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Accredited Social Health Activists and their contribution to maternal healthcare service utilisation in India a systematic review

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Abstract

The Accredited Social Health Activist (ASHA) program, launched under India's National Rural Health Mission (NRHM), serves as a cornerstone of community-based healthcare delivery, aiming to improve maternal health service utilisation through grassroots mobilisation. This systematic review synthesises empirical evidence from studies published between 2005 and 2025, examining ASHAs' contribution on antenatal care coverage, skilled birth attendance, and institutional deliveries across diverse Indian states. Findings reveal substantial improvements, including a 17% increase in antenatal care visits and a 38% rise in institutional births, underscoring ASHAs' pivotal role in advancing maternal health outcomes. Despite these achievements, several systemic challenges continue to hinder optimal program performance. Persistent issues such as training inconsistencies, delayed incentive disbursements, inadequate supervisory support, and excessive workload limit ASHAs' efficiency and motivation. Moreover, while ASHAs demonstrate strong competencies in maternal and child health, gaps remain in managing non-communicable diseases (NCDs) and addressing mental health concerns. Motivation among ASHAs is sustained through both intrinsic factors—such as community recognition and a sense of purpose—and extrinsic factors, including financial incentives and career progression opportunities. The review highlights the urgent need to strengthen training curricula by incorporating modules on chronic disease management and psychosocial support, institutionalise electronic payment systems to ensure timely incentive delivery, and implement structured supervisory frameworks for ongoing professional development. Strengthening these mechanisms will not only enhance ASHAs' capacity and retention but also contribute to achieving India's broader goals of equitable and sustainable primary healthcare delivery.

Keywords Accredited social health activist, Maternal healthcare utilisation, Community health workers, Antenatal care, Skilled birth attendance, Motivation, Health systems strengthening

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1 Introduction

Predictable maternal health complications persist as substantial worldwide health problems, especially in low- and middle-income countries (LMICs) because these nations have restricted access to essential and quality maternal healthcare services [3]. Global initiatives for maternal and newborn health success emphasise community health workers (CHWs) as an essential workforce to close healthcare gaps in service delivery [24]. With one-sixth of the global population residing in India, the country continues to have high maternal mortalities despite big health system investments [22]. With an estimated 19,000 annual maternal deaths, India has the second place in the world after the Democratic Republic of Congo with 7.2% of the total maternal deaths worldwide.

Among the 17 SDGs, the health-related goals identified in SDG 3: Ensure healthy lives and promote well-being for all at all ages, target that, By 2030, low maternal mortality ratio [MMR] in the world is reduced to less than 70 per 100,000 live births [32]. The public health spending increased to 2.1% of GDP in 2023, which is a signal of aggressive spending by the government to enhance healthcare access and outcomes [18].

The investments in the big health system in India are in the form of more public health funding and policy innovations through the National Rural Health Mission (NRHM) and its new name, the National Health Mission (NHM). The key aspect of these reforms was that Accredited Social Health Activists (ASHAs) were introduced, who today number more than 1.04 million community health workers, and the population of India amounts to about 1.4 billion, which makes CHWs to population about 1:1,350 (Ministry of Health and Family Welfare [18].

Since 2005, the Government of India has launched the National Rural Health Mission (NRHM) through which the Accredited Social Health Activists (ASHAs) became a central program (Ministry of Health and Family Welfare [14]. The Government of India established ASHAs through the MoHFW as a network of female health practitioners responsible for boosting public health service participation as well as maternal and child health support and behavioral transformation at community levels [15].

The ASHA program uses evidence from all around the world about Community Health Worker effectiveness. The global healthcare model proved effective through programs such as China's Barefoot Doctors, Brazil's Visitadoras and the Jamkhed Comprehensive Rural Health Project in India, which showed trained and supported lay health workers could provide basic curative and preventive services effectively [8]. These models demonstrated the big impact CHWs made in minimising maternal and child death rates by offering house visits coupled with health facility connections and wellness instruction. Lessons from these global programs underscore that adequate training, community integration, and sustained government support are essential prerequisites for CHW program success—insights that directly informed the design of the ASHA initiative in India.

There has been a significant improvement in the maternal health outcomes, as the Maternal Mortality Ratio (MMR) has reduced to 93 per 100,000 live births. On the same note, the Infant Mortality Rate (IMR) decreased to 27 per 1,000 live births in 2021, down to 39 per 1,000 live births in 2014, whereas the Neonatal Mortality Rate (NMR) dropped to 19 per 1,000 live births in 2021, as compared to 26 per 1,000 live births in 2014.

Moreover, the Under-Five Mortality rate (U5MR) had declined to 31/1,000 live births in 2021 [19]. The World Health Organisation recommends Community Health Workers because they help solve human resource deficiencies in healthcare delivery through task-shifting programs [32].

ASHAs entered the Indian healthcare sector through a dual concept that united rights-based principles with pragmatic measures to support weak, established health systems. ASHAs who originated from their communities were responsible for taking care of 1000 people while connecting local needs to district health services [14]. The workforce of ASHAs performed functions that included the management of antenatal exam attendance and the support of institutional birth deliveries, along with family planning mentoring, nutrition education and promotion of vaccines and post-childbirth care [15, 25].

