

**ASSESSMENT OF AWARENESS ON ABHS ID AND NCD CLINICS IN THE
GENERAL PUBLIC AND CHALLENGES FACED BY ANMS, ASHAS AND CHOS
IN ABHA ID GENERATION IN JAIPUR**

Dissertation Submitted to



The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree of

Master of Business Administration (MBA)

in

Hospital and Health Management

by

Shivam Verma

Under the Supervision and Guidance of

Mr. S.P. Chattopadhyay

2025

Government of Rajasthan
National Health Mission, Rajasthan
Department of Medical, Health & FW, Swasthya Bhawan, Jaipur
Tel.No.0141-2229108, Email ID: spm_raj.nrhbm@yahoo.com

No. F 2 (153) NHM/SPM/2025/ 620

Dated: 30/05/2025

CERTIFICATE

This is to certify that **Mr. Shivam Verma**, student of MBA, Indian Institute of Health Management Research (IIHMR University, Jaipur) has successfully completed his Dissertation & Internship at National Health Mission, Rajasthan from 10th March, 2025 to 31st May, 2025.

His performance was found satisfactory. We extend his good wishes for a bright and successful career ahead.



(Dr. Bharti Dixit)
Mission Director, NHM
Joint Secretary
Medical Health & Family Welfare

CERTIFICATE

This is to certify that dissertation titled “**ASSESSMENT OF AWARENESS ON ABHA ID AND NCD CLINICS IN THE GENERAL PUBLIC AND CHALLENGES FACED BY ANMs, ASHAs, AND CHOs IN ABHA ID GENERATION IN JAIPUR**” is a record of the research work undertaken by **Shivam Verma** in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

A handwritten signature in blue ink, appearing to read 'S.P. Chattopadhyay'.

Mr. S.P. Chattopadhyay

Faculty Guide

IIHMR University, Jaipur

Date 12/06/25

A handwritten signature in blue ink, appearing to read 'Sanjay Gupta'.

Dr. Sanjay Gupta

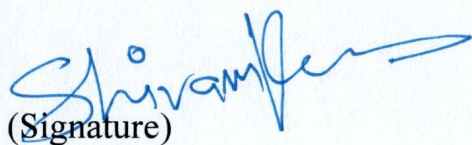
School Dean

IIHMR University, Jaipur

12/06/25 Date

DECLARATION BY STUDENT

I hereby declare that this dissertation titled “**ASSESSMENT OF AWARENESS ON ABHA ID AND NCD CLINICS IN THE GENERAL PUBLIC AND CHALLENGES FACED BY ANMs, ASHAs, AND CHOs IN ABHA ID GENERATION IN JAIPUR**” is the Bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.


(Signature)

Shivam Verma

Date 27/05/2025

Abstract

Introduction:

India's healthcare system is undergoing a major digital shift through the Ayushman Bharat Digital Mission (ABDM), with the Ayushman Bharat Health Account (ABHA) ID playing a foundational role. In parallel, the government has expanded Non-Communicable Disease (NCD) Clinics under the NP-NCD programme to address chronic illness management. This study aimed to assess the awareness levels of ABHA ID and NCD Clinics among the general population in Jaipur, while also examining the operational challenges faced by frontline health workers—ASHAs, ANMs, and CHOs—in the promotion and generation of ABHA IDs.

Objectives:

- To assess the level of awareness regarding ABHA ID and NCD Clinics among patients in public healthcare facilities in Jaipur.
- To identify operational and technological challenges experienced by frontline healthcare workers in generating and promoting ABHA IDs.
- To examine socio-demographic patterns associated with ABHA ID ownership.
- To recommend strategies to improve awareness, infrastructure, and implementation effectiveness.

Methodology:

A cross-sectional descriptive study was carried out in Jaipur across 10 public health facilities, including PHCs, CHCs, UPHCs, and a district hospital. Structured exit interviews were conducted with 88 patients to assess awareness and adoption of ABHA and NCD services. Simultaneously, 20 frontline workers were interviewed with role-specific questionnaires. Additionally, a focus group discussion (FGD) was held with ANMs to explore systemic and technological challenges. Quantitative data was analyzed using STATA, with chi-square tests conducted to determine associations between ABHA ownership and socio-demographic factors.

Results:

Only 39.77% of respondents had an ABHA ID, and 31.82% were aware of NCD Clinics, indicating limited digital health engagement. A significant association was observed between ABHA ownership and age ($p = 0.0495$), education level ($p = 0.0141$), and preferred healthcare facility ($p = 0.0186$). Interestingly, individuals with no formal education had higher ABHA adoption, likely due to targeted outreach. Gender and occupation showed no significant associations. Among patients, 93.18% still used physical health records. Health workers reported significant infrastructural issues such as poor connectivity, frequent app crashes, and OTP failures. Manual data collection during field visits and later digital entry added to workload. Many workers lacked formal training and were dependent on informal support. Suggestions included appointing digital support staff at health facilities and increasing incentives.

Conclusion:

Despite their transformative potential, ABHA IDs and NCD Clinics face major roadblocks in awareness, training, and infrastructure. Integrating ABHA registration with Aadhaar/CSC centers, ensuring app interoperability, improving connectivity, and investing in staff training are critical. Outreach campaigns and worker incentives can further strengthen digital adoption. Addressing these systemic barriers is essential to realize the vision of Universal Health Coverage through ABDM.

Keywords:

ABHA ID, Digital Health, NCD Clinics, Frontline Health Workers, Ayushman Bharat Digital Mission, Public Awareness, System Challenges, Jaipur

Acknowledgement

I extend my heartfelt gratitude to the **National Health Mission, Rajasthan**, for granting me the invaluable opportunity to pursue my dissertation internship. This experience has been profoundly enriching and has been instrumental in deepening my understanding and growth in the field of **Public Health Management**.

I am deeply thankful to **Dr. Bharti Dixit**, Mission Director, NHM Jaipur, for offering me the chance to intern with such a distinguished organization.

A very special note of appreciation goes to **Mr. Arun Vashishtha**, State Program Officer, NP-NCD, NHM Jaipur, whose joyful spirit and infectious positivity made every interaction a memorable one and whose unwavering guidance, encouragement, and insightful mentorship were instrumental throughout my journey. His encouragement created a learning environment filled with warmth, energy, and genuine care.

I also sincerely thank **Mr. Narender**, District Programme Manager, for his continuous support during my field visits to various public health facilities for the data collection.

My sincere thanks to my university mentor, **Mr. S.P. Chattopadhyay**, for his steady guidance, timely feedback, and academic support throughout this process.

The knowledge, skills, and experiences gained during this internship will remain a cornerstone of my professional journey and will continue to guide me in my future endeavours.

Sincerely,

Shivam Verma
MBA Hospital and Health Management, 2023-25)
IIHMR University, Jaipur

Contents

Abstract	6
Acknowledgement.....	8
List of Tables	10
List of Figures.....	10
Abbreviations	11
Chapter 1: Introduction.....	12
Background of Digital Health Initiatives in India	12
Genesis of the Ayushman Bharat Digital Mission (ABDM).....	12
Introduction and Role of ABHA ID	13
Overview of the National Programme for Prevention and Control of NCDs.....	15
Chapter 2: Literature Review	18
Chapter 3: Methodology.....	22
Research Questions	22
Objectives	22
Study Design:	22
Data Analysis Plan	23
Chapter 4: Result.....	25
Findings from the Patients and the general public.....	25
Findings from ASHAs, ANMs and CHOs	30
Chapter 5: Discussion.....	36
Chapter 6: Conclusion	38
Recommendations	38
References	40

List of Tables

Sr no.	Title	Page No.
Table 2.1	Overview of reviewed papers	13
Table 3.1	Location and Name of Facilities Visited for Data Collection	18
Table 4.1	Demographic profile and Response summary of 88 Respondents	21
Table 4.2	Chi2: Having ABHA ID, Age of Respondent	22
Table 4.3	Chi2: Having ABHA ID, Sex of Respondent	22
Table 4.4	Chi2: Having ABHA ID, Education of Respondent	23
Table 4.5	Chi2: Having ABHA ID, Occupation	23
Table 4.6	Chi2: Having ABHA ID, Preferred Facility	24
Table 4.7	Challenges faced by ASHA, ANM, CHO, CO	28
Table 4.8	Support required by ASHA, ANM, CHO, CO	29

List of Figures

Sr no.	Title	Page No.
Figure 1.1	Components of ABHA ID	8
Figure 1.2	Features of ABHA ID	9
Figure 1.3	Share of NCDs in total deaths in India	11
Figure 4.1	Proper Internet Connectivity in the Hospital facility or Field	25
Figure 4.2	No. Of ASHA, ANM, CHO, and CO who received any formal training for ABHA	27
Figure 4.3	Attitude of Patients & People when introduced to ABHA ID	28

Abbreviations

AB-PMJAY	Ayushman Bharat-Jan Arogya Yojna
ABDM	Ayushman Bharat Digital Mission
ABHA	Ayushman Bharat Health Account
BHS	Block Health Supervisor
CBAC	Community-Based Assessment Checklist
CHC	Community Health Centre
CO	Computer Operator
DH	District Hospital
HFR	Health Facility Registry
HMIS	Health Management Information Systems
HPR	Healthcare Professionals Registry
ICT	Information and Communication technologies
NCD	Non-Communicable Disease
NHA	National Health Authority
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
HWC	Health and Wellness Centre
PHC	Primary Health Centre
PHR	Personal Health Record
SC	Sub Centre
SDH	Sub-District Hospitals
UHC	Universal Health Coverage
UPHC	Urban Primary Health Centre

