Situational Analysis of Challenges affecting Effective Healthcare Services Delivery at the Last Mile

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Abstract

Introduction: A country with a high population, like India, faces problems with shortage of health facilities and healthcare providers, especially at the community level. Community health officers play an essential link in the Indian health system in resolving health concerns at the community level. The present paper focuses on the challenges faced by them dealing at the community level.

Methodology: Authors felt the need to explore the concerns and challenges faced by CHO through this study. The survey was conducted on 300 CHO from 12 states of India from March 2022 to July 2022. With the help of the survey, authors identified six constructs which include health system challenges, operational challenges, personal, people, political, and policy issues. In the present research, mixed method approach was adopted to investigate the factors affecting the performance of CHOs.

Result: The analysis revealed that CHOs face many challenges in delivering services to the community and mainly people, and operational challenges are hindrances in their work. CHOs were experiencing work overload and unrealistic targets. They were feeling low on salary and incentives with almost no recognition and motivation to work. CHOs' primary source of stress is balancing government and other stakeholder agendas in delivering their service interventions.

Discussion: Current study can be used by Ayushman Bharat in planning facilities at HWC. Governments must coproduce solutions to these challenges with CHOs for sustainable interventions and strengthen their relationship with communities.

Keywords: Community Health Centre (CHC), Community Health Officer (CHO), Health & Wellness Centre (HWC), Ayushman Bharat, Community Health, Public Health System

Introduction

Numerous uncertainties exist with changes in demographic, epidemiological, and societal mindsets. Developing and underdeveloped countries experience various challenges in the public health system. There is a dire need for divergent healthcare infrastructure and healthcare personnel like doctors, clinicians,

administrative staff, and nurses to respond to current issues and challenges and resolve them(Sengupta, Roy, Ganguly, Baishya, & Mukhopadhyay, 2021). The community health officer or workers are pivotal in improving health awareness and practices at the grass-root level(2016). There is a dearth of health workers at the community level, especially in rural areas(Shiratori, et al., 2016).

India is a developing nation, and its population always face a dearth of medical professionals. A three-tier system has been established in India at the sub-centre level, primary health centre, and the first referral unit at the district and sub-district level to provide healthcare facilities (Jacob, 2021).

Ayushman Bharat (AB) is an important initiative of the Government of India launched to deliver comprehensive primary healthcare services covering curative, preventive, palliative, promotive, and rehabilitative care. In 2017 on the recommendation of the task force National Health Policy was launched and in 2018 Government of India announced the Ayushman Bharat Health and Wellness Center Programme with the sole purpose of bringing comprehensive primary health care accessible and free for all its users. In a strategic move by the Government of India to bring universal health coverage, health and wellness centres were established under the Ayushman Bharat Scheme. It aimed to create 150,000 Health and Wellness Centres in the first phase with equitable, efficient, and effective healthcare delivery. With the operationalization of this programme, India is witnessing a paradigm shift in primary and comprehensive healthcare services.

Community health officers (CHO) operationalized these health and wellness centres. These CHOs act as mid-level healthcare providers and helpbridge the health system's delivery gap at the community level. Hence steps need to be taken to maintain their motivation by strategically aligning their goals with maximum health coverage. (Shiratori, et al., 2016)

The country needs to strengthen primary healthcare to build a robust healthcare system. As per RHS (Rural Health Statistics),in March 2020(NHM Components » Health Systems Strengthening » Infrastructure, 2020), there were 1,57,921 Sub-centres, 30,813 Primary Health Centres, and 5,649 Community Health Centres across the country. Achieving a healthier world requires a skilled, knowledgeable, and trained workforce at the primary care level. The government felt that quality care needs to reach closer to the people where they live, which will help make the health system resilient and more robust.

It was decided that Health and Wellness Centres would provide universal access to primary healthcare services to provide adequate healthcare. It was also established to prevent illness and promote wellness. To improve its efficiency, it was decided to strengthen accountability and have better community engagement. Enabling treatment adherence, access to telemedicine and reducing patients' discomfort by providing services closer to them were also critical agendas.

