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Research Article

A Comparative Study to Assess the Awareness and Utilization of Maternal Health Services Provided Under the Pradhan Mantri Matru Vandana Yojana among the Antenatal Women in Urban and Rural Areas in the State of Maharashtra

Anita Shivaji Banate[1], Nilima Sonawane[2]

[1]Department of Community Health Nursing, Post Graduate Student, Institute of Nursing Education, Sir J J Group of Hospital, Mumbai, Maharashtra, India, [2]Assistant Director of Health Services Nursing, Public Health Department, Government of Maharashtra, India

Abstract

Aim: The aim of this study was to assess the awareness and utilization of maternal health services provided under the Pradhan Mantri Matru Vandana Yojana (PMMVY) among antenatal women in urban and rural areas of Maharashtra.

Research Methodology: This community-based study was conducted in selected urban and rural communities in Maharashtra, with a total of 300 antenatal women selected through simple random sampling. Data were collected using a semi-structured questionnaire and self-reported checklist. Descriptive and inferential statistics were used to analyze the data.

Results: The study found that 50.67% of antenatal women in urban areas and 46.67% in rural areas had good awareness regarding the PMMVY. In addition, 26.67% of women in urban areas and 38% in rural areas had average awareness, while 18% of urban women and 5.33% of rural women demonstrated excellent awareness. However, 4.67% of urban women and 10% of rural women showed poor knowledge regarding the scheme.

Conclusion: The findings indicate that antenatal women exhibit inadequate awareness and utilization of PMMVY. To improve awareness and utilization, there is a need for health programs, public education, and strengthening of primary healthcare services. These measures will enhance maternal and child health and contribute to the reduction of maternal and child mortality.

Keywords: Antenatal women, maternal health services, Pradhan Mantri Matru Vandana Yojana

Introduction

The experience of childbirth represents a unique convergence of pain and joy, marking the transformative journey from womanhood or wifehood to motherhood – a profound privilege unique to women. This phase, encompassing pregnancy and childbirth, significantly influences both maternal and infant health outcomes. As highlighted in previous studies, the maternal and neonatal health continuum is critical for ensuring the overall well-being of families and communities.[1]

Motherhood, while a significant and fulfilling milestone, can also pose life-threatening risks. During pregnancy, women are susceptible to severe complications requiring immediate medical intervention. According to the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10), the World Health Organization defines

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Address for Correspondence:
Anita Shivaji Banate, Post Graduate Student, Institute of Nursing Education, Sir J. J. Group of Hospital, Mumbai, Maharashtra, India.
E-mail: aanieebanate24@gmail.com

maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes." Alarmingly, for every maternal death, an estimated 30–50 women endure injuries, infections, or diseases. In developing countries, complications arising from pregnancy remain among the leading causes of death and disability for women aged 15–49 years.[2]

To address these challenges, the Government of India has introduced several national health initiatives, such as the Integrated Child Development Services and Janani Suraksha Yojana, aimed at improving antenatal and postnatal maternal health. In addition, the National Health Mission has played a pivotal role in advancing maternal and child health in both urban and rural settings. Recognizing that women are fundamental to nation-building, ensuring their health is essential for holistic national growth and development. Sustainable progress can only be achieved by prioritizing the health and well-being of women and children.[3]

Despite these efforts, malnutrition remains a pressing concern among women in India. One in three women is undernourished, and half of all women suffer from anemia, with hemoglobin levels often falling below 10 g/dL during pregnancy. Undernourished mothers are more likely to give birth to low-birth-weight infants, perpetuating a cycle of poor nutrition that begins in utero and can have lifelong consequences. Women from low socioeconomic backgrounds often face additional challenges, such as the need to work during pregnancy and resume their responsibilities shortly after delivery, limiting their ability to recover and breastfeed exclusively during the crucial first 6 months.

