Bridging the Healthcare Gap: A Study on the Utilization of Ayushman Bharat in Uttar Pradesh

Dr. Azeem Ahmad[1], Dr. Syed Belal Hassan[2], Dr. Mohd Tauseef Khan[3], Dr. Shadma Anwar*[4], Dr. Siraj Ahmad[5]

[1]Junior Resident, Department of Community Medicine, IIMSR

Email ID: azeem@iul.ac.in

[2]Prof. & Head, Department of Community Medicine, IIMSR

Email ID: sbelal@iul.ac.in

Email ID: syedbl@gmail.com

[3]Assistant Professor, Department of Medicine, IIMSR

Email ID: tauseefkhan4786@gmail.com

*[4]Assistant Professor, Department of Community Medicine, IIMSR

Email ID: docshadmaanwar@gmail.com

Email ID: shadmaa@iul.ac.in

0000-0002-4961-341X

[5]Prof., Department of Community Medicine, IIMSR

Email ID: sirajamd@iul.ac.in

***Corresponding author:**

Dr. Shadma Anwar

Postal Address: 24B/1B, Karamat ki chowki, near masjid Abu Baqar, Kareli, Allahabad, City: Allahabad, Country: India, Pin code: 211016

1. INTRODUCTION

India has pledged to achieve Universal Health Coverage (UHC) as part of its Sustainable Development Goal 3 (SDG 3) commitment to ensure "Good Health and Well-Being" for all citizens. UHC, as defined by the World Health Organization, refers to ensuring that all individuals have access to essential health services—including preventive, curative, rehabilitative, and palliative care—without facing financial hardship [1]. India's journey toward UHC began with the Bhore Committee Report of 1946, which advocated for a publicly funded, universally accessible healthcare system, especially for the economically disadvantaged [2]. The Committee proposed a three-tier structure consisting of Primary Health Centres (PHCs), secondary units, and tertiary facilities at the district level. While this model laid the foundation for India's healthcare system, persistent gaps in infrastructure, human resources, and funding have hindered its full realization [3].

To address these disparities, the Indian government launched several health initiatives, including the National Health Mission, Rashtriya Swasthya Bima Yojana (RSBY), and various state-sponsored health insurance programs. Among these, the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), launched in 2018, stands as a landmark intervention aimed at providing ₹5 lakh annual health coverage per family for secondary and tertiary care services [4]. The scheme targets nearly 55 crore individuals from over 12 crore economically vulnerable families, accounting for the bottom 40% of India's population.

Uttar Pradesh, with its vast rural population and socio-economic diversity, presents unique challenges to the effective implementation of AB-PMJAY. Despite moderate levels of awareness in some areas—such as 38.67% in rural Lucknow—utilization remains alarmingly low, with only 2.67% reporting having used the scheme [5]. In Gautam Buddha Nagar, although awareness is relatively higher, utilization still remains limited to just 8% of urban and 15.2% of rural beneficiaries [6]. These discrepancies reflect a significant knowledge-practice gap, pointing to systemic barriers like lack of information, logistical issues, and administrative inefficiencies that obstruct access to the scheme's benefits.

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2. AIM & OBJECTIVES

The aim of this study was to assess the utilization of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) among eligible beneficiaries in Uttar Pradesh with the following objectives:

• To estimate the coverage under AB-PMJAY among the population of Uttar Pradesh

• To evaluate the extent of hospitalization and utilization of AB-PMJAY services by the beneficiaries.

3. METHODOLOGY

A community-based cross-sectional study was conducted from April 2023 to October 2024 in rural and urban areas of Lucknow and Barabanki districts, Uttar Pradesh. The study population included adults aged >18 years residing in the selected areas for at least 6 months and eligible under AB-PMJAY, verified through Ayushman Card or SECC 2011 listing.

Inclusion Criteria:

• Participants > 18 years of age available at the time of survey.

