Advanced International Journal for Research (AIJFR)
E-ISSN: 3048-7641 ● Website: www.aijfr.com ● Email: editor@aijfr.com

Effectiveness of Maternal Health Schemes in Improving Maternal and Child Health: A Study in Cuddalore District, Tamil Nadu

Thamilarasan[1], Dr. S. Pichaipillai[2]

[1]Ph.D. Research Scholar, Department of Economics, Faculty of Arts, Annamalai University
[2]Assistant Professor (Deputed), Department of Economics, Periyar Government Arts College, Cuddalore

Abstract:

Maternal and child health is a key indicator of social and economic development. Maternal health schemes aim to improve access to prenatal care, institutional deliveries, postnatal care, maternal nutrition, and child health services. This study evaluates the effectiveness of maternal health schemes in improving maternal and child health outcomes in Cuddalore District, Tamil Nadu.

A descriptive and comparative research design was adopted. Primary data were collected from 60 mothers — comprising 30 beneficiaries and 30 non-beneficiaries — using a structured interview schedule. Purposive sampling was employed to select the respondents. Percentage analysis and the Chi-square test were used for data analysis.

The findings indicate that 80% of the respondents were aware of and utilized maternal health schemes. Furthermore, 83.3% reported attending four or more antenatal check-ups, 91.7% underwent institutional delivery, 81.7% received adequate postnatal care, 80% of infants had normal birth weight, 86.7% practiced exclusive breastfeeding, and 90% of children were fully immunized.

Chi-square analysis revealed statistically significant associations between participation in the scheme and antenatal care visits ($\chi^2 = 4.50$, $p = 0.034$), institutional delivery ($\chi^2 = 3.95$, $p = 0.047$), birth weight ($\chi^2 = 4.17$, $p = 0.041$), exclusive breastfeeding ($\chi^2 = 4.15$, $p = 0.042$), and infant immunization ($\chi^2 = 4.88$, $p = 0.027$). As all p-values were less than 0.05, the null hypothesis was rejected.

The study concludes that maternal health schemes are positively associated with improved maternal and child health outcomes in Cuddalore District. The effectiveness of these schemes could be further enhanced by strengthening awareness, accessibility, timely financial assistance, antenatal and postnatal services, and district-level monitoring.

Keywords: Maternal health schemes, maternal health, child health, antenatal care, institutional delivery, immunization, Cuddalore District, Tamil Nadu.

1. Introduction:

Maternal and child health serves as a key indicator of a nation's social and economic development, reflecting the effectiveness of its healthcare system. Access to quality antenatal care, skilled birth attendance, adequate maternal nutrition, institutional delivery, and postnatal care is essential for reducing maternal and neonatal mortality rates and improving child health.

Although India has made significant progress through schemes such as the Pradhan Mantri Matru Vandana Yojana (PMMVY), Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), and other maternal and child health initiatives, disparities in access to and utilization of healthcare services continue to affect maternal and child well-being.

Tamil Nadu has achieved notable progress in maternal and child health through a robust public health system and welfare schemes. In particular, the Dr. Muthulakshmi Reddy Maternity Benefit Scheme (MRMBS) provides financial assistance to promote antenatal care, maternal nutrition, and institutional delivery. However, district-level studies are essential to evaluate the effectiveness of these schemes in improving health outcomes.

Cuddalore District, with its diverse rural and urban population, provides a suitable setting for such an evaluation. This study examines the effectiveness of maternal health schemes in improving maternal and child well-being by assessing antenatal care utilization, institutional delivery, birth weight, immunization, and postnatal care. The findings provide evidence to support policy improvements and strengthen maternal and child health programs.

2. Statement of the Problem:

Despite the implementation of various maternal health schemes by the Government of India and the Government of Tamil Nadu, challenges related to maternal and child health persist — particularly among socio-economically disadvantaged populations. These include inadequate prenatal care, low birth weight, maternal anemia, and inequities in accessing quality healthcare services.

Although these schemes aim to improve healthcare utilization and enhance maternal and child health outcomes, there is limited empirical data on their actual effectiveness at the district level. In Cuddalore District, there is insufficient evidence comparing the health outcomes of beneficiaries and non-beneficiaries of these schemes. Therefore, this study aims to evaluate the effectiveness of maternal health schemes in improving maternal and child health outcomes in Cuddalore District, Tamil Nadu, and to identify shortcomings that may hinder their successful implementation.

3. Review of Literature:

Vaidyanathan et.al. (2022) reviewed maternal health initiatives in Tamil Nadu and reported that the state's sustained investment in maternal welfare, including strengthened primary healthcare, emergency obstetric services, and maternity benefit schemes, has significantly improved maternal and child health indicators. The study highlighted Tamil Nadu as a model for effective maternal healthcare delivery in India.

