

Original Research Article

Operational Readiness of Accredited Social Health Activists for Community-Based Noncommunicable Disease Screening in Rural Gujarat: A Cross-sectional Study

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ABSTRACT

Background: Noncommunicable diseases (NCDs) are a major contributor to premature morbidity and mortality in India. Accredited Social Health Activists (ASHAs) play a key role in implementing community-based NCD screening through household-level risk assessment and referral using the Community-Based Assessment Checklist (CBAC). The aim of the study was to evaluate the operational readiness of ASHA workers for population-based NCD screening regarding logistics, training, supportive supervision, incentive distribution, and digital infrastructure.

Material and Methods: A descriptive cross-sectional study was conducted at two Primary Health Centres (Sokhda and Varnama) in the rural Vadodara district, Gujarat. All eligible and available ASHAs were included using a universal sampling approach. Data were collected between September and November 2023 using a pre-tested semi-structured questionnaire. Descriptive statistics were generated using Microsoft Excel 2019 and Jamovi 2.3.38. Continuous variables were presented as mean (standard deviation) and median; categorical variables as frequencies and percentages.

Results: A total of 49 ASHAs participated, with a mean work experience of 9.4 years and mean population coverage of 1,217 individuals. CBAC forms were available to 86% of ASHAs, while family folders (45%) and smartphones (31%) were limited. CBAC training coverage was high (86%); however, only 39% had received CPHC-NCD application training. Supportive supervision was widely reported (92%), but incentive disbursement was predominantly irregular (90%). Referral (22%) and follow-up (55%) incentives were inconsistently received.

Conclusion: ASHAs demonstrated substantial field experience and supervisory support but faced significant gaps in digital readiness, logistical supplies, and incentive regularity. Addressing these systemic gaps is critical to strengthen community-based NCD screening under NP-NCD.

Keywords: Accredited Social Health Activists, Noncommunicable Diseases, Digital Divide, Community-Based Screening, Primary Health Care

INTRODUCTION

Currently, noncommunicable diseases (NCDs) are the leading cause of global mortality. India closely mirrors this trend, where chronic conditions account for over 60% of all deaths and a significant portion of disability-adjusted life years.¹ The escalating prevalence of cardiovascular conditions, diabetes, and cancers requires robust population-level prevention strategies. Consequently, India's health policy has transitioned toward strengthened primary care, integrating previously separate vertical programs into the unified National Programme for Prevention & Control of Non-Communicable Diseases (NP-NCD).²

Accredited Social Health Activists (ASHAs) sit at the core of this strategy. Originally introduced to improve maternal and child health, this massive community health workforce has seen its duties expand into NCD risk assessment and prevention.³ Because they are deeply embedded within local communities, ASHA workers are theoretically well-positioned to conduct household enumeration, deliver health education, and link high-risk individuals to Health and Wellness Centres (HWCs) using the Community Based Assessment Checklist (CBAC).

Despite these clear policy mandates, field evidence suggests that grassroots readiness varies heavily. Research from various states reveals that while ASHA workers often understand basic hypertension and diabetes screening, they face systemic hurdles. These include inadequate cancer-related training, broken referral links, lack of equipment, and heavy workloads.⁴⁻⁹ Furthermore, the NP-NCD relies heavily on digital transformation. The program expects ASHAs to utilize digital portals for real-time surveillance. Unfortunately, early reports highlight a profound digital divide characterized by poor internet connectivity, a lack of devices, and insufficient software training.^{10,11} Evaluating primary care readiness across HWCs and broader South Asian settings reveals that despite policy shifts toward NCD management, workforce capacity, structural financing, and knowledge gaps remain significant barriers to effective service delivery.¹²⁻¹⁴

Evaluating actual field readiness is necessary to ensure the NP-NCD's goals for early detection and continuous care are met. Therefore, the primary aim of this study was to assess the functional preparedness of ASHA workers for community-based noncommunicable disease screening in rural Gujarat, specifically examining the availability of logistics, training status, supervision, and digital readiness.