Chapter 1: Introduction

Background of Digital Health Initiatives

Given its vast population and diverse healthcare needs, India has progressively embraced digital health initiatives to enhance and streamline healthcare delivery. Digital health encompasses using information and communication technologies (ICT) to improve health outcomes, increase access, and reduce healthcare disparities. In recent years, India's healthcare landscape has undergone significant Digital transformation, propelled by initiatives such as the Ayushman Bharat Digital Mission (ABDM), eSanjeevani (telemedicine), National Health Portal, and various mobile health applications is reshaping India's healthcare landscape. [1]

The core objective of digital health initiatives is to ensure equitable, affordable, and quality healthcare for all citizens, with a special focus on reaching remote and underserved populations. Digital health solutions such as telemedicine consultations, electronic health records (EHRs), health management information systems (HMIS), and digital health IDs facilitate effective disease surveillance, patient management, and health data analytics, thus contributing significantly to strengthening the overall healthcare ecosystem. [1]

Genesis of the Ayushman Bharat Digital Mission (ABDM)

The Ayushman Bharat Digital Mission (ABDM) originated as a key digital health initiative under India's broader Ayushman Bharat program, which was recommended by the National Health Policy 2017 to achieve Universal Health Coverage (UHC) [2]. The vision was to strengthen the country's health data infrastructure and bridge gaps among stakeholders through a unified digital platform [3]. The Prime Minister announced the pilot phase of the mission on 15th August 2020, and the nationwide launch took place on 27th September 2021. [2]

The mission was piloted in six Union Territories: Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli and Daman & Diu, Ladakh, Lakshadweep, and Puducherry, to test its feasibility and effectiveness before scaling up. [4]

The core objectives of the Ayushman Bharat Digital Mission are:

- To develop a national digital health ecosystem that supports universal health coverage in an efficient, accessible, inclusive, affordable, timely, and secure manner.
- To offer a wide range of data, information, and infrastructure services through open, interoperable, and standards-based digital systems while ensuring the security, confidentiality, and privacy of personal health information.
- To empower citizens to own their health data, with the ability to access, manage, and consent to share their health records.
- To improve the accessibility and equity of healthcare services through a citizen-centric approach, ensuring a seamless continuum of care using IT and related technologies.
- To implement key programs and components under ABDM, such as ABHA ID, Health Facility Registry, Healthcare Professionals Registry, and Unified Health Interface. [5]

Several important programs and registries have been developed under ABDM to build a robust digital health ecosystem:

- **Ayushman Bharat Health Account (ABHA):** A unique digital health ID for every citizen, enabling the secure storage and sharing of health records.

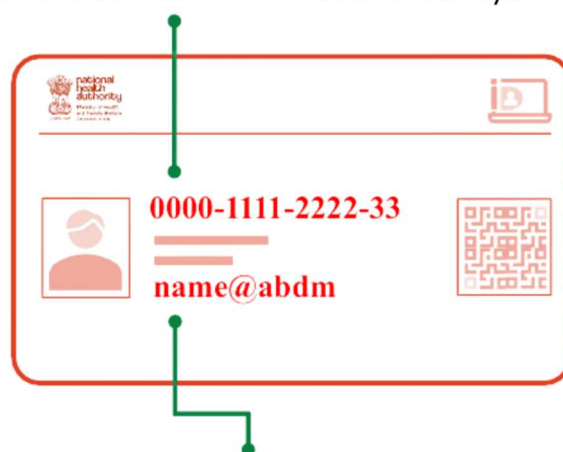
- **Healthcare Professionals Registry (HPR):** A comprehensive nationwide database of registered healthcare professionals.
- **Health Facility Registry (HFR):** A directory of public and private healthcare facilities, making it easier for citizens to locate and choose suitable healthcare options.
- **Personal Health Records (PHR):** A system for citizens to create, manage, and share their medical records digitally.
- **Integration with Government Schemes:** ABDM is integrated with various government health programs such as PM-JAY, reproductive child health (RCH), TB Nikshay, and others, promoting interoperability and efficiency in service delivery [5] [6].

Introduction and Role of ABHA ID

Ayushman Bharat Health Accounts (ABHA) form the vital part of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), which is India's flagship scheme of nationals (meaning one that covers all of the nationals). ABHA helps in cashless and other transactions and care for monetary parts of healthcare (meaning money issues in healthcare) under the Ayushman Bharat. [7]

Ayushman Bharat Health Account (ABHA) is a unique identification number that connects an individual's health records across various healthcare providers. It is designed to enable the creation of a seamless digital health ecosystem and supports the digitization of healthcare services. Any individual can voluntarily register under the Ayushman Bharat Digital Mission (ABDM) to generate an ABHA ID, free of cost. ABHA ID serves as a unique digital identifier for every individual, ensuring a seamless and interoperable digital health ecosystem across the country. It lets individuals digitally store and access their medical history, diagnostic reports, prescriptions, and other health-related information. [7]

ABHA Number is a 14-digit random unique number that acts as an identifier in the healthcare ecosystem



ABHA Address* is an easy to remember username that has links to the longitudinal health records. Only preferred Address is visible on the ABHA Card

Figure 1.1: Components of ABHA ID

An ABHA user has key digital identifiers and tools to access benefits under the Ayushman Bharat Digital Mission (ABDM). The ABHA number is a unique 14-digit health identifier assigned to everyone, ensuring their identity remains consistent across various healthcare providers nationwide.

Complementing this is the ABHA address, a user-friendly, email-like handle (e.g., name@abdm) that allows individuals to access and share their health records digitally. To streamline user experience, the ABHA mobile application provides a centralized platform to securely receive, store, and share digital health records with consent, such as prescriptions, diagnostic reports, and lab results. This ensures continuity of care, data privacy, and ease of access across hospitals, clinics, laboratories, and wellness centres. [7]

It offers patients and beneficiaries a secure and convenient method to share and access their digital health records. Individuals can connect with verified healthcare providers, such as hospitals, clinics, laboratories, and wellness centres, and effortlessly receive digital prescriptions, lab reports, and diagnoses. [7]

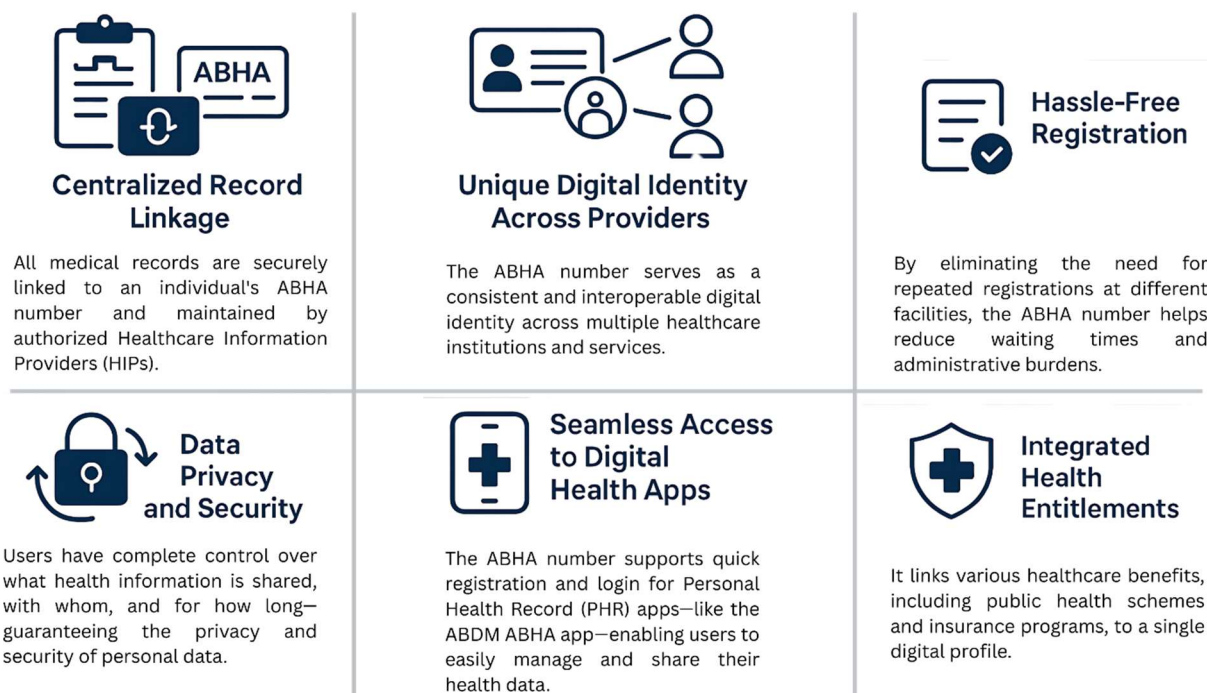


Figure 1.2: Features of ABHA ID

ABHA integrates beneficiaries into India's national digital health ecosystem, allowing citizens to access and manage health records securely. Patients can view their linked medical data using any Personal Health Record (PHR) app on a mobile device. This enables seamless transfer of records between healthcare providers, ensuring continuity of care. For instance, if a patient is treated at one hospital and later visits another, the new provider can securely access their medical history through the ABHA ID, with the patient's consent. Looking ahead, features like QR code-based OPD appointment booking are also envisioned, further enhancing ease of access and care delivery.[7]

By promoting the digitization of healthcare information, the ABHA ID directly advances the government's vision of Universal Health Coverage (UHC) by enhancing service delivery, reducing health inequities, and enabling more efficient use of healthcare resources.[7]

Citizens can create their Ayushman Bharat Health Account (ABHA) through the following four methods:

Self-Mode via ABHA Portal

- Individuals can independently generate their ABHA number by visiting the ABHA portal or using the ABHA mobile app.
- Aadhaar-based eKYC is used for verification.
- Best suited for digitally literate users comfortable with self-registration.

