Assessment of Awareness Regarding Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana Among Rural Residents of Meerut: A Cross Sectional Study

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Abstract: <u>*Background*</u>*: Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) is a flagship health insurance scheme aimed at providing financial protection to economically vulnerable families in India. Despite its extensive coverage, awareness—especially in rural areas—remains a crucial factor in its effectiveness.* <u>*Objective*</u>*: To assess the level of awareness regarding AB-PMJAY among rural residents of Meerut and examine its association with socio-demographic factors.* <u>*Methods*</u>*: A community-based cross-sectional study was conducted among 340 adults from 10 randomly selected villages in Machhra block, Meerut district. A pre-tested, semi-structured questionnaire was used. Data were analyzed using Jamovi software, and chi-square tests were applied to assess associations.* <u>*Results*</u>*: Overall, 72.6% of participants were aware of AB-PMJAY. The main sources of information were ASHA workers (48.6%) and mass media (40.1%). Awareness was significantly associated with gender, caste, education, and socioeconomic status (p<0.05). Males, literates, and individuals from higher socioeconomic groups had greater awareness.* <u>*Conclusion*</u>*: Although awareness was relatively high, gaps persist among females, the illiterate, and lower socioeconomic groups. Strengthening outreach through community health workers and localized media can improve awareness in underserved rural populations.*

Keywords: Ayushman Bharat, AB-PMJAY, awareness, rural health, health insurance, cross-sectional study

1. Introduction

Over the past few decades, India has witnessed significant improvements in health indicators such as life expectancy, immunization rates, and sanitation. However, the journey towards a fully inclusive and efficient healthcare system remains incomplete. The sector still faces persistent challenges related to accessibility, affordability, infrastructure, and funding. Key issues include an insufficient health workforce, especially in rural areas, an underfunded public health system, and a heavily privatized healthcare sector. [1]

Approximately 70% of healthcare services in India are delivered by the private sector, making the system vulnerable to economic shocks that may affect private providers. [1]

Universal Health Coverage (UHC): According to World Health Organization (WHO), Universal health coverage (UHC) means that all people have access to the full range of quality health services they need, when and where they need them, without financial hardship. It covers the full continuum of essential health services from health promotion to prevention, treatment, rehabilitation and palliative care across the life course. The delivery of these services requires health care workers with an optimal skills mix at all levels of the health system, who are equitably distributed, adequately supported with access to quality assured products and enjoying decent work.[2]

In India, with a population of 1.44 billion 63.4% in rural areas and 36.6% in urban regions realizing UHC is both a necessity and a challenge[3].

India's journey with health insurance began with the Workmen's Compensation Act of 1923, followed by the Employees' State Insurance Act (1948), and later, the entry of private insurers post-IRDA Act (1999).4 Today, health insurance is categorized into four types: Social Health Insurance like Employees' State Insurance Scheme (ESIS), Central Government Health Scheme (CGHS), Ex-serviceman's Contributory Health Scheme (ECHS), Private Health Insurance, Community Health Insurance, and Government-Initiated Health Insurance e. g. Rashtriya Swasthya Bima Yojana (RSBY), Ayushman Bahrat Pradhan Mantri Jan Arogya Yojana (AB- PMJAY).5

Ayushman Bahrat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) was launched on 23 September 2018 in Ranchi, Jharkhand seeks to mitigate the burden of rising healthcare expenses. AB-PMJAY will target poor, deprived rural families and identified occupational category of urban workers families as per the latest Socio-Economic Caste Census (SECC) data, both rural and urban. Additionally, all such enrolled families under RSBY that do not feature in the targeted groups as per SECC data will be included as well. ABPMJAY aims to reach 10.74 crore impoverished and vulnerable families, approximately benefiting 50 crore individuals. It extends coverage to nearly 40% of India's economically disadvantaged population[1].

