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Original Research Article

Knowledge, attitude, and utilization of Ayushman Bharat Pradhan Mantri Jan Arogya Yojana among general population of Bishnupur district: a cross-sectional study

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ABSTRACT

Background: Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) provides healthcare to economically vulnerable populations, advancing Universal Health Coverage and supporting the sustainable development goals. This study aimed to assess the knowledge, attitude, and utilization of AB-PMJAY and to determine the associations between socio-demographic factors and knowledge, as well as between knowledge and attitude towards the scheme.
Methods: A cross-sectional study was conducted among the general population of Bishnupur district, Manipur (January 2023 to March 2024), using stratified multistage cluster sampling with proportional allocation. Data were collected through face-to-face interviews with a pre-tested questionnaire. Descriptive statistics, chi-square test, and binary logistic regression were employed.
Results: A total of 444 individuals participated in the study. Of these, 66.2% had heard of AB-PMJAY, of whom only 20.4% had adequate knowledge on AB-PMJAY, while a majority (86%) showed a favourable attitude, and 37.9% had utilized the scheme in the past year. Graduates (aOR: 4.972(2.42-25.42)), married individuals (aOR: 4.041(1.37-11.86)), homemakers (aOR: 4.585(1.44-14.52)), and those with chronically ill family members (aOR: 2.992(1.39-6.42)) had significantly higher odds of adequate knowledge on AB-PMJAY, while those from upper-middle (aOR: 0.241(0.10-0.64)) and middle socio-economic groups (aOR: 0.196(0.060-0.643)) had significantly lower odds compared to the upper class.
Conclusions: Despite over half having heard of AB-PMJAY, only two out of ten had adequate knowledge, eight out of ten had a favourable attitude, and four out of ten utilized it. Adequate knowledge was higher among graduates, married individuals, homemakers, and families with chronic illness, and was also significantly associated with a favourable attitude.

Keywords: AB-PMJAY, Attitude, Knowledge, Manipur, Utilization

INTRODUCTION

The World Health Organization (WHO), through its agenda of "universal health coverage (UHC) for all by 2030," proposed to "ensure everyone within a country to have access to quality healthcare that is effective and provide financial protection from the costs of using health services".[1] Approximately two billion people are experiencing financial hardship, including one billion facing catastrophic out-of-pocket health expenses (SDG indicator 3.8.2) and 344 million being driven deeper into extreme poverty due to healthcare costs. The COVID-19 pandemic exacerbated this situation, disrupting essential services in 92% of countries at its peak in 2021. Even in 2022, 84% of countries continued to report disruptions.[2]

Despite a significant demand for community-based health services, India spends only 3.31% of its gross domestic

product (GDP-2022) as public expenditure on health.[3] World Health Organization proposes that health expenditure should be catastrophic when out-of-pocket payments exceed 40% of the capacity for health care.[4] The increasing cost of medical treatment is beyond the reach of ordinary people. High out-of-pocket spending makes healthcare inaccessible to a significant proportion of Indian households, while catastrophic medical spending continues to remain a primary reason for impoverishment in Indian households.[5]

To advance UHC, the Indian government launched "Ayushman Bharat", shifting from a sectoral and segmental approach of health service delivery to a comprehensive, need-based healthcare service. The scheme integrates primary, secondary, and tertiary care through health and wellness centers (HWCs) and Pradhan Mantri Jan Arogya Yojana (PMJAY). HWCs provide comprehensive primary healthcare, improving access, universality, and equity. The second component, PM-JAY, launched on 23 September 2018, aims to ensure financial protection and access to quality healthcare (SDG 3.8). This centrally funded scheme offers Rs. 5 lakh per family annually for secondary and tertiary care to 50 crore beneficiaries, covering 2,529 procedures, including pre-existing conditions, at public or empanelled private hospitals. State governments oversee implementation and may integrate existing programs with AB-PMJAY.[6]

Since its launch, as of 24th March 2025, more than 36.9 crore Ayushman cards have been created under the scheme. Between FY 2015 and 2022, Government health expenditure increased from 29.0% to 48.0%, while out-of-pocket expenditure (OOPE) declined from 62.6% to 39.4%, with recorded savings over Rs. 1.25 lakh crore.[7] In Manipur, 71 hospitals are currently empanelled under AB-PMJAY. As of 2nd April 2025, 3,07,908 beneficiaries are verified, and 2,29,236 beneficiaries are treated. AB-PMJAY beneficiaries can avail of free treatment benefits from all the empanelled hospitals across India. State Health Agency Manipur is overlooking the implementation of PMJAY in Manipur.[8]