Assisted Mode via ABHA Portal

- Citizens can seek assistance from State Operators or Frontline Workers (FLWs) to create their ABHA number.
- Verification options include Aadhaar eKYC or physical KYC using valid ID documents (e.g., driving license).
- Designed for those unfamiliar with digital platforms or requiring support.

Program or HMIS Portal-Based Creation

- ABHA numbers can be generated through integrated Health Management Information Systems (HMIS) or program-specific applications under the ABDM.
- Public health staff or program operators handle registration as part of ongoing initiatives.
- This method aligns with specific program objectives and workflows.

Program Data-Based Creation

- Government health programs with Aadhaar demographic data can create ABHA numbers using API integrations.
- Authorization must be obtained from the National Health Authority (NHA) to access demo authentication APIs.
- ABHA generation can occur with or without the beneficiary's physical presence. [\[8\]](#)

Under the program, provisions have been made to generate ABHA IDs at multiple levels of healthcare facilities. The National NCD Portal is integrated with the Ayushman Bharat Digital Mission (ABDM). This enables the creation and linking of ABHA Health IDs within the portal. These IDs are to be created by ASHAs, ANMs, CHOs, and Computer Operators across various centres, including Sub-Centres (SC/SC-HWC), Primary Health Centres (PHC/PHC-HWC/UPHC-HWC), Community Health Centres (CHC), Sub-District Hospitals (SDH), District Hospitals (DH), and Medical Colleges or Tertiary Care Centres.

Overview of the National Programme for Prevention and Control of NCDs

According to the World Health Organization (WHO), non-communicable diseases (NCDs)—including heart disease, stroke, cancer, chronic respiratory diseases, and diabetes—account for over 74% of all global deaths. These conditions pose a major public health challenge both globally and in India. NCDs lead to high levels of morbidity and mortality across urban and rural areas and among all socioeconomic groups, resulting in a substantial loss of productive years of life. Additionally, they are the primary cause of out-of-pocket health expenditures in India. The economic burden of NCDs (excluding mental health) is projected to cost India \$3.55 trillion in lost economic output between 2012 and 2030. In response, Sustainable Development Goal 3 (Target 3.4) and the National Health Policy 2017 emphasize reducing premature NCD mortality and controlling key risk factors like tobacco and alcohol use. [\[11\]](#)

The global burden of non-communicable diseases (NCDs) remains alarmingly high, with NCDs accounting for 41 million deaths annually worldwide. Of these, 17 million are considered premature, occurring between the ages of 30 and 70. The impact is particularly severe in low- and middle-income countries, which bear 77% of all NCD-related deaths and 80% of premature NCD deaths. Among these, the leading causes are cardiovascular diseases (17.9 million deaths), cancers (9.3 million), chronic respiratory diseases (4.1 million), and diabetes (2.0 million), collectively responsible for over 80% of premature NCD deaths each year.

According to the WHO NCD India Profile (2018), NCDs are estimated to contribute to 63% of all deaths in India. Within this, cardiovascular diseases account for the largest proportion at 27%, followed by chronic respiratory diseases (11%), cancers (9%), diabetes (3%), and other NCDs (13%).

[12]

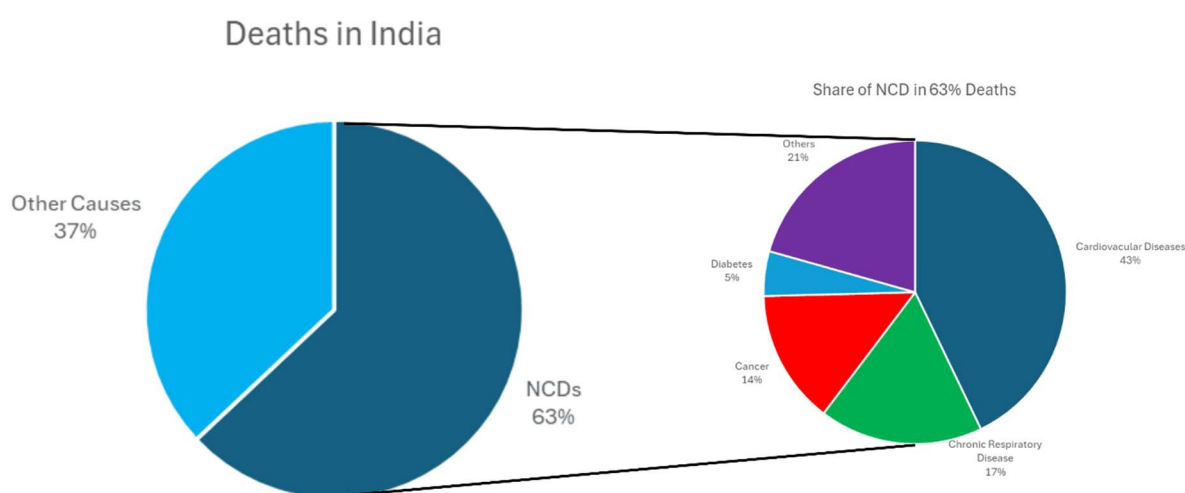


Figure 1.3: Share of NCDs in total deaths in India

Launched in 2010, the NPCDCS seeks to prevent and control non-communicable diseases through early diagnosis, effective management, health promotion, and public awareness.

Key components of the Programme include:

- **Screening and Early Detection:** Organizing regular screening camps and establishing NCD clinics at community health centres (CHCs) and district hospitals for early diagnosis and timely treatment.
- **Capacity Building:** Training healthcare providers, including nurses, medical officers, and community health workers, to effectively manage and control NCDs.
- **Public Awareness Campaigns:** Conducting awareness programs to educate the community about risk factors, preventive measures, and management strategies for NCDs.
- **Integration of Services:** Integrating NCD management with existing primary healthcare services to ensure comprehensive healthcare delivery. [13]

The National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD), previously known as NPCDCS, was launched in 2010 across 100 districts in 21 states to prevent and control major NCDs. Initially focused on opportunistic screening through NCD clinics at District

Hospitals and Community Health Centres, the programme has since expanded to cover all districts, offering screening, diagnosis, and management services for common NCDs at the district and block levels.

Under NP-NCD, Urban Community Health Centres (UHC) as well as Community Health Centres (CHC) are supported in running these clinics. Comprehensive patient management is provided, particularly for those referred from lower-level health facilities. The NCD clinics are managed by a Medical Officer (MO) and/or a Medicine Specialist, who are responsible for implementing the NP-NCD programme and delivering clinical services. [\[13\]](#)

The Programme includes both population-based and opportunistic screening approaches. Under population-based screening, individuals aged 30 years and above diagnosed with NCDs at Health and Wellness Centres (HWCs) are referred to Community Health Centres (CHCs), receiving priority care from the NCD Medical Officer and nurse at the NCD clinic. Opportunistic screening is carried out at the Community Health Center or UHC level for all age groups who visit the facility, involving history-taking, physical examination, BMI calculation, blood pressure and blood sugar checks to identify those with or at risk of NCDs. Diagnosed individuals are provided with counselling, lifestyle modification advice, and treatment. Diagnostic services such as blood tests, ECG, X-ray, and USG are made available (or outsourced if needed), and ongoing management of conditions like diabetes, hypertension, COPD, and stroke is ensured through the NCD clinic staff. [\[13\]](#)

The NP-NCD significantly contributes to India's public health landscape by addressing the rising incidence and prevalence of NCDs through a comprehensive, multi-sectoral approach. Its effective implementation is critical to reducing India's chronic disease morbidity, mortality, and economic burden.

In conclusion, digital health initiatives, particularly the implementation of ABHA IDs and the NPCDCS program, play a pivotal role in India's journey toward achieving Universal Health Coverage and meeting global Sustainable Development Goals. This research study seeks to assess awareness and utilisation of ABHA IDs and NCD clinics, identifying gaps and opportunities to strengthen these initiatives further within Jaipur, a major urban centre in Rajasthan.

Chapter 2: Literature Review

The review literature in Table 2.1 gives an in-depth examination of existing research on the awareness, utilisation, and implementation challenges of the ABHA (Ayushman Bharat Health Account) ID and Non-Communicable Disease (NCD) Clinics. It critically analyses and synthesises findings from selected national and regional studies that align with the objectives of the present research. The reviewed literature highlights trends in digital health adoption, barriers to implementation at the community and health system levels, and the role of frontline health workers in promoting government health schemes. This chapter establishes the contextual foundation for the study by identifying knowledge gaps and informing the research framework.

Table 2.1 Overview of reviewed papers

Author(s)	Study Location	Sample Size	Methodology	Salient Features
Choudhury et al. (2021)	Multiple (India)	1200 individuals	Cross-sectional survey	Identified awareness gaps in rural areas. • Awareness of ABHA ID was significantly lower in rural areas. • Digital literacy was a major barrier, especially among older adults and women. • Poor internet connectivity and limited device access limited ABHA usage. • Many participants expressed concerns about data privacy and trust. The study recommended local awareness campaigns using frontline health workers.
Kumar & Sharma (2022)	Urban India	850 urban residents	Quantitative survey	Higher awareness in urban areas, but low usage and understanding • Most urban residents were aware of the ABHA ID initiative. • Despite awareness, many lacked clarity on how to use the ID effectively. • Respondents often confused ABHA with other health schemes like Ayushman Bharat Yojana.