Multiple assessment studies conducted in the past have demonstrated that ASHAs effectively improve maternal health service participation rates. The [25] determined that ASHAs played a substantial role in encouraging women to give birth in a healthcare facility and receive their antenatal check-ups on time. The exposure to the ASHA program, as measured by the Indian Human Development Surveys, linked to increased rates of a minimum of one antenatal care visit by 17%, while skilled birth attendance grew by 26% and facility-based delivery escalated by 28% [1].

The program has encountered multiple obstacles despite its achievements. The Indian government has documented major barriers which prevent ASHA program success, including performance disparities between states and inconsistent training standards, as well as fragmented supervision methods and payment delays [2, 27]. The assessment conducted by Singh et al. [28] showed ASHAs had an average understanding (62% pooled prevalence) of maternal health issues but demonstrated significant knowledge shortages when it came to treating non-communicable diseases. Two scientific studies from Delhi and Uttar Pradesh discovered that ASHAs understood their duties extensively but faced practical obstacles which limited their success, including insufficient transportation and neighbourhood opposition and insufficient emergency safety measures [10, 20].

Academic research confirms that intrinsic elements play essential roles in determining the work performance of ASHAs. Community recognition, together with personal efficacy, along job satisfaction, maintains ASHA motivation according to Gopalan et al. [7]. The delegation of multiple responsibilities without appropriate support or incentives to ASHAs is linked to their decreased motivation and increased workforce departure [9].

The Ministry of Health and Family Welfare [17] has adopted three policy measures to strengthen ASHA training while developing certification programs with the National Institute of Open Schooling (NIOS) and implementing supportive supervision systems. New technical innovations have not solved existing persistent health system problems. The complete impact of the program remains limited because of contradictory state-level actions combined with restricted career opportunities for ASHAs and health-related social factors. Sustainable development in India requires the ASHA cadre to receive strategic emphasis for both development and sustainability as the country works toward SDG 3 (Good Health and Well-Being) and other goals [29].

This review combines evidence about the contribution and outcome success of ASHAs as maternal healthcare service champions in India. It is important to note that the data drawn upon in this review measure contribution rather than direct causal attribution, given the observational and cross-sectional nature of many included studies. Where the term 'impact' is used, it reflects associations documented in the literature rather than experimentally established causation. The assessment of ASHAs' performance under both positive and negative aspects alongside environmental factors will help develop new approaches to boost maternal health community interventions.

2 Review of literature

2.1 Role of community health workers (CHWs) in maternal healthcare: global evidence

Community health workers known as CHWs serve as key contributors to maternal and child health results across all low- and middle-income countries (LMICs). Research evidence shows that interventions led by community health workers produce major improvements in antenatal care services and facilities, along with institutional delivery systems and newborn healthcare practices [12, 24]. The "Barefoot Doctors" program in China and the "Visitadoras" program in Brazil prove that properly educated CHWs successfully span essential health service gaps in remote and under-represented areas [3].

The positive outcomes from these models led India to implement the ASHA program, which entrusted local women to perform community health work and deliver health education services and support health services [8, 14].

2.2 ASHAs' role in promoting antenatal care (ANC)

Female volunteers from the community serve as ASHAs and have shown positive results in the use of maternal healthcare services across India. Agarwal et al. [1] found that ASHA excellence in public service delivery resulted in higher institutional delivery rates, which increased by 28%, while ANC visit rates rose by 17% above baseline rates. Program Evaluation Organisation of the Planning Commission [25] reported substantial improvements in institutional delivery rates in states which prioritised ASHA interventions among their focus areas (Table 1).

The ASHA program particularly benefited marginalised groups—Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backwards Classes (OBC)—where service access was historically low [1, 27].

2.3 ASHAs and antenatal care (ANC) Uptake

One of the earliest areas of measurable success was in increasing antenatal care coverage. Studies indicate that ASHAs play a key role in:

- Early pregnancy identification
- Registration at public health facilities
- Counselling on danger signs

Table 1 Improvements in Maternal Health Indicators Attributed to ASHA Program (Sources: [1, 25]; IHDS Surveys)

Health Indicator	Pre-ASHA (2005)	Post-ASHA (2015)	% Change
At least one ANC	73.6%	86.2%	+17%
Institutional Births	40.9%	79%	+38.1%
Skilled Birth Attendance	47%	81%	+34%

- Ensuring compliance with iron and folic acid supplementation [10, 11].

The combined maternal health knowledge of ASHAs reaches 62% according to [28], yet their performance varies substantially due to geographic and training standards.

The researchers from [10] studied Delhi and discovered that ASHAs successfully promoted ANC checkups among 94.5% of patients while focusing on the necessity of iron tablets for pregnant women at a rate of 87%. The effectiveness of ASHAs was limited by transportation disadvantages and a lack of sufficient healthcare personnel working in the field.

2.4 ASHAs and skilled birth attendance (SBA) and institutional deliveries

The ASHA program excelled in raising facility-based childbirth rates, which is considered an important achievement of the program. Direct contact with ASHA services through the northeastern and high-focus states resulted in a 25% or higher increase in both SBA and institutional delivery probabilities, according to the research of Agarwal et al. [1] and the [16].

Through Janani Suraksha Yojana (JSY) incentive programs, the government successfully used ASHAs' community networks to motivate women to deliver their babies in health institutions [13, 15].

