

*Article***A Geographical Study of Rural Community Health Problems in Development Block Betalghat, Kumaon Lesser Himalaya***Dheeraj Pant^{1*}, Sunil Tewari¹, Mohan Singh Sammal¹, Ranju Joshi Pandey²**¹Department of Geography & NRM, School of Earth and Environmental Science, Uttarakhand Open University, Haldwani, Nainital, Uttarakhand, India.**¹Department of Geography & NRM, School of Earth and Environmental Science, Uttarakhand Open University, Haldwani, Nainital, Uttarakhand, India.**¹Department of Geography & NRM, School of Earth and Environmental Science, Uttarakhand Open University, Haldwani, Nainital, Uttarakhand, India.**²Department of Remote Sensing & GIS, School of Earth and Environmental Science, Uttarakhand Open University, Haldwani, Nainital, Uttarakhand, India.***Email: dheerajpant@uou.ac.in*

Abstract: In the 21st century, basic healthcare remains a major challenge in the Himalayan region. This study aims to assess the status of health services in the Betalghat development block, identify key issues related to rural healthcare, examine the geographical and socio-economic factors influencing community health, and suggest measures to improve the accessibility and delivery of health services. Primary data were collected through questionnaires, interviews with key informants, focus group discussions, and empirical observations on respondents' age structure and socio-economic status. Participants included health workers (ASHA, ANM), local traditional healers, and government and non-government healthcare providers (doctors/pharmacists). Secondary data were gathered from various government offices and healthcare centres (CHC, PHC, Sub-C, & Anganwadi Centres). Study findings indicate that the primary barriers to accessing basic health services include poor socio-economic status, inadequate health infrastructure, a severe shortage of health workers, a poor transport system, and difficult geographical terrain; among these, the shortage of health workers (29%), poor infrastructure (22%), and poor accessibility (20%) stand out as the most significant health challenges. As with other plain regions, strengthening basic rural health infrastructure, improving transport and emergency services, ensuring the adequate deployment of healthcare professionals, and expanding financial protection mechanisms are essential to fostering accessible and sustainable healthcare development.

Keywords: Rural community; Health services; Socio-economic status; Kumaon Himalaya.

Introduction

Every state and nation has an obligation to uphold every citizen's fundamental right to good health and to ensure the public has easy access to basic healthcare services. According to the 2021 census, India's population is approximately 1.43 billion (142.86 crore). The 2011 Population Census counted 1.21 billion (121 crore or 1210 million) people, with 833 million (68.84%) living in rural areas and 377 million (31.16%) in urban areas. Most people live in rural areas. Despite this demographic reality, healthcare infrastructure remains disproportionately concentrated in metropolitan areas. A United Nations report states that almost 75% of India's medical facilities, including hospitals, doctors, and specialists, are found in cities. India has implemented numerous health policies, initiatives, and strategic plans to improve public health more than 70 years after gaining independence. Despite significant economic expansion, public health remains a significant developmental obstacle. Similarly, global initiatives like the World Health Organisation's Health for All campaign, the Millennium Development Goals, Universal Health Coverage, and the Sustainable Development Goals—especially the objectives of guaranteeing healthy lives and promoting well-being for all at all

ages—have not been fully translated into successful grassroots implementation. As a result, access to, use of, and quality of public healthcare services remain major issues, especially in rural India. The World Health Organisation advises nations to devote roughly 5% of their GDP to the health sector. However, India's health spending remained much lower, at only 3.3% of GDP in 2019–20 (National Health Accounts, 2023). Rural populations that are economically and socially disadvantaged and heavily dependent on government health services are disproportionately affected by low public healthcare expenditure. Access to basic healthcare facilities has also been influenced by the growing commercialisation and privatisation of health services. A large section of the population is deprived of essential services because high treatment costs at private healthcare facilities make quality medical care unaffordable for low-income households. In terms of healthcare services, Uttarakhand faces significant challenges compared with other Himalayan states. Primary Health Centres (PHCs), which are the initial point of contact for basic healthcare, are severely lacking in the state. About 68% of district hospitals lack specialised physicians, while about 70% of PHCs lack a Medical Officer. These problems seriously restrict access to and the quality of healthcare, particularly in remote and hilly regions. The study region reflects many of these broader structural problems. A fragile and complex system results from several factors, including harsh weather and geographic conditions, low socioeconomic status, poor nutrition, environmental degradation (including air, water, and noise pollution from increased human intervention), declining agricultural productivity, and inadequate physical infrastructure. These interrelated issues compound each other, increasing the community's risk of unfavourable outcomes and further limiting access to quality healthcare facilities.