				• Younger, tech-savvy individuals showed better understanding than older participants. • The study suggested simplified information materials and user guidance tools.
Singh et al. (2021)	Rural Health Facilities	30 healthcare staff	Qualitative interviews	Barriers include workload, lack of training • Healthcare staff reported increased workload due to ABHA ID registration tasks. • Many lacked proper training on digital health systems and data entry. • Technical issues like slow software and poor internet disrupted the process. • Staff expressed frustration over the lack of support and follow-up from higher authorities. • The study recommended hands-on training and better infrastructural support.
Patel et al. (2020)	Urban and Rural India	1500 households	Mixed methods	Limited NCD clinic awareness despite availability • A large portion of respondents were unaware of NCD clinics in their area. • Awareness was slightly higher in urban regions compared to rural ones. • Even among those aware, the understanding of available services was low. • Community outreach and IEC (Information, Education, Communication) activities were found to be weak. • The study recommended integrating NCD awareness with routine health programs.
Rao & Mehta (2022)	Public Health Clinics	1000 individuals	Descriptive analysis	Inconsistent service availability affects clinic visibility

				• Respondents reported irregular functioning of NCD clinics in public health facilities. • Many visited clinics only to find services unavailable or staff absent. • This inconsistency led to low trust and reduced footfall over time. • Patients preferred private providers despite higher costs, due to reliability. • The study suggested better monitoring and scheduling to ensure consistent service delivery.
Verma et al. (2020)	North India	950 respondents	Community-based survey	Digital divide evident across socioeconomic groups • Higher-income and educated groups had better access to ABHA-related information. • Lower socioeconomic groups showed limited awareness and usage. • Smartphone ownership and internet access were key differentiators. • Gender disparities were also observed, with women less likely to be informed. • The study called for inclusive strategies targeting marginalised communities.
NHA Report (2021)	Pan-India	Government health records	Secondary data analysis	Implementation bottlenecks and registration delays were identified • Delays in ABHA ID registration were observed across multiple states. • Bottlenecks included software glitches and insufficient technical support. • Many facilities lacked dedicated staff for digital health tasks.

				• Data integration with existing health records was inconsistent. • The report recommended a robust IT infrastructure and centralised monitoring.
Sharma & Desai (2022)	Tier-2 Cities	600 urban participants	Structured interviews	Low staff engagement due to a lack of incentives • Healthcare staff showed low motivation to promote ABHA ID registration. • The absence of financial or professional incentives has reduced engagement levels. • Staff viewed ABHA-related tasks as an added burden to their routine work. • Some were unaware of the broader purpose of digital health initiatives. • The study suggested linking ABHA promotion to performance-based incentives.
Bhatt et al. (2019)	District Hospitals	45 hospital administrators	Focus group discussions	Infrastructural gaps hampering ABHA adoption • Administrators reported a lack of dedicated devices for ABHA registration. • Frequent power cuts and poor internet affected daily operations. • Many facilities lacked technical staff to support digital processes. • Budget constraints delayed the procurement of essential digital tools. • The study recommended targeted funding for digital infrastructure upgrades. •

Chapter 3: Methodology

Research Questions

1. What is the level of awareness and understanding of the ABHA ID among the general population in Jaipur?
2. What are the key barriers or challenges faced by healthcare staff in generating and implementing ABHA IDs?
3. To what extent is the public aware of Non-Communicable Disease (NCD) Clinics in Jaipur?
4. What demographic factors (e.g., age, gender, education level) influence awareness of ABHA ID and NCD Clinics?

Objectives

The study aims to understand the following:

1. To know the awareness and understanding of the Ayushman Bharat Health Account (ABHA) ID among the target population.
2. To identify the key challenges faced by healthcare staff in the generation and implementation of ABHA IDs.
3. To know public awareness regarding the existence, objectives, and healthcare services provided by Non-Communicable Disease (NCD) Clinics.

Study Design:

- Cross-sectional descriptive design.
- **Type of Data:** Primary Data collected through interviews and questionnaires.

Study Population

- General residents of Jaipur are eligible for an ABHA ID
- Frontline healthcare workers involved in ABHA ID generation in the government health facilities of Jaipur

Inclusion criteria

- Residents of Jaipur aged 18 years and above
- OPD patients in the government health facilities of Jaipur
- Healthcare staff are involved in ABHA ID implementation or working in NCD clinics at the government health facilities in Jaipur.

Exclusion Criteria

- Individuals below 18 years of age
- Those not residing in Jaipur
- Respondents unwilling to participate or unable to provide informed responses.
- Healthcare professionals not directly associated with ABHA or NCD services

Study Tools

- Questionnaire for the general population to assess awareness and usage of ABHA ID and NCD Clinic services. (Appendix 1)
- Questionnaire for healthcare staff to explore operational challenges and experiences.

Sample Size:

Based on feasibility and response saturation, the study included 88 participants from the general population and 20 healthcare providers.

Sampling Technique:

A convenience sampling method was used.

Data Collection Procedure

Data were collected across 10 selected health facilities in Jaipur, including Primary Health Centres (PHCs), urban primary health centres (UPHCs), Community Health Centres (CHCs), the District Hospital (DH), and Sub-Centres (SCs).

Table 3.1 Location and Name of Facilities Visited for Data Collection

Location	Type of Facility
Begus	PHC
Fatehpura	SC
Dhankya	CHC
Kumbha Marg, Jaipur	UPHC
Gandhinagar, Jaipur	UPHC
Sirsi	CHC
Gandhi Vihar, Jaipur	UPHC
Kanwatiya, Jaipur	District Hospital
PHC-HWC	Rangoli Garden
Vaishali Nagar, Jaipur	UPHC

Patient exit interviews were conducted using structured questionnaires to assess ABHA ID awareness, usage, and knowledge of NCD Clinic services. In addition, digital forms were circulated via WhatsApp to reach a wider sample of individuals who had accessed healthcare.

Key healthcare workers such as **ASHAs**, **ANMs**, **CHOs**, and **Computer Operators** were interviewed using role-specific questionnaires to understand their challenges in ABHA ID generation and perceptions of public awareness of NCD Clinics. A **Focus Group Discussion (FGD)** with ANMs was also conducted to gather group-level insights and promote open dialogue on shared challenges.

Data Analysis Plan

Data collected through questionnaires, interviews, and the FGD were compiled and organised for systematic analysis. Quantitative data from patient interviews and digital surveys were collected through Google Forms to avoid data sorting hustle and analysed using descriptive statistics such as frequencies, percentages, and cross-tabulations in STATA to identify levels of awareness and demographic patterns. Visual representations (charts and tables) were generated to present key insights.

Qualitative data from staff interviews were collected and presented as text, citing their views. Recurring patterns were identified to explore the challenges in ABHA ID generation and awareness of NCD Clinics. Both quantitative and qualitative findings were integrated to provide a comprehensive understanding of the research questions.

Ethical Considerations

Ethical integrity was maintained throughout the study. Informed consent was obtained from all participants after clearly explaining the purpose of the study, their voluntary participation, and their right to withdraw at any stage. Confidentiality and anonymity were preserved by assigning unique respondent codes and avoiding any collection of personally identifiable data. For interviews and the FGD, verbal and/or written consent was also obtained for audio recordings.

Data were securely stored and used only for academic purposes. The study protocol, instruments, and procedures adhered to ethical research standards and were reviewed for participant safety and comfort. Care was taken to ensure respectful engagement, particularly during sensitive discussions related to systemic challenges.

Chapter 4: Result

Findings from the Patients and the general public

This study surveyed 88 individuals to evaluate their awareness, adoption, and perceptions of the ABHA ID and NCD clinics. Table 4.1 provides demographic distribution insight into the population and ABHA and NCD-related responses.

In terms of age, the highest proportion of respondents belonged to the 46–60 age group (35.23%), followed by those above 60 years (25.00%). Younger individuals aged 18–30 accounted for 21.59%, and the 31–45 age bracket comprised 18.18% of the sample. This age distribution indicates that the study captured a significant representation of older adults, who are more likely to have regular health needs. Gender-wise, males constituted the majority at 61.36%, while females comprised 38.64% of the participants. Educationally, the respondents had varied backgrounds. Nearly half (46.59%) had completed primary to higher secondary education. A considerable number (31.82%) were graduates or had attained higher qualifications, while 21.59% reported having no formal education. This diversity in educational attainment suggests varying levels of digital literacy, which is pertinent when analyzing awareness of health initiatives like ABHA. Occupational data showed an almost even distribution. Homemakers were the largest group at 26.14%, followed closely by the unemployed or students (25%) and those employed in the private or government sectors (25%). Self-employed individuals formed 23.86% of the sample. This spread indicates that the findings reflect perceptions across different socioeconomic roles.

Regarding health-seeking behaviour, 44.32% of participants reported visiting healthcare facilities occasionally, while 37.50% visited once every month. A smaller segment, 18.18%, indicated frequent visits (two or three times a month). A significant majority (70.45%) preferred government healthcare facilities such as PHCs or CHCs. Only 14.77% opted for private clinics or hospitals, and an equal percentage utilised both. These preferences reflect a reliance on the public health system, likely driven by affordability and accessibility. Health record management remains traditional, mainly, with 93.18% of respondents still using manual files and folders. Only 6.82% used the ABHA app for managing health information, highlighting a critical gap in digital health adoption. Additionally, a large portion of the population is managing chronic conditions—61.36% reported suffering from at least one chronic disease, and 59% are on regular medication.

Awareness of the ABHA health card was moderate, with 54.55% indicating they had heard of it. However, only 39.77% reported having an ABHA ID. Furthermore, awareness of its functionality was low—72.73% were unaware that ABHA enables digital linking of health records. This highlights an urgent need for more robust information dissemination and user support.

The reach of NCD clinics also appeared limited. Only 31.82% of respondents had heard of NCD clinics, and only 22.73% knew about their services. This suggests that despite their strategic importance under the NP-NCD program, their visibility and impact remain low at the community level.

Despite these gaps, the perception of digital health records was largely positive. A substantial 71.59% of respondents believed that platforms like ABHA were useful. Notably, 75.00% expressed trust in the government to maintain data privacy and ensure safety, reflecting a willingness to adopt digital systems if adequate support and education are provided.