MATERIAL AND METHODS

The study utilized a descriptive cross-sectional design. We conducted the research at two conveniently selected Primary Health Centres (PHC Sokhda and PHC Varnama) under the jurisdiction of the Vadodara Rural district in Central Gujarat. Using a universal sampling approach (non-probability), we approached all eligible ASHA workers within these two PHCs. Inclusion criteria required ASHAs to be actively working between September and November 2023 and involved in current NCD screening activities. Those unwilling to participate were excluded.

A printed, pre-tested, semi-structured questionnaire was used to gather the data. The tool captured socio-demographic details, work experience, population coverage, availability of logistical supplies (family folders, CBAC forms, measuring tapes, smartphones), training history, supportive supervision, and incentive regularity. Prior to commencing the survey, we obtained administrative approval from the Medical Officers of the selected facilities and Institutional Ethical Committee. Written informed consent was secured from every participant after clearly explaining the study's purpose and ensuring data confidentiality. Ethical principles of voluntary participation and anonymity were strictly maintained throughout the data collection process. Data entry and statistical analysis were performed using Microsoft Excel (Version 2021) and Jamovi (Version 2.3.38). Descriptive statistics were heavily utilized to summarize the findings. Continuous variables demonstrating normal distribution were presented as Mean (Standard Deviation, SD) and Median, along with the Range where applicable. Categorical variables were reported as Frequencies (Percentages).

RESULTS

A total of 49 Accredited Social Health Activists participated in the study. Of these, 23 (47%) were working at Sokhda Primary Health Centre and 26 (53%) at Varnama Primary Health Centre.

Socio-demographic and Work Profile of ASHAs

The age distribution of ASHAs showed that the largest proportion belonged to the 41-45 years age group (15; 31%), followed by 36-40 years (12; 24%) and 26-30 years (7; 14%). ASHAs aged 21-25 years constituted 2 (4%), while those aged 50-55 years accounted for 1 (2%) of the study population (Figure 1).