This paper evaluates the Batalghat Development Block's healthcare infrastructure, addresses the main health issues in rural areas and investigates the socioeconomic and geographic elements affecting healthcare access and health outcomes. Based on these findings, it recommends actions and legislative changes to improve the quality, accessibility, and availability of rural healthcare services.

Study Area

Geographically, Batalghat Block lies predominantly within the Lesser Kumaon Himalayas. It extends between 29°22'30" and 29°37'00" N latitude and 79°12'00" and 79°35'00" E longitude. The study region covers a total area of 315.7 km². According to the 2011 Census of India, the block's total population is 41,535, comprising 20,518 males (49.40%) and 21,017 females (50.60%). The average is 131 people per km². The Batalghat Block, characterised by steep surface slopes and geotectonic instability, displays tremendous geomorphologic diversity and climatic variation. It is also one of the relatively densely populated regions of the Lesser Himalayas, where subsistence agriculture and animal husbandry constitute the primary sources of food security and rural livelihoods.

Research Methodology

This study used questionnaires, key informant interviews, and focus group discussions to assess the local community's health status, rural health problems, and the state of health services and infrastructure. Primary data collection was based on the respondents' age structure, socio-economic status, and empirical observation. Respondents primarily included the elderly (over 60 years of age), experienced individuals, and rural women, along with health workers (ASHA, ANMs), local Vaidyas, and government and non-government health service providers (doctors/pharmaceuticals). Data on the state of health infrastructure, the status of health service providers, the availability of health services, and key health schemes in the study area were

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collected from various government offices, hospitals (community health centres, primary health centres, and sub-centres).

Community Health Problems in Development Block Betalghat

Table 1 presents the questions asked to local people about major health-related problems and the respondents' responses.

Table 1: Health-Related Major Problems

S. No.	Major Problems	Percent (%)
1.	Poor Accessibility	20
2.	Weak Healthcare Infrastructure	22
3.	Severe Shortage of Medical Staff	29
4.	High Maternal and Child Health Risks	11
5.	Economic Hardship and Out of Pocket Costs	18

According to respondents, major health problems in the study area include: 20% agreed on poor accessibility, 22% on weak health infrastructure, 29% on a severe shortage of medical staff, 11% on high maternal and child health risks, and 18% on economic hardship and out-of-pocket costs.

Poor Accessibility

In response to challenges related to access to health services, 20% of respondents stated that access to healthcare in the area remains difficult for the general public. Many villages (Gram Sabhas) still lack road connectivity; residents must first walk 2–5 km to reach the metalled road and then take shared taxis for 20–25 km to reach the community health centres. During the monsoon season, heavy rainfall disrupts roads, bridges, and other infrastructure, directly affecting rural community health services and making emergency treatment (accidents and labour pain in pregnant women, etc.) more critical (Fig. 1&2).

Weak Health Infrastructure

Regarding the physical infrastructure for health services, 22% of respondents acknowledged a lack of it in the study area. The survey found two community health centres, five primary health centres, and 19 sub-health centres in the study area. Of these, only 60% of primary health centres have physician accommodations; none of the primary health centres in the study area has nurse or pharmacist accommodations. In the study area, only 60% of Primary Health Centres have an electricity supply. In the event of a power outage, no Primary Health Centre possesses any alternative resource (such as a generator, solar light, etc.). 40% of Primary Health Centres lack any water supply facilities, while the water supply in 20% of the centres is damaged. Given this situation, one can easily identify the actual condition of hygiene and sanitation facilities—specifically toilets—within these health centres. Furthermore, because of the challenging terrain in the study area, the '108' emergency health service is often unavailable on time. Moreover, most Sub-Health Centres lack basic amenities such as normal delivery kits and stretchers; Primary Health Centres lack delivery kits, deep freezers, and wheelchairs; and Community Health Centres lack anaesthesia equipment and blood transfusion apparatus (Table 2).



