ISSN 0973-2063 (online) 0973-8894 (print)

Bioinformation 22(10): 6204-6210 (2026)

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BIOINFORMATION
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BIOMEDICAL INFORMATICS

www.bioinformation.net

Volume 22(10)

Research Article

Received October 1, 2026; Revised October 31, 2026; Accepted October 31, 2026, Published October 31, 2026

DOI: 10.6026/973206300226204

SJIF 2026 (Scientific Journal Impact Factor for 2026) = 8.478
2022 Impact Factor (2023 Clarivate Inc. release) is 1.9

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Edited by P Kangueane

Citation: Ananthakrishnan *et al.* Bioinformation 22(10): 6204-6210 (2026)

Performance variation in Ayushman Arogya Mandirs: A DEA-guided qualitative study

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ISSN 0973-2063 (online) 0973-8894 (print)
Bioinformation 22(10): 6204-6210 (2026)
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Abstract:
Performance variation among Ayushman Arogya Mandirs (AAMs) persists despite comparable resource allocation. Therefore, it is of interest to explore the contextual and behavioral determinants of this variation using the Consolidated Framework for Implementation Research (CFIR). Twenty-five AAMs in Obedullaganj block, Madhya Pradesh were classified as high or low-performing using Data Envelopment Analysis. Thirty-five in-depth interviews with healthcare providers were then analyzed using a CFIR-guided framework approach. High-performing centres showed stronger communication, adaptive problem-solving and greater provider self-efficacy. Low-performing centres were constrained by weak feedback mechanisms, equipment failures and role strain. Thus, data shows that technical efficiency in AAMs also depends on leadership and implementation climate in addition to resource availability.

Keywords: Health services research, implementation science and primary health care, qualitative research

Background:
The Government of India launched the Ayushman Bharat program in 2018 **[1]**. This program aimed to shift from selective primary healthcare to comprehensive primary healthcare (CPHC). A critical component of this transition is the Ayushman Arogya Mandir (AAM), formerly the Health and Wellness Centre **[2]**. These centres provide expanded services including maternal and child health, non-communicable disease (NCD) screening and basic emergency care **[3]**. Despite the national rollout, substantial variation in centre performance persists across sub-regions **[4]**. Previous studies focused on quantitative metrics such as infrastructure availability or total patient footfall. These metrics do not explain performance gaps seen under similar resource conditions. DEA can objectively classify centres as high- or low-performing. However, it does not capture the underlying mechanisms driving these differences **[5]**. Implementation research frameworks offer a useful lens to explore such contextual and behavioral determinants. The Consolidated Framework for Implementation Research (CFIR) provides a structured approach to examine how intervention characteristics, inner and outer settings, individual attributes and implementation processes influence outcomes. Applying this framework helps unpack the "how" and "why" behind observed performance variation **[6]**. We used DEA to generate contrasting performance categories, followed by qualitative inquiry to explore the attributes behind these contrasts **[7, 8]**. Therefore, it is of interest to evaluate the contextual and behavioral determinants of performance variation among Ayushman Arogya Mandirs in a rural block of Central India.

Methods:
Study design and setting:
A qualitative descriptive study was conducted in Obedullaganj block of Raisen district, Madhya Pradesh, a predominantly rural setting with an established network of Ayushman Arogya Mandirs (AAMs). The present qualitative phase represents the explanatory component of a sequential explanatory design, where findings from the preceding DEA informed sampling and comparison**.**

Sampling and categorization of centres:
Participants were selected using purposive sampling based on the performance categorization of AAMs derived from a preceding Data Envelopment Analysis (DEA). The DEA employed an output-oriented model to classify 25 centres into high- and low-performing groups based on their technical efficiency. Inputs included staffing levels (Community Health Officers, Auxiliary Nurse Midwives and ASHAs), availability of essential medicines and frequency of training. Outputs included service utilization indicators such as outpatient attendance, NCD screening rates (hypertension and diabetes) and treatment adherence. Centres achieving higher outputs relative to their inputs were categorized as high-performing, while those with lower efficiency scores were categorized as low-performing. A total of 35 stakeholders including Community Health Officers, ANMs, ASHAs and program managers were recruited from both groups to capture diverse perspectives between January to July 2022. Sampling continued until thematic saturation was achieved.