• Respondents who are falling into AB-PMJAY eligibility criteria.

• Willing to provide informed consent.

Exclusion Criteria:

• Locked /inaccessible house after two consecutive attempts.

• If the respondent was too ill or cognitively impaired to answer questions.

• Refusal to participate or provide consent.

Sample Size: The sample size has been calculated by using the formula below:

$$n = Z^2_{(1-\alpha/2)} P(1-P)/ d^2$$

Using a prevalence of 40% (Prasad et al., 2023)[7], margin of error 6.5%, and 90% confidence interval, a sample size of 228 was calculated, accounting for a 4% non-response rate.

Sampling Technique: The multi stage sampling was carried out in the following stages:

Stage 1: Selection of Districts Two districts in Uttar Pradesh — Lucknow and Barabanki — were purposively selected based on operational feasibility and cooperation with local health authorities.

Stage 2: Selection of Blocks From each district, one block was chosen using purposive sampling for ease of field operations and support from district level health officials.

Stage 3: Selection of Villages/Wards Within each selected block, 30 villages / urban wards were randomly selected. The bottle spinning method was used to choose the direction for the first house in each selected area.

Stage 4: Selection of participants in each selected village / ward, four participants were interviewed from four different houses. The direction for movement was determined using the bottle-spinning method, and next others house selected by the same method. 42 Selection of Respondents From each selected village, four adult respondents were interviewed from four different houses— preferably the head of the family or another informed adult member who could provide reliable information about the family's awareness and utilization of the AB-PMJAY scheme. A total of 228 respondents were targeted for inclusion in the study.

Data Collection Tools: A pre-tested, semi-structured questionnaire was used for data collection. Data was collected via face-to-face interviews using a pre-tested, semi-structured questionnaire developed in English and translated to Hindi. A pilot study with 30 participants was conducted to refine the tool. Trained health workers conducted the interviews.

Ethical Consideration: Ethical clearance was obtained from the Institutional Ethics Committee of Integral Institute of Medical Sciences & Research, Lucknow (No: IEC/IIMS&R/2023/14). Written informed consent was secured, and confidentiality was maintained.

Data Analysis: Data analysis involved coding, grouping, and processing responses from the interview schedule, followed by tabulation and entry into an MS-Excel spreadsheet. The data was summarized in frequencies as well as mean and standard deviation in the form of tables and charts.

4. OBSERVATION & RESULTS

The study included 228 participants (Table 1), with a majority aged between 30–40 years (31.58%) and predominantly male (68%). Most participants were Hindu (70.18%) and belonged to lower socioeconomic classes, with 42.98% in Class V as per the Modified B.G. Prasad 2024 scale. Monthly income ranged mainly between ₹10,000–₹20,000 (42.98%). The majority

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reported no disability among household members (93.86%), and most households had six members (49.12%). Educational attainment was low, with 35.09% educated up to the 5th class. In terms of housing and living conditions (Table 2), 58.77% lived in nuclear families and 71.05% resided in pucca houses, with five rooms being the most common (38.16%). Over half (52.63%) owned their homes and 79.39% owned agricultural land. Employment was primarily supported by two or more earning members in 90.79% of households.

Table 1: Socio-demographic distribution of the participants:

Socio-demographic Characteristics		Frequency	Percentage
Age group	30-40	72	31.58%
	41-50	66	28.95%
	51-60	47	20.61%
	≥ 60	43	18.86%
Gender	Male	155	68.0%
	Female	73	32.0%
Religion	Hindu	160	70.18%
	Muslim	68	29.82%
SES (acc. To modified B.G. Prasad 2024 scale)	Class I	2	0.877%
	Class II	4	1.74%
	Class III	44	19.29%
	Class IV	80	35.08%
	Class V	98	42.98%
Total Monthly Income	< 10,000	66	28.95%
	10,000-20,000	98	42.98%
	20,000-30,000	64	28.07%
Disability among Household Members	No	214	93.86%
	Yes	14	6.14%
Total Family Members	Four or less than four	11	4.82%
	Five	50	21.93%
	Six	112	49.12%
	Seven or more	55	24.12%
Highest-Level of Education	5th Class	80	35.09%
	Junior High School	40	17.54%
	High School	47	20.61%
	Intermediate	29	12.72%
	Graduate	32	14.03%