To operationalize and lead this system, Community Health Officers were appointed at HWC. These CHOs are "B.Sc./GNM Nurses or Ayurveda Practitioners, trained and accredited in an approved Certificate Programme in Community Health." The government introduced this new cadre for leading the primary health care teams, improving customer satisfaction and quality of care with better community engagement. CHOs are pivotal in creating community awareness, counselling, and outreach activities. The government has envisaged CHOs roles as health providers, leaders, collaborators, advocates, mentors, and managers who will transform and strengthen the health systems.

Functional AB- HWC is supposed to have adequate human resources as per government norms. They are also supposed to have the availability of life-saving and essential medicines and diagnostic services. These AB-HWC are meant to deliver services like screening for Hypertension, Oral and Breast Cancer, and Diabetes. Conducting wellness activities and providing Tele-consultation services. The government has linked a central reporting system with providing performance-based incentives for CHOs.

Primary Healthcare in India

In the public health care system, community health officers have a big role. They must proactively manage and direct the public health sector's primary healthcare delivery system. They serve as an intermediary between delivering healthcare facilities to the community, (Desai S, 2020)but in doing so they face many challenges.(Zalani, et al., 2016)

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Some authors have noted that community health professionals deal with specific grassroot issues like funding challenges, literacy issues, digitalization problems and lack of motivation (Mishra, et al., 2019). The professional difficulties that community health workers confront have a direct bearing on their motivation level for their jobs. CHWs' top concerns include interpersonal relationships, patient adherence, and the work, social, and mental health environment. These difficulties result from their inability to govern their behaviour effectively. Selfmanagement inefficiency can be decreased by introducing interventions. Their motivation will be maintained as a result, and they will be able to provide quality community health facilities.(Johnson, Schopp, Waggie, & Waggie, 2022). Community Health Officers play an important role in sustainable development by removing health inequities and improving the health outcome at the community level. Working at the grassroots level places significant obstacles in their path. Lack of proper transportation, poor road connectivity, cultural beliefs, and lack of willingness of community engagement are some of the significant challenges they face(Bassoumah, 2021).

The literature review of the public health system of South Africa reveals that it is also not untouched by ground-level problems(2020). Free Stata, South Africa, is facing these challenges even though they have the government's support. Lack of employees, issues with cash flow management, and incorrect integration of the health services all contribute to the health system's underperformance. Transportation to the patients' houses and the acceptability of these workers in their households are also a source of concern for these workers. They can acquire the necessary knowledge to improve their profession and adhere to ethical health practices through mentorship.(F, 2018)

Community health nurses in Myanmar(May, et al., 2021) also encounter some challenges in the public health system. Most of them said that one of the major obstacles to universal health coverage was a lack of adequate infrastructure. Role conflicts are another factor impeding their work, in addition to the previous one. The lack of career progression and advancement opportunities is a source of demotivation among these nurses. They

recognized the need for professional training in community health since they could not provide the necessary services at the community level. The performance of ANMs and MPWs in Taluka Shahpur, District Thane, Maharashtra, was impacted by work overload, a lack of non-monetary benefits, and unclear roles. (R, 2017)

In another study, the quality of services provided at health and wellness centres in Madhya Pradesh was affected by various factors (2021). The study revealed that the performance of these CHOs was affected by certain factors like unsupportive staff at the health and wellness center and unawareness about the position and role of CHOs among the officials at district as well as block levels. In addition to this, the orders given at the block or district level need to be adequately used. It was recommended that performance can be enhanced by providing CHOs with timely training and direction from higher-level officers. Further, in this line, if there is an improvement in the working environment of HWC through better coordination and support from the team members, it will result in higher efficiency of CHOs. Effective leadership and good governance can help attain efficiency in the public health system.

Configuration of management arrangements affects the performance of community health workers. Supervision, work scope, facility linkages as well as legitimacy with the community affects the level of performance of community health workers. (Ludwick, 2022)

The performance level of community health workers can be enhanced by the intrinsic and extrinsic factors as suggested by Herzberg's two-factor theory. These factors can help in better insights into resolving the challenges faced by community health workers. Factors like recognition and respect in the community and effective patient outcomes develop a sense of intrinsic motivation among health workers. Their performance will be improved by empowering them, which will positively impact healthcare services provided at the community level. (Myness, 2022).