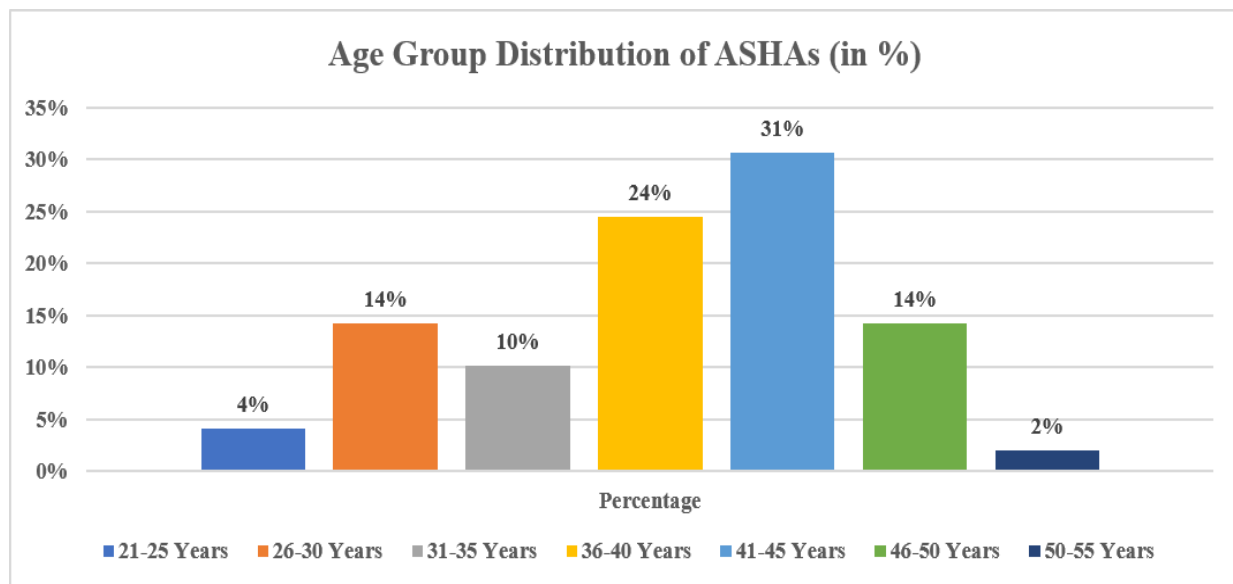


Figure-1 : Age group wise distribution of ASHAs

The duration of work experience among ASHAs ranged from 0.5 to 14 years, with a mean of 9.40 years, median of 12 years, and a standard deviation of 4.68 years. The population covered by individual ASHAs varied widely, ranging from 516 to 3,364 individuals, with a mean population coverage of 1,217.14, a median of 1,167, and a standard deviation of 484.32. Nearly all ASHAs (48; 98%) reported completing population coverage for NCD screening within six months, while 1 ASHA (2%) reported an inability to complete coverage within the stipulated time.

Availability of Logistics and Supportive Supervision

Availability of logistics required for community-based NCD screening varied across components (Table 1). CBAC forms were available to 42 ASHAs (86%), while family folders were available to 22 (45%). Measuring tape and beneficiary lists were available to 29 ASHAs (59%). Provision of smartphones for programme-related activities was reported by 15 ASHAs (31%).

Table 1: Logistics Availability and Supportive Supervision Status (N=49)

Input Component	Frequency (n)	Percentage (%)
Availability of Family Folders	22	45%
Availability of CBAC Forms	42	86%
Availability of Measuring Tape/Beneficiary List	29	59%
Provision of Smartphone	15	31%
Supportive Supervision Provision	45	92%

Supportive supervision was reported by 45 ASHAs (92%), whereas 4 (8%) reported that they did not receive any supportive supervision. The sources of supervision included multiple cadres, as depicted in Figure 2.

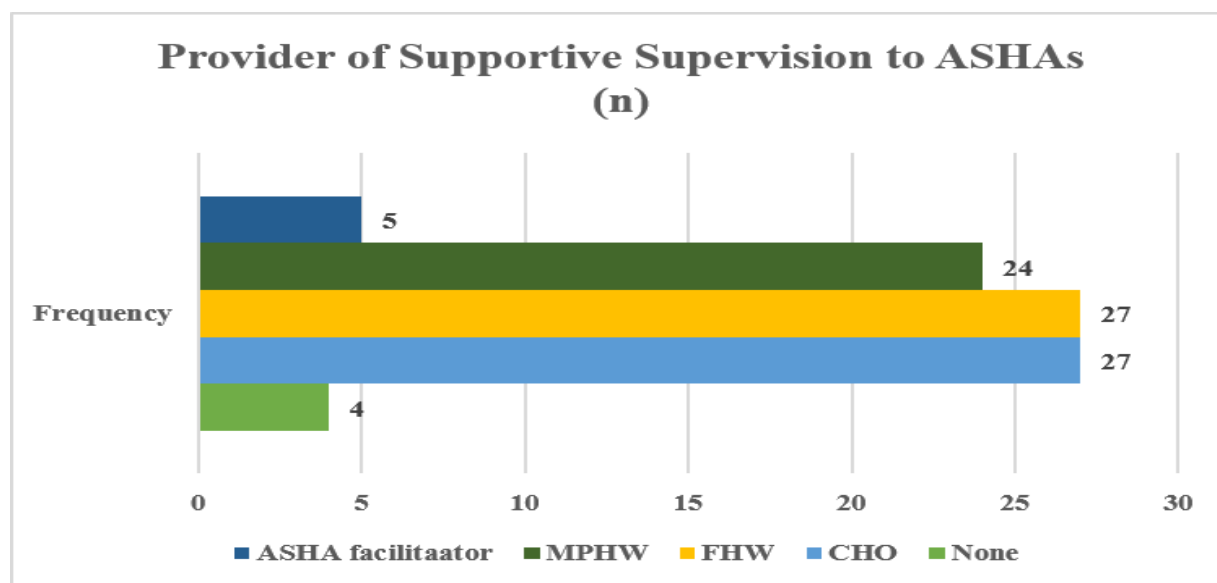


Figure-2 : Supportive Supervision Provider (N=49)