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Table 2: Distribution of participants according to housing & living status:

Housing Characteristics		Frequency	Percentage
Type of Family	Nuclear Family	134	58.77%
	Joint Family	94	41.23%
Type of Housing Construction	Pucca	162	71.05%
	Semi Pucca	16	7.02%
	Kacha	50	21.93%
Total No. of Rooms	Two	47	20.61%
	Three	43	18.86%
	Four	51	22.37%
	Five	87	38.16%
Ownership of House	Parental	97	42.54%
	Self	120	52.63%
	Rented	11	4.82%
Agriculture Land	Yes	181	79.39%
	No	47	20.61%
Earning Members	One	21	9.21
	Two	51	22.37
	Three	90	39.47
	Five	66	28.95

Utilization of the PMJAY scheme (Table 3) was partial; only 22.37% reported having a family member with the card, and 39.91% were aware of eligibility restrictions. Notably, 47.81% had added a newborn and 43.42% had added a newlywed under the scheme. Regarding the major source of healthcare financing (Table 4), PMJAY was reported as the primary source by 46.05% of households, followed by savings (19.74%), borrowings, and other means.

Table 3: Utilization of PMJAY Scheme Benefits (total=228)

Characteristic	Frequency	Percentage
Member of Your Family with Card	51	22.37%
Payment for Card	20	8.77%
No. of Family Members Eligible for the PMJAY Scheme	91	39.91%
Any Restriction on Family Size, Age or Gender Under the PMJAY Scheme	91	39.91%
Addition of Newly Born Baby Under the PMJAY Scheme	109	47.81%
Addition of Newly-Wed Women Under the PMJAY Scheme	99	43.42%
Process of Addition of Family Members	75	32.89%
No. of Times Family Members Can Get Treatment	21	9.21%
More Than One Family Member Avail the PMJAY Benefits	119	52.19%

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5. DISCUSSION & CONCLUSION

The socio-demographic profile (Table 1) revealed that the majority of households (68%) were headed by males and most respondents were aged between 30 and 50 years, aligning with demographic patterns observed nationally. The predominance of Hindu households (70.18%) and the significant Muslim minority (29.82%) mirrors regional demographics. A large portion of respondents belonged to the lower socioeconomic strata, with 78.07% in Class IV and V combined, supporting SECC 2011 findings that link poverty with healthcare access challenges. The representation of female-headed households (32%) was lower than the SECC 2011 rural average (41.28%), possibly indicating underrepresentation or regional gender disparities in household leadership.

Housing and living status data (Table 2) reflect relative infrastructural stability. Most families (71.05%) lived in pucca houses, surpassing the rural average reported by NFHS-5 (60%) [8], suggesting a better-than-average quality of housing in the studied regions. Nuclear families (58.77%) were more prevalent, similar to Saikia et al. [9], who observed changing family structures in urban and semi-urban India. Nearly half the households had four or more rooms, with 52.63% owning their homes—indicators of housing stability that, as suggested by Thomas et al. [10], could facilitate better healthcare access without necessarily translating into improved outcomes.

Despite these structural advantages, utilization of PMJAY services remained limited (Table 3). Only 22.37% of households had received a PMJAY card, with 8.77% reporting they paid for it, contrary to the scheme's free distribution mandate. While 82.46% of eligible households eventually obtained cards, the remaining 17.54% did not, indicating persistent barriers. Challenges such as incomplete documentation, misinformation, and instances of informal payments align with findings by Gupta et al. [11] and Mohanty et al. [12], who identified logistical and bureaucratic hurdles in PMJAY implementation.