Chief Minister-gi Hakshelgi Tengbang (CMHT) is a pioneering health insurance scheme launched by the Government of Manipur on 21st January 2018. The beneficiaries can receive cashless treatment up to Rs. 5 lakhs annually per enrolled family for secondary and tertiary healthcare on a floater basis. In Manipur, the CMHT runs alongside AB-PMJAY, with households eligible to benefit from either one of these health insurance schemes, but not both.[9]

The major challenge today is the rising cost of medical expenditure. The majority of Indians today are victims of lifestyle diseases, not to mention the wave of epidemics and pandemics sweeping the country and world alike. Medical emergencies can attack anyone at any time and cripple their emotional and financial well-being; therefore, every person must opt for health insurance coverage to fend off such serious ramifications arising out of such unanticipated disruptions in life. AB-PMJAY has the potential to become a milestone in India's health sector. It is essential to make people aware of the policy and its implementation. By evaluating the level of knowledge, attitude and utilization of the scheme, we can identify gaps in achieving Universal Health Coverage and inform policy decisions to strengthen the implementation of AB-PMJAY. Given the significance of health insurance for public health, this study was conducted to assess the knowledge, attitude, and utilization of AB-PMJAY and to determine the associations between socio-demographic factors and knowledge, as well as between knowledge and attitude towards the scheme.

METHODS

A cross-sectional study was conducted from January 2023 to March 2024 among the general population of Bishnupur District, Manipur, which comprises three subdivisions-Bishnupur, Nambol, and Moirang. According to the 2011 census, the district had 237,399 people (50.03% males) and 46,850 households, with 60% residing in rural areas. Among these, 14,901 families were eligible for AB-PMJAY. Adults (≥18 years) residing for ≥1 year were included; households unreachable after two visits were excluded. Taking a prevalence of 77.33% for AB-PMJAY awareness, with a 5% allowable error, 95% confidence interval, and 80% power, the sample size was 269.[10] Considering a 10% non-response rate and 1.5 design effect, the final sample size was 444. Stratified multistage cluster sampling with proportional allocation selected 266 rural and 178 urban households (Figure 1). From the three subdivisions, Bishnupur was randomly chosen and stratified into rural and urban areas. Six villages and one municipal area were then selected by simple random sampling. Households were selected using probability proportionate to size, starting from the first house to the right of each community hall and continuing sequentially until the required sample size was reached. A house-to-house visit was done, and only one individual from each household was interviewed. The preference for selecting the individual to be interviewed was in the following order: head of the family, spouse of the head of the family, or any individual 18 years or older. When there was more than one individual aged 18 years and above, a lottery was done to select one of them.

Data were collected by face-to-face interviews in the vernacular language. A pretested, structured questionnaire was used to collect data on socio-demographic characteristics, knowledge, attitude, and utilization of AB-PMJAY among participants. It was developed following an extensive literature review and expert inputs from the faculties in the Department of Community Medicine of the institute, state medical officers, and AB-PMJAY kiosk staff. Pretesting on ten individuals confirmed clarity and comprehensibility.