Fig. 1: Collapsed Bridge, Source: Google
Source: Open access social media



Fig. 2: Carrying Patient to Hospital (CHCs),

Table 2: Status of Basic Health Infrastructure in Community Health Centres in Betalghat Development Block

S.No.	Infrastructure	Community Health Centre			
		Betalghat		Garampani	
		Available	Unavailable	Available	Unavailable
1.	Own Building	Yes	-	Yes	-
2.	Doctor's Residence	Yes	-	Yes	-
3.	Nurses' and Pharmacist's Residence	Yes	-	Yes	-
4.	Electricity Supply	Yes	-	Yes	-
5.	Water Supply	Yes	-	Yes	-
6.	Generator	Yes	-	Yes	-
7.	Toilets	Yes	-	Yes	-
8.	Fully Equipped Laboratory	Yes	-	Yes	-
9.	Blood Bank	-	No	Yes	-
10.	Vehicle	Yes	-	Yes	-

Source: Field Survey

Table 3 shows the status of basic health infrastructure in the Community Health Centres (CHCs) of Betalghat and Garampani Development Blocks. Both CHCs have almost all essential facilities, including their own building, a doctor's residence, nurses' and pharmacists' residences, electricity, water supply, a generator, toilets, a fully equipped laboratory, and a vehicle. However, the Betalghat CHC lacks a blood bank, while the Garampani CHC has one. Overall, the findings indicate that both CHCs are well equipped with basic health infrastructure, with the only notable gap being the absence of a blood bank at Betalghat CHC.

Table 3: Status of Basic Health Infrastructure in Primary Health Centers in Betalghat Development Block

Name of Nyaya Panchayat	Name of primary health center	Own House	Doctor residence	Nurse and Pharmacist Accommodation	Power Supply	Generator	Water Supply	Reading Room	Boundary Wall
Betaalghat	Kalakhet	Yes	Yes	No	No	No	Partial	Yes	No
Dadima	Sukhadankholi	Yes	Yes	No	Yes	No	No	Partial	Partial
	Uchakot	Yes	Yes	No	No	No	Partial	Partial	Partial
Simalkha	Simalkhan	Yes	Yes	No	Yes	No	Yes	Yes	No
Garampani	Dhaniyakot	Yes	Yes	No	Yes	No	Yes	Partial	Partial

Source: Field Survey

According to the report, all PHCs have their own buildings and physician houses, suggesting adequate physical infrastructure. Overall, none of the PHCs provides the required accommodations for nurses and pharmacists, a serious shortcoming that affects medical personnel availability, especially outside regular business hours and during emergencies. Basic facilities aren't always easily accessible. Sukhadankholi, Simalkhan, and Dhaniyakot PHCs have electricity; however, Kalakhet and Uchakot PHCs do not. Healthcare services are vulnerable to power outages because none of the PHCs has generator facilities. Only Simalkhan and Dhaniyakot PHCs have full access; Kalakhet and Uchakot have partial access, and Sukhadankholi has no regular water supply.

Supportive infrastructure also has serious issues. Only the PHCs in Kalakhet and Simalkhan have fully functional reading rooms; the other facilities are only partially furnished. Concerns remain about maintenance and security because boundary walls are either nonexistent or only partially constructed in all PHCs.

Overall, the chart shows that significant problems remain with staff accommodation, backup power, water supply, and supporting facilities, even though PHCs have only the barest minimum of structural infrastructure. These infrastructure defects may negatively affect the quality, effectiveness, and continuity of basic healthcare services in the Betalghat Development Block.