Awareness gaps were notable: only 47.81% knew about adding newborns, and 43.42% about newlywed additions, while just 32.89% understood the process of including family members. This limited understanding, along with only 9.21% knowing the benefit could be availed multiple times, echoes earlier studies by Reddy et al. [13] and Thomas et al. [10], highlighting insufficient IEC efforts and widespread misconceptions. Although 52.19% believed benefits could be shared among family members, actual service utilization stood at just 42.11%, confirming that enrollment does not guarantee service uptake. These figures are consistent with Kaur et al. [14], who observed a disconnect between awareness and actionable knowledge about the scheme's benefits.

Healthcare financing data (Figure 1) shows that PMJAY was the primary source for 46.05% of households, yet a significant proportion relied on savings (19.74%), borrowings (12.28%), or bank loans (5.70%). These figures suggest that while PMJAY is impactful for a section of the population, it does not fully replace traditional financial coping strategies.
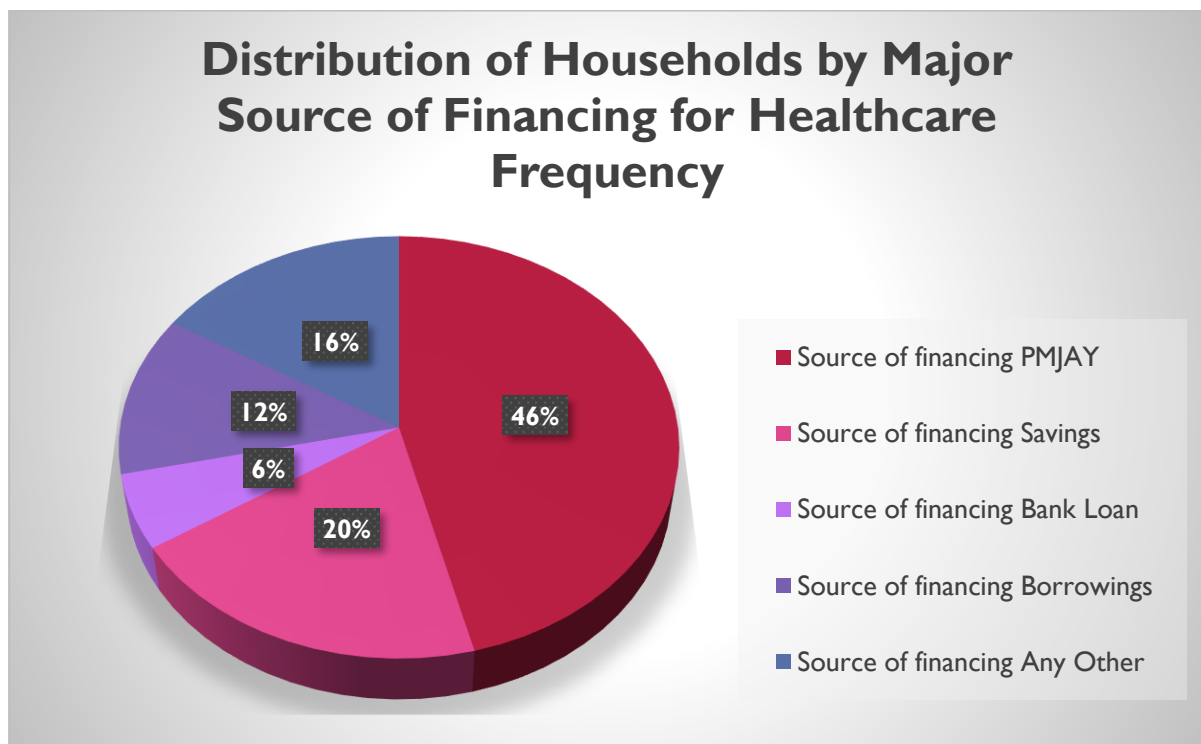