In response to these challenges, the Government of India launched the Pradhan Mantri Matru Vandana Yojana (PMMVY) on January 01, 2017, under the leadership of Prime Minister Narendra Modi. Implemented nationwide in accordance with the National Food Security Act of 2013, this maternity benefit program aims to provide partial compensation for wage loss through a cash incentive of ₹5,000. This support enables women to take adequate rest before and after the birth of their first child, promoting maternal recovery and improved neonatal outcomes.[4]

Objectives of the study

Primary objectives

1. To assess the awareness and utilization of Maternal Health Services provided under PMMVY among the antenatal women in urban area.
2. To assess the awareness and utilization of Maternal Health Services provided under PMMVY among the antenatal women in rural area.

Secondary objectives

3. To correlate the awareness and utilization of Maternal Health Services provided under PMMVY among the antenatal women in urban and rural area.
4. To ascertain the association between awareness and utilization of Maternal Health Services provided under PMMVY with their demographic variables.

Research Methodology

Research approach

The study adopts a quantitative research approach, emphasizing the collection and analysis of numerical data to evaluate awareness and utilization of maternal health services under the PMMVY.

Research design

The research is structured as a descriptive evaluatory survey, aiming to systematically describe and evaluate the awareness and utilization of services among antenatal women.

Setting of the study

The study is conducted in selected urban and rural areas of Maharashtra, representing diverse socio-economic and demographic contexts.

Study population

- Entire population: All antenatal women in Maharashtra
- Target population: Selected antenatal women from urban and rural areas in the state
- Accessible population**:** Antenatal women available in the urban and rural areas during the period of data collection.

Sample size

The sample consists of 300 antenatal women, chosen to ensure reliable and representative results.

Sampling technique

Simple random sampling is utilized to select participants, ensuring every eligible individual has an equal chance of being included in the study.

Inclusion and exclusion criteria

Inclusion criteria

Antenatal mothers who:

1. Are registered antenatal women.
2. Are enrolled under the PMMVY in urban or rural areas
3. Are willing to participate in the study.

Exclusion criteria

Antenatal mothers who:

1. Are critically ill
2. Participated in the pilot study
3. Are not registered in antenatal clinics.

Description of the tool

- Section A: Includes socio-demographic variables such as age, education, socio-economic status, religion, occupation, and parity
- Section B: Comprises a semi-structured questionnaire designed to assess awareness of maternal health services under the PMMVY

- Section C: Contains a self-reported checklist to evaluate the utilization of these maternal health services.

Data collection

Primary data is collected directly from hospital settings in both urban and rural areas, ensuring accurate and first-hand information regarding awareness and service utilization.

Results

Section 1: Demographic profile of the respondents

Among the 300 antenatal women surveyed, the majority belonged to the 20–24 years age group, with 38.67% from urban areas and 43.33% from rural areas. This was followed by women aged 25–29 years, comprising 30% in urban areas and 34% in rural areas. A smaller proportion of women were below 19 years, with 14% in urban areas and 9.33% in rural areas. Women aged 30–34 years made up 10% in urban areas and 9.33% in rural areas, while the smallest group, aged 35 years and above, included 6.67% from urban areas and 4% from rural areas.

Regarding religion, the majority were Hindus, accounting for 47.33% in urban areas and 50.67% in rural areas. Muslims constituted 28.67% in urban areas and 30.67% in rural areas, Christians represented 16.67% in urban areas and 13.33% in rural areas, and other religions made up 7.33% in urban areas and 5.33% in rural areas.

In terms of education, the largest group of antenatal women had studied up to the secondary level, with 50% in urban areas and 49.33% in rural areas. Those educated up to high school included 22.67% in urban areas and 26% in rural areas. Graduates comprised 17% in urban areas and 10% in rural areas. Women educated up to the primary level included 5.33% in urban areas and 12.67% in rural areas, while illiterate women accounted for 4.67% in urban areas and 1.33% in rural areas.

The occupational profile revealed that most women were housewives, with 53.33% in urban areas and 55.33% in rural areas. Government employees formed 16% in urban areas and 18.67% in rural areas, while self-employed women accounted for 12.67% in urban areas and 6.67% in rural areas. Daily wage earners included 10% in urban areas and 8% in rural areas, and private employees represented 8% in urban areas and 11.33% in rural areas.