Table 4: Status of basic health infrastructure in health sub-centres in development block Betalghat

Name of the Nyaya Panchayat	Name of Primary Health Center	Own Building	Rented Building	A.N.M. Residence	Power supply	Generator	Water Supply	Reading Room	Boundary Wall
Betalghat	Kalakhet	Yes	-	No	Yes	No	Yes	Yes	
	Binkot	Yes	-	No	Yes	No	Partial	Partial	No
	Naughar	Yes	-	No	Yes	No	Partial	Partial	No
	Betaalghat	Yes	-	No	No	No	No	No	Yes

	Talliseti	Yes	-	No	No	No	Yes	Yes	No
	Malliseti	Yes	-	No	Yes	No	Yes	Yes	Yes
Dadima	Darima	Yes	-	No	Yes	No	Partial	Partial	Yes
	Sukhdankh oli	Yes	-	No	Yes	No	Partial	Yes	No
	Uchhakot	Yes	-	Yes	Yes	No	Partial		Yes
	Tiwari Gaon	Yes	-	Yes	Yes	No	Yes	Yes	Yes
Simalkha	Simalkha	Yes	-	No	Yes	No	Partial	Partial	Yes
	Khairalibun ga	Yes	-	Yes	Yes	No	Yes	Yes	No
Garampani	Garampani	Yes	-	No	Yes	No	Yes	Yes	Yes
	Dhaniyakot	Yes	-	No	Yes	No	Yes	Yes	Yes
	Lohali	Yes	-	No	Yes	No	Partial	Yes	Yes
Ghangharet i	Chandrakot	-	Yes	No	No	No	No	No	Yes
	Thapli	Yes	-	No	No	No	Yes	Yes	No
Ratighat	Ratighat	Yes	-	No	Yes	No	Yes	Partial	No
	Niglat	Yes	-	No	Yes	Yes	Yes	Yes	No

Source: Field Survey

Table 4 shows the condition of basic health infrastructure in 18 Health Sub-Centres across the Betalghat Development Block. With 17 sub-centres operating from their own buildings and only Chandrakot operating from a rented building, the results show sufficient permanent infrastructure. A.N.M. dwellings are found in only three sub-centres (Uchakot, Tiwari Gaon, and Khairalibunga); the absence of residential facilities in the other centres may adversely affect staff availability and emergency medical services.

Basic amenities are inconsistently available. While Betalghat, Talliseti, Chandrakot, and Thapli lack power, most sub-centres do. Because most centres lack generators, they are vulnerable to service interruptions during power outages, as only Niglat has a generator. The fact that water supply is sufficient in some places, partially available in others, and nonexistent in Betalghat and Chandrakot demonstrates disparities in access to fundamental amenities. Overall. Although most Health Sub-centres have permanent buildings, the lack of A.N.M. housing, backup power, adequate water supply, and security infrastructure reveals significant infrastructural deficiencies. These drawbacks highlight the need for focused infrastructure development and are expected to reduce the efficacy, accessibility, and quality of essential healthcare services in the Betalghat Development Block.

Severe Shortage of Medical Staff

A community's ability to maximise its health depends on its medical personnel. Through screenings, vaccinations, and health education, they help prevent disease, manage chronic illnesses, offer early detection and medical attention, and give emergency care. Areas with enough trained healthcare providers typically have higher life expectancy, better health outcomes, and lower death rates. Conversely, a lack of medical personnel can lead to poorer health and limited access to high-quality healthcare. This study uses secondary data, and field observations indicate that the research location severely lacks medical personnel. In violation of Indian Public Health Standards, over 29% of respondents admitted a significant scarcity of healthcare professionals, including specialists, general practitioners, gynaecologists, health supervisors, cleaners, and other workers.

Table 5: Status of healthcare providers at Community Health Centres in Betalghat Development Block

