



Original Research Article

AWARENESS AND UTILIZATION OF AYUSHMAN BHARAT PRADHAN MANTRI JAN AROGYA YOJANA AMONG RURAL HOUSEHOLDS IN BUNDELKHAND REGION OF UTTAR PRADESH: A COMMUNITY-BASED CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) is one of the largest publicly financed health protection initiatives globally and aims to reduce catastrophic health expenditure by providing cashless secondary and tertiary care services to eligible households. The programme plays a central role in India’s strategy for achieving Universal Health Coverage.^[1] **Objectives:** To assess awareness regarding PMJAY, evaluate its utilization among rural households and identify socio-demographic factors influencing service utilization in the Bundelkhand region.

Materials and Methods: A community-based cross-sectional study was conducted among 420 rural households in Jalaun district between June 2024 and November 2025 using multistage sampling. Data were collected using a pre-tested semi-structured questionnaire. Associations between utilization and explanatory variables were examined using the chi-square test. A p-value < 0.05 was considered statistically significant.

Results: Awareness regarding PMJAY was observed among 94.3% of participants. Overall utilization of scheme benefits was reported by 56.6% of respondents. Frontline health workers were the primary source of information (65.9%). Maternity-related services represented the most frequently utilized benefit package (63.8%). Utilization showed statistically significant association with education level, occupation, socio-economic status, and awareness of cashless hospitalization services.

Conclusion: Despite high awareness levels, utilization of PMJAY services remains suboptimal. Strengthening beneficiary awareness regarding service entitlements and improving accessibility of empanelled facilities are essential to enhance effective programme uptake in rural Bundelkhand.

Keywords: PMJAY; Ayushman Bharat; Health insurance; Healthcare utilization; Rural health; Bundelkhand.

INTRODUCTION

Financial barriers remain a major determinant of inequitable access to healthcare services in low- and middle-income countries, including India. High out-of-pocket expenditure continues to contribute to delayed treatment seeking and medical impoverishment among vulnerable populations.^[3]

To address this, the Government of India launched the Ayushman Bharat programme in 2018, aligned with the National Health Policy 2017.^[1] The programme includes Health and Wellness Centres and the Pradhan Mantri Jan Arogya Yojana (PMJAY), which provides cashless hospitalization coverage of up to ₹5 lakh per family per year at empanelled hospitals.^[2]

Utilization of such schemes depends not only on policy implementation but also on beneficiary awareness and accessibility. Previous studies have shown that education, socio-economic status, and availability of empanelled healthcare facilities significantly influence utilization of publicly funded health insurance schemes.^[10-12]

The Bundelkhand region of Uttar Pradesh is characterized by poor socio-economic conditions and limited healthcare infrastructure. Evidence on PMJAY awareness and utilization from this region is limited. Therefore, the present study was undertaken to assess awareness and utilization of PMJAY services and to identify associated factors among rural households in Bundelkhand.^[14]

MATERIALS AND METHODS

Study design and setting: A community-based cross-sectional study was conducted in rural areas of Jalaun district, Uttar Pradesh, from June 2024 to November 2025.

Study population and eligibility: The study included adult household representatives residing in selected villages for at least six months. Households unwilling to participate or unavailable after two visits were excluded.

Sample size and sampling: The sample size was calculated using the standard formula $n = Z^2pq/d^2$,

adjusted for design effect and non-response, resulting in a total of 420 households. A multistage sampling technique was employed, wherein one block was selected randomly, followed by selection of four villages. From each village, 105 households were selected using systematic random sampling.

Data collection tool: Data were collected using a pre-tested semi-structured questionnaire covering socio-demographic characteristics, awareness of PMJAY, and utilization patterns. The tool was pilot-tested prior to data collection and demonstrated good internal consistency (Cronbach's alpha = 0.8).

Study variables: Awareness included knowledge of eligibility, coverage limit, empanelled hospitals, and availability of cashless services. Utilization was defined as availing hospitalization services under PMJAY by any household member. Socio-economic status was classified using Modified BG Prasad classification (2025 update).^[15]

Statistical Analysis: Data were analysed using SPSS version 21. Descriptive statistics were expressed as proportions and percentages. Associations between variables were assessed using the chi-square test. A p-value < 0.05 was considered statistically significant.

Ethical considerations: Ethical approval was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants.

RESULTS

Table 1: Socio-demographic profile of study participants (n = 420)

Variable	Category	Frequency	Percentage
Education	No formal education	120	28.6
	Primary school	122	29.0
	Middle school	67	16.0
	Secondary school	54	12.9
	Senior secondary	42	10.0
	Graduate & above	15	3.6
Occupation	Unemployed	120	28.6
	Unskilled worker	122	29.0
	Semi-skilled worker	67	16.0
	Skilled worker	54	12.9
	Clerical / shop owner	42	10.0
	Semi-professional	15	3.6
	Professional	0	0.0
Socio-economic class (BG Prasad 2025)	Upper	0	0.0
	Upper middle	0	0.0
	Middle	84	20.0
	Lower middle	280	66.7
	Lower	56	13.3

Table 2: Awareness regarding Ayushman Bharat–PMJAY (n = 420)

Variable	Frequency	Percentage
Aware of PMJAY	396	94.3
Not aware	24	5.7
Aware of eligibility criteria*	383	96.7
Aware of ₹5 lakh coverage*	389	98.2
Aware scheme is cashless*	372	93.9

*Among aware participants (n = 396)

Percentages for eligibility criteria, coverage amount, and cashless benefit calculated among aware participants (n = 396).