Table 4.1 Demographic profile and Response summary of 88 Respondents

Demographic and ABHA ID-related Responses (n=88)	n	%
Age of Respondent		
18-30	19	21.59
31-45	16	18.18
46-60	31	35.23
Above 60	22	25
Sex of Respondent		
Female	34	38.64
Male	54	61.36
Education		
No Formal Education	19	21.59
Primary/Secondary/Higher Secondary Education	41	46.59
Graduate & Above	28	31.82
Occupation		
Unemployed/Student	22	25
Homemaker	23	26.14
Employed(Private/Govt)	22	25
Self Employed(Business)	21	23.86
Hospital Visit Freq		
Frequently (Twice or Thrice a month)	16	18.18
Occasionally	39	44.32
Once Every Month	33	37.5
Preferred Facility		
Both	13	14.77
Government Hospital/PHC/CHC	62	70.45
Private Clinic/Hospital	13	14.77
How do you manage your health records?		
ABHA App	6	6.82
Manual Files and Folders	82	93.18
Suffering From a Chronic Disease		
No	34	38.64
Yes	54	61.36
On regular medication for any chronic disease?		
No	36	40.91
Yes	52	59.09
Have you heard about the ABHA health card?		
No	40	45.45
Yes	48	54.55
Have ABHA ID		
No	53	60.23
Yes	35	39.77
Aware ABHA links health records digitally		
No	64	72.73
Yes	24	27.27
Is Digital Records like ABHA useful		
No/Not Sure	25	28.41
Yes	63	71.59
Trust Govt for Data		
Somewhat/Not Sure	22	25
Yes	66	75
Heard about NCD Clinic		
No	60	68.18
Yes	28	31.82
Know Services of NCD Clinic		
No	68	77.27
Yes	20	22.73

Chi-square tests examined the association between ABHA ID ownership and various socio-demographic and service-related variables. This analysis aimed to identify whether factors such as age, sex, education level, occupation, and preferred healthcare facility were significantly associated with the likelihood of an individual having an ABHA ID. By comparing observed and expected frequencies across different categories, the tests helped determine if these variables had a statistically significant correlation with ABHA ID ownership.

The Chi-square test between ABHA ID ownership and age group reveals a statistically significant association ($\chi^2 = 7.84$, $p = 0.0495$). This indicates that the distribution of ABHA ID ownership is not uniform across different age groups, and that age is significantly associated with whether a person has an ABHA ID. Looking at the distribution, younger individuals appear more likely to have an ABHA ID. For instance, in the 18–30 age group, 42% (8 out of 19) have an ABHA ID, while in the above-60 age group, only 18% (4 out of 22) possess one. Conversely, ABHA ID non-ownership is highest among the elderly, with 82% (18 out of 22) in the above-60 category not having the ID. This trend suggests that younger populations are more engaged with or can better access digital health initiatives like ABHA. In contrast, older individuals may face barriers such as limited digital literacy, lesser outreach, or reduced perceived need. The statistically significant result confirms that this observed difference is unlikely due to random chance and that age plays a meaningful role in ABHA adoption.

Table 4.2 χ^2 : Having ABHA ID, Age of Respondent

Have an ABHA ID	Age of Respondent				Total
	18-30	31-45	46-60	Above 60	
No	11	6	18	18	53
Yes	8	10	13	4	35
Total	19	16	31	22	88

Pearson $\chi^2 = 7.84$ Prob = 0.0495

The Chi-square test examining the relationship between ABHA ID ownership and sex shows a χ^2 value of 1.23 with a p-value of 0.2678, indicating that the association is not statistically significant. This means there is no meaningful difference in ABHA ID ownership between male and female respondents in this sample. From the data, 47% of females (16 out of 34) and 35% of males (19 out of 54) have an ABHA ID. While this suggests a slightly higher proportion of ABHA ownership among females, the difference is not large enough to be considered statistically significant. Therefore, based on this analysis, sex does not appear to have a significant influence on whether an individual has an ABHA ID. The observed variation may be due to random chance rather than any systematic difference between male and female respondents.

Table 2.3 χ^2 : Having ABHA ID, Sex of Respondent

Have an ABHA ID	Sex of respondent		Total
	Female	Male	
No	18	35	53
Yes	16	19	35
Total	34	54	88

Pearson $\chi^2 = 1.23$ Prob = 0.2678

The Chi-square test between ABHA ID ownership and education level yields a χ^2 value of 8.52 with a p-value of 0.0141, indicating an association that is statistically significant, between the two variables. This means that ABHA ID ownership varies meaningfully across different levels of

education. The data reveals an unexpected trend: individuals with no formal education are more likely to have an ABHA ID (13 out of 19, or ~68%) compared to those with primary to higher secondary education (14 out of 41, ~34%) and graduates or above (8 out of 28, ~29%). In contrast, the majority of individuals with higher education levels do not have an ABHA ID. This statistically significant result suggests that education level does influence ABHA adoption, but not straightforwardly. Contrary to expectations, ABHA ownership is highest among the least educated group, possibly due to targeted outreach in underserved populations or greater reliance on public health services, where ABHA promotion may be more active. These findings highlight the need for inclusive awareness strategies that engage more educated groups who may be less exposed to or interested in ABHA despite greater digital access.

Table 0.4 Chi²: Have ABHA ID, Education of Respondent

Have an ABHA ID	Education of Respondent			
	No Formal Education	Primary/Secondary/Higher Secondary Education	Graduate & above	Total
No	6	27	20	53
Yes	13	14	8	35
Total	19	41	28	88

Pearson Chi2 = 8.52 Prob = 0.0141

The Chi-square test between ABHA ID ownership and occupation yields a Chi² value of 7.07 with a p-value of 0.0697, indicating that the association is not statistically significant at the 5% level, but is marginally significant at the 10% level. This suggests a potential relationship between occupation and ABHA ID ownership, though the evidence is insufficient to draw a definitive conclusion. The data shows that homemakers are likelier to have an ABHA ID (13 Yes vs. 10 No), possibly due to greater exposure to government health outreach activities. In contrast, most employed (private/government) do not have an ABHA ID (18 No vs. 4 Yes), indicating lower engagement with such initiatives. Meanwhile, the unemployed/students and self-employed show a more balanced distribution, but still with a slight lean toward non-ownership. These findings imply that occupational roles may influence the degree of interaction with public health programs promoting ABHA. While not statistically significant at a strict threshold, the near-significant result highlights a trend worth exploring further, particularly through larger or more targeted studies.

Table 4.5 Chi²: Have ABHA ID, Occupation

Have an ABHA ID	Occupation				Total
	Unemployed/ Student	Homemaker	Employed (Private/Govt)	Self-Employed (Business)	
No	13	10	18	12	53
Yes	9	13	4	9	35
Total	22	23	22	21	88

Pearson Chi2 = 7.07 Prob = 0.0697

The Chi-square test examining the relationship between ABHA ID ownership and preferred healthcare facility reveals a statistically significant association (Chi² = 7.97, p = 0.0186). This indicates that individuals' preferences for where they seek treatment are meaningfully linked to whether they possess an ABHA ID. The data shows that ABHA ownership is highest among those who prefer government and private healthcare facilities, with approximately 69% (9 out of 13) having an ABHA ID. In contrast, only 39% (24 out of 62) of those who prefer government facilities and 15% (2 out of 13) of those who prefer private clinics have the ID. This suggests that individuals who

engage with a mix of healthcare services may have greater exposure to ABHA-related information and registration opportunities, possibly through public health outreach. Meanwhile, those relying solely on private healthcare may be less likely to encounter ABHA promotion efforts, resulting in lower adoption. The significant result highlights the importance of expanding ABHA awareness and services into private healthcare settings to ensure broader and more equitable access.

Table 0.6 Chi²: Have ABHA ID, Preferred Facility

Have an ABHA ID	Preferred Facility			Total
	Both	Government Hospital/PHC/CHC	Private Clinic/Hospital	
No	4	38	11	53
Yes	9	24	2	35
Total	13	62	13	88

Pearson Chi2 = 7.97 Prob = 0.0186

In conclusion

- The association between ABHA ID ownership and age is statistically significant (Chi² = 7.84, p = 0.0495), suggesting that younger individuals are more likely to have an ABHA ID, while older age groups, particularly those above 60, show lower ownership.
- The relationship between ABHA ID ownership and education level is statistically significant (Chi² = 8.52, p = 0.0141). ABHA ownership is the highest among those with no formal education and lowest among graduates and above, indicating an inverse trend between education and ABHA adoption.
- The association between ABHA ID ownership and preferred healthcare facility is statistically significant (Chi² = 7.97, p = 0.0186), showing that individuals who prefer both government and private healthcare facilities are more likely to have an ABHA ID compared to those who prefer only government or private clinics.
- The association between ABHA ID ownership and occupation is marginally significant at the 10% level (Chi² = 7.07, p = 0.0697), indicating a potential link where homemakers show higher ABHA ownership than employed individuals. However, the result does not meet the conventional 5% threshold for significance.

Findings from ASHAs, ANMs and CHOs

The ASHAs and ANMs had a limited and unclear understanding of ABHA. Most of them believed it to be similar to an Aadhaar ID meant for use in hospitals, but they lacked clarity on how the hospital, or the patient would utilise it. Some mentioned that ABHA IDs are only used for enrolling NCD patients, while others assumed they are linked to the Ayushman Bharat card.

During field interactions, it became evident that ASHAs and ANMs faced significant challenges in generating ABHA IDs, primarily due to infrastructural and technical limitations. One of the most common issues reported was poor internet connectivity (Fig. 4.1), especially in remote village areas locally referred to as *dhanis*. These areas often lack network coverage entirely. As a result, ASHAs cannot access the ABHA generation portal in real-time while visiting these locations. To cope, they manually record all necessary data—including Aadhaar details, mobile numbers, and personal health information—in their registers during field visits. Once they return to their Primary Health Centre (PHC), they attempt to enter this data online to generate ABHA IDs or upload other forms, such as the Community-Based Assessment Checklist (CBAC).