Government Financing: The program receives full financial support from the government. Funding distribution between the central and state governments follows a ratio of 60: 40, except for northeastern and Himalayan states (90: 10) and Union Territories (100%).[1]

As of recent reports, PMJAY has enrolled a lot of families and facilitated numerous treatments yet challenges remain in benefits of AB-PMJAY scheme specially in rural region. Factor such as awareness level plays a major role in the overall success of this scheme. So present study will evaluate the awareness of AB-PMJAY among beneficiaries of rural area and the association between socio demographic characteristics and awareness of AB-PMJAY scheme in rural Meerut.

Objectives
1) To know about the awareness regarding ayushman bharat–pradhan mantri jan arogya yojna (AB-PMJAY) in study population of rural Meerut.
2) To assess the association between socio demographic characteristics and awareness of AB-PMJAY scheme in rural Meerut.

2. Material and Method

Study population
The study population consisted of head of the family or in the absence of that an adult of the family in the selected villages of Machhra block of district Meerut, whose name was available in the beneficiary list of AB-PMJAY.

Study type
A community based cross-sectional study.

Inclusion criteria
- Head of family or an adult aged 18 years or above of selected households.
- All those who gave consent for study.

Exclusion criteria
- Those absent during the time of the visit.
- Those who did not give consent to be part of the study.

Sampling technique
Simple random sampling.

Sample size estimation
Prevalence of awareness of AB-PMJAY was taken from a previous study at 68.6% [Prasad SSV et al. (2023)][6] with 5% absolute precision at 95% confidence interval, the sample size was calculated using the following formula:

$$n = (z_{\alpha/2})^2 \times p \times q / d^2$$

Where n: sample size
$Z_{\alpha/2}$ = value of standard normal deviate at 95% confidence interval (1.96)
p = anticipated value of proportion in the population
q = 1 – p; d = absolute precision = 5%

Final sample size was calculated as 329. And it was rounded off to 340 study participants.

Study period
The study was carried out from **01/09/2023 to 30/09/2024** which was used for data collection, compilation and presentation of findings.

Sampling method
The study employed a simple random sampling technique to select participants from rural areas of the Meerut District. The Meerut district has a total of 12 blocks. For the purpose of studying the sample of 340, one block Machhra was selected by simple random sampling method. A total ten villages, Bhatipura, Hasanpur kala, Kasimpur, Kayasth Barha, Machhra, Meghrajpur, Nagli Abdulla, Paswara, Rachhoti and Sholda of Machhra block were selected using simple random sampling. From each village, 34 eligible families named present in the list of AB-PMJAY beneficiaries available on the online portal (pmjay. gov. in) were selected by simple random sampling technique using lottery method. After obtaining the consent from study participants, data were collected using a pre-designed, pre-tested, semi-structured questionnaire and the questionnaire filled on the spot.

Analysis
The collected data was systematically coded and entered into a master chart using Microsoft Excel and analysed by using the Jamovi 2.3.28 statistical software.

Chi square test was applied to find out significant association between the two characteristics which was in the form of frequency. $P < 0.05$ was considered significant. Appropriate graphs were also used to show the results. All the statistical significances were evaluated as 95% confidence interval level.

Institutional Ethics Committee permission for the study was obtained before the commencement of the study wide letter No. /SC-1/2025/2963

3. Results

A total of 340 study subjects were selected for the study, from the rural area of Meerut district.
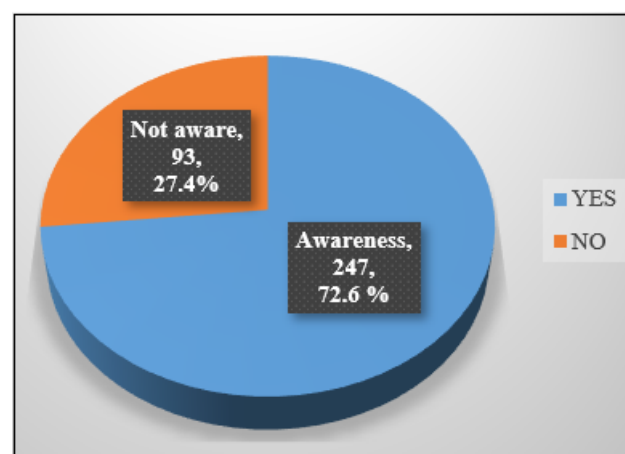

Figure 1: Awareness of AB- PMJAY scheme among the study participants

Figure 1 shows that among study participants a majority (**72.6%**) were aware about the Ayushman Bharat Pradhan

Mantri Jan Arogya Yojana (PM-JAY) scheme. However, **27.4%** of participants were unaware of the scheme.