Follow-up Mechanisms

Follow-up details for individuals screened under the NCD programme were received by 47 ASHAs (96%), while 2 (4%) reported not receiving such information. Follow-up details were communicated by Community Health Officers (26; 53%), Medical Officers (15; 31%), Multipurpose Health Workers (15; 31%), and Female Health Workers (14; 29%) (Figure 3).

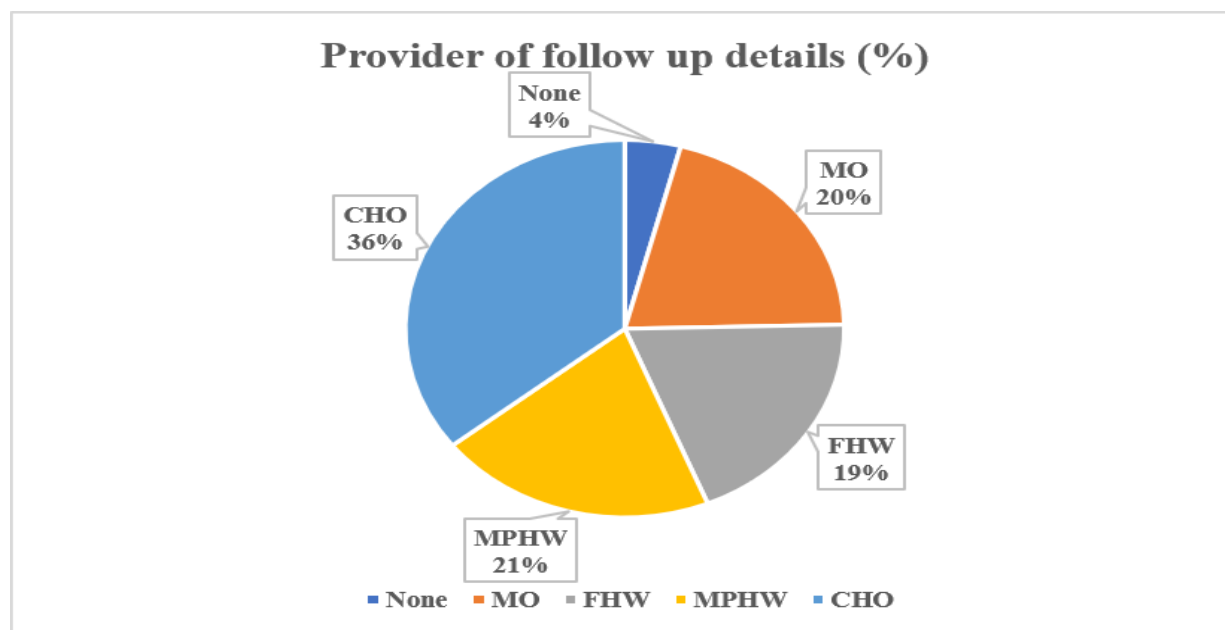


Figure-3 : Provider of follow up details (N=49)

Regarding the recommended follow-up interval, 34 ASHAs (69%) reported a follow-up period of one month, while 11 (22%) stated that they were unaware of the follow-up timeline. Smaller proportions reported follow-up intervals of six months (1; 2%), one year (2; 4%), or other durations (1; 2%) (Figure 4).