Data collection:
Data were collected through in-depth interviews (IDIs) using a semi-structured interview guide developed based on the Consolidated Framework for Implementation Research (CFIR). The guide covered domains including intervention characteristics, inner and outer settings, characteristics of individuals and implementation processes. Interviews were conducted in Hindi or in English, depending on participant preference and were audio-recorded with informed consent. Each interview lasted approximately 30–45 minutes. Field notes were maintained to capture contextual observations. Audio recordings were transcribed verbatim and, where necessary, translated into English for analysis.

Reflexivity and researcher positionality:
The primary interviewer was a Junior Resident in the Department of Community and Family Medicine with prior field experience in similar rural health settings. This positionality facilitated rapport-building and enabled nuanced probing of context-specific operational challenges. At the same time, reflexive practices were employed to minimize potential bias arising from pre-existing familiarity with the health system. Participants were assured of confidentiality and informed that their responses would not influence administrative decisions or performance evaluations, thereby encouraging candid responses.

Data analysis:

Data were analysed using a framework approach guided by the CFIR. A hybrid deductive-inductive strategy was employed, wherein initial coding was informed by CFIR constructs, followed by the identification of emergent subthemes from the data. Transcripts were independently coded by members of the research team and discrepancies were resolved through discussion to ensure consistency. Codes were subsequently organized into themes mapped to CFIR domains. Comparative analysis was conducted to identify differences in implementation experiences between high-performing and low-performing centres.

Ethical considerations:
The study was approved by the Institutional Human Ethics Committee of the Institute (Reference No: IHEC-LOP/2020/PG/July/08). Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity were maintained throughout the study. The study is reported in accordance with the COREQ (Consolidated Criteria for Reporting Qualitative Research) guidelines.

High-performing centres:
Demonstrated adaptive problem-solving, collaborative work environments and proactive engagement with program goals.

Low-performing centres:
Were characterized by operational constraints, limited feedback mechanisms and a perception of increased administrative burden. These differences collectively shaped the ability of centres to translate available resources into effective service delivery. Notably, constructs across CFIR domains did not operate in isolation but interacted dynamically, with factors such as perceived relative advantage, team climate and local implementation practices reinforcing one another **(Figure 1).**

Innovation characteristics:
Perceived value versus perceived burden:
Perceptions of the AAM model differed markedly between HP and LP centres, influencing the extent to which staff engaged with program components. In HP centres, the transition from sub-centres to AAMs was widely perceived as a relative advantage, particularly due to the presence of Community Health Officers (CHOs) and access to teleconsultation services. This enhanced service capacity strengthened community trust and increased utilization. "Earlier, people had to go to the PHC for everything. Now, with the CHO and tele-consultation, we can provide specialized advice here. It has increased the community's trust in us." (CHO, High-Performing Center) In contrast, staff in LP centres emphasized the complexity of new program requirements, particularly digital reporting and expanded NCD-related responsibilities. These were often viewed as additional administrative burdens rather than service improvements. "The reporting work has doubled. We spend more time on the tablet than with the patient. It feels like we are data entry operators more than health workers." (ANM, Low-Performing Center) These contrasting perceptions indicate that the same intervention can be internalized either as an opportunity or as a burden, significantly influencing implementation effectiveness.

Inner setting:
Learning climate and resource adaptation:
The inner setting emerged as a key differentiator between HP and LP centres, particularly in terms of communication, teamwork and the ability to manage resource constraints. HP centres exhibited a strong learning climate, characterized by open communication and informal peer networks. Staff actively collaborated to address operational challenges, including temporary shortages of medicines or supplies. "If we run out of Amlodipine, I call the CHO at the next center. We manage until the next supply comes. We don't let the patient go back without medicine." (CHO, High-Performing Center) In contrast, LP centres reported limited access to functional resources and weaker communication structures. Frequent equipment failures and drug stockouts disrupted service delivery and reduced patient trust. "The BP machine has been broken for months. How can I screen for NCDs? Patients come, they see we have no medicine or working machines and then they stop coming." (MPW, Low-Performing Center) While both groups faced resource constraints, HP centres showed greater adaptability through informal coordination mechanisms, effectively mitigating the impact of systemic limitations.