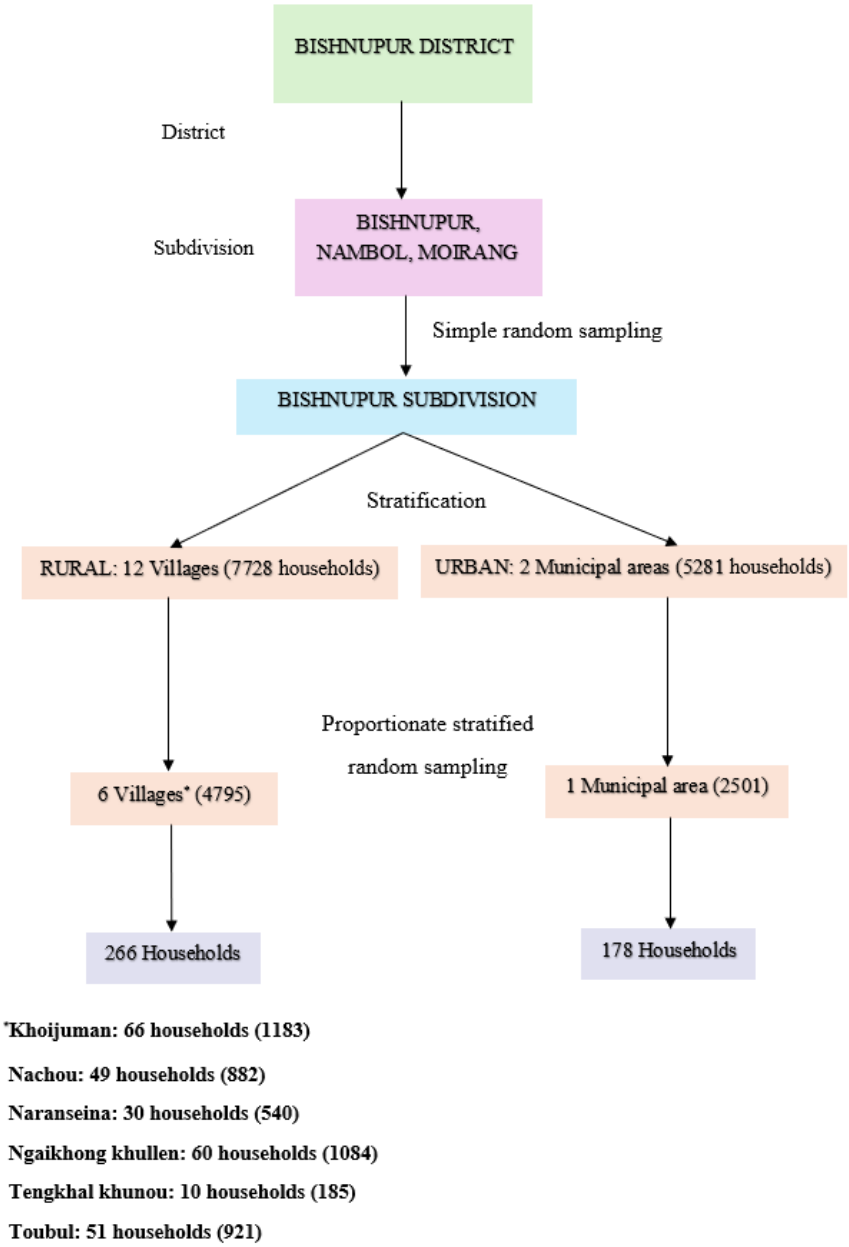

Figure 1: Stratified multistage cluster sampling with proportional allocation.

The questionnaire consisted of four sections. Section A included 16 items on socio-demographic details. Section B assessed knowledge of AB-PMJAY using 11 questions. Most items were scored 1 for a correct answer and 0 for an incorrect or "don't know" response. Questions 1 and 4 had tiered scoring: 2 points for more than three correct responses, 1 point for one to three correct responses, and 0 otherwise. For questions 2 and 7, respondents received 2 points for two correct answers, 1 point for one correct answer, and 0 for incorrect or "don't know." Question 8 awarded 2 points for the correct answer and 0 otherwise. The total possible score ranged from 0 to 16. Section C evaluated attitude toward AB-PMJAY using seven statements on a five-point Likert scale (1-5), yielding scores from 7 to 35. Section D addressed the utilization of AB-PMJAY with five questions.

Knowledge, attitude, and utilization were analyzed only for participants aware of the scheme. Adequate knowledge was defined as ≥75% (≥12/16) of the maximum obtainable score. Attitude toward Ayushman Bharat–PMJAY was categorized using the total attitude score (maximum 35). Scores above 21 (>60%) indicated a favourable attitude, scores between 14 and 21 (40–60%) indicated a neutral attitude, and scores below 14 (<40%) indicated an unfavourable attitude. Utilization referred to eligible individuals who availed AB-PMJAY services within the past year. Those who utilized it were asked about additional expenses, satisfaction, and future insurance preferences (private or public). Catastrophic health expenditure was defined as household health spending exceeding 10% of annual household income.

After checking for the completeness and consistency, the data were analyzed using IBM statistical package for the social sciences (SPSS) 26 for Windows (IBM, Armonk, New York, USA). Descriptive statistics like mean, standard deviation, frequency, and percentage were used to summarize data. Univariate analysis was carried out using the Chi-square test.

The variables with p<0.2 in univariate analysis were further assessed using binary logistic regression to identify the independent predictors of adequate knowledge on AB-PMJAY. A p value less than 0.05 was considered to be statistically significant.

RESULTS

The study population included individuals across various age groups, with the majority aged 30-39 years. Males (52.3%) slightly outnumbered females (47.7%). Hinduism was the predominant religion (68.5%), followed by Sanamahism (22.7%). Educational status varied, with 36% of the population holding a graduate degree or higher, and 11.2% having no formal education. A large proportion (79.7%) were married. Employment was reported by 72.3%, with 13.7% in the healthcare sector. Nuclear families were more common (56.8%), and 9.5% reported catastrophic healthcare expenditures. Socioeconomic status was predominantly upper-middle class (48.2%), and 58.1% of the families had a chronic illness. Public healthcare was preferred by 80.6%. Overall, 66.2% (294) had heard of AB-PMJAY, mainly via healthcare workers (43.9%), radio (28.2%), and television (11%) (Table 1).