Materials and Methods

The present study was a quantitative study conducted on the Community Health Officers of 12 states of India working at Ayushman Bharat Health and Wellness Centres. The study was carried out during the period of March 2022 to July

2022. Participating states included Tripura, Sikkim, Odisha, Nagaland, Meghalaya, Mizoram, Arunachal Pradesh, Manipur, Madhya Pradesh, Jharkhand, Chhattisgarh, and Assam. CHOs were randomly picked up from these state HWCs for participation in the study. These HWC locations were selected based on their work areas and popularity as per the National Health Mission. CHOs were selected based on the inclusion criteria of a minimum of one year of experience as a CHO and participation in CHO leadership training programmes. Exclusion criteria included less than one year of experience and no interest in participating in the research study.

These CHOs were entirely in charge of their Health and Wellness Centres, delivering effective primary healthcare services. These Community Health Officers lead primary health care teams at sub-centres or HWC, helping to provide ambulatory care and clinical management services to the community and acting as linking pins to ensure continual care.

Approximately 300 CHOs participated in the survey and filled up the data. An open-ended questionnaire was constructed based on the interaction with the CHOs to determine the challenges they faced at AB-HWC. Before collecting information, all the respondents were given a background of the study and a clear understanding of the requirements. Out of three hundred randomly selected CHOs, 262 CHOs shared complete responses. The structured questionnaire consists of open-ended questions about the various problems encountered at HWC for healthcare service delivery. The authors kept the questionnaire intentionally open-ended to get unbiased data from CHO. Authors specialize in qualitative answer analysis and hold the degree of Doctor of Philosophy. It was easy for them to analyze the data coming from varied angles. The collected data was cross-checked and tallied by the authors to keep the information unchanged. Authors read the questionnaire multiple times for understanding and familiarization with the highlighted issues. The authors coded responses received independently and fine-tuned the data to explain and establish relationships.

In total 1216 problems /issues were identified by the CHOs. This data was further categorised into six categories: health

system (295), operational (204), personal (80), political (48), policy (72), and people (339). Authors ensured screening of duplicate data and grouping similar problems together. After the first round of analysis, data were further classified into 223 issues across the above 6 categories.

Challenges were standardised and similar data was carefully combined. Data was analysed manually by looking at every problem statement and dividing them into related categories. Similar problem statements were excluded in finalising the factors. This approach provided rich and complex data for analysis and an in-depth understanding of problems faced by healthcare delivery champions at their HWC. Once data was classified, the statistical tool of Factor analysis and Chi-square test was applied using SPSS software.

Results

CHOs significant job lies in engaging with the communities and resolving their problems, and at times it goes beyond their formal capabilities. They often work in difficult situations, with almost little or no support from the government and poor recognition of their efforts. With the help of this study, authors have been able to document the day-to-day challenges they faced at their HWCs.

Personal Issues

One of the major concerns for healthcare personnel is occupational stress and anxiety. Which reduces job satisfaction and reduces morale. A certain degree of stress is there in every profession; however, it has been found that here it is quite above the threshold limit. These healthcare professionals are suffering from being overburdened with work, and they are not even getting their due incentive for performing extra and timely duties.

The non-Parametric Chi-Square Test was employed to examine the presence of different sub-categories in the 'personal issues' category and to figure out the significant dominance of any particular sub-category(s). The proposed hypothesis is:

H0: P1=P2=P3...... (All the sub-categories have an equal presence).

As per table 1.2, p-value (Asymp. Sig.) = 0.000 < 0.05, so H0 is rejected at a 5% level of significance. Hence, we may

propose that all the sub-categories in CHO's personal issues do not have equal presence instead, 'overburden of work/ unrealistic target' with max proportion is the dominant problem followed by 'Lack of patience/ motivation' related to CHO's personal issues (table 1.1).