Implementation process:
Active monitoring versus passive compliance:
Differences in implementation processes further contributed to performance variation. HP centres engaged in regular reflecting and evaluating practices, including weekly meetings and informal digital communication (*e.g.,* messaging groups) to review targets and resolve issues in real time. In contrast, LP centres described implementation as largely top-down, with minimal local feedback or performance review mechanisms. Data reporting was often perceived as a compliance requirement rather than a tool for improvement "We just fill the data because the supervisors ask for it. We don't know if our center is doing well or not compared to others." (ASHA, Low-Performing Center) The presence of local feedback loops in HP centres enabled continuous performance improvement, whereas their absence in LP centres contributed to stagnation and disengagement.

Characteristics of individuals:
Self-efficacy and role ownership:
Individual-level factors, particularly self-efficacy, played a crucial role in shaping centre performance. CHOs in HP centres showed higher confidence in their clinical and managerial roles, often taking initiative in patient care and program implementation. This was reflected in greater ownership of NCD management and community engagement activities. In contrast, staff in LP centres frequently reported role ambiguity and dependence on external guidance, particularly for tasks such as

ISSN 0973-2063 (online) 0973-8894 (print)
Bioinformation 22(10): 6204-6210 (2026)
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digital reporting and diagnostic procedures. Higher self-efficacy among providers in HP centres appeared to facilitate proactive problem-solving and effective utilization of available resources. These findings indicate that performance differences between AAMs are not solely determined by resource availability but are strongly influenced by implementation climate, team dynamics and provider behavior. High-performing centres showed the ability to convert similar inputs into better outputs through adaptive strategies, collaborative practices and strong local leadership. In contrast, low-performing centres remained constrained by a combination of operational challenges, limited feedback mechanisms and lower perceived ownership of program goals. The diverging experiences of staff in HP versus LP centers across key operational dimensions are summarized in **(Figure 2).** A comprehensive thematic map was also generated to visualize the domain-specific enablers and barriers. This map highlights how facilitators like 'Sarpanch Support' and 'Weekly Meetings' drive HP success, while 'Incentive Delays' and 'Transport Costs' act as significant friction points in the outer setting for LP centers **(Figure 3).**

Results:

A total of 35 stakeholders from 25 Ayushman Arogya Mandirs (AAMs) participated in the study, with representation from both high-performing (HP) and low-performing (LP) centres. The socio-demographic and professional profiles of participants were broadly comparable across the two groups **(Table 1).** While gender distribution and median age were similar, staff in HP centres had relatively greater work experience (median 8 years vs. 5 years in LP centres) and reported more frequent participation in training sessions. In addition, LP centres were located farther from the district headquarters, indicating potential geographic and logistical disadvantages. These baseline similarities, alongside comparable resource inputs identified in the preceding DEA, suggest that differences in performance are unlikely to be explained solely by structural factors, thereby showing the importance of contextual and implementation related determinants. Analysis identified key differences across three major CFIR domains; innovation characteristics, inner setting and implementation process with additional influences from characteristics of individuals. Across these domains, a consistent pattern emerged.

Table 1: Socio-demographic and professional characteristics of participants across 25 HWCs (N=35)

Characteristic	Relatively High-Performing Centers (n=18)	Relatively Low-Performing Centers (n=17)
Gender		
Male	6 (33%)	5 (29%)
Female	12 (67%)	12 (71%)
Median Age (Years)	28 (IQR 25-33)	27 (IQR 24-32)
Professional Role		
Community Health Officer (CHO)	5	5
ANM / MPW	6	6
ASHA / ASHA Supervisor	5	4
Medical Officer / Manager	2	2
Median Years of Experience	8 (IQR 4-11)	5 (IQR 3-8)
Distance from District HQ (km)	22 (± 8)	36 (± 10)
Training Sessions Attended (Last 1 Yr)	3 (2-4)	1 (0-2)

IQR: Interquartile range, SD: Standard deviation, ***ANM: Auxiliary Nurse Midwife; MPW: Multi-purpose Worker; ASHA: Accredited Social Health Activist***

