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Ayushman Bharat Scheme: A Comprehensive Analysis of Knowledge, Awareness, Utilization and Impact on Healthcare Access in India A Multi State Review

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Abstract

Background: Ayushman Bharat scheme is an initiative taken as a flagship healthcare program in India due to the need to have universal health coverage by offering comprehensive healthcare services. This review combines the evidence of several studies which investigate knowledge, awareness, practices, and patterns of use at the level of different states and the different stakeholder categories.

Objectives: This paper is aimed at analysing where Ayushman Bharat is with its implementation and how well or poorly its stakeholders understand and are aware of launching the scheme; how well or poorly it is utilised and also which are the obstacles in successful implementation of such a scheme across the different Indian states.

Methods: This systematic review examines the findings of 11 studies that had been conducted in various states namely Haryana, Madhya Pradesh, Karnataka, Uttar Pradesh, and Bihar. They used varied research methods such as cross-sectional surveys, qualitative phenomenological methods, and mixed-method assessments, and quasi-experimental studies that covered healthcare workers, healthcare beneficiaries and certain population groups.

Findings: The level of knowledge adequacy among the healthcare workers was between 46.72 and 55 percentages with considerable differences according to the subjective parameters of age and experience. Awareness among the beneficiaries reflected regional differences where the rates of registration levels were higher in the rural areas (58) than urban areas (37) in Bihar. Ownership levels were as low as 44% in Karnataka and as high as 48.8% in the state of Uttar Pradesh. Usage levels were critically low at 3% in certain areas although awareness levels were as high as 65%. The scheme also proved to have a great contribution in bringing down out-of-pocket spending especially on cancer care where median spending of 3.10 lakh between enrolled patients was starkly lower when compared to non-enrolled ones.

Conclusions: Ayushman Bharat is promising towards addressing issues related to healthcare access and lower cost of care; however, there are still numerous barriers to its full implementation including poor knowledge level among healthcare workers, low utilization rates despite awareness, administrative barriers, and technical issues during the use of digital platforms.

Keywords: Ayushman Bharat, Universal Health Coverage, Healthcare Access, Health Insurance, India

1. INTRODUCTION

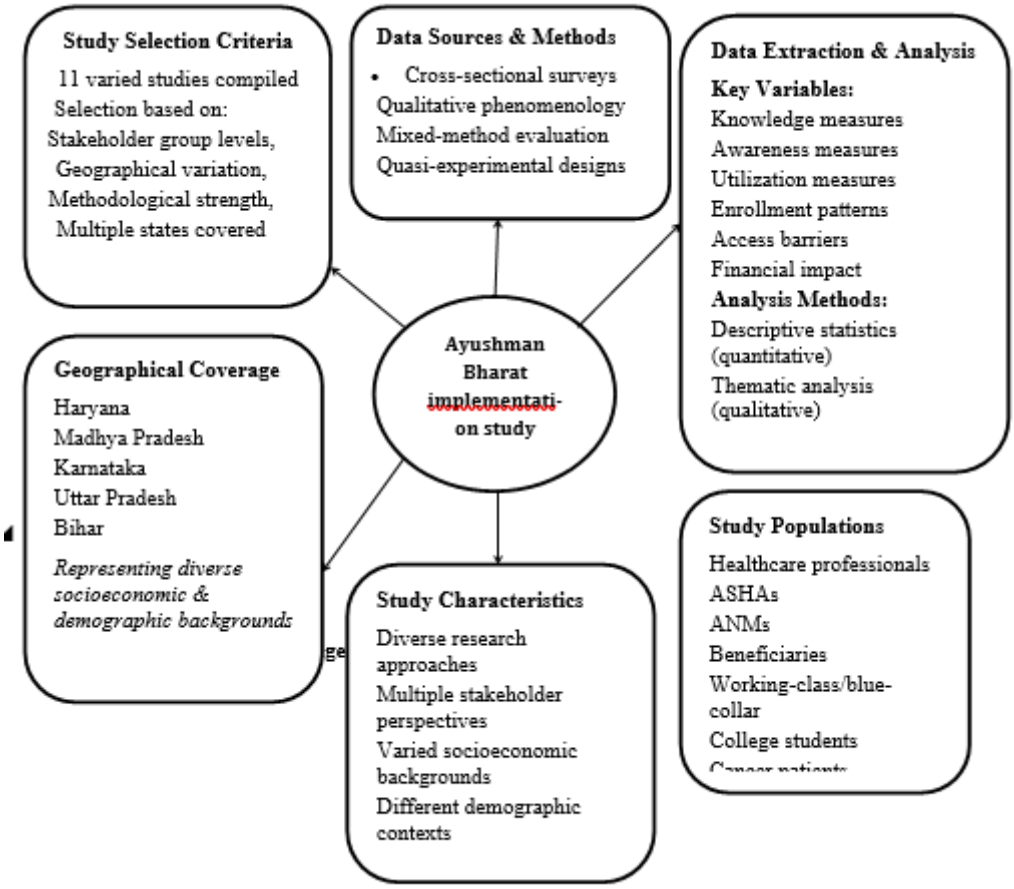
In 2018, India experienced revolutionary changes in health care, with the implementation of the Ayushman Bharat Health Insurance Scheme through which the government aspires to provide health insurance to all the country citizens. The program is a massive undertaking that will offer the entire healthcare coverage to more than 500 million vulnerable citizens who are core workers and offering universal health coverage [1]. The scheme is functioning in two major phases, including the provision of primary healthcare using Health and Wellness Centers (HWCs) and secondary and tertiary care coverage through Pradhan Mantri Jan Arogya Yojana (PM-JAY) [2].