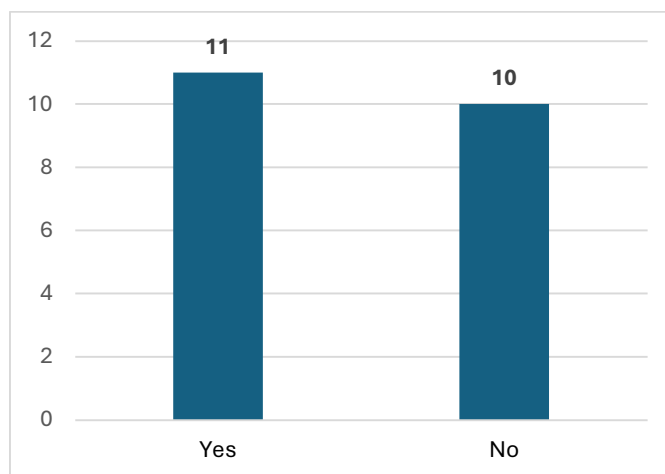


Figure 4.1 Proper Internet Connectivity in the Hospital facility or Field

Another technical issue that was frequently highlighted is the unreliability of the ABHA generation app and portal, particularly during midday hours. ASHAs reported that the app typically works only in the early morning or late evening and often becomes unresponsive or crashes during peak hours. This irregular functioning delays the process and increases the workload as they must repeatedly attempt to complete the same task.

A further complication is the lack of synchronisation between the AMRIT/ABDM portal and the ASHA mobile app. This disconnect means that even after generating an ABHA ID through one platform, the progress or status may not reflect in the other. Consequently, ASHAs cannot track or report their completed work effectively, leading to frustration and duplication of efforts.

The NCD app, which is also used for ABHA ID generation in connection with screening services, presents its limitations. Notably, it does not support offline ABHA ID creation. In scenarios without internet access, the only alternative is to access the ABHA portal through a web browser like Google Chrome, further complicating frontline workers' workflow.

One of the most significant and recurring issues mentioned by ASHAs was the OTP (One-Time Password) challenge. The process of ABHA ID generation requires an OTP to be sent to the patient's

registered mobile number for verification. However, ASHAs reported two significant problems: First, many patients, particularly elderly individuals, are either unwilling to share their OTPs or do not understand the process, creating resistance. Second, there are frequent delays in receiving OTPs due to poor network connectivity, which causes the session to time out and forces the ASHA to restart the process entirely.

These challenges were reaffirmed during a visit to the PHC at Rangoli Garden, where a Block Health Supervisor (BHS) also acknowledged the technical difficulties and the burden they place on health workers. The lack of real-time support, inadequate training, and absence of user-friendly interfaces were highlighted as systemic barriers preventing the smooth implementation of the ABHA ID initiative.

The Block Health Supervisor shared that many ASHAs are not sufficiently trained or tech-savvy to efficiently handle mobile-based tasks such as generating ABHA IDs. A number of ASHAs themselves admitted that they often rely on their children to assist them with smartphone-related activities. This lack of digital proficiency is attributed mainly to the fact that many ASHAs were recruited nearly two decades ago, with some having joined as early as 2004, when smartphones were not in use. These ASHAs are more accustomed to manual record-keeping in registers and now face difficulty adapting to digital systems. Transitioning from paper-based documentation to mobile applications has proven particularly challenging for older and more experienced ASHAs and ANMs.

ASHAs emphasised that proper and ongoing training is essential. As frontline workers who are often the first point of contact with the community, they believe it is critical for them to have a clear understanding of government schemes, including ABHA ID and NCD services. Their ability to effectively inform and guide the public is compromised without adequate digital training. Strengthening their technical skills would not only ease their workload but also improve the overall efficiency of public health service delivery.

During field interactions, ANMs reported frequent occurrences of technical errors—specifically Error 408 and Error 502—while using mobile applications to generate ABHA IDs. Error 408 typically arises when the app's API fails to respond, often due to server overload, making it challenging to complete the registration process. ANMs also shared that they often have to use their own mobile data for these operations because the government-provided Wi-Fi at health facilities is either weak or only accessible in specific rooms, limiting their ability to work efficiently across the premises.

A significant challenge highlighted was the need to operate multiple applications simultaneously—sometimes six to seven different apps—to enter and update patient data for various services such as ANC check-ups, vaccinations, NCD enrolment, and ABHA ID generation. Using so many apps causes mobile devices to slow down or crash, affecting work efficiency. Additionally, these applications are not synchronised, leading to duplication of effort and inconsistent records.

ABHA IDs can currently be generated using either OTP verification or demographic data. However, OTP-based registration presents its own difficulties: many citizens hesitate to share their OTPs due to mistrust or lack of understanding. In such cases, health workers opt for the demographic method, which also has flaws, such as outdated or duplicated records, where a single individual may appear multiple times with different identifiers.

Another key concern is the lack of a feedback mechanism for improving app usability based on inputs from frontline workers like ASHAs, ANMs, CHOs and Computer operators. Despite being the

primary users of these digital tools, they are not given avenues to report issues or suggest improvements. Furthermore, some ANMs were reluctant to engage in technical work, stating that their recruitment 10–15 years ago did not include any digital competency requirements. They feel unprepared and unwilling to learn complex mobile operations at this stage of their careers.

When asked about potential solutions, many ANMs suggested that instead of offering incentives to ASHAs or ANMs for technical tasks, appointing a dedicated technical staff member for each facility would be more efficient. They recommended using the same funds allocated for incentives to pay the salary of a trained person who can manage all app-based operations. This, they argued, would reduce the burden on health workers, require less training, and significantly improve the speed and quality of digital health data entry.

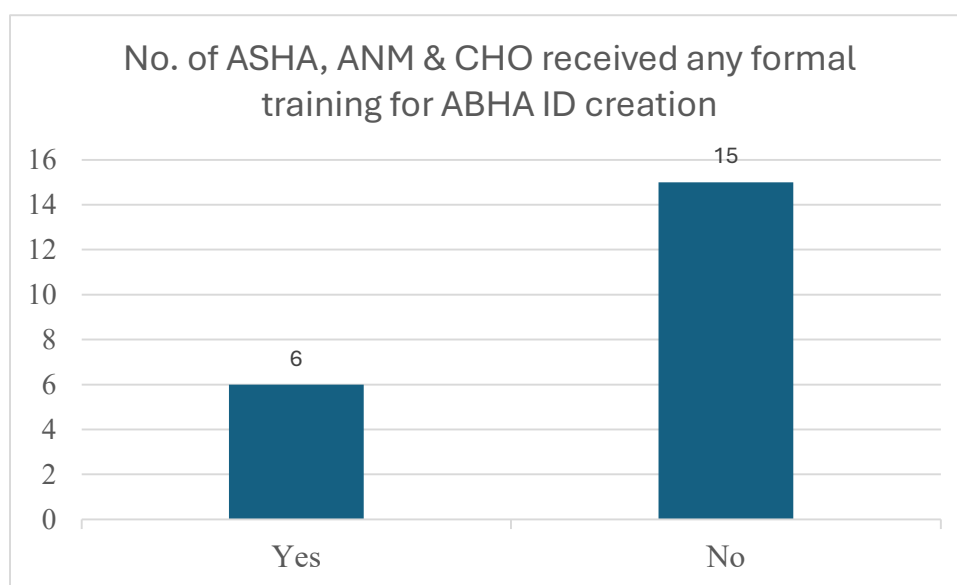


Figure 4.2 No. Of ASHA, ANM, CHO who received any formal training for ABHA

As shown in Figure 4.1, out of 23 healthcare workers we interviewed, only 6 received formal training. Others either learn through YouTube, through any video sent by the head office or are explained by a medical officer. The respondents expressed dissatisfaction about the quality of training sessions conducted for ASHAs, ANMs, and CHOs. They shared that most of these sessions are one-way lectures, where participants are not encouraged to ask questions or seek clarification if they face any issues. There is little interaction and no dedicated time for a question-and-answer segment. Moreover, they reported that while the training sessions are scheduled for an hour or two, only 10 to 15 minutes are spent discussing relevant content, with the rest of the time occupied by unrelated discussions or administrative talks.

Health workers highlighted the need for training to be more practical, interactive, and outcome oriented. They recommended regular monitoring and evaluation of these sessions to ensure they effectively build the necessary competencies.

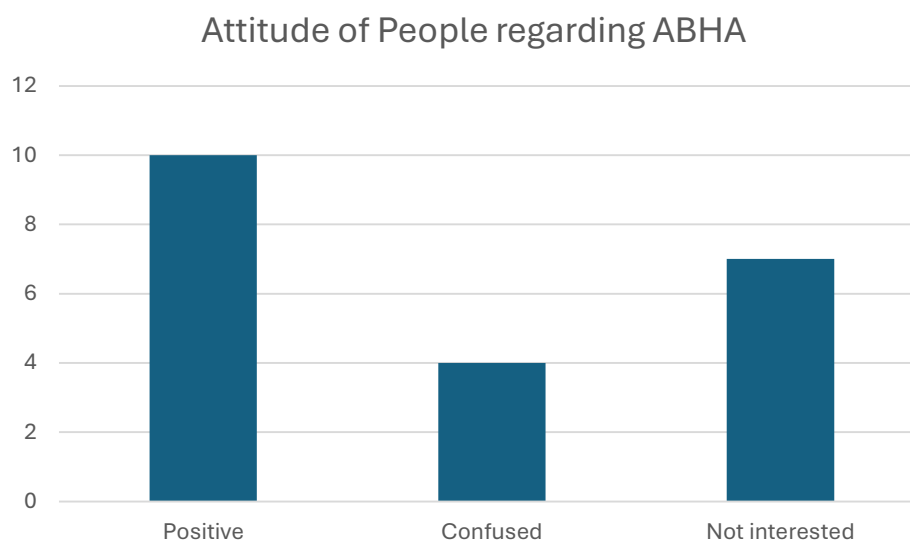


Figure 4.3 Attitude of Patients & People when introduced to ABHA ID

Many health workers proposed a more systemic solution to enhance ABHA ID generation: just like Aadhaar enrolment, ABHA ID generation should be facilitated at Aadhaar or Common Service Centres (CSCs). These centres already have the necessary infrastructure and trained personnel, which could reduce the burden on frontline health workers and improve overall efficiency and coverage.