Table 1: Source of information about AB-PMJAY scheme in awared participants

Sources	Frequency	Percentage (%)
ASHA	120	48.6
TV/ radio/ News paper	99	40.1
Panchayat member	22	8.9
Friends/ neighbour	6	2.4
total	247	100

Table.1 suggest distribution of sources of information regarding the AB-PMJAY scheme highlights the key channels through which participants learned about the program. ASHA workers were the most common source, with **48.6%** of participants receiving information from them. Mass media (TV, radio, and newspapers) was the second most significant source, informing **40.1%** of participants. Panchayat members contributed to spreading awareness were **8.9%** and friends and neighbour **2.4%**.

Table 2. Association between socio demographic characteristics and awareness of PMJAY scheme

Socio demographic Characteristics	Aware about AB - PMJAY, n (%)	Not aware about AB PMJAY, n (%)	Total	χ^2 df P value
Gender				χ^2= 4.88 df=1 P< 0.02
Male	177 (76.3)	55 (23.7)	232 (68.2)	
Female	70 (64.8)	38 (35.2)	108 (31.8)	
Category				χ^2=4.5 df = 2 P< 0.03
SC / ST	123 (68.0)	58 (32.0)	181 (53.2)	
OBC	118 (77.6)	34 (22.4)	152 (44.7)	
General	6 (85.7)	1 (14.3)	7 (2.1)	
Education				χ^2= **77.5** df= 4 P < 0.05
Illiterate	55 (47.8)	60 (52.2)	115 (33.8)	
Primary School	30 (71.4)	12 (28.6)	42 (12.4)	
Middle school	32 (65.3)	17 (34.7)	49 (14.4)	
High school	41 (93.2)	3 (6.8)	44 (12.9)	
Intermediate and above	89 (98.9)	1 (1.1)	90 (26.5)	
Socioeconomic status				χ^2= 14.3 df= 3 P< 0.05
Upper middle	11 (91.7)	1 (8.3)	12 (3.5)	
Middle class	41 (87.2)	6 (12.8)	47 (13.8)	
Lower Middle	97 (76.3)	30 (23.6)	127 (37.4)	
Lower class	98 (63.6)	56 (36.4)	154 (45.3)	
Total	247	93	340 (100)	

In our study population as shown in table 2, the male participants comprising **76.3%** were significantly more aware in comparison to females **64.8%.** The chi-square test statistic applied, p value less than 0.05 indicates a statistically significant association between gender and awareness about AB PMJAY scheme.

As per caste category awareness levels were slightly higher in the OBC group **(77.6%)** compared to SC/ST category **(68.0%).** There was **85.7%** awareness in general category participants. The p -value is lower than 0.05 suggesting statistically significant association between caste and awarenesss about AB-PMJAY scheme.

Among the intermediate and higher educated beneficiaries **98.9%** participants were aware about PMJAY scheme in comparison to illiterate beneficiaries **(47.8%)** were awared**.** It shows that awareness increased with education level. P value <0.05 shows significant association between awareness level and education.

This result shows **63.6%** of lower-class participants were aware about AB-PMJAY compared to **91.7%** of upper middle class. Among middle class **87.2%** participants were awared followed by lower middle **76.3%.** The p- value is less than 0.05 suggesting association between socioeconomic status and awareness is statistically significant.

4. Discussion

The findings of this study reveal that a majority (72.6%) of the participants were aware of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY) scheme, while 27.4% of participants reported being unaware of it. Girish B et al (2023)[5] in Karnataka found approximately 65% awareness of Ayushman Bharat Arogya Karnataka, further supporting regional variations. Another supporting study by Sriee GV V et al (2021)[7] in Chennai found that 77.3% households were aware of the Ayushman Bharat scheme. Prasad S et al. (2023)[6] in Eastern India found that 68.6% of individuals were aware of PM-JAY. Parisi D et al (2022)[8] in a multi-state study found that 62% of participants were aware of PM-JAY. Akshay V et al (2021)[9] in Bangalore found that 42% of respondents were aware about AB-PM-JAY scheme which is lower than our study.