Research by Mohanty [21] established that women who received ASHA guidance had a 30–50% higher chance of using health facilities for childbirth when compared to those without ASHA interaction.

2.5 Knowledge, skills, and gaps among ASHAs

While ASHAs generally demonstrate sound knowledge in maternal health, gaps persist, especially in emerging health domains:

- Non-communicable diseases (NCDs)
- Mental health
- Advanced newborn care [5, 28]

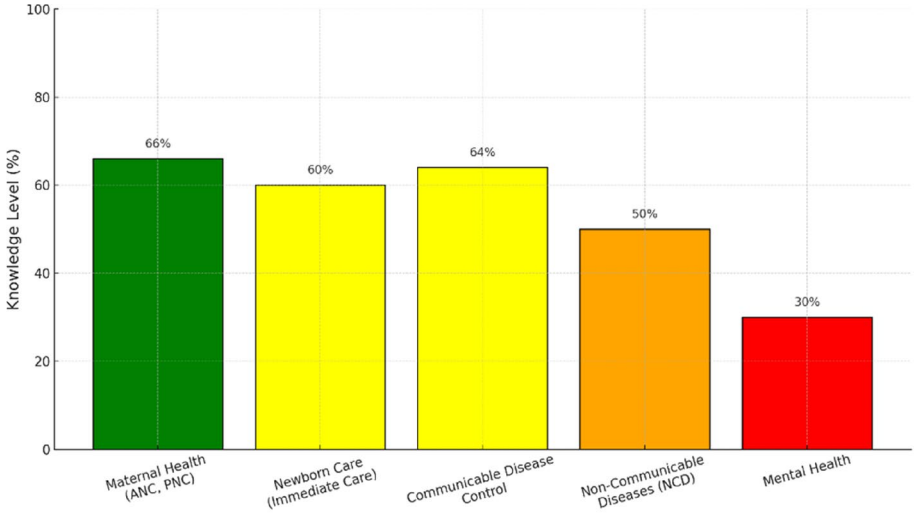


Fig. 1 Domains of ASHA Knowledge: Strengths and Gaps (Source: [5, 28])

The strength of knowledge among ASHAs appears in Fig. 1 as they demonstrate their capabilities within five health domains. ASHAs demonstrate strong competencies in Maternal Health and Communicable Disease Control, but their knowledge about Newborn Care is moderate, and Non-Communicable Diseases and Mental Health receive weak responses and very weak responses, respectively. The data reveal important training priorities which need attention, mainly in developing and treating persistent diseases.

2.5.1 Challenges in ASHA performance

Multiple systemic barriers limit the full potential of ASHAs:

2.5.1.1 Inadequate training and refresher programs States show diverse levels of excellence in ASHA training that consequently affect the effectiveness of maternal health service delivery by ASHAs. States differ in their approach to ASHAs training, where some provide modern updated sessions along with refreshers, yet others conduct uneven or obsolete sessions. Research indicates that ASHAs working in undertrained states perform fewer maternal health tasks since they lack competence and skill sets [2]. ASHA performance and service utilisation reach significant improvement when ASHAs receive regular quality refresher programs, according to Lassi and Bhutta [11]. The training curriculum needs updates to include ongoing challenges, which consist of non-communicable diseases along with mental health issues and COVID-19 approaches, since these problem areas remain insufficient [7].

2.5.1.2 Delayed or irregular incentive payments Incentive payments provided to ASHAs face delays along with insufficient funding depending on their performance achievements in pregnant women enrollment and antenatal and postnatal care activities. Financial instability within rural areas leads to a demotivational cycle as it affects ASHAs most significantly. The authors [27], demonstrate that unpredictable payments harm ASHA service dedication, which results in high worker turnover. The effectiveness of global community health workforces depends directly on financial incentives that arrive on time and keep their promised value, according to [9]. Payments that arrive late by even short periods of weeks force community health workers to decrease their service levels and to have elevated rates of discontinuing their work.

2.5.1.3 Poor supportive supervision ASHAs encounter insufficient mentorship and supervisory support from their managers, which hinders the success of community health initiatives [6]. Supervisory visits regularly help ASHAs obtain recommendations while solving their issues and verifying adherence to established protocols. Many regional areas fail to provide ASHAs with regular guidance and supervision, which causes the standard of care to deteriorate [2]. ASHAs based in rural Uttar Pradesh told [20] that insufficient connection with supervisors and lack of on-field assistance hindered their ability to address challenging situations or confront community opposition. Better imple-

mentation of supervision can be achieved through mentorship programs and a combination of field visits and peer support networks to boost ASHAs' performance.

2.5.1.4 Overburdening with new responsibilities The responsibilities handled by ASHAs have expanded significantly through the years to now cover non-communicable disease management and COVID-19 surveillance in addition to mental health awareness and vaccination drives. New responsibilities added to the workload of ASHAs led to burnout while simultaneously reducing their attention to essential maternal and child care duties [20]. According to Gopalan et al. [7], performance stress combined with role confusion emerges when healthcare workers receive excessive workloads without proper training. The addition of COVID-19 surveillance responsibilities in 2020 placed excessive strain on ASHAs because they received neither sufficient assistance nor resources, and this eventually reduced their enthusiasm [20]. Research findings show that when health providers receive sufficient resources alongside task-related goal orientation, their workload becomes manageable, which prevents burnout and improves service quality [30] (Table 2).