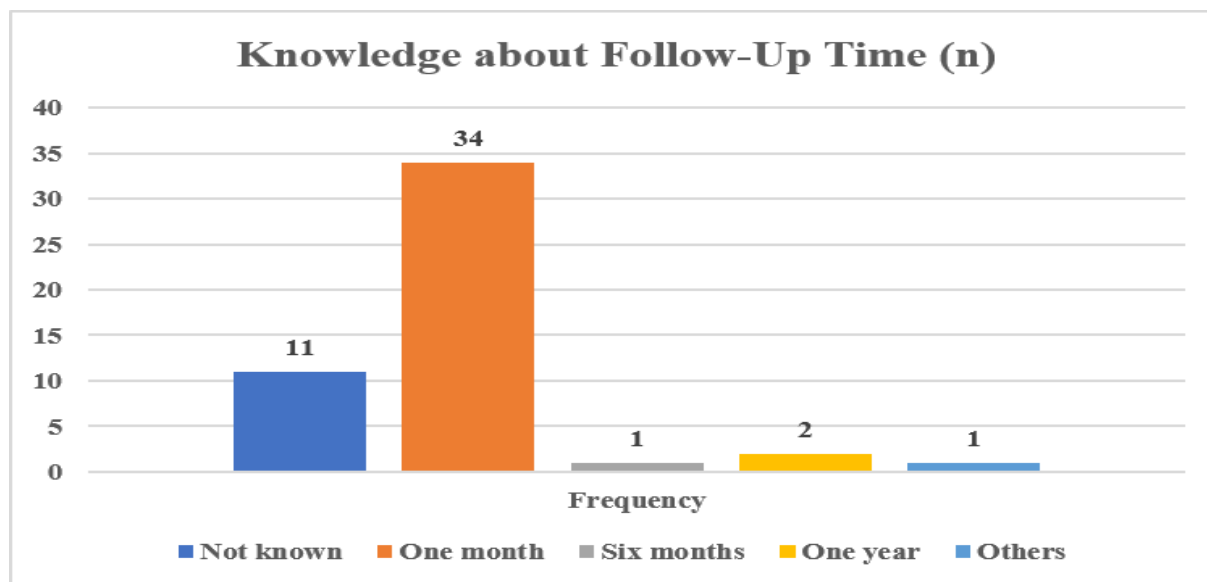


Figure-4 : Knowledge about follow up time (N=49)

Incentive Provision

All ASHAs (49; 100%) received incentives through Direct Benefit Transfer to their bank accounts. However, only 5 ASHAs (10%) reported receiving incentives on a regular or target-based basis, while 44 (90%) reported irregular payments (Table 2). Referral incentives were received by 11 ASHAs (22%), whereas 38 (78%) reported not

receiving referral-related incentives. Follow-up incentives were received by 27 ASHAs (55%), while 22 (45%) reported not receiving such incentives.

Table 2: Incentive Provision and Regularity Status (N=49)

Incentive Component	Category	Frequency (n)	Percentage (%)
Timeliness of Incentive Provision	Regular/Target-based	5	10%
	Irregular	44	90%
Referral Incentive Received	Yes	11	22%
Follow-up Incentive Received	Yes	27	55%

Training Status

Training related to CBAC form filling had been received by 42 ASHAs (86%). Among those trained, the most commonly reported year of training was 2019 (26; 62%), followed by 2021 (5; 10%), while 11 ASHAs (22%) could not recall the year of training (Table 3). With respect to training duration, 35 ASHAs (71%) reported receiving five-day training, whereas 7 (14%) reported a one-day training.

Table 3: Training Status for CBAC Form and CPHC-NCD Application (N=49)

Training Component & Characteristics	Frequency (n)	Percentage (%)
CBAC Form Filling (Physical/Paper)		
Training Received		
Yes	42	86%
No	7	14%
<i>Details of CBAC Training (Among Trained, n=42)</i>		
Duration of Training		
5 Days	35	83%
1 Day	7	17%
Year of Training		
2019	26	62%
2021	5	12%
Could not recall	11	26%