Table 3: Hospital utilization pattern, coverage awareness, and beneficiary experience among PMJAY users (n = 224)

Variable	Category	Frequency	Percentage
Type of hospital utilized	Public	74	33.0
	Private	133	59.4
	Both	17	7.6
Processing time for Ayushman card	Immediate	104	46.4
	Within 1 week	77	34.4
	More than 1 week	43	19.2
Awareness of hospitalization coverage benefits	Pre-hospitalization coverage known	142	63.4
	Post-hospitalization coverage known	129	57.6
	Coverage for pre-existing diseases known	151	67.4
Overall experience	Very good	71	31.7
	Good	104	46.4
	Average	36	16.1
	Poor	13	5.8
Cashless service experience	Smooth	187	83.5
	Faced issues	37	16.5

Percentages calculated among PMJAY beneficiaries who utilized services (n = 224).

Table 4: Factors associated with utilization of PMJAY services

Variable	Category	Utilized n (%)	Not utilized n (%)	p-value
Age group*	18–29 yrs	28 (48.3)	30 (51.7)	0.418
	30–44 yrs	96 (59.3)	66 (40.7)	
	45–59 yrs	86 (57.7)	63 (42.3)	
	≥60 yrs	14 (54.0)	12 (46.0)	
Gender†	Male	150 (53.4)	131 (46.6)	0.091
	Female	74 (53.2)	65 (46.8)	
Education*	No formal education	45 (37.6)	75 (62.4)	<0.001*
	Primary	62 (50.8)	60 (49.2)	
	Middle school & above	117 (69.8)	51 (30.2)	
Occupation*	Unemployed	60 (50.0)	60 (50.0)	0.003*
	Unskilled worker	63 (51.6)	59 (48.4)	
	Skilled and above	101 (74.4)	35 (25.6)	
Socio-economic class*	Lower	20 (34.9)	36 (65.1)	<0.001*
	Lower middle	152 (54.3)	128 (45.7)	
	Middle	53 (63.1)	31 (36.9)	
Family type*	Nuclear	102 (55.7)	81 (44.3)	0.621
	Joint	122 (57.3)	91 (42.7)	
Ration card status*	Available	188 (56.1)	147 (43.9)	0.774
	Not available	36 (59.0)	25 (41.0)	
Knowledge of cashless treatment*	Yes	200 (61.7)	124 (38.3)	<0.001*
	No	24 (33.3)	48 (66.7)	
Knowledge of hospitalization benefits*	Yes	174 (61.2)	110 (38.8)	0.002*
	No	50 (41.3)	62 (58.7)	

Analysis for age, education, occupation, socio-economic status, family type, ration card status, and knowledge variables was performed among participants aware of PMJAY (n = 396).

Gender association was analyzed using the total study population (n = 420). Chi-square test was applied. A p-value < 0.05 was considered statistically significant.

Socio-demographic profile: A total of 420 participants were included. Primary education was the most common level (29.0%), followed by no formal education (28.6%), while only 3.6% had graduate-level education. Unskilled workers (29.0%) and unemployed individuals (28.6%) constituted the majority of participants. Most respondents belonged

to the lower middle socio-economic class (66.7%), followed by middle (20.0%) and lower class (13.3%), with no participants in upper categories.

Awareness regarding PMJAY: Overall awareness of PMJAY was 94.3% (n = 396). Among those aware, knowledge of key scheme components was high, with 96.7% aware of eligibility criteria, 98.2% of ₹5 lakh coverage, and 93.9% of cashless services. Frontline health workers were the primary source of information (65.9%), followed by friends/relatives (14.6%), mass media (10.9%), and hospitals (8.6%). Among aware participants, 49.7% knew about both components of Ayushman Bharat, while 39.4% were aware only of PMJAY.

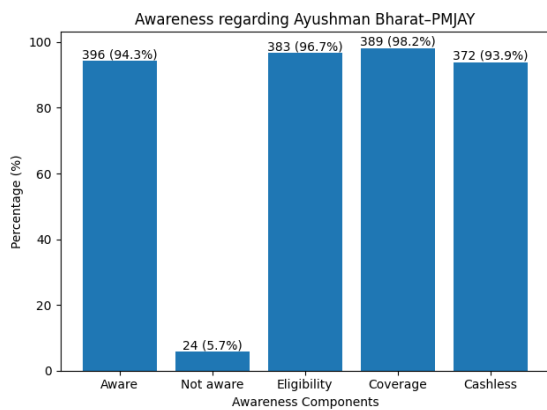


Figure 1: Awareness regarding Ayushman Bharat-PMJAY among study participants

Values represent frequency (n) and percentage (%). Percentages for eligibility criteria, coverage amount, and cashless services are calculated among participants aware of PMJAY (n = 396).