2.5.1.5 Community resistance Community members display resistance when ASHAs attempt to implement novel health behaviors such as hospital delivery and family planning practices. The presence of ASHAs causes traditional birth attendants (dais) to experience competition that leads to conflicts, according to [10]. The findings of [20] in Uttar Pradesh demonstrated how dais deliberately pushed women away from receiving medical care at hospitals, which conflicted with the work of ASHAs. Their work with dias in community-based education initiatives can create opportunities to connect health-related objectives between these two professional groups.

2.5.1.6 Cultural and gender barriers There are still several socio-cultural and gender-based issues that ASHAs face, impacting their productivity and professional identity. At the cultural level, the entrenched community norms and conventional beliefs regarding the role of women tend to create resistance among community members, which restrains the power and authority of ASHAs in their local settings [26]. Moreover, the health system negativity, especially of some health officials, may decrease the credibility of ASHAs

Table 2 Key Challenges Faced by ASHAs (Note: Each study typically reported multiple challenges; the above presents the primary challenge categories and representative studies

Challenge	Reported in Studies
Training gaps	[2, 28]
Payment delays	[9]
Supervision deficiencies	[27]
Expanding workload	[20]
Community residence	[10, 24]
Cultural and gender barriers	[26, 31]

This table is not exhaustive per study

and their effectiveness in representing the interests of the community in the context of health [26].

Gender wise, systemic inequalities still affect the working experiences of ASHAs. The systemic gender discrimination in communities, as well as in institutions, denies them a chance to reach their professional level and grow professionally, even though the policy has been revised to help them work with fewer difficulties [31]. Also, the growing range of ASHAs' duties can lead to high workloads that are likely to cause occupational distress and reduced job satisfaction [4]. Collectively, these barriers associated with culture and gender demonstrate the necessity of structural and attitudinal changes on the community and institutional levels so that the frontline health workforce in India could enjoy a more inclusive and accommodating environment.

2.6 Motivation and retention of ASHAs

Service delivery effectiveness depends heavily on the motivation level of ASHAs. Multiple linked variables at individual health-system and community levels determine ASHA motivation, which subsequently influences maternal health outcomes.

2.6.1 Intrinsic rewards

- Community Recognition & Social Status: Knowing that villagers show respect toward them enables ASHAs to maintain their commitment to service. When ASHAs received affirmations from Village Health and Sanitation Committee meetings, their work satisfaction, along with efforts, increased according to Gopalan et al. [7].
- Self-Efficacy & Skill Development: ASHAs develop self-confidence and personal satisfaction after learning to handle postpartum haemorrhagic situations and providing birth preparedness counselling [20].

2.6.2 Extrinsic rewards

- Timely, Adequate Incentives: ASHAs receive increased motivation from time-appropriate financial bonuses when their work is linked to specific tasks (such as Rs 200 for institutional deliveries), though they lose trust when incentives become delayed or fail to match expectations. According to Bhutta et al. [3], reliable payment systems of performance-based compensation will effectively drive service use.
- Public Acknowledgement & Awards: The retention of ASHAs increases when state governments organise yearly recognition ceremonies for their best-performing health workers [28].

2.6.3 Health system support

- Supportive Supervision: The supervision provided by both ASHA facilitators and ANMs serves to help ASHAs resolve their work challenges. Throughout five

countries, Jaskiewicz and Tulenko [9] documented direct relationships between supervisor site checks and CHW performance metrics.

- Career Pathways & Certification: Multi-country evidence [5] indicates that CHWs offered formal certification and advancement routes demonstrate higher retention and commitment. India's ASHA Certification Scheme with NIOS aims to emulate this model [17].

2.6.4 Community-Level Factors

- Trust & Teamwork: ASHAs become more motivated when part of cohesive Village Health and Nutrition Days (VHNDs) teams because their trust and teamwork improve according to findings from [20].
- Health Behavior Reinforcement: Ved & Scott [30] argue that framing counselling as a relationship rather than a task deepens ASHAs' sense of purpose.

2.7 Key policy implications

- Ensure timely disbursement of performance-based incentives at or above market rates.
- Institutionalise career ladders, linking ASHA certification to tangible roles (e.g., ASHA mentor, ANM trainee).
- Strengthen supervisory frameworks, mandating at least monthly field visits by facilitators.
- Leverage digital tools for real-time feedback, recognition (e.g., SMS acknowledgements), and peer support networks.

India should support the ASHA program through intrinsic motivation programs such as recognition and mastery, along with extrinsic incentives such as pay and career development, so it can maintain and increase its effects on maternal health services access.

3 Methodology

3.1 Data collection

For this review, we systematically searched for peer-reviewed articles, reports, and data on the role of Accredited Social Health Activists (ASHAs) in improving maternal healthcare utilisation. Literature was identified through multiple academic and governmental databases, including PubMed, ScienceDirect, Taylor & Francis (T&F), ResearchGate and Scopus. Additionally, policy documents and reports were sourced from the Ministry of Health and Family Welfare (MoHFW) portal to include relevant grey literature and official data. The data collection process was primarily based on studies published between 2005 and 2025, sourced from the following:

1. Published Peer-Reviewed Studies: The review explores research which investigates the involvement of ASHAs in rural maternal healthcare within India through studies found in peer-reviewed publications. The analysis for this review utilised original

papers that included research articles as well as reports appearing in publications cited in uploaded studies.