Table 1.1: Personal Issues

	Observed N	Expected N	Residual
Lack of knowledge, skills & interest	21	21.5	5
Overburden of work/ unrealistic target	55	21.5	33.5
Multi-tasking/performing non CHO rules	5	21.5	-16.5
Stress & Anxiety	10	21.5	-11.5
Gender issues	1	21.5	-20.5
Lack of patience/ motivation	37	21.5	15.5
Total	129		

Table 1.2: Chi-Square Test Statistics

	Personal Issues
Chi-Square	101.744
Df	5
Asymp. Sig.	.000

Policy Issues

Our research identified that there are few issues which require government support to be resolved. With the ambitious target of providing comprehensive primary healthcare services to last mile government also need to ensure timely skill development training of healthcare professionals. Set realistic targets and work on reward and recognition system to incentivize their work.

Again, the Non-Parametric Chi-Square Test was used to examine the presence of different sub-categories in the 'policy issues' category to identify the major issue of concern in this category of CHO's policy issues. The proposed hypothesis remains the same as the earlier case.

The p-value (Asymp. Sig.) is found to be 0.000<0.05, so the null hypothesis is rejected at 5% level of significance (Table 2.2). Hence, various sub-categories in 'policy issues' do not have equal proportions, as figured out by CHO's responses. Table 2.1 suggests that 'poor salary, incentives & recognition is the dominant problem in the policy issues of CHOs.

Table 2.1: Policy Issues

	Observed N	Expected N	Residual
Poor salary, incentives & recognition	39	15.7	23.3
Compliance related to campaigns	2	15.7	-13.7
Lack of training	6	15.7	-9.7
Total	47		

Table 2.2: Chi-Square Test Statistics

	Policy Issues
Chi-Square	52.638
Df	2
Asymp. Sig.	.000

People Issues

Healthcare delivery is not possible effectively without a workforce. There is dearth of trained and skilled manpower for promoting holistic healthcare system. Unavailability, incompetency, inefficiency, communication gap, language barriers are some of the issues highlighted by the respondents. All this led to a serious work crisis, and people who are contributing selflessly are the only ones able to sustain themselves.

Non-Parametric Chi-Square Test was replicated for the purpose of analyzing the presence of sub-categories of 'people issues' as perceived by CHOs. The p-value (Asymp. Sig.) of 0.000, which is less than 0.05 (as per table 3.2), suggests rejection of the null hypothesis of equal frequencies of various sub-categories. The observed frequencies of table 3.1 establish that 'team coordination' has been the major problem faced by the CHOs when they consider 'people's issues' and 'non-supportive community' has been identified as the second major issue in this domain.

Table 3.1: People Issues

	Observed N	Expected N	Residual
Team coordination	86	41.3	44.7
Lack of awareness + comm education	24	41.3	-17.3
Communication Gap	31	41.3	-10.3
Religious Social Cultural barriers	33	41.3	-8.3
Language barriers	16	41.3	-25.3
Non supportive community	58	41.3	16.7
Total	248		

Table 3.2: Chi-Square Test Statistics

	People Issues
Chi-Square	82.048
Df	5
Asymp. Sig.	.000

Operational Issues

There is scarcity of resources in Indian healthcare sector. The gross mismatch in demand and allocation of resources is a serious concern. This is one of the leading healthcare challenges where non-availability of drugs, equipment and funds leads to big hindrances. The healthcare personnel have reported several issues in this area.

To examine the relative prevalence of various subcategories of the 'operational issues', faced by CHOs, a nonparametric chi-square was applied again on these sub-categories. Just like in previous cases, here also p-value (Asymp. Sig.) is found to be 0.000 (< 0.05) (table 4.2), which signifies that there is a significant difference among various sub-categories of the 'operational issues. Accordingly, as per table 4.1, 'non-availability of medicine' dominates the operational issues faced by CHOs, followed by 'lack of transportation and 'lack of funds.

Table 4.1: Operational Issues

	Observed N	Expected N	Residual
Drug distribution	5	20.7	-15.7
Online work	6	20.7	-14.7
Non-availability of medicine	62	20.7	41.3
Lack of funds	42	20.7	21.3

	Observed N	Expected N	Residual
Lack of management	7	20.7	-13.7
Storage problem	3	20.7	-17.7
Lack of transportation	44	20.7	23.3
Waste management	7	20.7	-13.7
Sample collection problem	7	20.7	-13.7
Lack of material (first aid)	24	20.7	3.3
NCD Screening /prangnency/covid related problems	21	20.7	.3
Total	228		

Table 4.2: Chi-Square Test Statistics

	Operational Issues
Chi-Square	195.500
Df	10
Asymp. Sig.	.000

Health Systems Issues

The performance of CHO and the services of HWC are dependent on various health system-related issues, which include inadequate physical, infrastructure and people issues. Poor connectivity, lack of trained manpower, lack of equipment, safety and privacy issues, and administrative issues all impacted the performance of HWC.