Ayushman Bharat implementation will be a kind of paradigm shift where out of pocket payment system to more equitable mode of health care delivery is based on insurance. The core objective of this mission is to attain sustainable development Goal (SDGs), with a vision of Universal Health Coverage (UHC) [2]. Nevertheless, effectiveness of such mass-scale interventions in the field of the public health relies crucially on the range of factors such as the awareness of the stakeholder, the efficiency of the administration, the involvement of the beneficiary, and the competent use of the existing means [3]. It is vital to understand these implementation dynamics in refining of the policies and in realization of the end goals of the scheme which are universal health coverage. The healthcare workers i.e., Accredited Social Health Activists (ASHAs) and Auxiliary Nurse-Midwives (ANMs) play an important role of being an intermediary between the implementation of the scheme and being involved in community-based assessment and check-ups (CBAC) to register the beneficiaries [4]. It is their knowledge, attitudes and practices that play major role on scheme effectiveness and community acceptance. As well, beneficiary knowledge and awareness of scheme entitlement directly influence health outcomes and pattern of utilization.

There is recent evidence that implementation of scheme varies significantly across states, populations groups and healthcare settings. Complex implementation issues are presented by urban-rural inequities, inequalities in education, migration trend, and digital literacy status, which need vital assessment and specifications [5]. Moreover, the inclusion of digital health enterprise with the Ayushman Bharat Digital Mission (ABDM) introduces further complexity in the dynamics of implementation. This systematic review compiles evidence across several studies in different Indian states to bring about an overview of the current state of Ayushman Bharat implementations, major pairs of issues, and the best practices that have led to the improved healthcare delivery and coverage.

2. Methodology

The methodology used in these studies (selection criteria, data sources, study methods, data analysis, sample location, sample characteristics etc) are described below:



3. Results

a. Healthcare Worker Knowledge, Attitudes, and Practices

ASHA Workers' Performance in CBAC Implementation

Evaluation of the ASHA workers in India in Haryana showed that there was a lot of knowledge deficit on the implementation of Community-Based Assessment and Checklist (CBAC). Out of 75 asked ASHAs through the survey, 46.7 percentage had poor knowledge of the CBAC procedure, whereas 41.3 percentage had poor practical skills in the execution of the process [6]. These results demonstrate vital training gaps among the medical workforce involved in the implementation of the scheme on the primary level. Both age and experience became important predictors of knowledge, attitudes, and practices (KAP) scores indicating that demographic considerations in designing trainings should be taken into account when developing the workforce. Surprisingly, there were no significant correlations of the formal level of education and performance suggesting that special, pragmatic training is more beneficial in enhancing the quality of CBAC implementation instead of high-level education.

Auxiliary Nurse-Midwives' Knowledge and Perceptions

A more positive one was drawn in relation to the research in 60 ANMs in Gurugram, Haryana, in which 55 percentages proved to have sufficient know-how about the Ayushman Bharat scheme [7]. It would be interesting to note that every participant was positive in the perceived impact and value of the scheme. The fact is that, there were no remarkable demographic associations with the level of knowledge or perception which implies more homogeneity in terms of ANMs training effectiveness than that of ASHAs.

The creation of the detailed guide sheet to the implementation of the program can be considered one of the practical products of the research, which can be used as a model of data standardization of the training of healthcare workers in various areas and cadres.

b. Beneficiary Awareness and Knowledge Patterns

Regional Variations in Awareness

In the studied populations, the awareness about the beneficiary was shown to vary both regionally and demographically significantly. A dual search e-mail survey of 405 beneficiaries in Karnataka also indicated the high overall levels of awareness but some critical gaps in comprehending features of the scheme and accessing it [8]. Such an observation indicates that the campaign of general awareness has met with a fair degree of success, whereas specific education regarding the use of scheme needs improvements.