2. Government and Organisational Reports: Official documents released by the Ministry of Health and Family Welfare (MoHFW) of India were used because they contain both policy guidelines and national health mission reports [14, 17].
3. Relevant Program Evaluations: ASHA program outcomes were evaluated by merging information from the Program Evaluation Organisation (PEO) and various organisational assessments [25].
4. Literature from Other Countries: We analysed worldwide research about CHWs, including the Chinese "Barefoot Doctors" alongside the Brazilian "Visitadoras" programs, which provided worrying comparisons for the Indian ASHA program [3].

3.2 Inclusion criteria

To ensure the relevance and quality of studies included, the following inclusion criteria were applied:

- Study Focus: Only studies that directly examined ASHAs or their role as community health workers in improving maternal healthcare utilisation were included.
- Geographical Focus: We included studies that focused on India or countries with similar healthcare challenges and CHW programs.
- Study Type: Both quantitative studies (e.g., longitudinal studies, cross-sectional surveys) and qualitative studies (e.g., interviews, focus groups) were included to capture a comprehensive view of ASHA performance and challenges.
- Publication Date: We included studies published from 2005 to 2025 to ensure relevance to current ASHA program dynamics and evolving healthcare policies.

3.3 Exclusion criteria

1. Commentaries, conference abstracts, and review articles (though their reference lists were screened).
2. Studies not directly examining ASHAs or maternal health outcomes.
3. Papers focusing exclusively on unrelated public health domains or without community-level components.

3.4 Information sources

Comprehensive searches were performed across multiple databases and repositories:

- Academic databases: *PubMed, SCOPUS, ScienceDirect, Taylor & Francis Online, and ResearchGate.*
- Government and organisational sources: *Ministry of Health and Family Welfare (MoHFW)* reports and *National Health Mission (NHM)* publications.
- Grey literature: *ProQuest Dissertations & Theses Global*, *Google Scholar*, and reports from international organisations (e.g., WHO, UNICEF, World Bank).
- Hand-searching of reference lists from eligible studies and relevant reviews was also undertaken. Searches were completed in August 2025.

3.5 Search strategy

Search strings were adapted for each database with support from an academic librarian to optimise sensitivity and specificity. Keywords and Boolean operators combined terms for ASHAs, maternal healthcare, and community-based interventions.

A representative PubMed search string included:

("Accredited Social Health Activist"[Title/Abstract] OR "ASHA"[Title/Abstract] OR.
"community health worker"[MeSH Terms] OR "CHW"[Title/Abstract]).
AND
("maternal health"[MeSH Terms] OR "maternal healthcare utilisation"[Title/Abstract] OR.
"antenatal care"[Title/Abstract] OR "institutional delivery"[Title/Abstract] OR.
"skilled birth attendance"[Title/Abstract]).
AND
(India [Title/Abstract] OR "developing countries"[MeSH Terms]).

3.6 Study selection

Two reviewers independently screened titles and abstracts to identify potentially eligible studies. Full-text articles were then evaluated against the inclusion criteria. Discrepancies were resolved through consensus or consultation with a third reviewer. The study selection process and exclusions at each stage were illustrated in Fig. 2 using a PRISMA 2020 flow diagram.

3.7 Data synthesis

The four themes used to guide the narrative synthesis were identified a priori by the authors based on key domains of ASHA program evaluation established in foundational policy documents [14] and prior systematic reviews of community health worker programs globally [3, 24]. These themes were not derived from a single predefined framework but were developed to reflect the primary dimensions of program effectiveness relevant to the Indian maternal health context. Providing this a priori rationale strengthens methodological transparency and ensures replicability of the synthesis approach.

A narrative synthesis approach was used to integrate qualitative and quantitative findings under four primary themes:

1. Maternal Health Service Utilisation: Evaluated ASHAs' role in increasing ANC, SBA, and institutional delivery rates [1, 14].
2. Motivation and Retention: Analysed the influence of monetary incentives, supervision, and intrinsic motivation [7, 9].
3. Training and Knowledge Gaps: Reviewed ASHA training adequacy and its effect on performance [11, 28].
4. Barriers to Performance: Identified structural, social, and personal barriers affecting ASHA efficiency [20, 27].

Qualitative insights and quantitative findings were triangulated to provide a holistic understanding of ASHA program effectiveness.

