2021

The socio-economic characteristics of the households who sought health services during the COVID-19 pandemic are shown in Table 2. Almost 19% of the household where the head is female visited private facilities (81.2% for men) and 20.5% used pharmacy (79.5% for men) whereas 88.7% of men as the decision-maker chose government facilities compared to 11.3% of female households. Nearly 61.7% of non-agricultural households visited pharmacies compared to agricultural households who chose private facilities (60.7%). Inter-group analysis reveals that 62.3% of households who reduced consumption compared to pre-COVID 19 visited pharmacy compared to those who did not reduce consumption (37.7%).

The majority of the respondents were aware of cough (91.1%) and fever (80.9%) as symptoms of COVID-19, and

44.4% of them knew the difficulty in breathing whereas only a few of them knew about the loss of appetite (2.7%), loss of smell and taste (35) and Diarrhoea (0.8%) (Table 3).

Regarding the awareness of the prevention of COVID-19, most of the respondents knew about wearing a mask (63.6%), washing hands (60.4%), using hand sanitizers (45.5%), and social distancing (45.3%) (Table 4)

TABLE 2: SCIO-ECONOMIC CHARACTERISTICS: HEALTH SEEKING BEHAVIOUR

	Government facilities (%)	Private facilities (%)	Pharmacy (%)
Self-help group member	(N=582)	(N=962)	(N=49)
Yes	47.1	51.1	53.1
No	52.9	48.9	46.9
Gender*	(N=283)	(N=644)	(N=39)
Male	88.7	81.2	79.5
Female	11.3	18.8	20.5
Ration card	(N=283)	(N=644)	(N=39)
Yes	83.4	80.4	82.1
No	16.6	19.6	17.9
Household size	(N=642)	(N=1063)	(N=60)
1-3 members	7.5	7.8	13.3
4-5 members	38.3	34.5	40
6-9 members	41.6	45.2	36.7
10 members or more	12.6	12.4	10
Agriculture**	(N=641)	(N=1065)	(N=60)
Yes	57.1	60.7	38.3
No	42.9	39.3	61.7
Caste**	(N=620)	(N=1012)	(N=59)
General	15.8	12.1	15.3
Scheduled caste	28.1	29.2	33.9
Scheduled tribe	14.4	12.7	10.2
Other backward castes	41	43.4	39
Others	0.8	2.6	1.7
Religion	(N=631)	(N=1051)	(N=59)
Buddhism	1.1	1.7	1.7
Christianity	4	3.1	0
Hinduism	88.3	86.6	86.4
Islam	6.7	8.6	11.9
Current occupation of respondent	(N=275)	(N=420)	(N=37)
Unemployed	2.5	3.3	2.7
Self-employed (non-cultivation)	46.2	51	45.9
Salaried in private sector	4.7	5.2	8.2
Salaried in government sector	3.3	1.7	0
Labour in agriculture	15.3	13.6	13.5
Labour in non-agriculture	28	25.2	29.7
Consumption quartile	(N=605)	(N=977)	(N=55)
Q1 (INR<=3000)	25.8	23.5	18.2
Q2 (INR 3001-5000)	26.4	29.1	36.4
Q3 (INR 5001-8000)	22.5	19.9	21.8
Q4 (INR >8000)	25.3	27.5	23.6

Reduction in consumption during the last seven days due to shortage of money	(N=247)	(N=424)	(N=28)
Yes	27.5	33.7	28.6
No	72.5	66.3	71.4
Reduction in consumption compared to pre-covid times**	(N=582)	(N=919)	(N=53)
Yes	45.2	47.6	62.3
No	54.8	52.4	37.7

*p<0.05,**p<0.1
1US Dollar=INR 73.64, as on 21 September 2021

TABLE 3: AWARENESS ABOUT SYMPTOMS COVID-19

	N	Percent %	Percent of cases %
Fever	3019	27.4	80.9
Cough	3398	30.9	91.1
Tiredness	441	4.0	11.8
Difficulty breathing	1657	15.0	44.4
Muscle pain/ body aches	792	7.2	21.2
Loss of appetite	102	0.9	2.7
Sore throat	743	6.7	19.9
Diarrhoea	31	0.3	0.8
Nausea	37	0.3	1.0
Nasal and throat congestion	681	6.2	18.2
Loss of smell and taste	112	1.0	3.0