The optimal factor analysis and ordinal logistic regression regimes found the main determinants on the awareness levels, which might help to conduct the specific awareness interventions. The advanced analysis methodology utilized in this research provides an example of the model that explains complicated relations between demographic variables and scheme knowledge.

Urban-Rural Disparities

In Bihar, the conclusion about the urban-rural differences in scheme participation was strikingly clear as based on the fact that rural registration was very high (58%) than in urban areas (37%) [9]. Such trend is against stereotypical thinking regarding an easier access of urban populations to government schemes and indicates that implementation strategies adopted in rural areas have been more successful.

The main source of information became the social media (31%), and only after that comes the newspapers (21%) making clear that digital outreach approaches are relevant in the promotion of schemes. Nonetheless, there were still administrative obstacles, documentation complexities and Aadhaar association challenges restricting the adoption to rural and urban society.

c. Card Ownership and Utilization Patterns

Coverage vs. Utilization Gap

The most critical finding in several researches was that there was a big disparity between being conscious, having a card, and using a card. The survey of 375 households in the region of Ayodhya in Uttar Pradesh revealed that not all these households (48.8 percent) had golden cards, and only 40.4 percent of the surveyed households used offered services [10]. The current consumption level seems moderately high in comparison to the Chamarajanagar district of Karnataka; as in a survey of 1,027 families, though the ownership of card is 44% and awareness of the scheme stands at 65%, very few families had used the services of the scheme yet [11].

These drastic differences in use rates imply that the local factors of implementation, quality of healthcare infrastructure, and the adequacy of the provider network play an important role in the success of a scheme more so than having a person present on the scheme or possessing a card.

Barriers to Utilization

Major hindrances in the development of successful schemes were mismatch between aadhaar forms, administrative complexities and issues of quality with the services provided against a healthcare. Even with the availability of financial coverage, a huge number of beneficiaries still incurred catastrophic

health expenditures, but not as high as those of non-beneficiaries.

The fact that out-of-pocket spending continues to occur despite scheme coverage indicates area of gaps in scheme implementation that should be addressed systematically, especially in relation to providing coverage to all the important healthcare services as well as the need to address incidences of hidden costs.

d. Special Population Groups

Blue-Collar Workers and Migration Challenges

In Gurgaon, Haryana, research shows a strong correlation between the individual's educational background, their place of origin (specifically, if they are from Haryana) with their knowledge and participation in government schemes as well as scheme enrolment [12]. Migrant labor was an especially uneven phenomenon, and there was a particular value in a simplification of application procedures that could address large-scale internal migration in India.

The phenomenon experienced of scheme access as interpreted in this study gave significant details that the administrative complexities are causing disproportionate effects to the vulnerable populations who stand the most to gain a thorough medical scheme.

Digital Health Initiative Awareness

Karnataka university students who belong to a digitally literate group of people were merely partially aware of the Ayushman Bharat Digital Mission (ABDM) with major barriers to usage [13]. This result brings into the picture the accessibility of digital health initiatives among the less educated groups and the necessity of better technical instructions and user-friendly interface.

The qualitative working conducted in 2025 states that even populations, which have been technologically comfortable, have problems with implementing ABDM, implying that there is a general problem with usability that must be implemented in specific solutions in terms of successful integration of digital health.

e. Financial Impact and Healthcare Access

Cancer Care Cost Analysis

A detailed study of 271 cancer patients who had been treated in Karnataka showed that the scheme had really made difference in minimizing the out-of-pocket spending. The median costs were much lower (3.10 lakh) in patients enrolled into Ayushman Bharat-Arogya Karnataka than patients privately insured or with no cover [14]. The discovery indicates the specific utility of the scheme towards high-cost conditions which are chronic and customarily cause financial catastrophes to Indian families. The security against financial risk can be described as one of the most tangible benefits of the scheme, notwithstanding the existence of other difficulties in implementation.