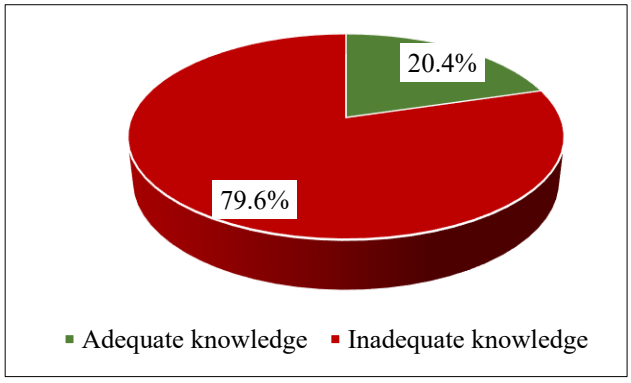

Figure 2: Distribution of participants according to knowledge on AB-PMJAY (n=294).

Among them, only 60 (20.4%: CI- 16-25.2%) had adequate knowledge (Figure 2). Only 8.8% correctly identified the SECC criteria for eligibility, while 36.1% knew the annual coverage amount of ₹5 lakh. Awareness of healthcare services provided under the scheme was reported by 40.1%, and 42.9% knew that all family members are eligible for benefits. Nearly half (48.3%) correctly stated that no premium is required, and 36.0% recognized that benefits can be availed at both empanelled government and private hospitals. Coverage of pre-existing conditions was known to only 28.6%, while 54.5% correctly knew that no fee is required to obtain an AB-PMJAY card (Supplementary Table 1).

In contrast, a favourable attitude was observed in 253 (86.0%: CI: 82.3%-90.1%) participants (Figure 3), with most recognizing the scheme's role in financial protection (91.5%), promoting healthcare-seeking (81.6%), and supporting emergency care. About 43.6% perceived effective implementation, 62.2% found the scheme user-friendly, and 59.5% acknowledged the active involvement of healthcare workers (Supplementary Table 2).

Among the 294 participants who had heard of the AB-PMJAY scheme, only 74 (25.2%) knew they were eligible, while the remaining had either not checked their eligibility or were unaware of it. All eligible participants had enrolled in the scheme and possessed AB-PMJAY cards. Among them, 28 (37.9%) utilized the scheme in the past year, with 22 for medical conditions and 6 for surgical procedures, depending on the health needs that arose within their families during the same period. The most common health conditions for which the scheme was utilized were dialysis (39.3%), acute gastroenteritis (14.3%), stroke (14.3%), and acute appendicitis (14.3%). Despite utilizing the scheme, a significant proportion (85.7%) of the beneficiaries incurred additional expenses, ranging from Rs. 2,000 to Rs. 80,000, with a median expenditure of Rs. 15,000. In terms of satisfaction, 42.8% of the users were satisfied with the scheme. When considering future enrollment in health insurance, a majority (86.0%) expressed preference for public schemes, primarily due to the absence of premium payments (46.6%). Meanwhile, among the 62 participants favouring private insurance, the key reason cited (45.2%) was the user-friendly nature of private schemes.

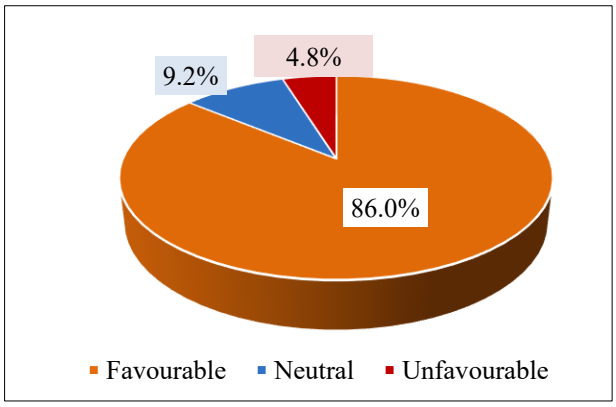

Figure 3: Distribution of participants according to attitude towards AB-PMJAY (n=294).