The data highlights several key challenges in promoting the ABHA (Ayushman Bharat Health Account) ID among the population. The most reported issue is a lack of awareness in the community, cited by 13 respondents, indicating a significant gap in public knowledge about the initiative and its benefits. This suggests an urgent need for targeted IEC efforts to demystify myths and raise awareness and engagement. Technical issues during registration were reported by 11 respondents, underscoring usability problems and the need for system improvements. Limited internet access (7 mentions) further compounds the problem, particularly in rural or underserved areas, where digital infrastructure may be weak. No incentives for promoting ABHA (6 responses) and a lack of training among staff (4 responses) point to systemic issues in motivating and equipping healthcare workers to support ABHA enrolment actively. Additionally, low trust in digital health records and frequent OTP (One-Time Password) issues were each noted by 3 respondents, reflecting user-level concerns related to data security and authentication processes. Together, these challenges emphasise the need for a multi-pronged strategy involving awareness campaigns, technical enhancements, training programs, and trust-building measures to promote ABHA adoption across diverse settings.

Challenge	Frequency
Lack of awareness in the community	13
Technical issues during registration	11
No incentives for promoting ABHA	6
No internet access	7
Lack of training	4
People not trusting digital health records	3
OTP Issue	3

Table 4.7 Challenges faced by ASHA, ANM, CHO, CO

The responses from ASHA, ANM, and Community Outreach (CO) workers reveal critical areas where support is needed to promote and implement the ABHA initiative effectively. The most frequently cited need is for incentives, mentioned by 13 respondents, reflecting a strong desire for recognition and motivation for their field efforts. Better mobile and internet access was highlighted by 7 respondents, indicating that digital infrastructure limitations continue to hinder smooth ABHA registration and usage. More training was suggested by 6 respondents, emphasising the need to build capacity and ensure that frontline workers are well-equipped to explain and implement ABHA services confidently. Additionally, IEC materials such as posters and pamphlets were requested by 5 respondents, signalling a need for visual aids and informational tools to support public engagement. Other concerns included registration process improvements (3 mentions), provision of devices by the government (4 mentions), and ensuring the technical functionality of the app (2 mentions). These responses collectively point to the need for a comprehensive support system that combines financial, technical, and educational resources to enable frontline health workers to perform their roles effectively in ABHA implementation.

Support required by ASHA, ANM, and CO	Frequency
More training	6
Incentives	16
IEC materials (Posters, Pamphlets)	6
Better mobile/internet access	8
Registration process improvement	3
Govt. should provide devices	4
App should work properly	3

Table 4.8 Support required by ASHA, ANM, CHO, CO

In conclusion, Frontline health workers, especially ASHAs and ANMs, face numerous challenges in generating and promoting ABHA IDs, primarily due to technical limitations, poor internet connectivity, and inadequate training. In many rural areas, especially remote “*dhanis*”, a lack of network coverage prevents real-time ABHA registration. ASHAs often manually collect data during field visits and input it at PHCs, adding to their workload. The ABHA app and portal frequently crash or become unresponsive during midday hours, making them usable only during early mornings or late evenings. The lack of synchronisation between platforms (like AMRIT/ABDM and the ASHA app) further complicates record-keeping and progress tracking.

Additionally, the NCD app lacks offline functionality, and health workers must rely on browsers to access the ABHA portal in low-connectivity areas. One of the most recurring issues is OTP delays or failures, often due to network issues or patients' reluctance or confusion in sharing OTPs. In such cases, workers use the demographic method, which is prone to duplication and errors. Multiple app usage (6–7 apps) for different services like ANC, immunisation, and NCD screenings results in device lag, data duplication, and poor integration across platforms. Many ASHAs and ANMs lack digital skills, as they were recruited before smartphones became common. Several rely on their children to assist with mobile-based tasks. Training sessions are reportedly ineffective, often lecture-based, with

minimal focus on practical skills or interaction. There is no structured feedback system for app-related issues, and workers feel excluded from discussions on digital tool improvement.

ANMs and BHSs suggested appointing dedicated technical staff at each facility, using existing incentive funds, to handle digital data entry tasks. This would reduce the burden on frontline health workers and ensure better accuracy and efficiency.

Field data also reflect wider systemic challenges: lack of awareness in the community (13 mentions), technical registration issues (11), poor internet access (7), lack of incentives (6), and limited training (4). Additional concerns include distrust in digital systems and frequent OTP problems (3 mentions each). ASHAs, ANMs, and COs requested incentives, better mobile/internet access, training, IEC materials, government-provided devices, and app improvements.

Overall, the findings point to the urgent need for strengthened digital infrastructure, user-friendly apps, capacity-building, and systemic support—including technical staffing and policy integration—to improve the implementation and scalability of ABHA ID generation across communities.

Chapter 5: Discussion

The present study aimed to assess the level of awareness, access, and utilisation of the Ayushman Bharat Health Account (ABHA) ID and Non-Communicable Disease (NCD) Clinics among the community, while also understanding the infrastructural and operational challenges faced by health workers in implementing these digital health services.

The Chi-square test findings revealed an association that was statistically significant between ABHA ID ownership and age, with younger respondents demonstrating higher rates of ABHA adoption. This trend suggests that younger individuals are more receptive to digital health initiatives due to better digital literacy and frequent smartphone use. In contrast, elderly populations—particularly those above 60—showed the lowest levels of ABHA ownership, likely due to limited digital exposure and reluctance to adapt to mobile-based services.

A significant association was also found between ABHA ID ownership and education level. Surprisingly, ABHA ownership was higher among individuals with no formal education compared to those with higher qualifications. This contradicts common assumptions but may be attributed to targeted outreach efforts focused on underserved populations reliant on government health facilities. Similar observations were made by Thomas et. al (2022) [14], who reported that frontline workers prioritised ABHA registration in economically disadvantaged groups where health schemes are most actively promoted.

The study showed a statistically significant relationship between ABHA ID ownership and preferred healthcare facility. Respondents who utilised both government and private services were more likely to possess an ABHA ID, indicating that increased touchpoints within the health system facilitate greater exposure to digital initiatives. In contrast, those seeking care exclusively from private providers showed notably lower ABHA adoption, echoing concerns raised in earlier studies about the underutilization of ABHA in the private sector due to poor integration and lack of advocacy. [15]

The association between ABHA ID ownership and occupation was marginally significant, with homemakers more likely to have ABHA IDs than employed individuals. This trend may reflect greater interaction between homemakers and ASHAs/ANMs during community outreach activities, as observed by Kamini Pangare et. al [16], who emphasised the role of regular interpersonal communication in driving awareness and registration for public health programs.

Regarding operational challenges, the study highlights critical barriers ASHAs and ANMs face in implementing ABHA and NCD initiatives. Poor internet connectivity—especially in remote areas like Dhanis—was among the most cited challenges. Due to a lack of network coverage, ASHAs are often forced to collect data manually during field visits and input it later at PHCs. Similar issues were reported by Swati Deshpande et al. (2019) [17], who documented the impact of digital infrastructure gaps on timely service delivery.

The functionality of the ABHA app and portal also emerged as a key concern. Health workers reported frequent crashes and unresponsiveness during peak hours, forcing them to work early in the morning or evening. Furthermore, the lack of synchronisation between the ABDM portal and other platforms led to duplication of efforts and an inability to track completed tasks, a challenge corroborated in digital health evaluations conducted in Maharashtra and Odisha. [18]

OTP-related challenges significantly impeded ABHA registration. Many patients, particularly elderly ones, were unwilling to share OTPs or lacked understanding of the verification process. Network delays also led to session timeouts. These recurring issues hindered the registration process and contributed to frustration among health workers, especially when multiple retries were required.

ANMs reported technical errors such as Error 408 (API timeout) and Error 502 (server failure) during data uploads. In addition, most government-provided Wi-Fi connections were found to be weak or limited to specific areas, forcing health workers to use their mobile data. Moreover, the need to operate multiple unsynchronised apps for various services, ranging from ANC check-ups to NCD enrolment, caused device lags and reduced efficiency.

Another significant limitation was a lack of digital training and proficiency. Many ASHAs admitted relying on family members, particularly their children, to complete smartphone-based tasks. This is largely due to their recruitment over a decade ago, when digital competency was not a requirement. The transition from manual to digital documentation has been challenging for older health workers, highlighting the need for targeted, hands-on digital literacy training.

Feedback mechanisms are currently absent, preventing ASHAs and ANMs from reporting technical issues or suggesting daily improvements to the platforms they use. In addition, training sessions were criticised for being one-sided and ineffective, with minimal time spent on practical demonstrations or question-and-answer interactions. These concerns reflect broader systemic issues in program implementation, as noted by similar field studies on POSHAN Abhiyaan and e-RCH rollouts.

As a solution, several ANMs recommended hiring dedicated technical staff at health facilities using the same budget currently allocated for performance-based incentives. They argued that this approach would reduce training demands on existing staff and ensure more accurate and timely digital data entry. Additionally, the idea of integrating ABHA registration with existing Aadhaar or CSC centres was widely supported, as these already have established digital infrastructure and skilled operators.