TABLE 4: AWARENESS ABOUT PREVENTION OF THE COVID-19 PANDEMIC

	N	Percent	Percent of cases
Wash hands frequently	2824	15.7	60.4
Use alcohol-based hand sanitizer	2128	11.8	45.5
Cover nose/mouth with handkerchief/tissue	618	3.4	13.2
Avoid touching face, eyes, nose, or mouth	295	1.6	6.3
Be at least one meter away from everyone	2116	11.7	45.3
Avoid crowded places	1174	6.5	25.1
Stay away from people who sneeze or cough	154	0.9	3.3
Avoid physical contact with infected individuals	226	1.3	4.8
Avoid touching common surfaces	122	0.7	2.6
Keep cleaning common surfaces	216	1.2	4.6
Wear a mask	2970	16.5	63.6
Don't spit in public	35	0.2	0.7
Stay at home	484	2.7	10.4

The estimated result on the relationship between avoidance of health services during the pandemic and other independent variables is given in Table 5. The Odds Ratio (OR) for the households having a shortage was

significantly higher than 1 (odds ratio 2.08), which implied that these households were more likely to avoid access to health services. The results also indicate that the odds of not accessing health care were higher if the individuals were in consumption quartile Q1 (odds ratio 1.7), Q2 (odds ratio 1.75), and Q3 (odds ratio 1.83) than Q4. As the cost of accessing care is high, better-off individuals have a higher likelihood to visit health facilities. The model was checked for robustness by using the omnibus test of model coefficients, Hosmer and Lemeshow test, -2 log-likelihood ratios. The results of these tests show that the model is significant at the 0.05 level and 82.4% of cases were correctly predicted by the model. Hosmer and Lemeshow's test value of 0.756 indicates good discrimination.

Multinomial logistic regression analysis was applied to estimate the probability of visiting private hospitals, private mobile clinics, and government facilities during the COVID-19 pandemic (Table 6). When self-care by visiting a pharmacy is considered as the reference category, non-agricultural households were 0.39 times less likely to visit government hospitals compared to agricultural households. The households not reducing the proportion of consumption compared to the pre-COVID19 period were 2.08 times more likely to seek care at government hospitals and not self-care. Similarly, non-agricultural households were less likely to seek health services at private facilities and more of self-care, compared to agricultural households (odds ratio 0.38). The chances of households not curtailing consumption compared to pre-COVID-19 pandemics while visiting private facilities were higher (odds ratio 2.5) than self-care when the reference category was the households reducing the proportion of consumption due to the pandemic. 65.8% of cases were correctly classified by the predicted model.

TABLE 5: BINARY LOGISTIC REGRESSION: AVOIDANCE OF HEALTH SERVICES DURING COVID-19

Variables	Exp. (B)	p	95% C.I. for EXP(B)	
			Lower	Upper
Self-help group member No (Ref: Yes)	1.21	0.32	0.83	1.76
Gender Female (Ref: Male)	1.13	0.63	0.68	1.86
Ration card No (Ref: Yes)	0.69	0.16	0.42	1.16
Size of the Household		0.17		
<3 members	0.58	0.25	0.23	1.46
4-5 members	0.72	0.30	0.39	1.33
6-9 members	1.07	0.81	0.59	1.95
(Ref: More than 10 members)				
Caste		0.71		
General	0.65	0.52	0.18	2.38
Scheduled Caste	0.84	0.78	0.25	2.82
Scheduled Tribe	0.81	0.74	0.22	2.92
Other backward castes	0.63	0.46	0.19	2.13
(Ref: Others)				
Consumption (in quartiles)		0.19		
Q1	1.70	0.06	0.96	3.00
Q2	1.75	0.05	0.99	3.11
Q3	1.83	0.06	0.98	3.44
(Ref: Q4)				
Religion		0.48		
Minority	0.81	0.82	0.14	4.68