S. No.	Name of Cadre	Details of Staff at the Community Health Centres					
		Betalghat			Garampani		
		Sanctioned Posts	Incumbents	Vacant Posts	Sanctioned Posts	Incumbents	Vacant Posts
1.	Medical Superintendent	01	01	00	01	01	00
2.	Public Health Specialist / Other Specialist	01	00	01	01	00	01
3.	General Surgeon	01	00	01	01	00	01
4.	Physician	01	00	01	01	00	01
5.	Gynecologist	01	00	01	01	00	01
6.	Pediatrician	01	00	01	01	00	01
7.	Anesthetist	01	00	01	01	00	01
8.	Medical Officer	02	05	00	02	02	00
9.	Dental Surgeon	01	00	01	01	00	01
10.	Chief Pharmacist	01	00	01	01	00	01
11.	Pharmacist	01	01	00	01	00	01
12.	X-ray Technician	01	01	00	01	01	00
13.	Dental Hygienist	01	01	00	01	01	00
14.	Nurse	01	00	01	05	05	00
15.	Nursing Officer	05	04	01	05	05	00
16.	Laboratory Technician	01	01	00	01	00	01
17.	Laboratory Assistant (Rural)	01	00	01	01	00	01
18.	Health Inspector	03	00	03	01	00	01
19.	Health Supervisor	05	00	05	05	00	05
20.	Health Worker (Male)	09	00	09	09	00	09
21.	Health Worker (Female)	01	01	00	01	01	00
22.	Senior Assistant	01	01	00	01	01	00
23.	Junior Assistant	01	01	00	01	00	01
24.	Vehicle Driver	01	01	00	01	00	01
25.	Class IV Staff	07	01	06	05	01	04
26.	Cleaner	03	00	03	02	00	02
Total		53	19	37	52	18	34

Source: Field Survey

Table 5 reveals that the Betalghat Development Block's Community Health Centres (CHCs) are severely understaffed. Only 19 of the 53 available posts at Betalghat CHCs are filled (35.8%), leaving 34 openings (64.2%). Similarly, only 18 of the 52 positions at Garampani CHC are filled (34.6%), while 34 are empty (65.4%). Human resources are severely lacking because only 37 of the 105 allowed positions at the two CHCs are filled (35.2%),

leaving 68 open (64.8%). Because 100% of the approved positions for Public Health Specialists, General Surgeons, Physicians, Gynaecologists, Paediatricians, Anaesthetists, and Dental Surgeons remain unfilled in both CHCs, the shortfall is most acute among specialist physicians. This acute lack of experience severely limits CHCs' ability to provide referral, emergency, and speciality healthcare services. Technical, paramedical, and field-level staff are severely lacking, even though administrative positions such as Medical Superintendents (100% filled) and Medical Officers (100% in Betalghat and 100% in Garampani) are mostly filled. Male health professionals at Betalghat CHC have a 100% vacancy rate, while class fourth staff have an 85.7% vacancy rate. Similar shortcomings exist at Garampani CHC, where laboratory assistants, pharmacists, health supervisors, male health workers, and other specialised professions have 100% vacancies. Cleaners, drivers, and laboratory technicians are among the roles that remain unfilled.

The statistics show that over two-thirds (64.8%) of sanctioned healthcare positions are unfilled, adversely affecting the operational capacity of both Community Health Centres. The severe shortage of experts, paramedics, field workers, and support personnel is expected to compromise the quality, accessibility, effectiveness, and continuity of healthcare services in the Betalghat Development Block. These results highlight the need to improve the rural healthcare system through equitable staffing, targeted hiring, and effective retention strategies.

Table 6: Healthcare providers' status in Primary Health Centres in Development Block Betalghat

Name of Nyaya Panchayat	Name of Primary Health Centre	Status of Healthcare Workers						
		Total Sanctioned Posts Medical Officer	Medical Officer	Pharmacist	A.N.M.	Class IV Staff	Cleaner	Vacant posts
Betalghat	Kalakhet	05	00	01	00	00	00	04
Dadima	Sukhadankholi	05	00	01	00	00	00	04
	Unchakot	05	01	01	00	00	00	03
	Simalkhan	05	00	01	00	01	00	03
Simalkha	Dhaniyakot	05	00	01	00	00	00	04
Betalghat Development Block		25	01	05	00	01	00	18

Source: Field Survey

Table 6 shows that the five Primary Health Centres (PHCs) in the Betalghat Development Block are severely understaffed. Of the 25 sanctioned posts, just 7 are filled (28.0%), leaving 18 unfilled (72.0%). This indicates that more than three-fourths of the authorised workforce is unavailable. According to the staffing pattern, just one medical officer is available out of five sanctioned posts (20.0%), leaving 80.0% of medical officer positions vacant. Pharmacists are now fully staffed, with all five allowed posts filled (100%). Nevertheless, each PHC has only one fourth-class employee and no Auxiliary Nurse Midwives (ANMs) or cleaners, meaning ANMs and cleaners are 100% vacant and fourth-class staff are only 20% filled.