In present study among the participants who were aware of the AB-PMJAY scheme, the primary sources of information were ASHA workers (48.6%), television, radio, and newspapers (40.1%), panchayat members (8.9%), and friends or neighbors (2.4%). Similarly Girish B et al (2023)[5] in his study found that health care workers (HCWs) are the most effective source of information regarding the AB-Arogya Karnataka scheme (55.7%). Yadav S et al (2018)[10] in western Uttar Pradesh found that media was a primary source of information for approximately 63.5% of respondents regarding health insurance schemes. Netra G et al (2019)[4] shows that the source of information regarding the health

insurance was mainly through the village co-operative society i. e.78.9%, followed by friends and family, i. e.62.2% and 24.4% respectively. The other minor sources were mass media (television, newspaper), insurance agents and doctors/tax consultants. Akshya V et al (2021) [9] in Bangalore reveals that 17.3% of respondents mentioned TV/ Radio/ Newspapers, 5.3% cited Panchayat members, 3.3% relied on family and friends, and 2.6% reported the internet as their source of information. Only 1.3% reported receiving information directly from ASHA/ANM in this breakdown which differs significantly from our study.

In our study, male participants (76.3%) were significantly more aware of the AB PMJAY scheme compared to females (64.8%). The chi-square test yielded a p-value < 0.05, indicating a statistically significant association between gender and awareness.

In the present study, awareness of the AB PMJAY scheme was highest among the general category (85.7%), followed by OBC (77.6%) and SC/ST (68%) groups. This study indicates the statistically significant association between caste and awareness levels.

The present study found a significant association between education level and awareness of the Ayushman Bharat PMJAY scheme. Among participants with intermediate and higher education, 98.9% were aware of the scheme, whereas awareness was markedly lower (47.8%) among illiterate beneficiaries. This indicates that awareness increases substantially with educational attainment. These findings are supported by the study conducted by Chopra H et al (2023) [11], which also showed higher awareness in individuals with education at high school level and above especially in urban areas (75.9%) compared to those with education below high school (47.2%). Both studies highlight the critical role of education in enhancing awareness and potentially increasing health scheme utilization.

This study found a statistically significant association between socioeconomic status and awareness of the Ayushman Bharat PMJAY scheme. Awareness was highest among middle-class (87.2%) and upper-middle-class participants (91.7%), while it was considerably lower among lower-middle (76.3%) and lower-class individuals (63.6%). This suggests that individuals from higher socioeconomic backgrounds may have better access to information and resources related to government health schemes. While disimilar trends were observed in the study by Chopra H et al (2023) [11], where awareness was higher among BPL families 52.9% compared to APL families 16.2%.

5. Conclusion

The majority of study participants were aware of the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PM-JAY) scheme, while a notable were unaware of the scheme. The primary sources of information about the AB-PMJAY scheme were ASHA workers and electronic and print media. Male participants showed significantly higher awareness about the AB-PMJAY scheme. Among participants, awareness about the AB-PMJAY scheme was highest in the general category, followed by the OBC group and the SC/ST

category. Beneficiaries with intermediate and higher levels of education showed a much greater awareness of the PMJAY scheme compared to those who were illiterate. Awareness about the AB-PMJAY scheme was highest among upper middle class followed by middle-class, lower middle class, and lowest among the lower class participants.

6. Recommendation

Awareness campaigns should be expanded to cover lesser-known features of the scheme, such as empanelled hospitals, helpline numbers, and interstate benefits, especially among illiterate and economically weaker sections. All posters, banners, and awareness material should be displayed in local languages. This will make it easier for villagers to understand their rights and how to use the AB-PMJAY scheme. ASHA workers, being the most common source of information, should be given further training and support to enhance their role in spreading accurate and detailed knowledge about the scheme.

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