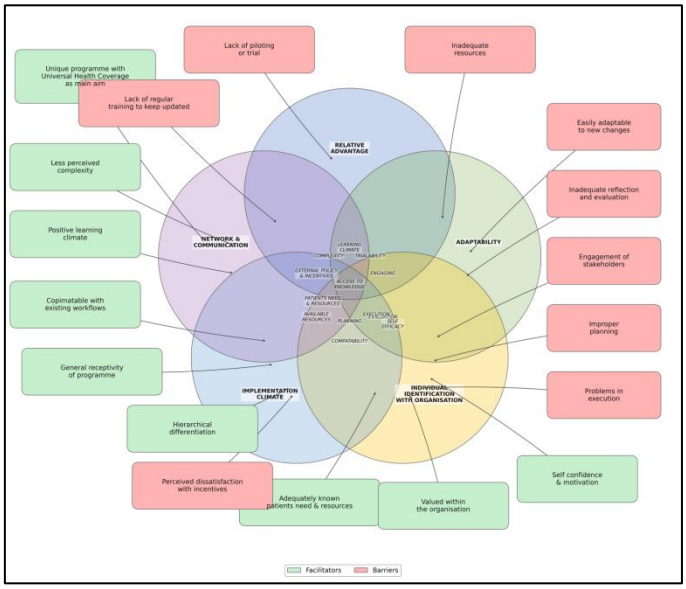


Figure 1: Venn diagram showing the interconnection between the various constructs under different domains

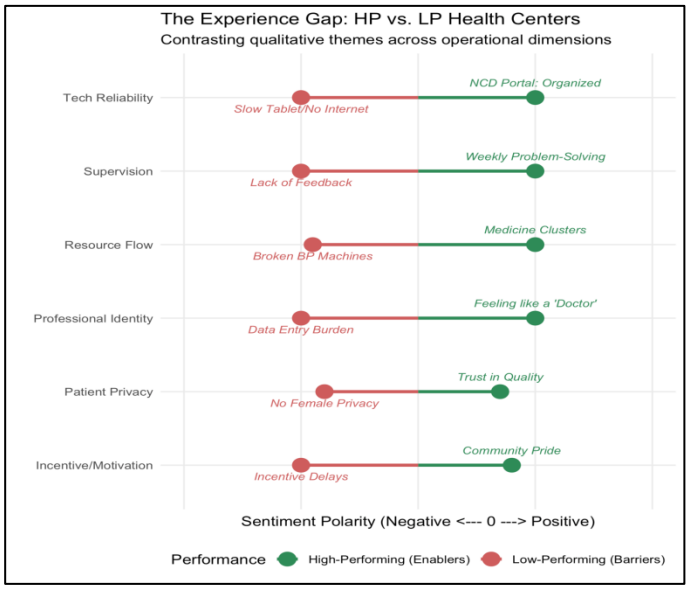


Figure 2: The experience gap: HP vs. LP health centers (diverging lollipop plot)

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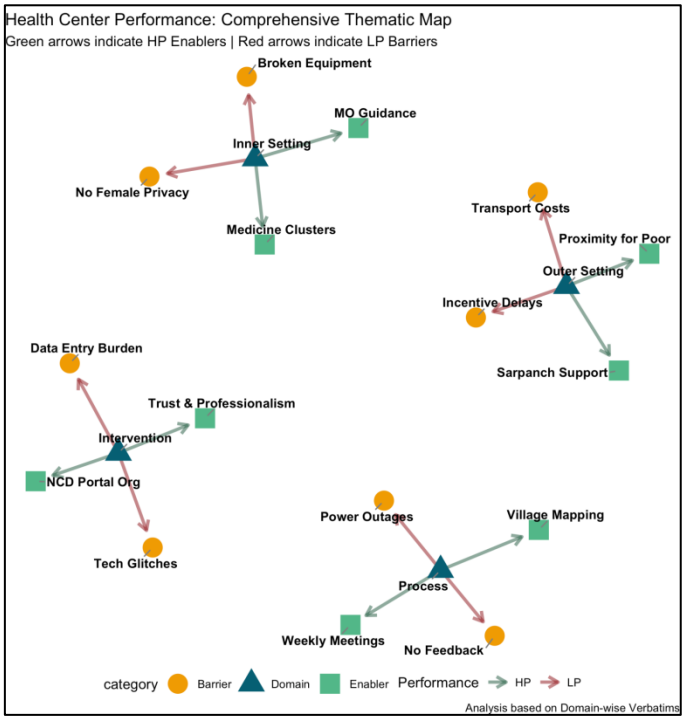