On univariate analysis, several factors were significantly associated with knowledge of AB-PMJAY. Females, individuals with higher education, those employed in the healthcare sector, residents of nuclear families, participants from higher socio-economic status, individuals with a family member having chronic illness, and those preferring private healthcare showed significantly higher levels of adequate knowledge (Table

2). But on regression analysis, those having an educational qualification qualification of graduate and above (aOR: 4.972 (2.42–25.42)), married individuals (aOR: 4.041 (1.37–11.86)), homemakers (aOR: 4.585 (1.44–14.52)), and those with chronically ill family members (aOR: 2.992(1.39–6.42)) had higher odds of adequate AB-PMJAY knowledge, while individuals from upper-middle (aOR: 0.241 (0.10–0.64)) and middle socio-economic groups (aOR: 0.196 (0.06-0.64)) had lower odds compared to the upper class (Table 3). A favourable attitude was significantly more (p=0.025) among those with adequate knowledge of AB-PMJAY (Table 4).

Table 1: Background characteristics (n=444).

Background characteristics	N (%)
Age (in completed years)	
<30	105 (23.6)
30-39	128 (28.8)
40-49	86 (19.4)
50-59	74 (16.7)
≥60	51 (11.5)
Gender	
Male	232 (52.3)
Female	212 (47.7)
Religion	
Hinduism	304 (68.5)
Sanamahism	101 (22.7)
Christianity	22 (5.0)
Islam	17 (3.8)
Place of residence	
Rural	266 (59.9)
Urban	178 (40.1)
Educational status	
No formal education	50 (11.2)
Primary school (class I-VIII)	106 (23.9)
Secondary school (class IX-XII)	128 (28.9)
Graduate and above	160 (36.0)
Marital status	
Married	354 (79.7)
Unmarried	86 (19.4)
Widow	4 (0.9)
Occupation	
Employed	321 (72.3)
Unemployed	19 (4.3)
Homemaker	66 (14.9)
Student	38 (8.6)
If employed, works in healthcare sector (n=321)	
Yes	44 (13.7)
No	277 (86.3)
Family type	
Nuclear	252 (56.8)
Joint	192 (43.2)
Catastrophic healthcare expenditure	
Present	42 (9.5)
Absent	402 (90.5)
Socio-economic status (modified BG Prasad scale 2024 update)	
Upper class (I)	106 (23.9)
Upper middle class (II)	214 (48.2)
Middle class (III)	78 (17.6)
Lower middle class (IV)	28 (6.3)
Lower class (V)	18 (4.1)

Continued.

Background characteristics	N (%)
Any family members with chronic diseases	
Yes	258 (58.1)
No	186 (41.9)
Preferred type of health sector for availing treatment	
Public	358 (80.6)
Private	86 (19.4)
Heard of the scheme: AB-PMJAY	
Yes	294 (66.2)
No	150 (33.8)
If heard of the scheme AB-PMJAY, source of information (n=294)	
Healthcare workers	129 (43.9)
Friends	8 (2.7)
Panchayati Raj Institutions (PRI) members	22 (7.5)
Radio	83 (28.2)
Television	32 (11.0)
Internet	12 (4.0)
Newspaper	8 (2.7)

Table 2: Association of knowledge on AB-PMJAY with socio-demographic characteristics (n=294).

Variables	Knowledge		P value
	Adequate N (%)	Inadequate N (%)	
Age (in completed years)			
<30	17 (26.2)	48 (73.8)	0.271
30-39	12 (13.3)	78 (86.7)	
40-49	14 (25.9)	40 (74.1)	
50-59	10 (20.8)	38 (79.2)	
≥60	7 (18.9)	30 (81.1)	
Gender			
Male	22 (15.1)	124 (84.9)	0.024
Female	38 (25.7)	110 (74.3)	
Religion			
Hinduism	48 (24.0)	152 (76.0)	0.083
Sanamahism	9 (13.0)	60 (87.0)	
Others*	3 (12.0)	22 (88.0)	
Place of residence			
Rural	28 (17.1)	136 (82.9)	0.111
Urban	32 (24.6)	98 (75.4)	
Education			
No formal education	2 (4.9)	39 (95.1)	0.011
Primary school (I-VIII)	4 (16.0)	21 (84.0)	
Secondary school (IX-XII)	21 (18.8)	91 (81.2)	
Graduate and above	33 (28.4)	83 (71.6)	
Marital status			
Married	52 (22.0)	184 (78.0)	0.163
Others†	8 (13.8)	50 (86.2)	
Occupation			
Employed	39 (18.8)	168 (81.2)	0.170
Unemployed	1 (6.7)	14 (93.3)	
Homemaker	14 (30.4)	32 (69.6)	
Student	6 (23.0)	20 (77.0)	
Employed in healthcare sector (n=207)			
Yes	14 (38.9)	22 (61.1)	0.001
No	25 (14.6)	146 (84.9)	

Continued.