Rural Healthcare Access Improvement

Four villages of Madhya Pradesh had mixed-method evaluation of massive out-of-pocket spending and healthcare improvement issues that occurred during Ayushman Bharat implantation [15]. Nevertheless, the ongoing issues in the area of beneficiary identification, backlog in enrolments, and quality/equity concerns still restricted the possibility to achieve optimal results. Such a rural orientation of this assessment offers a valuable piece of information on the effectiveness of this scheme in a region where people have historically had a lack of proper healthcare and thus indicates the impact of the scheme as well as implementation challenges even under the conditions of resource-limitation.

f. Educational Interventions and Knowledge Enhancement

Teaching Program Effectiveness

An example of how this was implemented through the use of targeted educational interventions is a quasi-experimental study conducted in Greater Noida, Uttar Pradesh, and showed how the latter affected scheme knowledge. In 59 respondents, there was a substantial rise in the mean score on knowledge (trust knowledge scores improved significantly after the educational program) of knowledge (9.6 to 13.7 out of 20) [16]. There was a big impact between age and income level and learning, thus educational programs should be geared to demographic parameters in case the programs would have maximum effect. The significant knowledge gain attained during regular education emphasizes the possibility to expand such an intervention to the wider population.

4. Discussion

Implementation Challenges and Systemic Issues

The integration of data of various states and population groups indicates the existence of systematic difficulties that go beyond regional borders. The lack of knowledge by the healthcare workers, especially by the ASHAs in charge of primary level implementation, is a basic limitation of the scheme effectiveness. The observation that 46.7 percent of ASHAs exhibited inadequate knowledge concerning CBAC indicates that the existing training programs are in sufficient needs of massive reform and standardization.

Bureaucracy and red tape such as the Aadhaar linkage and the complicated documentation procedures continued to prove to be major stumbling blocks in various populations as well as different geographical setting. The consequences of these bureaucratic challenges are easily seen as counterproductive to the scheme in the case of the goals of equity among fail to bestow the benefits of the scheme to the vulnerable populations. The fact that these problems exist in successive researches means that systematic administrative changes are required instead of localized solutions.

Digital Divide and Technology Integration

The tempered awareness and serious usage barriers to ABDM even in university students brings to focus critical digital divide problems that may hinder the potential technological development of the scheme. With the digitalization of health care provision, access to technology in healthcare is an essential factor that promotes principles of universal coverage. The juxtaposition made between classic awareness of schemes (usually high) and involvement in digital platforms (soft and tense) indicates that technology combination is a method that needs important attention to the ability of users, the design of interfaces, and the accessibility of the support infrastructure.

Rural-Urban Implementation Dynamics

The fact that the numbers of registered rural population were higher than the registered urban population in Bihar creates a dilemma against the idea that urban population has better access to government schemes. This trend is likely to represent either more active outreach in the rural communities, more established networks of community health workers or even perhaps an increased need of healthcare leading to enrolment incentive motivation. Nevertheless, the difference in the rate of utilization between areas implies that the success of enrolment is not necessarily connected with efficient healthcare access, which underscores the necessity of adequate provider networks and the quality of offered services in defining scheme influence.

Financial Protection and Healthcare Equity

The essence of targeted healthcare spending in the area of cancer care and reduction of out-of-pocket spending among the scheme population demonstrates a potential program in managing a financial catastrophe related to healthcare expenses. The given finding is especially meaningful considering the fact that India has historically been characterized by very high healthcare-initiated destitution rates. Nevertheless, the fact that out-of-pocket payments are not completely eliminated even in the case of beneficiaries' shows that the coverage is incomplete or has loopholes, which needs to be addressed. It will be important to convey genuinely overall coverage so as to attain the goals of equity in the scheme.

5. Summary Tables

1. Healthcare worker knowledge and performance across studies

Study Location	Healthcare Worker Type	Sample Size	Adequate Knowledge (%)	Key Findings
Haryana	ASHAs	75	53.3	Age and experience predict performance; education level non-significant
Gurugram, Haryana	ANMs	60	55.0	Positive perceptions universal; no demographic correlations

Table 1: Healthcare worker knowledge and performance across studies

2. Beneficiary Awareness and Utilization Patterns

State/Region	Sample Size	Awareness Level	Card Ownership	Utilization Rate (%)	Key Barriers
Karnataka (Likert Survey)	405	High overall	Not specified	Not specified	Gaps in scheme feature knowledge
Uttar Pradesh (Ayodhya)	375 households	Not specified	48.8%	40.4%	Aadhaar discrepancies, under-utilization
Karnataka (Chamarajanagar)	1,027 households	65%	44.0%	3.0%	Communication gaps, low engagement
Bihar	Multi-district	Not specified	Rural: 58%, Urban: 37%	Not specified	Administrative barriers, paperwork issues

Table 2: Beneficiary Awareness and Utilization Patterns

3. Educational Intervention Outcomes

Location	Study Type	Sample Size	Pre-intervention Score	Post-intervention Score	Improvement
Greater Noida, UP	Quasi-experimental	59	9.6/20	13.7/20	42.7% increase