3.8 PRISMA flow chart

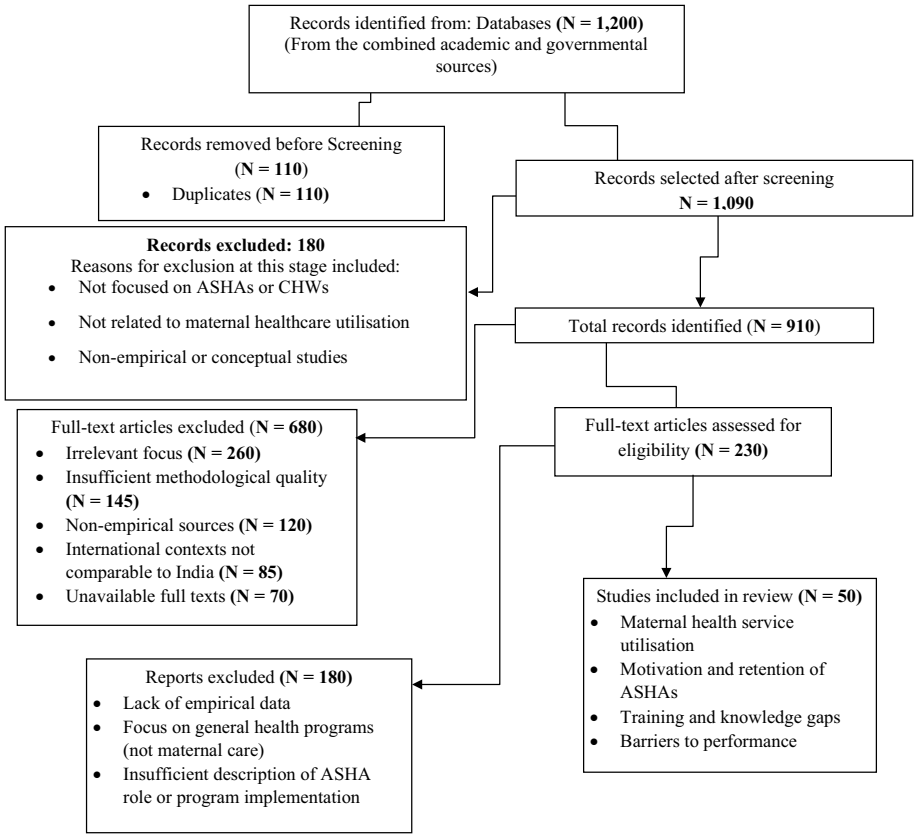


Fig. 2 PRISMA Flow DiagramSources: Author's compilation based on PRISMA 2020 [23].

3.9 Data organisation and analysis

Data from the selected studies were categorised into the four key themes described in Sect. 3.6. For each theme, the analytical approach involved systematically comparing findings across studies to identify patterns, consistencies, and contradictions. The thematic framework served as an interpretive lens—studies were not simply described but their findings were synthesised to draw broader conclusions about ASHA program effectiveness and areas requiring policy attention. The following describes how each theme informed the synthesis:

1. Maternal Health Service Utilisation: This theme guided synthesis of quantitative evidence on ANC uptake, skilled birth attendance, and institutional delivery rates. Findings were compared across states and time periods to assess the consistency and magnitude of ASHA-associated improvements [1, 14]. Variations between high-focus and low-focus states were interpreted to identify equity dimensions of program reach.
2. Motivation and Retention: Under this theme, qualitative and quantitative data on ASHA motivators and deterrents were synthesised. The analysis distinguished between intrinsic motivators (e.g., community recognition) and extrinsic incentives (e.g., financial remuneration), and interpreted how their interaction shapes workforce stability [7, 9].

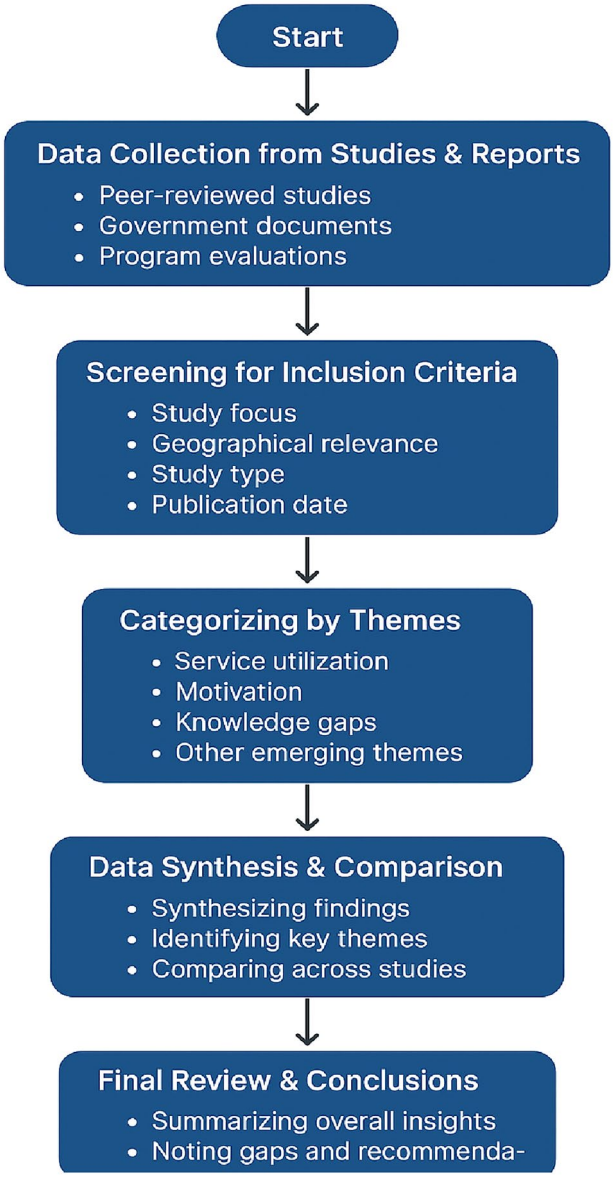


Fig. 3 Flowchart illustrating the data collection and analysis process, including study selection, screening based on inclusion criteria, thematic categorisation, and synthesis of findings

3. Training and Knowledge Gaps: Evidence on ASHA training programs from multiple states was synthesised to assess adequacy and identify domains of insufficient knowledge. Findings were interpreted in light of evolving health burdens, including non-communicable diseases and mental health, to inform recommendations for curriculum reform [11, 28]
4. Barriers to Performance: Structural, personal, and social barriers were synthesised across contexts. Studies reporting community resistance, gender barriers, supervision deficiencies, and payment delays were compared to distinguish context-specific from systemic challenges, allowing for more targeted policy recommendations [20, 27] (Fig. 3).