Kumar, Jain, and Garg (2024) conducted a literature review on the Pradhan Mantri Matru Vandana Yojana (PMMVY) and concluded that maternity cash transfer schemes have improved antenatal care utilization, maternal nutrition, institutional deliveries, and child health. However, they also identified challenges such as delayed payments, limited awareness, and the exclusion of eligible beneficiaries.

Sutapa et.al. (2025) evaluated PMMVY through a statewide mixed-methods study and found that beneficiaries were significantly more likely to complete four or more antenatal care visits, register childbirth, and fully immunize their children compared to non-beneficiaries. The study also noted implementation challenges related to enrolment and fund utilization.

Ray et.al. (2026) analyzed national survey data to examine the impact of India's maternity benefit programme on child health. The study found modest improvements in child growth and nutrition among beneficiaries but emphasized that financial assistance alone is insufficient without stronger health services, nutrition support, and effective programme implementation.

Selvaraj et al. (2026) examined awareness and barriers to the utilization of conditional cash transfer schemes among postnatal women in South India. The study reported that while awareness of maternity benefit schemes was relatively high, delays in registration, documentation issues, and administrative barriers limited access for some eligible women.

4. Research Gap:

Previous studies have largely focused on the national-level Pradhan Mantri Matru Vandana Yojana (PMMVY) or evaluated maternity welfare schemes at the state and national levels. However, there is a scarcity of studies in Tamil Nadu's Cuddalore District that assess the effectiveness of maternity welfare schemes in improving maternal and child health outcomes by comparing beneficiaries with non-beneficiaries. Therefore, the present study seeks to bridge this gap by examining the effectiveness of maternity welfare schemes in Cuddalore District and providing district-level evidence essential for policy improvement.

Objective:

To evaluate the effectiveness of maternal health schemes in improving maternal and child health outcomes in Cuddalore District, Tamil Nadu.

5. Research Methodology:

Research Design:

The study adopts a descriptive and comparative research design to evaluate the effectiveness of maternal health schemes in improving maternal and child health outcomes in Cuddalore District, Tamil Nadu.

Study Area:

The study was conducted in selected rural and urban areas of Cuddalore District, Tamil Nadu.

6. Sample Size and Sampling:

A total of 60 mothers were selected for the study, consisting of 30 beneficiaries and 30 non-beneficiaries of maternal health schemes. A purposive sampling technique was used to select respondents who met the study criteria.

Sources of Data:

- Primary data: Collected through a structured interview schedule from 60 mothers.
- Secondary data: Collected from government reports, journals, NFHS reports, and relevant maternal and child health publications.

Hypothesis:

- Null Hypothesis (H_0): There is no significant association between maternal health scheme beneficiary status and maternal/child health outcomes.
- Alternative Hypothesis (H_1): There is a significant association between maternal health scheme beneficiary status and maternal/child health outcomes.

Data Analysis Methods:

The collected data were analyzed using percentage analysis and the Chi-square test.

Table 1. Awareness and Utilization of Maternal Health Schemes (N = 60)

Category	Frequency	Percentage (%)
Aware and utilized	48	80
Aware but not utilized	8	13.3
Not aware	4	6.7
Total	**60**	**100**

Interpretation: 80.0% of respondents were aware of and utilized maternal health schemes, while 13.3% were aware but had not utilized them.

Table 2. Antenatal Care Visits (N = 60)

ANC Visits	Frequency	Percentage (%)
4 or more visits	50	83.3
Less than 4 visits	10	16.7
Total	**60**	**100**

Interpretation: A majority (83.3%) of mothers reported having four or more antenatal care visits.

Table 3. Maternal and Child Health Outcomes (N = 60)

Health Indicator	Positive Outcome	Frequency	Percentage (%)
Institutional delivery	Yes	55	91.7
Adequate postnatal care	Yes	49	81.7
Normal birth weight (≥2.5 kg)	Yes	48	80
Exclusive breastfeeding	Yes	52	86.7
Fully immunized child	Yes	54	90

Interpretation: The findings indicate generally positive maternal and child health outcomes.

Table 4. Chi-square test Analysis:

Health Indicator	χ^2 Value	p-value	Result
ANC Visits	4.5	0.034	Significant
Institutional Delivery	3.95	0.047	Significant
Birth Weight	4.17	0.041	Significant
Exclusive Breastfeeding	4.15	0.042	Significant
Child Immunization	4.88	0.027	Significant

Interpretation: The Chi-square analysis shows statistically significant associations between scheme participation and all five maternal and child health indicators, as all p-values are below 0.05.

7. Major Findings:

1. Scheme Awareness and Utilization: 80% of mothers were aware of and utilized maternal health schemes, indicating high scheme coverage.
2. Antenatal Care: 83.3% of mothers received four or more ANC visits, indicating good utilization of antenatal care services.