Hindu (Ref: Islam)	1.51	0.34	0.64	3.53
Reduction in consumption during the last seven days due to shortage of money Yes (Ref: No)	2.08	0.00	1.37	2.94
Constant	0.70	0.76		

Minority includes Buddhism, Sikhism, Jainism, and Christianity

Number of observations=818; chi2 =28.26; Prob> chi2 = 0.029; -2 Log pseudolikelihood (df 50) = 733.01; Hosmer and Lemeshow Test p=0.756

Note: The case of "Did not avoid health services" is included as the base (omitted) category

TABLE 6: HEALTH SEEKING BEHAVIOUR: PRIVATE HOSPITALS, PRIVATE MOBILE CLINICS, AND GOVERNMENT FACILITIES

		Exp(B)	p	95% Confidence Interval for Exp(B)	
				Lower Bound	Upper Bound
Government facilities	Intercept		0.00		
	Self-help group member No (Ref: Yes)	0.67	0.31	0.32	1.49
	Gender Female (Ref: Male)	0.53	0.22	0.19	1.46
	Consumption (in quartiles) Q1 Q2 Q3 (Ref: Q4)	1.59 0.59 0.75	0.48 0.33 0.63	0.44 0.21 0.24	5.74 1.68 2.38
	Caste Socially disadvantaged (Ref: General)	0.82	0.74	0.26	2.56
	Religion Hindu (Ref: Minority)	0.62	0.44	0.18	2.07
	Size of the household Small household (Ref: Large household >5 members)	1.04	0.92	0.48	2.25
	Agricultural household No (Ref: Yes)	0.39	0.02	0.18	0.87
	Reduction in consumption compared to pre-COVID-19 times No (Ref: Yes)	2.08	0.08	0.9	4.78
Private facilities	Intercept		0.00		
	Self-help group member No (Ref: Yes)	0.68	0.31	0.33	1.43
	Gender Female	1.16	0.75	0.45	2.96

(Ref: Male)				
Consumption (in quartiles) Q1 Q2 Q3 (Ref: Q4)	1.02 0.51 0.72	0.97 0.18 0.57	0.29 0.19 0.24	3.57 1.37 2.18
Caste Socially disadvantaged (Ref: General)	1.16	0.79	0.38	3.57
Religion Hindu (Ref: Minority)	0.79	0.68	0.25	2.46
Size of the household Small household (ref: Large household >5 members)	0.85	0.68	0.40	1.8
Agricultural household No (Ref: Yes)	0.38	0.01	0.18	0.82
Reduction in consumption compared to pre-COVID 19 period No (Ref: Yes)	2.50	0.02	1.11	5.59

Number of observations (subpopulation)=216; chi2 =36.87; Prob> chi2 = 0.012; -2 Log pseudolikelihood (df 50) = 561.63; Pseudo R2

Note: The case of self-care (pharmacy) is included as the base (omitted) category.

Government facilities include hospitals, primary health centers, dispensaries, mobile clinics, Ayush and Anganwadi.

Private facilities include hospitals, clinics, mobile clinics, and Ayush.

DISCUSSION

This study, the first of its kind in India, looked at the pattern of HSCBs and the factors that impact avoidance of healthcare services in rural areas during the COVID-19 pandemic. Due to financial and non-financial barriers, people would not seek care during illness. During the COVID-19 pandemic in India, respondents' characteristics such as belonging to the lower consumption quartile and a reduction in spending due to shortage of money influenced avoidance of health care. The majority of non-agricultural households, as well as those that cut back on their consumption during the epidemic, had to turn to pharmacies for self-medication. These findings imply that the burden of the COVID-19 pandemic on impoverished households will harm their health outcomes, which will be exacerbated if they become infected, even after the epidemic has passed.