Table 3 Quantitative Improvements in Maternal Health Indicators (Sources: [1, 13, 21, 25])

Study & setting	Indicator	Change Associated with ASHA Exposure
Agarwal et al. [1], National	≥ 1 ANC visit	+ 17%
Lim et al. [13], JSY evaluation	Institutional deliveries	+ 38%
Mohanty [21], Uttar Pradesh	Skilled birth attendance (SBA)	+ 23%
[25]High-focus states	Institutional deliveries	+ 30–50% (state variation)

3.9.1 Data synthesis

For each theme, a narrative synthesis approach was used, allowing for:

1. Comparison of Results: The results from similar studies were combined to produce broader findings through comparison. A careful examination was conducted to explain differences in research outcomes, specifically due to variations between regions and community environments with program delivery practices.
2. Qualitative and Quantitative Integration: The study's authors combined qualitative research data from interviews with quantitative statistical analysis results to develop a complete overview of ASHA program effectiveness.
3. Key Themes Identification: The research team used thematic analysis to identify the fundamental motivational factors, difficulties, and successful elements among all reviewed studies.

3.10 Limitations

3.10.1 The review acknowledges several limitations:

1. Geographical Bias: The majority of studies originated from Uttar Pradesh, Bihar, and Madhya Pradesh states, even though we strived for national representation, so ASHA performance assessment in other areas might differ from our findings.
2. Methodological Variability: Studies used qualitative along with quantitative methodologies, which prevented a statistical comparison of their results.

4 Results

This summary consolidates key research findings on maternal health service utilisation, ASHA expertise, motivation levels, and retention prospects, as well as institutional barriers.

4.1 Maternal health service utilisation

Across multiple evaluations, ASHA engagement is consistently associated with marked increases in maternal health service use (Table 3).

- Antenatal Care (ANC): ASHA services helped mothers have at least one antenatal care check-up by increasing their likelihood by 17%, while the probability of four or more visits improved by 5% [1].
- Institutional Deliveries: Through incentives and ASHA mobilisation of the Janani Suraksha Yojana (JSY) program, the number of facility-based births increased by 38% [13].
- Skilled Birth Attendance: The probability of securing qualified assistance during labour increased by 23% for women who received ASHA services within Uttar Pradesh [21].

4.2 ASHA knowledge and skills

Multiple studies show employees possess moderate to strong levels of core maternal and child health understanding, although important gaps exist in advanced healthcare fields [10, 28].

- Maternal and Neonatal Health: The prevalence rate for pooled knowledge regarding maternal and neonatal health was presented at 62–69% according to Singh et al. [28].
- Communicable Diseases: The knowledge level of ASHAs regarding communicable diseases reached approximately 62% as reported in [28].
- Non-Communicable Diseases (NCDs): Results showed that ASHAs had approximately 50% knowledge regarding NCDs [28].
- Mental Health: A training deficit resulted in the very low (< 40%) performance of ASHAs in mental health [28].

4.3 Motivation and retention

The retention of ASHAs strongly depends on intrinsic and extrinsic motivators,together with supervision alongside professional development opportunities.

- Intrinsic Rewards: The performance of ASHAs improves as they experience both community appreciation and personal effectiveness [3, 20].
- Extrinsic Rewards: ASHA workers receive better performance when their rewards arrive in a timely fashion, yet delayed payment reduces their motivation according to [3, 9].
- Supervisory Support: Regular mentoring visits are positively associated with productivity [6, 9].
- Career Pathways: Certification programs from NIOS, together with formal roles, help staff maintain their positions at work according to [5, 17].

4.4 Systemic barriers

Key challenges identified across studies include:

- Training Gaps: ASHA workers experience varying quality of training, and their available refresher courses are not conducted regularly [2, 11].
- Incentive Delays: Unsteady payment practices lead ASHAs toward demoralisation and affect their retention rate, according to [9, 27].
- Supervision Deficiencies: The lack of ongoing supportive supervision creates service quality weaknesses as noted by [20, 27].
- Work Overload: The absence of additional support for the expanded healthcare responsibilities, including COVID-19 surveillance along with NCD screening, has caused work-related burnout among ASHAs, according to [7, 20].

5 Discussion

This review is an analysis of the research to establish how the Accredited Social Health Activist (ASHA) program has enhanced maternal healthcare services in India tremendously. It has been shown that ASHAs have played a significant role in marshalling mothers into the medical centres and institutional delivery. In particular, maternal health facilities attendance was also increased by 17 percent, and institutional births were increased by 38 percent, which indicates the positive contribution of the program

[1, 13]. Research across the world has confirmed the use of community health workers (CHWs) who can use lay workers as a means of improving access to preventive health care, especially in low-resource environments [3, 12].