At the individual PHC level, Kalakhet, Sukhadankholi, and Dhaniyakot each have one employee (20% of sanctioned strength), whereas Uchakot and Simalkhan each have two employees (40% of sanctioned strength). Consequently, the vacancy rates at the PHCs range from 60% to 80%. Overall, the findings demonstrate how seriously understaffed the Primary Health Centres in the Betalghat Development Block are. Although pharmacist positions are fully staffed, the severe shortage of Medical Officers, the complete absence of ANMs and cleaners, and the inadequate availability of support workers are expected to negatively affect

the accessibility, effectiveness, and quality of primary healthcare services. These findings show the importance of equitably hiring and distributing healthcare staff to strengthen the PHC system.

Table 7: Status of Health Workers at Health Sub- centres in Betalghat Development Block

Name of the Nyaya Panchayat	Sub-center	Status Of Health Workers				
		Pharmacist	M.L. H.P. / CHO	Health Worker (Female)	Sanctioned Posts	Vacant Posts Relative to Sanctioned Posts
Betaalghat	Kalakhet	00	00	01	03	02
	Binakot	00	01	01	03	01
	Naugar	01	01	01	03	00
	Betaalghat	00	01	00	03	02
	Talliseti	00	00	01	03	02
	Malliseti	01	01	01	03	00
Dadima	Darima	00	01	00	03	02
	Sukhadankholi	00	00	01	03	02
	Uchhakot	00	00	01	03	02
	Tiwari Gaon	00	01	00	03	02
Simalkha	Simalkha	00	00	01	03	02
	Khairilibunga	00	01	00	03	02
Garampani	Garampani	00	00	00	03	03
	Dhaniyakot	00	00	01	03	02
	Lohali	01	01	01	03	00
Ghanghareti	Chandrakot	00	01	01	03	01
	Thapli	00	01	01	03	01
Ratighat	Ratighat	01	01	01	03	00
	Niglat	00	01	01	03	01
Betalghat Development Block		04	12	14	57	27

Source: Field Survey

Table 7 reveals a considerable shortage of health workers across the 19 Sub-centres in the Betalghat Development Block. Against a total of 57 sanctioned posts (3 posts per sub-centre), only 30 posts are filled (52.6%), while 27 posts remain (47.4%). Thus, nearly one-half of the sanctioned workforce is unavailable, which may adversely affect the delivery of primary healthcare services. Among cadres, Female Health Workers (ANMs) show the highest availability, with 14 of 19 posts filled (73.7%), leaving 5 vacancies (26.3%). Multi-Purpose Health Workers/Community Health Officers (MLHP/CHO) have 12 filled posts (63.2%), while 7 posts (36.8%) remain vacant. In contrast, Pharmacists are available in only 4 sub-centres (21.1%), leaving 15 vacancies (78.9%) and indicating a severe shortage of pharmaceutical personnel. At the sub-centre level, Malliseti, Naugar, Lohali, and Ratighat are fully staffed, with 100% of sanctioned posts occupied, whereas Garampani Sub-centre has the poorest staffing, with only one of three sanctioned posts filled (33.3%) and 66.7% vacancies. Most other sub-centres have only one or two staff members, resulting in vacancy rates ranging from 33.3% to 66.7%.

Overall, the findings indicate that although the availability of Female Health Workers and Community Health Officers is relatively satisfactory, the acute shortage of Pharmacists and the high overall vacancy rate (47.7%) weaken Health Sub-centre functioning. These human resource gaps are likely to reduce the accessibility, continuity and quality of primary healthcare

services in the Betalghat Development Block, highlighting the need for urgent recruitment and equitable deployment of health personnel.

High Maternal and Child Health Risks

In medical institutions, supervision by medical professionals and adequate equipment reduce maternal and infant mortality rates and help ensure safe, healthy deliveries. During the survey, 11% of respondents acknowledged that maternal and child health is a serious social and health-related challenge in the study area. Inaccessible geographical conditions, a scarcity of health facilities, economic backwardness, and a lack of awareness adversely affect the health of women and children in this region. There is a shortage of specialist doctors-particularly female specialists-at the Community Health Centres and Primary Centres (Maternity Centres) within the area. Consequently, residents must travel to larger cities to access better Maternal and Child Health care services.