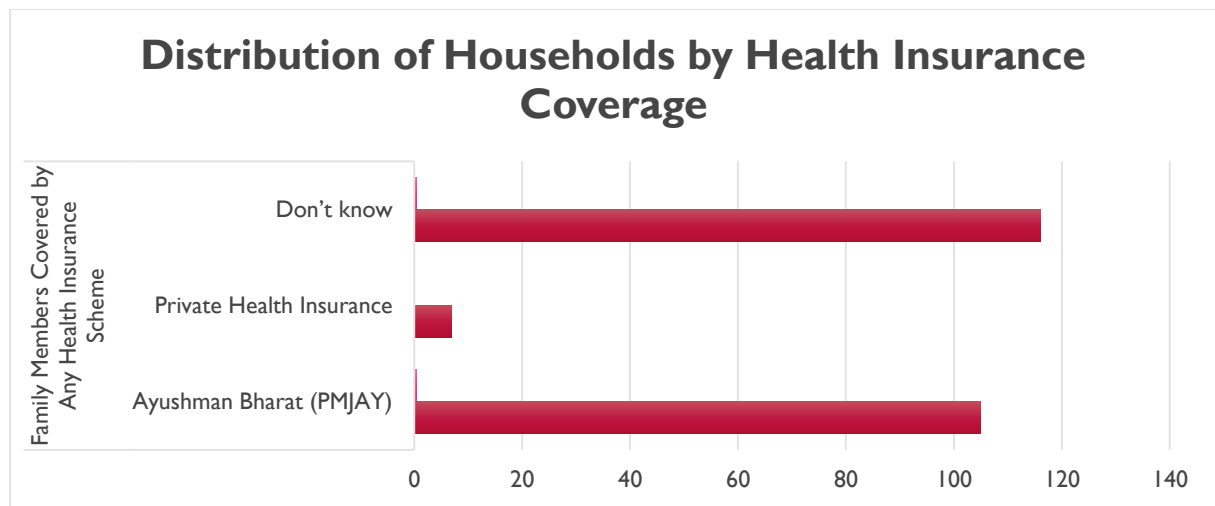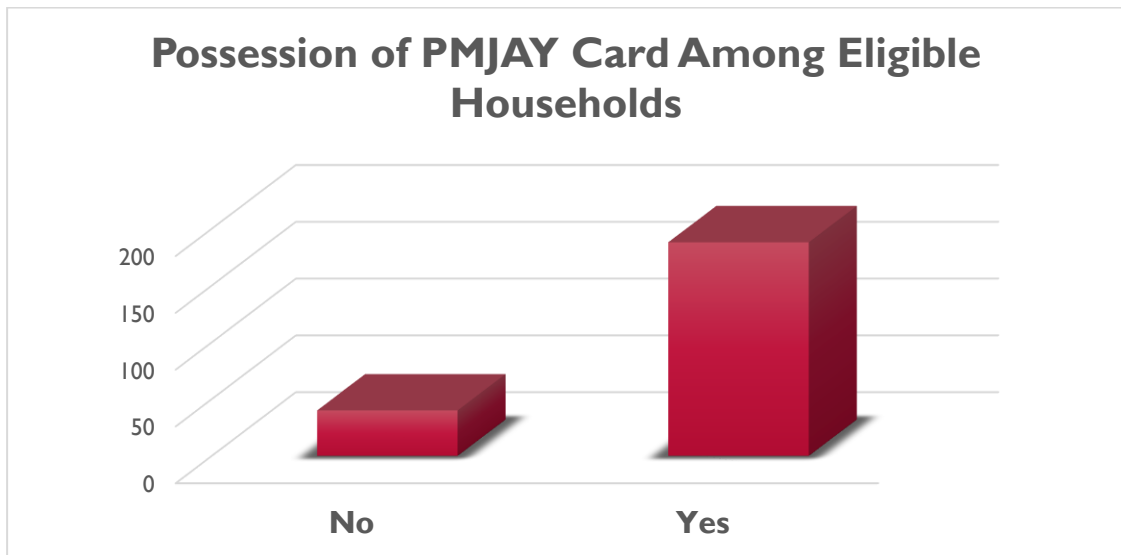**Distribution of Households by Major Source of Financing for Healthcare Frequency**