Variables	Knowledge		P value
	Adequate N (%)	Inadequate N (%)	
Family type			
Nuclear	42 (24.4)	130 (75.6)	0.043
Joint	18 (14.8)	104 (85.2)	
Catastrophic health expenditure			
Yes	5 (19.2)	21 (80.8)	0.876
No	55 (20.5)	213 (79.5)	
Socio-economic status (modified BG Prasad scale 2024 update)			
Upper class (I)	28 (43.8)	36 (56.2)	0.000
Upper middle class (II)	20 (14.5)	118 (85.5)	
Middle class (III)	6 (10.0)	54 (90.0)	
Lower middle class (IV)	2 (11.1)	16 (88.9)	
Lower class (V)	4 (28.6)	10 (71.4)	
Presence of a family member with chronic illness			
Yes	42 (25.0)	126 (75.0)	0.024
No	18 (14.3)	108 (85.7)	
Preferred type of healthcare sector for availing treatment			
Public	36 (16.7)	180 (83.3)	0.008
Private	24 (30.8)	54 (69.2)	
Distance to nearby healthcare centre (km)			
≤5	36 (18.4)	160 (81.6)	0.219
>5	24 (24.5)	74 (75.5)	

*Christianity and Islam, †unmarried/widowed.

Table 3: Binary logistic regression for the association between variables of interest and adequate knowledge on AB-PMJAY (n=294).

Variables	Univariate analysis cOR (95% CI)	P value	Logistic regression aOR (95% CI)	P value
Gender				
Female	1.947 (1.085-3.493)	0.025	1.186 (0.525-2.676)	0.681
Male	1	-	1	-
Religion				
Sanamahism	0.475 (0.219-1.028)	0.059	0.566 (0.220-1.457)	0.238
Others*	0.432 (0.124-1.506)	0.188	0.565 (0.147-2.166)	0.406
Hinduism	1	-	1	-
Place of residence				
Urban	1.586 (0.897-2.804)	0.113	1.762 (0.822-3.776)	0.145
Rural	1	-	1	-
Education				
Graduate and above	7.753 (1.770-33.958)	0.007	4.972 (2.423-25.420)	0.005
Secondary school	4.500 (1.006-20.128)	0.049	3.060 (0.615-15.215)	0.172
Primary school	3.714 (0.627-21.987)	0.148	1.750 (0.224-13.670)	0.594
No formal education	1	-	1	-
Marital status				
Married	1.766 (0.788-3.960)	0.167	4.041 (1.377-11.860)	0.011
Others†	1	-	1	-
Occupation				
Student	1.292 (0.486-3.431)	0.607	2.125 (0.577-7.814)	0.257
Homemaker	1.885 (0.919-3.865)	0.084	4.585 (1.447-14.520)	0.010
Unemployed	0.308 (0.039-2.410)	0.262	0.458 (0.048-4.302)	0.495
Employed	1	-	1	-
Family type				
Nuclear	0.536 (0.291-0.985)	0.045	1.859 (0.871-3.968)	0.109
Joint	1	-	1	-

Continued.

Variables	Univariate analysis cOR (95% CI)	P value	Logistic regression aOR (95% CI)	P value
Socio-economic status (modified BG Prasad scale 2024 update)				
Lower class (V)	0.541 (0.145-1.814)	0.301	0.719 (0.157-3.285)	0.671
Lower middle class (IV)	0.161 (0.034-0.758)	0.021	0.438 (0.071-2.677)	0.372
Middle class (III)	0.143 (0.053-0.380)	0.001	0.196 (0.060-0.643)	0.007
Upper middle class (II)	0.218 (0.109-0.432)	0.001	0.241 (0.101-0.576)	0.001
Upper class (I)	1	-	1	-
Presence of a family member with chronic illness				
Yes	2.00 (1.088-3.677)	0.026	2.992 (1.395-6.421)	0.005
No	1	-	1	-
Preferred type of health sector for availing treatment				
Private	2.222 (1.220-4.047)	0.009	1.611 (0.777-3.342)	0.200
Public	1	-	1	-

*Christianity and Islam, †unmarried/widowed

Table 4: Association of attitude towards AB-PMJAY with knowledge on AB-PMJAY (n=294).