Figure 3: Health center performance: comprehensive thematic map

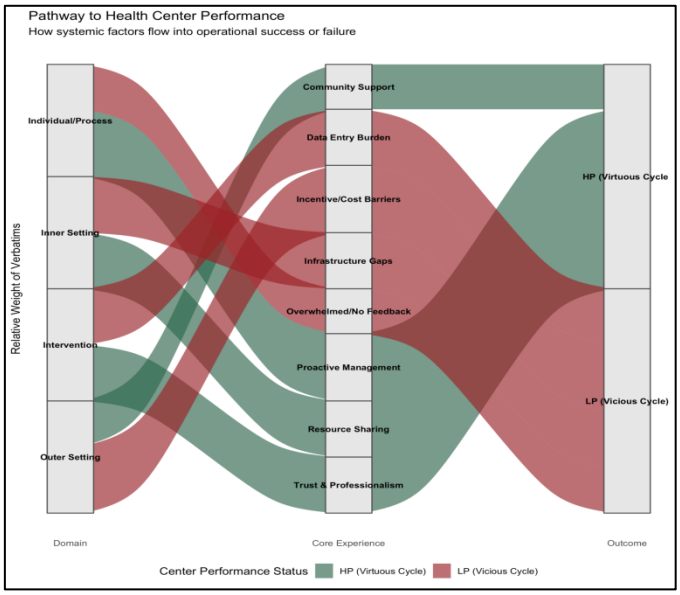


Figure 4: Pathway to health center performance (sankey diagram)

Discussion:

The implementation of Ayushman Arogya Mandirs (AAMs) in rural Central India represents a complex adaptive system where technical efficiency is influenced more by human agency and local climate than by the mere provision of infrastructure. This qualitative study, guided by the Consolidated Framework for Implementation Research (CFIR) and informed by prior Data Envelopment Analysis (DEA) categorization, provides insight into the drivers of efficiency in the implementation of the Ayushman Arogya Mandir (AAM) programme. By using DEA to distinguish high- and low-performing centres before qualitative exploration, the study moved beyond anecdotal accounts to systematically identify implementation factors associated with performance variation. The findings show that technical efficiency in AAMs is not merely a function of infrastructure or resource availability but is strongly shaped by implementation climate, human agency and local leadership. Across all centres, constructs from all five CFIR domains influenced implementation, with innovation characteristics, inner setting and process emerging as particularly influential. A central contribution of this study is the identification of divergent implementation pathways across high-performing (HP) and low-performing (LP) centres. Importantly, factors across CFIR domains did not operate in isolation but interacted to produce reinforcing patterns of performance. In HP centres, supportive team environments, positive perceptions of the intervention and active feedback mechanisms combined to create a "virtuous cycle" of engagement and continuous improvement. In contrast, LP centres experienced a convergence of constraints including resource limitations, weak feedback structures and perceived administrative burden resulting in a "vicious cycle" characterized by disengagement and suboptimal performance. These contrasting pathways are conceptualized in **Figure 4** and provide a useful framework for understanding how similar inputs can yield markedly different outcomes. Among the CFIR domains, the inner setting emerged as the most influential determinant of performance variation. High-performing centres exhibited a strong learning climate characterized by open communication, shared problem-solving and informal peer networks. Staff frequently used lateral communication channels (*e.g.*, peer messaging groups) to resolve operational issues such as reagent shortages or vaccine logistics. This distributed leadership model enabled continuity of services despite external pressures and aligns with studies by Sheehan *et al.* **[9].** Highlighting the centrality of communication in primary care implementation success. Conversely, low-performing centres operated within more rigid hierarchies where communication was largely vertical and decision-making centralized. This often resulted in delayed responses to operational challenges and reduced adaptability. Digital reporting was commonly perceived as an externally imposed burden rather than an integrated care tool, reducing perceived compatibility of the innovation. These findings reinforce that the success of national programmes relies not only on sound design but also on the adaptive capacity of local health systems. In addition to organizational context, individual-level characteristics, particularly self-efficacy, played a critical role. Community Health Officers in HP centres demonstrated greater confidence and ownership of their clinical roles, facilitating proactive engagement with NCD services and patient care. This apparent "identity shift" from referral-based function to primary care provider contributed to improved service utilization and community trust. Strong knowledge and positive beliefs about