Concerning family type, 55.33% of urban women and 46% of rural women belonged to joint families, while 33.33% in urban areas and 41.33% in rural areas lived in nuclear families. Women from extended families accounted for 11.33% in urban areas and 12.67% in rural areas.

Family income distribution showed that most antenatal women had a monthly income between ₹10,001 and 20,000, with 42.67% in urban areas and 53.33% in rural areas. Women with incomes below ₹10,000 formed 26% in urban areas and 16.67% in rural areas, while those earning ₹20,001–30,000 accounted for 18% in urban areas and 21.33% in rural areas. Families with an income above ₹30,001 constituted 13.33% in urban areas and 8.67% in rural areas.

Parity data indicated that 55.33% in urban areas and 56% in rural areas were 1st-time mothers, while 44.67% in urban areas and 44% in rural areas were 2nd-time mothers. Regarding stillbirth history, 88% in both urban and rural areas had no history of stillbirths, whereas 12% in both areas reported such a history.

When asked about sources of information on the PMMVY, the majority reported receiving information from accredited social health activists, with 22% in urban areas and 27.33% in rural areas. Auxiliary nurse midwives were cited as sources by 24.67% in urban areas and 20% in rural areas. Relatives informed 12.67% in urban areas and 11.33% in rural areas, while 6.67% in both urban and rural areas cited radio or television. Friends provided information to 6% in urban areas and 8.67% in rural areas, neighbors informed 5.33% in urban areas and 4.67% in rural areas, and print media was a source for 1.33% in rural areas, with none reported in urban areas.

Section 2: Assessment of awareness regarding maternal health services provided under the PMMVY among antenatal women in urban and rural areas

This section presents the analysis and interpretation of data on the awareness levels of maternal health services provided under PMMVY among antenatal women in urban and rural areas. The levels of awareness are categorized into four grades: poor, average, good, and excellent. Table 1 summarizes the findings.

Overall awareness of maternal health services under PMMVY

The analysis revealed that 50.67% of antenatal women from urban areas and 46.67% from rural areas had a *good* level of awareness. In contrast, 26.67% from urban areas and 38% from rural areas demonstrated *average* awareness. A smaller proportion, 18% in urban and only 5.33% in rural areas, showed an *excellent* level of awareness. Meanwhile, 4.67% of urban women and 10% of rural women displayed a *poor* level of awareness.

Awareness of the concept of PMMVY

In terms of awareness about the concept of PMMVY, 33.33% of antenatal women from urban areas and 20% from rural areas exhibited *excellent* awareness. Approximately 32% from urban areas and 38% from rural areas had *average* awareness, while 24.67% in urban and 26% in rural areas demonstrated a *good* level of understanding. A minority, 10% in urban areas and 16% in rural areas, exhibited *poor* awareness regarding the concept.

Awareness of objectives of PMMVY

Regarding the objectives of PMMVY, 46.67% of urban respondents and 42% of rural respondents demonstrated *excellent* awareness. A majority, 49.33% in urban and 46.67% in rural areas, had *average* awareness. A smaller group, 4% in urban areas and 11.33% in rural areas, had *poor* awareness. None of the respondents in either group displayed a *good* level of awareness about the objectives.

Table 1: Assessment grade wise overall level of awareness regarding maternal health services provided under PMMVY among antenatal women in urban and rural areas (n=300)

Awareness regarding	Groups	Percentage	Urban		Rural	
			Frequency	Percentage	Frequency	Percentage
Maternal health services	Excellent	81 and above	27	18.00	8	5.33
	Good	61–80	76	50.67	70	46.67
	Average	41–60	40	26.67	57	38.00
	Poor	<40	7	4.67	15	10.00
Concept	Excellent	81 and above	50	33.33	30	20.00
	Good	61–80	37	24.67	39	26.00
	Average	41–60	48	32.00	57	38.00
	Poor	<40	15	10.00	24	16.00
Objectives	Excellent	81 and above	70	46.67	63	42.00
	Good	61–80	0	0.00	0	0.00
	Average	41–60	74	49.33	70	46.67
	Poor	<40	6	4.00	17	11.33
Eligibility criteria	Excellent	81 and above	30	20.00	16	10.67
	Good	61–80	50	33.33	37	24.67
	Average	41–60	51	34.00	65	43.33
	Poor	<40	19	12.67	32	21.33
Benefits	Excellent	81 and above	24	16.00	17	11.33
	Good	61–80	56	37.33	51	34.00
	Average	41–60	52	34.67	65	43.33
	Poor	<40	18	12.00	17	11.33