CPHC-NCD Application (Digital Portal)		
Training Received		
Yes	19	39%
No	30	61%
<i>Details of Digital Training (Among Trained, n=19)</i>		
Year of Training		
2021	17	89%
2022	1	5%
Could not recall	1	5%
Training Provider Cadre		
Medical Officer (MO)	17	89%
Block Health Officer (BHO)	1	5%
Community Health Officer (CHO)	1	5%

Training in the use of the NP-NCD digital application/portal had been received by 19 ASHAs (39%), while 30 (61%) reported not receiving any such training. Among the trained ASHAs, 17 (35%) reported receiving training in 2021, 1 (2%) in 2022, and 1 (2%) could not recall the year. Training was primarily conducted by Medical Officers (17; 35%), with limited involvement from Block Health Officers (1; 2%) and Community Health Officers (1; 2%).

DISCUSSION

The primary finding of this study reveals a workforce that is highly experienced and well-supervised, yet underequipped to meet the digital and logistical demands of modern NCD screening. While basic awareness of the Community-Based Assessment Checklist (CBAC) is high, the critical infrastructure required to close the care loop—smartphones, digital training, and regular financial incentives—is severely lacking in the surveyed region.

These observations align closely with broader national assessments. Shukla et al. noted that while community health workers exhibit competence in basic diabetes and hypertension screening, their performance drops significantly when lacking proper facility linkages and standardized training.⁴ A lack of family folders (available to only 45%) and measuring tapes (59%) in our cohort mirrors operational bottlenecks documented in Assam and Maharashtra, where absent logistics directly crippled community follow-up rates and program efficiency.^{8,9,15}

The transition to digital health records under the NP-NCD remains a clear hurdle. The program heavily relies on the Clinical Decision Support System and automated portal referrals. However, as Meghana et al. and Dixit have highlighted, expecting frontline workers to adopt digital workflows without providing adequate hardware or software training leads to massive data inaccuracies and worker frustration.^{5,11} International evidence similarly indicates that electronic health records improve chronic disease management but require integrated, user-friendly systems to overcome fragmentation.¹⁶ In our cohort, a mere 31% were provided with smartphones dedicated to program activities. Expecting a digital transformation without the foundational hardware inevitably forces dual data-entry

burdens on an already overstretched workforce.¹⁰ Consequently, task rationalization is urgently needed to prevent the displacement of routine duties and effectively manage the cognitive load on ASHA workers.¹⁷

Financially, the irregularity of incentives threatens program sustainability. While direct bank transfers have streamlined the delivery method, 90% of the participants in our study reported that these payments arrived irregularly. Delayed compensation is a documented driver of low morale. Furtado et al. previously identified that complex documentation processes routinely delay ASHA payments, a barrier that urgently requires administrative simplification.¹⁵

A notable strength observed in the current setting was the robust supervisory environment. With 92% of workers reporting supportive supervision, mostly from Community Health Officers, there is a clear foundation for improved continuum of care. Garg et al. demonstrated that active HWC catchments with strong supervision dramatically improve public sector utilization for chronic diseases.¹² This aligns with systematic reviews confirming that an ASHA's knowledge and programmatic performance improve substantially with better structured supervision and refresher education.¹³

This study carries certain limitations. The reliance on self-reported survey data introduces potential recall bias, particularly regarding historical training dates. Furthermore, the geographic scope is restricted to two PHCs in a single district, meaning these findings represent a localized snapshot rather than a statewide generalization. Objective verification of portal data quality and actual patient referral completion rates were not measured.

CONCLUSIONS

ASHA workers in rural Gujarat demonstrate strong community integration, practical field experience, and benefit from active supervisory support. However, their full readiness to execute community-based NCD screening under the NP-NCD is heavily constrained by systemic deficits. Urgent attention must be directed toward bridging the digital divide through hardware provisioning and targeted software training. Furthermore, streamlining the payment mechanisms to ensure reliable, timely incentives is necessary to maintain motivation and ensure the long-term success of early chronic disease detection at the grassroots level.