3. Institutional Delivery: 91.7% of mothers had institutional deliveries, reflecting improved access to safe delivery services.
4. Postnatal Care: 81.7% of mothers received adequate postnatal care.
5. Birth Weight: 80% of children had normal birth weight (≥2.5 kg).
6. Exclusive Breastfeeding: 86.7% of mothers practiced exclusive breastfeeding.
7. Immunization: 90% of children were fully immunized, reflecting good utilization of child healthcare services.
8. Chi-square Findings: Significant association was found between maternal health scheme participation and all five health indicators ($p < 0.05$).

Overall Finding: Maternal health schemes are positively associated with maternal and child health outcomes among mothers in Cuddalore District.

8. Suggestions:

1. Increase awareness: Conduct regular awareness programmes in rural and urban areas to ensure all eligible mothers know about maternal health schemes.
2. Improve accessibility: Simplify registration and documentation procedures to enable eligible mothers to access benefits without unnecessary delays.
3. Strengthen ANC services: Encourage mothers to complete recommended antenatal visits through regular counseling and follow-up.
4. Promote institutional delivery: Strengthen maternal healthcare facilities and referral services to encourage safe institutional deliveries.
5. Improve postnatal care: Provide timely postnatal follow-up, counseling, nutrition advice, and breastfeeding support.
6. Focus on child health: Strengthen immunization, nutrition monitoring, and early childhood healthcare services.
7. Ensure timely financial assistance: Ensure maternity benefit payments are provided promptly to eligible beneficiaries.
8. Strengthen monitoring: Health departments should regularly monitor the implementation and effectiveness of maternal health schemes at the district level.
9. Special focus on disadvantaged mothers: Provide additional support to mothers facing financial, geographical, or administrative barriers.
10. District-level evaluation: Conduct periodic studies in Cuddalore District to identify implementation gaps and improve scheme effectiveness.

9. Conclusion:

This study concludes that maternal health schemes play a significant role in improving maternal and child health outcomes in Cuddalore District, Tamil Nadu. The findings indicate that 80% of mothers are aware of and utilize these schemes, while 83.3% underwent four or more antenatal check-ups. Positive health outcomes were also observed in institutional deliveries (91.7%), adequate postnatal care (81.7%), normal birth weight (80%), exclusive breastfeeding (86.7%), and complete infant immunization (90%).

Furthermore, Chi-square analysis revealed a statistically significant association between participation in maternal health schemes and antenatal check-ups, institutional delivery, birth weight, exclusive breastfeeding, and infant immunization. All p-values were less than 0.05. Therefore, the study rejects the null hypothesis and supports the alternative hypothesis.

Overall, maternal health schemes in Cuddalore District contribute positively to the utilization of maternal health services and improved child health practices. However, sustained efforts are required to enhance awareness, accessibility, timely financial assistance, postnatal care, and monitoring, particularly among vulnerable mothers. Strengthening implementation at the district level will further improve maternal and child health outcomes in Tamil Nadu.

References:

1. Vaidyanathan, G., Muraleedharan, V. R., Sundararaman, T., Dash, U., Rajesh, M., Ranjan, A., Babu, R., Iyer, H., Rajasulochana, S. R., Chokshi, M., Mokashi, T., & Nair, A. (2022). *Innovations in Primary Healthcare: A Review of Initiatives to Promote Maternal Health in Tamil Nadu*. **Journal of Health Management, 24**(1), 22–30. https://doi.org/10.1177/09720634221078697.
2. Kumar, S., Jain, P., & Garg, U. (2024). *Impact, Challenges, Opportunities: A Literature Review of the Pradhan Mantri Matru Vandana Yojana in addressing Maternal, Child Health and Nutrition in India*. **Educational Administration: Theory and Practice, 30**(3), 2419–2424. https://doi.org/10.53555/kuey.v30i3.6077.
3. Banerjee, R., Singh, B. S., Sahrawat, N., Mehrotra, A., Swain, S., Mishra, R. M., Antony, P., Aparna, U., Jain, B. K., & Bandyopadhyay Neogi, S. (2025). *Effect of India's flagship conditional maternity benefit scheme on utilization of maternal and child health services: Evidence from a statewide evaluation study*. **BMC Pregnancy and Childbirth, 25**, 294. https://doi.org/10.1186/s12884-025-07416-3.
4. Ray, S., Nguyen, P. H., Pal, S., Scott, S., Menon, P., & Chakrabarti, S. (2026). *India's national maternity benefit cash transfer program and child anthropometry*. **Scientific Reports, 16**, 18807. https://doi.org/10.1038/s41598-026-48160-8.
5. Selvaraj, R., Jayashree, B., & Laksham, K. B. (2026). *Awareness and barriers in the utilisation of conditional cash transfer schemes for pregnant women: A cross-sectional study from South India*. **Journal of Family Medicine and Primary Care, 15**(2), 746–749. https://doi.org/10.4103/jfmpc.jfmpc_1670_24