Strengths of the Study

A key strength of this study lies in its mixed-methods approach, combining quantitative analysis with rich qualitative field insights. Chi-square tests enabled statistically grounded conclusions, while interviews and field observations added depth and context to the findings.

Limitations of the Study

The study is limited by its small sample size and focus on select PHCs and urban villages, which may not represent the broader population. It also did not include perspectives from private healthcare providers, who are crucial for ABHA ecosystem integration.

Chapter 6: Conclusion

The study aimed to assess the awareness, utilisation, and implementation challenges of the Ayushman Bharat Health Account (ABHA) ID and Non-Communicable Disease (NCD) Clinics among the community, with a specific focus on identifying the socio-demographic factors influencing adoption and the systemic barriers faced by frontline health workers.

Key Findings

- **Awareness and Ownership:** A considerable portion of the population was unaware of the ABHA ID and its purpose. ABHA ID ownership was not uniformly distributed, with significant associations observed with age, education level, and preferred healthcare facility. Younger individuals and those who used both public and private facilities were more likely to have ABHA IDs. Surprisingly, individuals with no formal education had higher ABHA ownership than those with higher qualifications, possibly due to targeted outreach.
- **Barriers to Implementation:** ASHAs and ANMs reported widespread technical and infrastructural challenges, including poor internet access in remote areas, frequent app crashes, OTP verification delays, and unsynchronised platforms. Manual workarounds and repeated data entries added to their workload.
- **Training and Digital Skills:** Many frontline workers lacked adequate digital literacy and expressed a strong need for practical, hands-on training. Older ASHAs and ANMs struggled to adapt to smartphone-based systems, often relying on family members for assistance.
- **Operational Gaps:** The absence of a feedback mechanism, inconsistent training quality, and limited device availability further restrict effective service delivery. The requirement to operate multiple uncoordinated apps leads to inefficiencies and frustration.

Implications

The findings suggest that while the ABHA initiative holds significant promise in building a unified digital health system, its success is currently constrained by systemic bottlenecks and user-level challenges. The digital divide—especially among elderly populations and health workers with low technical skills—may lead to unequal access and underutilization of services. Furthermore, the persistence of operational issues risks demotivating frontline workers, a crucial component of last-mile service delivery.

Challenges experienced by frontline staff highlighted the need for better technical support, training, and streamlined processes. The study also illuminated public engagement with NCD Clinics, offering direction for improving community outreach, health communication, and service accessibility.

This research supported the national vision of universal health coverage, contributing to the inclusive, efficient, and citizen-centric implementation of digital health platforms such as ABHA and the expansion of NCD services.

Recommendations

1. **Strengthen Digital Infrastructure:** Improve internet connectivity in remote areas, particularly rural villages and health sub-centres. Ensure functional Wi-Fi or provide reliable data allowances to ASHAs and ANMs.

2. **Deploy Dedicated Technical Staff:** Appoint trained digital support personnel at PHCs and CHCs to handle ABHA ID and app-based operations to collaborate with ASHA & ANMs, reducing the digital workload on frontline health workers.
3. **Enhance Training Quality:** Conduct regular, interactive, and skill-based digital training sessions for ASHAs, ANMs, and data entry operators. Monitor training outcomes and ensure that sessions are participatory and practical.
4. **Integrate Services Across Platforms:** Streamline the functionality of digital health apps by ensuring interoperability between ABHA, NCD, RCH, and other platforms to reduce duplication of effort and improve accuracy.
5. **Simplify the Registration Process:** The ministry should work on and implement a biometric approach to generating ABHA IDS as soon as possible. This will streamline the process of ABHA ID creation by bypassing the hassle of OTP and demographic data.
6. **Leverage Existing Infrastructure:** Enable ABHA ID registration through established digital centres like Aadhaar enrolment stations and Common Service Centres (CSCs), which already possess the necessary equipment and expertise.
7. **Community Awareness Campaigns:** Launch IEC initiatives focused on educating the public about the benefits of ABHA and NCD services, particularly in low-literacy and digitally excluded communities.

References

1. Government of India. Ayushman Bharat Digital Mission [Internet]. New Delhi: Ministry of Electronics and Information Technology; [cited 2025 May 21]. Available from: <https://www.digitalindia.gov.in/initiative/ayushman-bharat-digital-mission/>
2. Drishti IAS. Ayushman Bharat Digital Mission [Internet]. New Delhi: Drishti IAS; [cited 2025 May 21]. Available from: <https://www.drishtiiias.com/printpdf/ayushman-bharat-digital-mission-1>
3. Mishra US, Yadav S, Joe W. The Ayushman Bharat Digital Mission of India: An Assessment. *Health Syst Reform*. 2024;10(2):2392290. doi:10.1080/23288604.2024.2392290.
4. Government of India. Ayushman Bharat Digital Mission (ABDM) [Internet]. New Delhi: National Portal of India; [cited 2025 May 21]. Available from: <https://www.india.gov.in/spotlight/ayushman-bharat-digital-mission-abdm>
5. National Health Authority. Ayushman Bharat Digital Mission [Internet]. New Delhi: Government of India; [cited 2025 May 21]. Available from: <https://nha.gov.in/NDHM>
6. Ministry of Health and Family Welfare, Government of India. Update on Ayushman Bharat Digital Mission [Internet]. New Delhi: Press Information Bureau; 2024 Dec 17 [cited 2025 May 21]. Available from: <https://mohfw.gov.in/?q=pressrelease-166>
7. Press Information Bureau, Ministry of Health and Family Welfare, Government of India. Explainer on Ayushman Bharat Health Accounts (ABHA) [Internet]. New Delhi: Press Information Bureau; 2024 Apr 4 [cited 2025 May 21]. Available from: https://abdm.gov.in:8081/uploads/PIB_Explainer_on_Ayushman_Bharat_Health_Accounts_ABHA_79f9adab25.pdf
8. National Health Authority. ABHA Pathways [Internet]. New Delhi: National Health Authority; [cited 2025 May 21]. Available from: https://abdm.gov.in:8081/uploads/ABHA_Pathways_45fb0756cd.pdf
9. World Health Organization. Non-communicable diseases [Internet]. Geneva: WHO; 2022 [cited 2025 May 21]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
10. World Economic Forum, Harvard School of Public Health. Economics of non-communicable diseases in India [Internet]. Geneva: World Economic Forum; 2014 [cited 2022 Sep 24]. Available from: https://www3.weforum.org/docs/WEF_EconomicNonCommunicableDiseasesIndia_Report_2014.pdf
11. United Nations General Assembly. Resolution adopted by the General Assembly on 25 September 2015, 70/1: Transforming our world: the 2030 Agenda for Sustainable Development [Internet]. New York: United Nations; 2015 [cited 2022 Sep 24]. Available from: https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf
12. World Health Organization. Noncommunicable diseases country profiles 2018 [Internet]. Geneva: WHO; 2018 [cited 2022 Sep 24]. Available from: <https://www.who.int/publications-detail-redirect/ncd-country-profiles-2018>
13. Ministry of Health and Family Welfare, Government of India. Operational Guidelines for the National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD)

- [Internet]. New Delhi: Ministry of Health and Family Welfare; [cited 2025 May 21]. Available from: https://mohfw.gov.in/sites/default/files/NP-NCD%20Operational%20Guidelines_0.pdf
14. Thomas B, Raykundaliya DP, Bhatt S, Vadhel K. Study of awareness, enrolment, and utilization of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana in Gujarat, India . Int J Community Med Public Health [Internet]. 2023 Jul. 11 [cited 2025 May 21];10(8):2741-7. Available from: <https://www.ijcmph.com/index.php/ijcmph/article/view/11481>
 15. Sreerupa. Digitalisation at the frontlines: ASHAs' experiences across Haryana, Rajasthan, Kerala, and Meghalaya [Internet]. 2024 Dec 13 [cited 2025 May 21]. Available from: <https://ssrn.com/abstract=5169266> or <http://dx.doi.org/10.2139/ssrn.5169266>
 16. National Health Authority. Annual report 2020–21 [Internet]. New Delhi: National Health Authority; 2021 [cited 2025 May 21]. Available from: <https://nha.gov.in/img/resources/Annual-Report-2020-21.pdf>
 17. A descriptive study to assess the awareness regarding ABHA health card among people in selected areas of Pune city in a view to develop an information booklet". AJBR [Internet]. 2024 Dec. 18 [cited 2025 May 21];27(4S):8224-8. Available from: <https://africanjournalofbiomedicalresearch.com/index.php/AJBR/article/view/5183>
 18. Author(s). Rural health management: a diagnostic analysis of the ASHA's challenges vis-à-vis work performance [Internet]. Hisar: Guru Jambheshwar University of Science and Technology; 2024 Apr 24 [cited 2025 May 21]. Available from: https://gjust.ac.in/portal/upload/5.%20RURAL%20HEALTH%20MANAGEMENT%20A%20DIAGNOSTIC%20ANALYSIS%20OF%20THE%20ASHA%E2%80%99S%20CHALLENGES%20VIS-%C3%80-VIS%20WORK%20PERFORMANCE_24April2024_10-59-36-48.pdf
 19. NATHEALTH. Ayushman Bharat Digital Mission: Advancing Digital Health in India [Internet]. New Delhi: NATHEALTH; 2023 [cited 2025 May 21]. Available from: <https://nathealthindia.org/wp-content/uploads/2023/04/ABDM-Report-Final.pdf>
 20. Thomas B, Raykundaliya DP, Bhatt S, Vadhel K. Study of awareness, enrolment, and utilization of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana in Gujarat, India . Int J Community Med Public Health [Internet]. 2023 Jul. 11 [cited 2025 May 21];10(8):2741-7. Available from: <https://www.ijcmph.com/index.php/ijcmph/article/view/11481>