- 46% — Source of financing PMJAY
- 20% — Source of financing Savings
- 6% — Source of financing Bank Loan
- 12% — Source of financing Borrowings
- 16% — Source of financing Any Other

Figure:1

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Distribution of Households by Health Insurance Coverage

Figure: 2

Possession of PMJAY Card Among Eligible Households

Figure: 3

Access to Health Services under the PMJAY Scheme

Figure: 4

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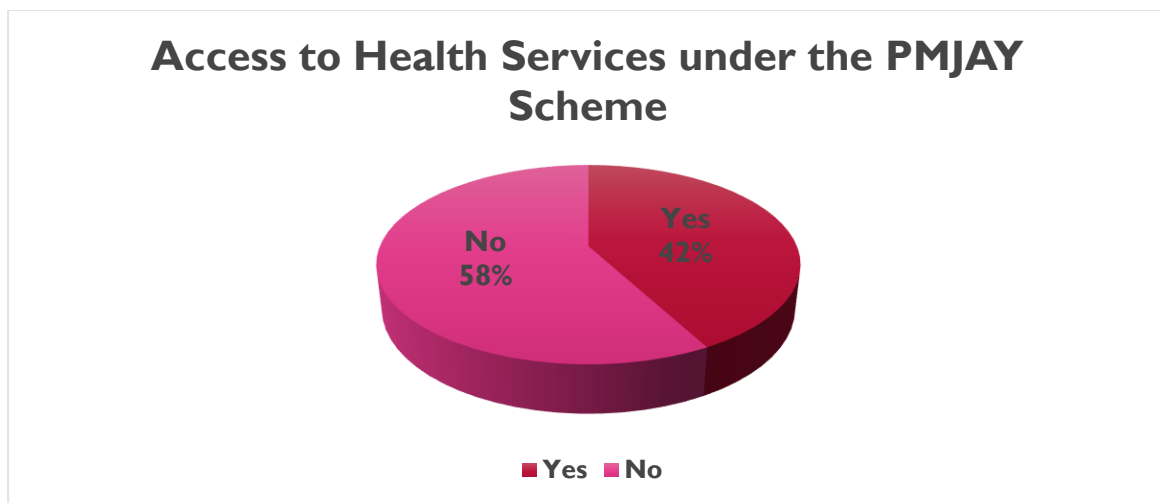
In conclusion, the findings underscore both progress and persistent gaps in PMJAY implementation. While enrollment has expanded, awareness and utilization remain constrained by administrative inefficiencies, limited IEC outreach, and systemic inequities. These results support calls by Verma et al. [15] and Patel et al. [16] for targeted community education, streamlined documentation, and robust monitoring to ensure that the promise of universal health coverage is fully realized in rural and underserved populations.

6. RECOMMENDATIONS & LIMITATIONS

The study acknowledges several limitations, including its restricted geographical scope to just two districts, potential sampling and non-response biases, and reliance on self-reported data prone to recall and social desirability bias. The cross-sectional design further limits causal interpretations, and the use of semi-structured questionnaires constrained deeper exploration of certain issues. To address the identified gaps, key recommendations include enhancing awareness through targeted IEC campaigns, simplifying enrollment and documentation processes, improving hospital experiences and transportation services, strengthening grievance redressal mechanisms, promoting use of the PMJAY mobile app, and conducting regular monitoring to ensure inclusive and efficient program implementation.

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CONFLICT OF INTEREST: Nil

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