Table 3: Educational Intervention Outcomes

4. Financial Impact Analysis

Study Focus	Sample Size	Key Financial Finding	Impact Measure	Study Focus
Cancer Care (Karnataka)	271 patients	Median OOP: ₹3.10 lakh	Lower costs for scheme beneficiaries vs. private/no insurance	Cancer Care (Karnataka)
Rural MP Villages	4 villages	Reduced OOP expenditure	Significant improvement in healthcare access	Rural MP Villages

Table 4: Financial Impact Analysis

6. Key Findings and Take-Home Messages

Critical Implementation Gaps

- **Preparedness of healthcare workers**: Almost one in every two ASHAs lack adequate understanding of implementation of schemes and thus there is an immediate need to train them well
- **Awareness-Utilization Disconnect:** A low level of utilization does not necessarily follow a high level of awareness with certain regions exhibiting only 3 percent of utilization in areas with 65 percent awareness
- **Administrative Barriers:** Administrative issues, especially on Aadhaar linkage, continue to impose a constant restriction on access to the scheme among the population

Successful Implementation Elements

- **Financial Protection:** The out-of-pocket spending will decrease by a significant percentage, especially among high-cost conditions such as cancer care
- **Rural Reach:** There are places where the rate of registration is higher in the rural areas than in the urban areas, implying rural reach programs are effective
- **Educational Interventions:** Specialized education interventions have been able to show significant enhancement of knowledge (42.7 percent gain on tests)

Priority Intervention Areas

- **Training Standardization:** Broadly defined standardized training of healthcare workers especially ASHAs
- **Administrative Simplification:** Remove the bureaucracy by creating easier processes of enrolling and using these services
- **Digital Literacy Support:** Technical support and user support of digital health efforts is enhanced
- **Provider Network Strengthening:** Having an effective healthcare provider networks to deal with the growing consumption

Policy Implications

- **Differentiated Strategies:** Different implementation approaches must be taken into consideration, which include rural-urban, educational and demographic differences

- **Continuous Monitoring:** Frequent monitoring of knowledge, awareness and utilization patterns, so as to establish emerging challenges
- **Stakeholder Integration:** Co-ordination between health care workers, health care administrators and beneficiaries in the deployment of best practices

7. Conclusions

The overall picture gained on the basis of this review of Ayushman Bharat implementation in various states of India is somewhat mixed as many accomplishments are yet to be realized with albeit continuing challenges. This scheme has proved to be very successful in lowering financial costs to impede access to healthcare especially on high cost conditions and has been able to penetrate rural areas of enrollment to a considerable extent. Nevertheless, the shortage of key information among healthcare workers, the lack of efficiency in healthcare administration, and the discontinuation between awareness and use remain a factor that restrains the best of outcomes.

The evidence has pointed to multidimensional interventions that will be needed to succeed in the implementation of the scheme since the training, administration, and service delivery will need to be redesigned handled in a holistic way. Capacity building of healthcare workers becomes another of the top priorities and especially the ASHAs who act as the key implementers. The conclusion is that, about half of them lack sufficient knowledge poses an important limitation to the effectiveness of schemes that should be addressed urgently. Simplification of administration seems to be crucial in enhancing access to vulnerable groups, especially through the Aadhaar linkage and enrollment procedures. Attention to a number of studies suggests that the existing mechanisms might be too complicated to be understood by the people who need healthcare assistance most of all.

The strong regional differences in the utilization despite equal awareness levels indicate the significance of the quality of implementation in the local area, network sufficiency of providers, and the quality of service delivery. This observation implies that national policy frameworks should be accompanied by effective local implementation support system and monitoring. The integration of digital health by means of ABDM is a challenge and an opportunity. Although digital settings provide the prospect of a better service delivery and monitoring, prevailing evidence indicates there are enormous barriers of usability and accessibility that need to be solved before the circulation of such process. The apparent value of the scheme on financial protection which is crucial in the cases of catastrophic health conditions justifies its underlying principles in its design. Nevertheless, to reach the de facto universal coverage, it will be necessary to manage the identified implementation gaps by systematic evidence-based interventions.

It is concluded that future studies are advised to be directed towards longitudinal outcomes evaluation, determination of intervention, and conclusion with the preparation of standardized implementation guidelines that can be adopted to different local settings without compromising quality and equity principles. The evidence base that is considered by this review offers a base of evidence-informed policy enhancement and refinement implementation. The lofty goals of universal health coverage and health equity in India formulated by the scheme will require ongoing and systematic assessment and adaptive management.

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