Awareness of eligibility criteria of PMMVY

For awareness of eligibility criteria, 34% of urban respondents and 43.33% of rural respondents exhibited *average* awareness. A smaller proportion, 33.33% in urban areas and 24.67% in rural areas, had a *good* level of understanding. About 20% of urban and 10.67% of rural participants demonstrated *excellent* awareness. Meanwhile, 12.67% of urban and 21.33% of rural participants exhibited *poor* awareness.

Awareness of benefits of PMMVY

Regarding the benefits of PMMVY, 37.33% of urban and 34% of rural participants showed a *good* level of awareness. An *average* level of awareness was noted among 34.67% of urban and 43.33% of rural respondents. Only 16% in urban and 11.33% in rural areas exhibited *excellent* awareness. A smaller group, 12% in urban and 11.33% in rural areas, demonstrated *poor* awareness about the benefits of PMMVY.

Section 3: Comparison of awareness regarding maternal health services provided under the PMMVY among antenatal women in urban and rural areas

The comparison of awareness levels regarding maternal health services provided under the PMMVY among antenatal women in urban and rural areas was conducted using an unpaired *t*-test. As shown in Table 2, the average awareness score for the urban group was 16.98, with a standard deviation of 3.50, while the rural group had an average score of 15.55 and a standard deviation of 3.49. The unpaired *t*-test yielded a *t*-value of 3.53 and a $P = 0.000$, indicating a statistically significant difference in the awareness levels between the two groups. This suggests that antenatal women in urban areas have significantly higher awareness regarding maternal health services under PMMVY compared to those in rural areas.

Table 2: Comparison of the awareness regarding maternal health services provided under the PMMVY (Unpaired *t*-test) (n=300)

Area	N	Mean	SD	*t*-value	*P*-value
Urban	150	16.98	3.5	3.53	0.000
Rural	150	15.55	3.49		

Section 4: Comparison of utilization of maternal health services provided under the PMMVY among antenatal women in urban and rural areas

The comparison of utilization of maternal health services provided under the PMMVY among antenatal women in urban and rural areas was conducted using an unpaired *t*-test. The null hypothesis (H_0) stated that there would be no significant association between awareness and utilization of maternal health services under PMMVY based on selected demographic variables. As presented in Table 3, the average utilization score for the urban group was 13.33, with a standard deviation of 2.81, while the rural group had an average score of 11.11 and a standard deviation of 3.46. The unpaired *t*-test yielded a *t*-value of 6.10 and a $P = 0.000$, indicating a statistically significant difference in utilization of PMMVY services between urban and rural antenatal women. This demonstrates that urban women had significantly higher utilization of maternal health services under PMMVY compared to their rural counterparts.

Section 5: Correlation between awareness and utilization of maternal health services under PMMVY among the antenatal women in urban areas

Table 4 presents the correlation between awareness and utilization of maternal health services under the PMMVY among antenatal women in urban areas, rural areas, and the combined urban and rural groups.

Table 3: Comparison of the utilization regarding maternal health services provided under the PMMVY (Unpaired *t*-test in urban and rural areas (*n*=300)

Area	N	Mean	SD	*t*-value	*P*-value
Urban	150	13.33	2.81	6.1	0.000
Rural	150	11.11	3.46		

Table 4: Correlation between awareness and utilization of maternal health services under PMMVY among antenatal women - Urban areas, Rural areas and between Urban and rural areas

Area	Correlation	*P*-value
Urban	0.724	0.000
Rural	0.73	0.000
Urban and Rural	0.74	0.000

In urban areas, the correlation coefficient between awareness and utilization was 0.724, with a $P = 0.000$. Since the $P < 0.05$, this indicates a statistically significant positive correlation between awareness and utilization of maternal health services under the PMMVY among urban antenatal women.