the innovation fostered greater patient trust and higher OPD utilization. This observation aligns with implementation literature showing that provider motivation and professional identity strongly influence programme success **[10, 11].** In contrast, CHOs in low-performing centres often retained a referral-oriented mind set, limiting clinical ownership and affecting achievement of NCD screening and treatment targets. Similar findings have been reported where role ambiguity and low professional confidence hinder programme delivery **[12].** Perceptions of the intervention itself also shaped implementation outcomes. An important finding was the paradox of resource standardization. Many high- and low-performing centres operated under similar staffing and drug availability conditions. However, high-performing centres showed greater "resource elasticity," creatively navigating constraints through informal logistics and teamwork. In these settings, the relative advantage of the AAM model was internalized as a professional upgrade, consistent with findings from Patterson *et al.* **[13]** where perceived benefits drive acceptance. Low-performing centres, however, often viewed the same innovations through the lens of complexity, particularly digital reporting demands. This aligns with Pattnaik *et al.* **[14]** who emphasize the need to integrate new responsibilities without overburdening health workers. The absence of a pilot or trial phase (Trialability) emerged as a key lesson. A phased rollout could have enabled contextual adaptation and workflow refinement before national scale-up **[15-17].** External policies and incentives were perceived as crucial for long-term sustainability. Perceptions around remuneration, particularly among ANMs and ASHAs, risk creating motivation gaps in the workforce. While intrinsic motivation and self-efficacy remain strong, sustained engagement requires commensurate financial and professional recognition **[18].** This reflects broader evidence linking employment conditions and incentives to implementation success **[19].** Importantly, stakeholders generally did not view programme complexity as a technical challenge but rather as an issue of workload and time management. CHO effectiveness was closely linked to manageable workloads and supportive team structures, consistent with prior research **[20].** The findings also highlight the critical role of implementation processes**,** particularly mechanisms for reflecting and evaluating performance. HP centres engaged in regular review of targets and utilized informal feedback systems to guide improvements. In contrast, LP centres largely perceived implementation as a top-down process, with limited opportunities for local learning or adaptation. Strengthening feedback loops and decentralizing performance monitoring may therefore be key to improving programme effectiveness. Continuous evaluation of incentive systems and operational processes may further enhance retention and motivation **[21, 22].** These findings have important policy implications. First, interventions aimed at improving AAM performance should move beyond infrastructure provision to focus on strengthening team dynamics, leadership and communication systems. Second, establishing peer-learning platforms**,** such as cluster-based mentorship between high- and low-performing centres, could facilitate the transfer of practical, context-specific knowledge. Third, formalizing task-sharing practices may help reduce administrative burden on CHOs and improve overall efficiency. Finally, training programs should incorporate components on leadership, teamwork and problem-solving, in addition to clinical competencies. This study has several strengths, including the integration of quantitative efficiency analysis with qualitative inquiry with inclusion of diverse stakeholders, enabling a more nuanced understanding of performance variation. The use of a theory-driven framework (CFIR) further strengthens the analytical depth and transferability of findings. By integrating DEA-based efficiency categorization with qualitative inquiry, this study moves beyond descriptive assessments to identify implementation mechanisms underlying performance variation However, certain limitations should be acknowledged. The study was conducted in a single rural block, which may limit generalizability to other settings. Additionally, findings are based on self-reported experiences and may be subject to social desirability bias. While the DEA-based categorization provided a robust basis for comparison, it is dependent on the quality of routine health data. Future research across diverse contexts is needed to validate and extend these findings.

Conclusion:

We show that performance variation among Ayushman Arogya Mandirs may be influenced equally by implementation climate, team dynamics and provider behaviour as resource availability. High-performing centres appeared to succeed through adaptive problem-solving, stronger communication and greater ownership of program goals. Focused efforts on leadership capacity, peer learning environments and team cohesion may help reduce performance variation and improvement in comprehensive primary healthcare delivery through AAMs.