Knowledge on AB-PMJAY	Attitude towards AB-PMJAY		P value
	Favourable N (%)	Unfavourable* N (%)	
Adequate	57 (95.0)	3 (5.0)	0.025
Inadequate	196 (83.8)	38 (16.2)	

*For the analysis, individuals with an unfavorable or neutral attitude were grouped into the unfavorable attitude category

DISCUSSION

UHC aims to provide healthcare without financial hardship. AB-PMJAY offers financial protection to vulnerable families, making it essential to assess population knowledge, attitudes, utilization, and factors influencing adequate knowledge for effective implementation.

More than one-fourth (28.8%) of the respondents belonged to the 30–39-year age group, a proportion comparable to the findings of Parisi et al (24.5%).[11] Around one-third (32.0%) of the respondents were spouses of household heads, possibly because the heads were occupied with work during the daytime data collection period. The proportion of males (52.3%) in our study exceeded that of females, which aligns with the demographic distribution of the research area (51%). In this study, only a minority of the participants were unemployed (4.3%), which is unlike other studies conducted by Parisi et al and Harish et al (41.1% and 45.0% respectively).[11,12] This disparity might be due to variations in categorization methods adopted in different studies like the consideration of homemakers and students as unemployed, while this study categorized these groups separately.

Catastrophic healthcare expenditure was faced by 9.5%, whereas the global incidence was 12.7% as reported by the World Health Organization in 2021.[13] This might be due to low income, chronic illness, hospitalization, high medication and surgical costs, and lack of insurance, collectively causing household financial hardship. The majority (58.1%) of the participants had members with chronic illness in the family, which is consistent with the growing burden of chronic diseases in India, as reported by the Global Burden of Disease Study 2021, which can have far-reaching consequences including financial strain indeed leading to out-of-pocket expenditure and thereby pushing the families into extreme poverty.[14]

In this study, 66.2% of the participants had heard of the scheme AB-PMJAY, which is consistent with the findings of a study conducted by Girish et al in Karnataka (65%).[15] This comparability may be due to a similar study setting, where both studies included participants from rural and urban areas. And, it was found that for most of the participants (43.9%), the source of information on AB-PMJAY was from healthcare workers which is in line with studies conducted by Girish et al and Prasad et al.[15,17] This similarity in findings can be attributed to the significant role of healthcare workers, whose direct interactions with communities during routine visits allow them to educate and raise awareness about AB-PMJAY.

The knowledge questionnaire used showed excellent internal consistency (Cronbach's alpha=0.91), indicating they reliably measured a single construct. Less than one-fifth, of the participants (19%) knew the eligibility criteria for AB-PMJAY, which is higher than reported in a study by Prasad et al (16.3%). Only one-third of the participants (36.1%) knew that AB-PMJAY covers 5 lakhs per family per year.[17] This awareness is lower compared to studies by Akshay et al (46.6%) in an outpatient department in Bangalore, Prasad et al (72.0%) in a rural area, and Thomas B et al.[5,17,18] (99.7%). Around one-third (36.1%) of the participants knew that the benefits of the scheme could be availed at both empanelled government and private hospitals, a higher percentage compared to the study conducted by Girish et al (33.2%).[15]

Most studies have described knowledge related to each individual aspect of the AB-PMJAY scheme rather than providing an operational definition and categorization of that knowledge, as done in our study. Our study indicates that only two out of ten participants had adequate knowledge on AB-PMJAY, a finding consistent with research by Girish et al (20%).[15] This similarity in results could be attributed to comparable study settings, including rural–urban participants and proportionate probability sampling, mirroring the design of our study. It is worth noting that the level of knowledge in our study appears to be lower when compared to studies conducted by Thomas et al (24%) and Verma et al (28.6%).[5,19] One possible explanation for these variations is that these studies may have exclusively focused on beneficiaries who were more informed about the scheme.

The attitude questionnaire used also showed good internal consistency (Cronbach's alpha=0.82). This study filled a research gap by examining public perceptions of AB-PMJAY, a key factor for its success and healthcare access. Overall, attitudes were favourable, likely due to financial protection, comprehensive coverage, cashless processes, and the guidance of Arogya Mitras. Sustaining this attitude requires improving service quality, awareness, and responsiveness to changing healthcare needs.

Over three-fourths of AB-PMJAY users incurred additional out-of-pocket expenses for services not fully covered, highlighting gaps that, if addressed, could reduce financial burden and improve access to comprehensive healthcare.

In multivariate analysis, individuals with a graduate or higher educational status had significantly higher odds of adequate knowledge compared to illiterates. This finding is similar to a study conducted by Parisi et al.[11] This may be because more educated individuals have a better understanding of information. Married participants, homemakers, and those with chronically ill family members are more likely to have adequate knowledge due to family responsibilities, healthcare interactions, and the need to manage medical expenses.