Lastly, the relative prevalence of various sub-categories of the 'HS issues', faced by CHOs, was examined using a nonparametric chi-square was used. Just like in previous cases, here also p-value (Asymp. Sig.) is found to be 0.000 (< 0.05) (table 5.2) which signifies the significant difference among various sub-categories of the 'HS issues. Accordingly, as per table 5.1, 'HR manpower trained/ lack of staff' dominates the HS problems faced by CHOs. Other problems in this area are 'lack of infrastructure' and 'Lack of resources, instruments/ equipment.

Table 5.1: HS Issues

	Observed N	Expected N	Residual
Poor connectivity/ tech issues	71	33.9	37.1
HR manpower trained/ lack of staff	90	33.9	56.1
Data recharge issue	8	33.9	-25.9
Safety & privacy issue	11	33.9	-22.9
Lack of resources instrument/ equipment	53	33.9	19.1
Working environment	8	33.9	-25.9
Patient referral issue	7	33.9	-26.9
Water & electricity issue	21	33.9	-12.9
Lack of infrastructure	62	33.9	28.1
Administrative challenges	8	33.9	-25.9
Total	339		

Table 5.2: Chi-Square Test Statistics

	HS Issues
Chi-Square	268.581
Df	9
Asymp. Sig.	.000

Non-Parametric Friedman Test was employed to examine the relative degree of the problem/issues faced by CHOs with the proposed null hypothesis:

H0: μ 1= μ 2= μ 3= μ 4= μ 5= μ 6 (All the six categories of problems/issues faced have the same average degree of criticality). Friedman test statistic p-value (Asymp. Sig.) found to be 0.000 (0.05), according to table 6.2, which establishes that the average relative degree of the criticality

for these six issues that were examined is not significantly same.

Table 6.1 suggests, as per the 'mean rank' values, that Operational Issues (Mean Rank = 4.16) and Personal Issues (Mean Rank = 4.14) were the most critical and common issues faced by CHOs in performing their tasks. They were followed by People Issues (Mean Rank = 4.04) and HS Issues (Mean Rank = 3.12) and so on.

Friedman Test

Table 6.1: Ranks

	Mean Rank
Personal Issues	4.14
Policy Issues	2.90
People Issues	4.04
Political Interference	2.64
Operational Issues	4.16
HSIssues	3.12

Table 6.2: Friedman Test Statistics

N	350
Chi-Square	268.353
Df	5
Asymp. Sig.	.000

Discussion

This study was carried out to listen to the voice of CHO and understand their workplace challenges in an unbiased manner. Indeed, it was an opportunity for CHOs to open and share their concerns which can be further addressed. With the present study, it was evident that to reach the last mile and provide effective healthcare service delivery, it is imperative to strengthen Health and Wellness Centres and provide adequate resources to CHO. There is a need for more recognition and motivation for CHO by stakeholders in the health system to strengthen their position. The

present paper highlights some unexplored notions drawing on the author's experience working in the health sector and beyond. The author also suggested pathways which can be used by stakeholders to address the challenges.

This quantitative study analysed the factors affecting healthcare workers' service delivery at their Health and Wellness Centres. The study suggests that this new cadre of appointment of CHOs was done by the government to lower the burden of doctors, especially in rural areas, and they have succeeded to some extent. Owing to limited resources, governments are utilizing the CHOs services,

but lack of capacity building and limited resources with growing reach is a matter of concern. No one is focusing on the impact of these interventions on the capacity of CHO and the personal issues faced by them. The highest priority is engaging with the community while keeping costs low, which CHOs carry out. The burden of CHOs work should be adequately assessed and reviewed so their performance is not compromised. Stress and anxiety are high due to overburdening, balancing the tasks and no career recognition, and low acceptability in the system.