Table 8: Status of Health Equipment in Community Health Centres in Betalghat Development Block

S. No.	Health Equipment	Community Health Centre			
		Betalghat		Garampani	
		Available	Unavailable	Available	Unavailable
1.	Standard Surgical Kit-1	Available	-	Available	-
2.	Standard Surgical Kit-2-5	Available	-	Available	-
3.	Contraception Kit	Available	-	Available	-
4.	Normal Delivery Kit	Available	-	Available	-
5.	Anesthesia Equipment	-	Unavailable	-	Unavailable
6.	Neonatal Resuscitation Equipment	Available	-	Available	-
7.	Blood Transfusion Equipment	-	Unavailable	-	Unavailable
8.	Vaccination Equipment	Available	-	Available	-

Source: Field Survey

Table 8 presents the availability of essential health equipment in the two Community Health Centres (CHCs) of Betalghat and Garampani. The findings indicate that both CHCs possess 6 out of 8 essential categories of health equipment (75%), while 2 categories (25%) are unavailable. Both centres stock sufficient equipment for family planning, immunisations, minor surgical procedures, and routine maternal and child healthcare services, including Standard Surgical Kits (Kit-1 and Kit-2.5), Contraception kits, Normal Delivery kits, Neonatal Resuscitation Equipment, and Vaccination Equipment.

However, anaesthesia and blood transfusion supplies are totally unavailable at both CHCs. CHCs' ability to handle obstetric crises, trauma patients, and severe anaemia is severely hampered by the lack of blood transfusion equipment, while the absence of anaesthesia equipment makes it challenging for them to perform emergency and major surgical procedures. As a result, patients needing advanced emergency care must be sent to more modern medical institutions, raising treatment costs and causing delays.

Overall, the analysis shows that while 75% of necessary medical equipment is available, the lack of 25% of vital life-saving equipment significantly impairs both Community Health Centres' ability to provide comprehensive services and to prepare for emergencies. The quality, accessibility, and efficacy of secondary healthcare services in the Betalghat Development Block will be greatly enhanced by fortifying these institutions with anaesthetic and blood transfusion equipment.

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Table 9: Status of Equipment in Primary Health Centres in Betalghat Development Block

Name of the Nyaya Panchayat	Name of primary health center	Health Equipment										
		Weighing-Machine	Delivery kit	BP Measuring Instrument	Deep Freezer	Hemoglobin Meter	Oxygen Meter	Wheel chair	Stretcher	Sterilizer	Citizen Charter	Sign board
Betalghat	Kalakheth	A	U	A	U	A	A	U	U	A	U	A
Dadima	Sukhadan kholi	A	U	U	U	A	A	A	A	A	U	A
	Uchakot	A	U	U	U	A	A	U	U	U	U	A
Simalkha	Simalkhan	U	A	U	U	A	A	U	U	A	A	A
Garampani	Dhaniyakot	U	U	U	U	A	A	U	U	A	U	A

Source: Field Survey

Table 9 lists the ten necessary medical supplies that are available at each of the five Primary Health Centres (PHCs) in the Betalghat Development Block. The research shows that more than half of the necessary equipment is missing: out of 50 equipment units (10 equipment $\times$ 5 PHCs), 23 units are available (46%), and 27 units are absent (54%).

All five PHCs (100%) have oxygen and haemoglobin meters, indicating adequate capacity for basic diagnostics and patient monitoring. In most centres, four PHCs (80%) have sterilisers and three PHCs (60%) have drugs that aid in infection management. Nevertheless, none of the PHCs has deep freezers, which can be detrimental to vaccine storage and cold chain upkeep. Similarly, only one PHC (20%) has wheelchairs, citizen charter boards, and BP meters, suggesting serious deficiencies. Only one delivery kit is available. Three PHCs (60%) have sign boards; however, only one PHC (20%) has stretchers, which limits emergency and maternal healthcare services. Sukhadankholi has the most equipment at the PHC level (7 out of 10 items, or 70%), followed by Kalakheth (60%), Simalkhan (50%), Uchakot (30%), and Dhaniyakot (30%). This suggests substantial differences in how PHCs distribute essential medical equipment. Although basic diagnostic tools like oxygen and haemoglobin meters are widely available, the results indicate that only 46% of equipment is available overall, with significant shortages in cold-chain, emergency, maternal care, and transportation. These shortcomings are expected to reduce the effectiveness, responsiveness, and quality of primary healthcare services in the Betalghat Development Block, underscoring the need to supply all PHCs with the necessary medical equipment.