Acknowledgements:

The authors would like to thank all participants for generously sharing their time and experiences. We would like to express our sincere gratitude to our Head of Department for his invaluable support and guidance, which was instrumental in mobilizing community health workers for this study. We also extend our thanks to the Senior Residents, Junior Residents and interns at the parent institute for their dedicated assistance during the data collection period.

Funding:

This study was funded by the Indian Council of Medical Research (ICMR), New Delhi, under an MD thesis grant (Grant No. 3/2/MD-thesis/2021; Reference ID: MD21JUN-0163). The funding body had no role in the study design, data collection, analysis, interpretation of data, the writing of the manuscript, or the decision to submit the paper for publication.

Data availability statement:

The datasets generated and analysed during the current study are not publicly available to protect participant confidentiality but are available in an anonymised format from the corresponding author on reasonable request.

Declarations:
Ethical approval and consent to participate. The study protocol was reviewed and approved by the Institutional Human Ethics Committee (Reference No: IHEC-LOP/2020/PG/July/08). The study was conducted in accordance with the ICMR National Ethical Guidelines for Biomedical and Health Research involving Human Participants. Written informed consent was obtained in the local vernacular language from all participants prior to their inclusion in the study. Permission for data retrieval and stakeholder interviews was also obtained from the Deputy Director, Ayushman Bharat, National Health Mission (NHM), Madhya Pradesh.

Conflict of interest:
The authors have no conflicts of interest associated with the material presented in this paper.

Others:
This manuscript has not been published as a preprint and is not under consideration elsewhere.

References:
[1] Lahariya C. *Indian Pediatr*. 2018 **55**:495. [PMID: 29978817]
[2] Gulati S *et al. J Family Med Prim Care*. 2026 **15**:16. [PMID: 41816146]
[3] Batra *et al. International Journal of Community Medicine and Public Health*. 2025 **12**:1557. [DOI: 10.18203/2394-6040.ijcmph20250654]
[4] Murphy J *et al. Int J Ment Health Syst*. 2021 **15**:30. [PMID: 33812375]
[5] Tripathi N *et al. BMC Prim Care.* 2024 **25**:360. [PMID: 39367295]
[6] Reardon CM *et al. Implement Sci.* 2025 **20**:39. [PMID: 40819067]
[7] Zakowska I & Godycki-Cwirko M. *Fam Pract.* 2020 **37**:147. [PMID: 31605609]
[8] Ivankova NV *et al. Field Methods*. 2006 **18**:3. [DOI: 10.1177/1525822X05282260]
[9] Sheehan J *et al. J Multidiscip Healthc*. 2021 **14**:493. [PMID: 33654406]
[10] Mbalinda SN *et al. Ann Glob Health*. 2024 **90**:61. [PMID: 39398104]
[11] https://www.sciencedirect.com/science/article/pii/S0022437524000227
[12] Zhang HL *et al. BMC Psychiatry*. 2023 **23**:516. [PMID: 37464335]
[13] Patterson DA *et al. Hum Serv Organ Manag Leadersh Gov*. 2014 **38**:215. [PMID: 25101308]
[14] Pattnaik T *et al. Journal of Medicinal and Chemical Sciences*. 2022 **5**:42. [DOI: 10.26655/JMCHEMSCI.2022.1.6]
[15] Prasad N *et al. Cureus.* 2024 **16**:e76445. [PMID: 39866969]
[16] Nabi S *et al. J Family Med Prim Care*. 2024 **13**:5781. [PMID: 39790767]
[17] Ramani-Chander A *et al. BMJ Public Health*. 2024 **2**:e000710. [PMID: 40018150]
[18] Hart D *et al. PLoS One*. 2026 **21**:e0341811. [PMID: 41628200]
[19] Liu W & Liu Y. *Front Public Health.* 2022 **9**:778101. [PMID: 35223756]
[20] https://www.sciencedirect.com/science/article/pii/S2096248717300012
[21] He AJ. *Health Policy Plan*. 2023 **38**:218. [PMID: 36103333]
[22] Noorazem N *et al. Jurnal Intelek*. 2021 **16**:40 [DOI: 10.24191/ji.v16i1.362]

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