Strengths and limitations

The study achieved a 100% response rate and employed stratified multistage cluster sampling to ensure balanced representation, along with reliable questionnaires to assess knowledge and attitudes, an aspect rarely explored in similar studies. However, recall and social desirability biases may have occurred, which were minimized through privacy, anonymity, and confidentiality assurances to encourage honest responses.

CONCLUSION

Despite more than half of the participants having heard of AB-PMJAY, only two out of ten had adequate knowledge. Around eight out of ten showed a favourable attitude, and nearly four out of ten had utilized the scheme. Knowledge was higher among those with higher educational levels, married individuals, homemakers, and those with chronically ill family members. Adequate knowledge of AB-PMJAY is significantly associated with a favourable attitude towards the scheme.

Recommendations

Targeted awareness campaigns and the distribution of IEC materials, such as pamphlets and posters in simple language, are recommended, with a primary focus on individuals with lower educational status and those residing in areas with low socio-economic status. A qualitative study should be conducted to identify and address user experience issues, thereby improving overall satisfaction with the scheme.

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SUPPLEMENTARY

Table 1: Knowledge on AB-PMJAY (n=294).

Item no.	Knowledge questions	N (%)
1.	What are the eligibility criteria for AB-PMJAY?	
	SECC criteria (correct)	26 (8.8)
	Don't know	238 (81.0)
	Others	30 (10.2)
2.	How can you check for the eligibility for AB-PMJAY?	
	Kiosk in empanelled hospital	50 (17.0)
	Official website	4 (1.3)
	Both	56 (19.1)
	Don't know	184 (62.6)
3.	What is the amount covered in a year under AB-PMJAY?	
	5 Lakhs (correct)	106 (36.1)
	Others (incorrect)	132 (44.8)
	Don't know	56 (19.1)
4.	What are the healthcare services provided under the scheme?	
	Know (surgery, daycare treatment, hospitalization etc.)	118 (40.1)
	Don't know	176 (59.9)
5.	How many members in the family can avail benefits of the scheme?	
	All family members (correct)	126 (42.9)
	Others (incorrect)	105 (35.7)
	Don't know	63 (21.4)
6.	Is there any premium to be paid to avail the benefits of AB-PMJAY?	
	No (correct)	142 (48.3)
	Yes (incorrect)	65 (22.1)
	Don't know	87 (29.6)
7.	Where can the benefits of AB-PMJAY be availed?	
	Empanelled Government hospital	14 (4.8)
	Empanelled Private hospital	4 (1.4)
	Both	106 (36.0)
	Don't know	170 (57.8)
8.	Does this scheme cover pre-existing diseases?	
	Yes (correct)	84 (28.6)
	No (incorrect)	202 (68.7)
	Don't know	8 (2.7)
9.	Can the benefits of AB-PMJAY be availed anywhere from India?	
	Yes (correct)	130 (44.2)
	No (incorrect)	85 (28.9)
	Don't know	79 (26.9)
10.	Can one household avail the benefits of both AB-PMJAY & state health insurance scheme?	
	No (correct)	96 (32.6)
	Yes (incorrect)	26 (8.8)
	Don't know	172 (58.6)
11.	Do the beneficiaries need to pay any fee for obtaining AB-PMJAY card?	
	No (correct)	160 (54.5)
	Yes (incorrect)	37 (12.6)
	Don't know	97 (32.9)

Supplementary Table 2: Attitude on AB-PMJAY (n=294).

Attitude statements	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
This scheme will help the poor to reduce financial burden	0 (0)	16 (5.4)	9 (3.1)	182 (61.9)	87 (29.6)
It increases the healthcare seeking behaviour	0 (0)	13 (4.5)	41 (13.9)	203 (69.0)	37 (12.6)
It is helpful during emergency healthcare needs	17 (5.8)	92 (31.3)	83 (28.2)	84 (28.6)	18 (6.1)
The scheme is effectively implemented	16 (5.4)	68 (23.1)	82 (27.9)	114 (38.8)	14 (4.8)
Government should conduct awareness programs about this scheme, so that many poor & vulnerable can be benefited	1 (0.3)	20 (6.8)	4 (1.4)	116 (39.5)	153 (52.0)
This scheme is user friendly	14 (4.8)	42 (14.3)	55 (18.7)	175 (59.5)	8 (2.7)
Healthcare workers are actively involved in spreading awareness about this scheme	14 (4.8)	68 (23.1)	37 (12.6)	159 (54.1)	16 (5.4)