Economic Hardship and Out-of-Pocket Costs

Health and economic status are positively associated: improved health outcomes correlate with improved economic conditions, and improved health outcomes are strongly associated with higher economic status and productivity. This creates a cycle in which improvements in health or economic well-being reinforce one another, whereas poverty and poor health perpetuate each other, forming a negative cycle.

According to the survey findings, 18% of participants reported that financial constraints and out-of-pocket medical costs cause significant health issues. A significant percentage of the population in the study area was impoverished. Due to their limited budget, families are compelled to cover the cost of medication, diagnostic testing, travel, and hospital stays whenever a family member falls ill, particularly with serious conditions like cancer, heart disease, or an accident. Patients often have to travel to larger hospitals in places like Haldwani, Bareilly, Dehradun, Rishikesh, or even Delhi to receive better medical care, which increases travel and lodging expenses. As a result, the family must pay for food, transportation, and lost wages in addition to medical costs.

Discussion

People in Betalghat Development Block still face issues with basic healthcare facilities, even though basic healthcare is a fundamental right of every citizen. Geographical conditions, scattered settlements, and poor road connectivity still hamper access to medical facilities, especially during emergencies. Inadequate infrastructure-lack of proper water supply and proper electricity connection- lowers the service quality and efficiency. The study also reflects a very serious scenario: a shortage of healthcare personnel such as doctors, nurses, pharmacists, lab staff, and field workers, which has increased the burden on hospitals outside the block. Mostly, newborn children and pregnant women suffer due to the shortage of specialists.

Healthcare issues are multidimensional and interconnected, requiring a joint effort to strengthen infrastructure, ensure adequate human resources, improve transport connectivity, and provide financial protection for villagers. These measures need to reduce disparities and improve healthcare quality and access in the Himalayan region.

Conclusion

The report highlights the major healthcare issues facing villages in Betalghat Development Block. The results show that a severe lack of medical staff (29%), insufficient healthcare infrastructure (22%), poor access to health services (20%), financial hardship leading to out-of-pocket healthcare expenditure (18%), and maternal and child risks (11%) are major concerns. These interconnected issues restrict the accessibility, availability, and quality of healthcare services in the study area. Together, these interrelated issues restrict access to, availability of, and quality of healthcare services in the study area. The field survey also showed that, although basic physical infrastructure exists, community health centres, primary health centres, and health sub-centres still face significant shortages of vital facilities, medical supplies, and healthcare workers. High vacancy rates among specialist doctors, Medical Officers, ANMs, pharmacists, laboratory staff, and other support personnel have weakened health institutions' capacity to provide timely and comprehensive healthcare. In addition, inadequate emergency equipment, unreliable electricity and water supply, the absence of blood transfusion and anaesthesia facilities, and poor transportation connectivity compel many Patients to seek treatment in urban centres, thereby increasing treatment delays and financial burden on rural households. These findings indicate that improving healthcare in the Himalayan region requires strengthening both the physical and human resource capacity of rural health institutions. Priority should therefore be given to filling vacant healthcare positions in accordance with the Indian Public Health Standards, upgrading community health Centres, Primary Health Centres, and Health Sub-centres with essential infrastructure and life-saving equipment, improving electricity, water supply, emergency transport, and road connectivity to remote villages and expanding maternal and child healthcare services through regular outreach and awareness programmes. Reducing out-of-pocket expenditure, strengthening financial

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protection, and expanding coverage of government health insurance schemes would further improve healthcare accessibility and equity. Implementing these measures would strengthen the rural healthcare system and contribute significantly to achieving equitable, accessible, and sustainable healthcare development in the Betalghat Development Block and other Himalayan regions.

References

National Health Accounts, 2023. Government of India.