In rural areas, the correlation coefficient was 0.73, with a $P = 0.000$. Similarly, the $P < 0.05$ demonstrates a significant positive correlation between awareness and utilization of PMMVY services among rural antenatal women.

For the combined urban and rural groups, the correlation coefficient was 0.74, with a $P = 0.000$. This also indicates a statistically significant positive correlation, highlighting that as awareness increases, the utilization of maternal health services under the PMMVY improves across both urban and rural settings.

The findings in Table 4 underscore the importance of raising awareness to enhance the utilization of maternal health services among antenatal women.

Discussion

The present study aimed to assess the awareness and utilization of maternal health services provided under the PMMVY among antenatal women in urban and rural areas of Maharashtra. The study utilized a semi-structured questionnaire and self-reported checklist to collect data. A significant portion of the participants, 50.67% from urban areas and 46.67% from rural areas, demonstrated good awareness regarding the PMMVY. In comparison, 26.67% of urban and 38% of rural antenatal women had average awareness levels. Only 18% of urban women and 5.33% of rural women exhibited excellent awareness, while 4.67% from urban areas and 10% from rural areas showed poor awareness.

These findings align with a study conducted by Nawale *et al.*, which examined awareness regarding PMMVY among antenatal women. The study included 100 antenatal mothers and found that 50% of the participants had excellent knowledge, 30% had good knowledge, and 20% had poor knowledge regarding the scheme. This highlights the importance of continuing efforts to increase both awareness and utilization of the scheme among antenatal women in both urban and rural settings.[5]

In another online study using a descriptive survey method, the knowledge of PMMVY among antenatal women was assessed. The data, collected through Google Forms, showed that 51% of participants had excellent knowledge, 36% had good knowledge, and 13% had poor knowledge. The study concluded that while most women had good to excellent awareness, further research is recommended, particularly targeting husbands and other family members, to broaden the scope of awareness. In addition, larger studies involving more pregnant women could help strengthen the understanding and impact of PMMVY.[6]

Despite the good awareness, challenges remain in the scheme's implementation. A critical evaluation by Gautam pointed out that, initially, the government estimated the total number of beneficiaries to be 51.6 lakh. However, official data revealed that only 2.1 lakh women were registered, and only 10,000 beneficiaries received the benefits. The non-registration of eligible beneficiaries and the resulting gap between awareness and actual utilization of the scheme is a major hurdle that needs to be addressed for better scheme implementation.[7]

Further complicating matters, regions such as Nagaland, a northeastern tribal state in India, show a higher maternal mortality rate (60/100,000 live births) than the national average (113/100,000 live births). This situation underscores the urgency of addressing maternal health challenges and ensuring the effective delivery of schemes like PMMVY to eligible women in such regions. According to the Ministry of Women and Child Development, only 20% of eligible beneficiaries in Nagaland had availed of the benefits by March 2020. The state's rural and remote areas face significant healthcare infrastructure challenges, limiting access to essential services. As such, it is vital to assess the implementation progress of the PMMVY scheme in these areas to ensure that it reaches its intended beneficiaries and meets its objectives.[8]

In conclusion, while the present study shows significant awareness among antenatal women in both urban and rural areas regarding the PMMVY, the gap between awareness and utilization suggests that there are obstacles to full utilization. Addressing registration issues, improving healthcare infrastructure, and ensuring that information reaches rural and remote areas are crucial steps toward enhancing the scheme's impact and ensuring that it benefits those in need.

Conclusion

Antenatal women demonstrated inadequate awareness and utilization of the PMMVY. To address this, future efforts should focus on enhancing awareness through health programs, public education, and strengthening primary healthcare services,

which will ultimately improve maternal and child health outcomes and reduce mortality rates.

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Conflict of Interest

None declared.

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Ethical Permission and Consent

The Ethical Review Committee of the Sir J.J. Group of Hospitals in Mumbai granted ethical clearance, and the study participants provided written authorization consent.

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