Table 2 presents detailed awareness regarding PMJAY, while Figure 1 illustrates the distribution of awareness components

Utilization of PMJAY services: Among those aware, 56.6% utilized PMJAY services, while 43.4% did not.

Types of services utilized: Maternity-related services were the most common (63.8%), followed by inpatient admissions (19.2%), surgical procedures (8.5%), diagnostic services (7.1%), and medicines (1.3%).

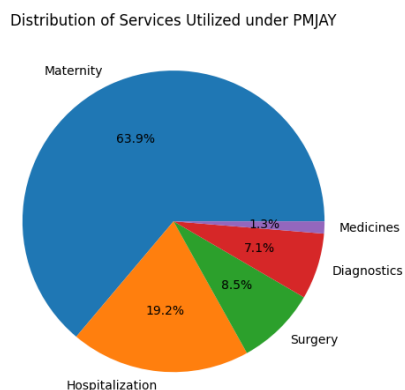


Figure 2: Distribution of services utilized under PMJAY among beneficiaries

Values represent percentage distribution of different services utilized under PMJAY among beneficiaries (n = 224).

The pattern of services utilized under PMJAY is illustrated in Figure 2.

Hospital utilization and beneficiary experience: Private empanelled hospitals were most frequently utilized (59.4%), followed by public facilities (33.0%). Most beneficiaries received Ayushman cards immediately (46.4%) or within one week (34.4%). Awareness of benefit entitlements varied, with 67.4% aware of pre-existing disease coverage,

63.4% of pre-hospitalization, and 57.6% of post-hospitalization benefits. Overall experience was positive, with 78.1% reporting good or very good satisfaction, and 83.5% experiencing smooth cashless services.

Factors associated with utilization: Utilization was significantly associated with education, occupation, socio-economic status, and awareness-related factors. Higher utilization was observed among participants with middle school education and above (69.8%) compared to those without formal education (37.6%) (p < 0.001), and among skilled workers (74.4%) compared to unemployed individuals (50.0%) (p = 0.003). Participants from higher socio-economic groups showed greater utilization (p < 0.001). Awareness of cashless treatment (61.7% vs. 33.3%, p < 0.001) and hospitalization benefits (61.2% vs. 41.3%, p = 0.002) were also significantly associated with utilization. No significant associations were observed with age, gender, family type, or ration card status (p > 0.05).

DISCUSSION

The present study demonstrated a high level of awareness regarding PMJAY among rural households in Bundelkhand (94.3%), which is higher than several earlier studies conducted in India.^[10,11] This may be attributed to the active role of frontline health workers such as ASHAs and ANMs in disseminating scheme-related information, as also reported in previous studies.^[10]

Despite high awareness, utilization of PMJAY services was 56.6%, indicating a gap between awareness and effective uptake. Although this utilization rate is higher than some earlier studies, variations across regions suggest that utilization depends not only on awareness but also on availability of services and administrative efficiency.^[10-12]

Maternity services constituted the major component of utilization (63.8%), consistent with previous findings where maternal care accounts for a significant proportion of claims under publicly funded health insurance schemes.^[4]

Education, occupation, and socio-economic status were significantly associated with utilization, indicating that socially and economically disadvantaged groups face greater barriers in accessing services. Similar associations have been reported in earlier studies, where these factors influence health-seeking behavior and healthcare access.^[8,12]

Preference for private empanelled hospitals observed in this study aligns with previous findings suggesting perceived better quality and faster service delivery in private facilities.^[9] However, this raises concerns regarding equity and cost regulation. Additionally, the persistence of out-of-pocket expenditure despite a cashless scheme highlights gaps in financial protection.^[5,8]

Operational barriers such as limited empanelled facilities, documentation challenges, and procedural delays further hinder utilization, particularly in rural settings with weaker healthcare infrastructure.^[9]

Overall, the findings indicate that while awareness of PMJAY is high, its utilization is influenced by a complex interplay of socio-economic, informational, and health system factors. Addressing these barriers through improved accessibility, streamlined administrative processes, and strengthened beneficiary support is essential to enhance equitable utilization of PMJAY services.^[4,8,9]

Strengths

This study employed a community-based design with multistage sampling, enhancing representativeness of rural households. The relatively large sample size (n = 420) improved the reliability of estimates. Additionally, it provides region-specific evidence from Bundelkhand, an underserved area with limited data on PMJAY utilization.

Limitations

The cross-sectional design limits causal inference between variables and utilization. Data on utilization were self-reported and may be subject to recall bias. Furthermore, findings from selected villages of a single block may limit generalizability to the broader Bundelkhand region.

CONCLUSION

Although awareness of PMJAY was high among rural households in Bundelkhand, utilization remained moderate. Education, occupation, socio-economic status, and awareness of scheme entitlements were significant determinants of utilization. Strengthening beneficiary awareness and improving accessibility of empanelled hospitals are essential to enhance programme effectiveness and support progress toward Universal Health Coverage in rural India.^[1]

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