REFERENCES

1. Thakur JS, Paika R, Singh S. Burden of noncommunicable diseases and implementation challenges of National NCD Programmes in India. *Med J Armed Forces India*. 2020;76(3):261–7.
2. Ministry of Health and Family Welfare. National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD) Operational Guidelines. Government of India; 2023.
3. Reddy KS, Vaidyanathan G, Sinha A. Healthcare for All: Community Action and Public Systems for an Inclusive India. 1st ed. London: Routledge; 2023.
4. Shukla P, Priya H, Meena JK, Singh S, Bairwa M, Saini A. Readiness and Motivation of ASHAs towards Their Participation in Non-Communicable Disease Control Programme in North India: A Cross Sectional Study. *Asian Pac J Cancer Prev*. 2023;24(9):3235–41.
5. Meghana R, Singh J, Huda R. Challenges, barriers, and facilitators in implementing digital health initiatives for NP-NCD management in India's public health system: A scoping review. *Clin Epidemiol Glob Health*. 2025.
6. Saini A, Agarwal M. Combating non-communicable diseases in rural Lucknow: Are the skills and knowledge of female health workers adequate? *Int J Community Med Public Health*. 2020;7(9):3480.

7. Samal J. Utilization of accredited social health activists in the community-based assessment of noncommunicable diseases: Experiences from a tribal district of Chhattisgarh. *Indian J Health Sci Biomed Res KLEU*. 2020;13(1):57.
8. Abdel-All M, Abimbola S, Praveen D, Joshi R. What do Accredited Social Health Activists need to provide comprehensive care that incorporates non-communicable diseases? Findings from a qualitative study in Andhra Pradesh, India. *Hum Resour Health*. 2019;17(1):73.
9. Oswal K, Kanodia R, Pradhan A, Avhad M, Sethuraman L, Kharodia N, et al. The role of frontline community health workers in the non-communicable disease screening program in Assam, India: Current trends, challenges and scope - A time and motion study. *J Cancer Policy*. 2020;26:100254.
10. Jat M, Gupta M, Prinja S. Implementation Status and Usability of Digital Health Interventions Among Health Care Workers and End Users at the Primary Health Care Level in Chandigarh, North India: Cross-Sectional Study. *JMIR Form Res*. 2025;9:e69824.
11. Dixit A. Digitalization of ASHA Work: Challenges and Way Forward. *Int J Health Syst Implement Res*. 2024;8(1):12–6.
12. Garg S, Tripathi N, Bebarta KK, Sinha N, Tiwari A. Effectiveness of the health and wellness centers in improving identification and primary care of non-communicable diseases in Chhattisgarh State of India. *J Fam Med Prim Care*. 2024;13(8):2092.
13. Singh S, Tiwary B, Barik M, Arora H, Abraham SS, Majumdar P, et al. Knowledge of Accredited Social Health Activists in India: a systematic review and meta analysis of evidence drawn from primary studies published between 2005 and 2022. *BMC Health Serv Res*. 2025;25(1):58.
14. Ahmed SM, Krishnan A, Karim O, Shafique K, Naher N, Srishti SA, et al. Delivering non-communicable disease services through primary health care in selected south Asian countries: are health systems prepared? *Lancet Glob Health*. 2024;12(10):e1706–19.
15. Furtado KM, Mehndiratta A, Bauhoff S, Pawar S, Luo A, Jha A, et al. Community health worker payment processes: a qualitative assessment of experiences in two Indian states. *Health Policy Plan*. 2025;40(4):483–95.
16. Hazazi A, Wilson A. Leveraging electronic health records to improve management of noncommunicable diseases at primary healthcare centres in Saudi Arabia: a qualitative study. *BMC Fam Pract*. 2021;22(1):106.
17. Shilpa R, Patrick HA, Sathyanarayana N, Kareem J. Examining the Effectiveness of ASHA Workers in Providing Healthcare Services in Rural and Urban Areas of Bengaluru. *WSEAS Trans Environ Dev*. 2025;21:629–47.

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