It is important to acknowledge, however, that the improvements observed in maternal health service coverage are likely multifactorial. In addition to the ASHA program, several facility-based services strengthening initiatives—including upgradation of primary health centres, the Janani Suraksha Yojana (JSY) conditional cash transfer scheme, and improvements in obstetric care at public hospitals—have run concurrently and may have independently contributed to the observed improvements. The ASHA program's contribution should therefore be understood as one important component within a broader health system strengthening effort, rather than the sole driver of change.

Nevertheless, in spite of these achievements, a low level of awareness of non-communicable diseases (NCDs) and mental health among the ASHAs highlights the necessity of detailed and specialised training resources [28]. To better meet the changing health needs of the population, it is possible to expand the current refresher training programs with elements of chronic disease management and psychosocial support [11].

Motivation is another important factor of a successful program. It has been continuously indicated that health workers serving in the field services are always dedicated to their work because of a mix of both intrinsic and extrinsic motivations. Examples of intrinsic factors are community recognition, personal growth, and professional development of the skills, whereas examples of extrinsic factors are financial incentives and career development opportunities [7, 9]. The ASHA Certification Scheme which has been launched by the Ministry of Health and Family Welfare (MoHFW) is a good move. Nevertheless, the success of the scheme in the long term will be based on prompt incentive payments and the development of effective supervisory systems to maintain the ASHA engagement [6, 17].

Systemic issues that remain unchanged over the years such as training inconsistency, slow incentive disbursement, poor supervising environment, and high work load are also reflected in findings made in other CHW programs globally [20, 27]. To respond to these complex problems, interventions in the form coordination, and evidence-based practices are needed:

- The standards of training ought to be applied within the state-based quality control measures.
- Institutionalisation should be done in terms of electronic payment system to facilitate automatic and timely disbursement of S/he incentives.
- Standardised guidelines that include accountability metrics should be used to enhance supportive supervision.
- Basic operational requirements such as sufficient human resource and infrastructural backup should be considered prior to increasing the ASHA responsibility.
- Digital healthcare integration into the current system may also improve CHW performance and job satisfaction by providing real-time feedback on the supervisor and establishing peer support networks [24]. The enhanced performance and retention of ASHA, along with the increased trust in the community and the improvement of health outcomes, will be achieved not only by enhancing these operational structures but also by strengthening them.

5.1 Limitations

The following restrictions are summarised from the various sources of the review. This study has a narrative review design, which raises several issues:

1. Geographical Bias:Despite our efforts to include national level, most of the studies were from Uttar Pradesh, Bihar and Madhya Pradesh, which may lead to variations in ASHA performance assessment in other regions.
2. Methodological Variability: Studies employed a qualified methodology as well as quantitative methodology, making it difficult to compare their findings statistically.
3. Insufficient Data: There was a limited amount of evidence reported for some indicators because several studies that were included in the analysis lacked information in all outcome domains.
4. Low Comparability Across Studies: Heterogeneity in study design, outcome definitions, and geographic context made it difficult to directly compare and combine study results.
5. Publication Bias: Only published literature was used in the review, which could have led to an overestimate of positive results and an underestimate of null or negative results for the effectiveness of ASHA programs.

6 Policy implications and future directions

This review analysis has shown that Accredited Social Health Activists (ASHAs) have been very instrumental in improving the provision of maternal health care utilisation in India as demonstrated by the observed improvement in institutional child births, antenatal enrolments and general maternal health enlightenment. However, the continued existence of regional inequalities as well as the current deficiencies in postnatal care make the necessity of strong system-wide support and the overall policy reinforcement highly urgent.

Policy-wise, in order to institutionalise the mechanisms that maintain the motivation, capacity and retention of ASHAs, it is necessary to ensure institutionalisation of such mechanisms. These include the availability of timely remuneration using the direct banking systems to maintain the morale of the workforce, and building training curricula that has brought non-communicable diseases and mental illness to the its training programme to ensure that the ASHA competencies are in tandem with the changing disease burden of the country. The reinforcement of supervisory frameworks through installing special community health supervisors plus the strategic placement of mobile health (mHealth) technologies and online platforms to perpetually train and oversee performance are estimated to increase the accountability as well as the quality of the service. Strategy in the future needs to focus on context-specific studies to clarify differences in the performance level of ASHA in low-focus states and urban slum areas, hence promoting fair practice of national policy interventions. Finally, financial security, professional development, and digital innovation that are brightly integrated into one way promises to bring together the success of ASHAs and put India on the road to achieve the Universal Health Coverage and the Sustainable Development Goals.

Author contributions

S. K. contributed to the conceptualisation of the study, literature search, data collection, screening and analysis of studies, interpretation of findings, and preparation of the original manuscript draft. F.K.S. contributed to the supervision of the study, methodological guidance, critical review, editing of the manuscript, and overall academic input. Both authors read and approved the final version of the manuscript.

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Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate
This work is a systematic review that is completely premised on already published literature and secondary sources of data. There were no human subjects or animals involved, and hence, there was no need to seek ethical approval. Not applicable. No direct involvement of human subjects was used in the study, and all materials used are openly available to the public.Not applicable. No personal information, data of an individual, such as personal information, photos, and videos, can be found in the manuscript.

Competing interests
The authors declare no competing interests.

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