HCSB was remarkably better for households that have not curtailed consumption during the pandemic compared to those who were forced to reduce consumption and also for agricultural households. Furthermore, self-care or self-medication was substantially associated with a drop in consumption compared to pre-COVID 19 periods and belonging to non-agricultural households. These households primarily used formal health care rather than going to the pharmacy. Earlier research supports the current study's conclusions that the majority of India's high-income households seek formal health care. [16,17] Few scholars have found a link between socioeconomic position and adequate HCSB, with the affordability of health services influencing the use of formal health care. [36,37,30] During the COVID-19 pandemic, poor 'capabilities' of non-agricultural rural households due to limited employment opportunities, poor access to health services, and government relief measures may also contribute to inappropriate HCSB. The pandemic has interrupted appropriate HCSB due to COVID-19 limits and protocols, with preventive and elective visits deferred.[38] In contrast to our findings, another study [39] discovered that COVID-19 has a favourable impact on HCSB in terms of regular check-ups and increased health awareness.

However, in India, during the pandemic, several services were not availed, including family planning, immunization, child development monitoring, prenatal care, and regular medical check-ups.

The majority of respondents were aware of cough and fever as COVID-19 symptoms, but few were aware of the loss of appetite, odour or taste, diarrhoea, and nausea. At least one symptom was recognized by 78.5% of respondents. Only a handful understood about avoiding touching common surfaces, not spitting in public, avoiding physical contact with infected persons, staying away from people who cough or sneeze, cleaning common surfaces, and staying at home. At least one preventative measure was mentioned by 90.8% of participants. The extensive public health education messages on COVID-19 that have been delivered through multiple media (television, radio, print, and social media) have resulted in better knowledge of COVID-19 symptoms and prevention strategies among the rural population. Health insurance systems that remove financial obstacles to care can help to reduce poor HSCB and negative health outcomes.[37] The flagship of Indian National Although health practitioners discourage the use of self-care or traditional healers; economically disadvantaged groups do not use formal health care facilities. Even after the pandemic, the comparative benefit of self-care through a pharmacy in terms of saving time and money may persist, although illness complications may have a detrimental effect on treatment outcomes. As a result, self-medication must be decreased by empowering lower-level institutions (*anganavadis,* mobile clinics, and PHCs), as well as training and supervision of workers at private drug stores to ensure referral compliance. A study from India indeed highlighted eh importance of documentation in tertiary hospitals.[40] Health Insurance, *Ayushman Bharat,* should be introduced to households whose income and consumption have fallen sharply due to the country's temporary lockdown to fight the pandemic. This will provide financial protection for insecure and disadvantaged households and encourage them to obtain appropriate medical resources during their illness. When barriers to access to care and adequate HCSB are removed, positive behavioural changes in response to the pandemic can be demonstrated. There is a need to improve health information campaigns, encourage changes in adaptive and protective behaviours, reduce reliance on self-care or self-treatment, and postponement of medical care and routine examinations related to children. The provision of government-funded mobile clinic services and the strengthening of community health workforce strategies (*anganavadis*) are particularly necessary for rural communities with limited access to health care facilities. Because the data on perceived health status, medication use, chronic conditions, income, and treatment costs were not available, the model could not include some of the predisposing factors that influence HCSB. In the absence of a complete set of data, some of the respondents' health-care alternatives had to be whittled down by grouping government-owned facilities under "government" and privately-owned facilities under "private" categories. The present study was unable to add the need factors, psychological variables (fear of developing the COVID-19 infection), and socio-cultural dimensions and interactions in the regression analysis due to a lack of data. One of the study's benefits, however, is that it provides nationwide comprehensive data that was methodically analysed to offer evidence on HCSB during the epidemic.

CONCLUSION

The families under distress (reduction in consumption and low consumption quartiles) during the COVID-19 not only avoided seeking health care services but also underutilized formal health services at public or private facilities. The pandemic had a negative influence on access to health services for poor households who had cut back on food consumption due to a lack of funds. The results of the present study highlight the need for removing financial barriers to access care during the COVID-19 pandemic and the necessity of continuity of child-related care (growth monitoring of the child, antenatal care, and immunization) and routine check-ups. The study also observed greater awareness of rural households about symptoms and prevention of COVID-19 pandemic which could be attributed to better health information garnered by the government's tireless efforts in devising and effectively conducting ongoing awareness campaigns through various kinds of media and communication.

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