The findings align with other studies that reported that holistic improvement of healthcare facilities at HWC would help improve service delivery. It is evident that CHO plays a vital role in improving primary healthcare services, and it's imperative to remove the roadblocks from their way. As per the current study, it is important to work on hindrance factors and provide comprehensive healthcare facilities to the community and reduce the burden of disease.

In due course of time, it is being realized that there are several factors which hinder their performance. The study has helped to analyze these factors; accordingly, the state governments need to plan corrective actions to help remove these hindering factors. Further, the Government also needs to carry out proper and regular training of the CHOs so that they perform effectively at their centres. Training the CHOs on operational issues like supply chain management and waste management will help resolve many problems.

Apart from this development of leadership and managerial competencies, CHOs can help cater to various personal issues. Competency mapping can help to identify the gaps, and after the gap assessment, the CHOs can be trained to enhance their proficiencies. The CHO's satisfaction level can be improved by providing them with skill development training.

Career and succession planning needs to be part of the broader discussion for building a wider public health system. Timely appraisals and monetary and non-monetary rewards associated with their performance will help them perform effectively and the government needs to work on this as a priority.

The main strength of this study lies in identifying factors

responsible for untimely service delivery. With the help of these factors, one can prioritise what needs to be tackled immediately and where more government intervention is required for improvement. Therefore, this current study can be used by Ayushman Bharat in planning facilities at HWC across the country.

Limitations and Future Scope

This study was conducted with few participants from Northern India and majorly from participants from Northeastern states. Though these CHOs are quite representative of their respective states as each state has many Health and Wellness Centres, challenges at those places might be different or contextual. Due to limited time and resources for research, the study could not be extended to other states. This study has an option for further replication in other states of India as well. There are 1,54,978 functional HWCs in India as on December 2022 and we have been able to capture responses from a handful of CHOs, though they are spread across 12 states of India.

Another limitation of the study includes that in-depth qualitative research was not conducted. This could have helped in getting closer insights. The findings of the present study can be used as a lesson learnt and can be used for improving the work and health facilities at other HWC within states or other states as well. The results may not represent the general picture at all HWC. Still, problems specific to people, policy, and operational issues are common and can be considered for making desired changes and providing accessible and acceptable primary healthcare services.

Conclusion

The current study aimed to identify the challenges faced by Community Health Officers at Ayushman Bharat – Health and Wellness Centres established by the Government of India. Many of the concerns raised by CHOs have been viewed with a technical lens. With the increase in population, there is a greater demand for equitable health facilities, which has imposed new challenges in service delivery to respond to community health needs. Therefore, it is desirable to constantly improve healthcare facilities and look at the factors affecting service delivery. It requires

constant planning, upgradation of skills, better infrastructure, and availability of manpower and resources to bring transition in community health and improved service delivery.

The challenges were broadly classified into six diverse categories, and the authors considered the factors underlying these challenges. The present study has specifically identified the challenges and issues commonly faced by CHOs from 12 states in India at their respective HWCs. Challenges related to workload and unavailability of resources, including manpower crisis, must be addressed as a priority. Most of the problems are common at HWC across different states. State government, while having an ambitious dream of providing comprehensive primary healthcare facilities to people at the last mile, needs to co-create the journey with CHO for sustainable interventions. Making policy decisions to resolve specific issues might be an appropriate way to fix them. One policy decision could be to deploy an additional workforce wherever required and roll out incentive policies for the CHO. Another critical policy decision could be capacity building and awareness training programmes for healthcare workers. The present study provides new findings and avenues for further detailed research on these factors.

Listening to CHO's voices and experience is crucial for building sustainable solutions for comprehensive healthcare delivery. Investing in this new cadre of community with leadership and supportive supervision programs and improving resource mobilization will be a fairer approach to reaching these ambitious goals and aligning with these healthcare workers.

Ethical Considerations

Ethical use (Including plagiarism, informed consent, misconduct, data fabrication and falsification, double publication and submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

We are sincerely grateful to the Community Health Officers and Nishtha Jhpiego Team, IIHMR University Management, for their assistance through our discussions and for sharing their valuable opinions, which elevated our work. The authors declare that there is no conflict of interest.

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