

Impact, Challenges, Opportunities: A Literature Review of the Pradhan Mantri Matru Vandana Yojana in addressing Maternal, Child Health and Nutrition in India

Dr Sukhender Kumar^{1*}, Dr Pankaj Jain², Dr Urvashi Garg³

¹Health Program Management Consultant

²Assistant Professor, NIIT University, Rajasthan, India

³Master Of Health Science Scholar, Victoria University, Wellington, New Zealand

*Correspondents Author :- Dr Sukhender Kumar

*House No. 46, Opposite Shiv Temple, Surya Nagar Colony, Suratgarh, Sri Ganganagar, Rajasthan, 335804

Email Address- Sukhender86@gmail.com.

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ABSTRACT

The Pradhan Mantri Matru Vandana Yojana (PMMVY) is an important conditional cash transfer (CCT) scheme launched by Government of India in 2017 to provide additional financial support to pregnant and lactating mothers focused on increment in the consumption of nutrition. This literature review aims to integrate the existing research evidence of the impact, challenges, and opportunities (ICO) of PMMVY on maternal and child health outcomes and nutrition status across different states and regions in India. The methodology involved a systematic search and screening of peer-reviewed articles, reports, and guidelines from reputed academic databases and organizational websites. The final review included a total of twenty-one relevant studies utilizing quantitative, qualitative, and mixed method approaches. The findings indicates that PMMVY has increased the utilization of key maternal and child health services like antenatal care visits, institutional deliveries, and on time childhood immunization rates. However, the evidence of impact on maternal and child nutrition outcomes remained mixed, where some studies reported positive effects, while others found no significant contribution in improvement. The review highlights execution challenges encountered like delays in cash transfers, exclusion of eligible beneficiaries, and poor monitoring and grievance redressal mechanisms. After the review, recommendations are provided for enhancing the scheme's effectiveness, such as streamlining the cash transfer process, increasing the transfer amount and number of instalments, integrating complementary interventions, strengthening awareness, and improving monitoring and evaluation efforts. The review underscores the need for continued research and policy interventions to address remaining gaps in maternal and child health in India.

Keywords: PMMVY, Maternal Health, Conditional Cash Transfer, Nutrition, Child Health, Health Outcome, Direct Benefit Transfer, Partial Income, Loss of wages

Introduction:

Poor maternal and child nutrition conditions remains to be a major public health challenge in India, with adverse effects on survival, health outcome, and overall mental and physical development (Sachdev & Dasgupta, 2001) (Victoria, et al., 2008). Regardless of significant reduction in maternal and child mortality rates, India still contributing a substantial proportion of global maternal and child deaths (UNICEF, 2019) (Bhutta, et al., 2013).

According to the National Family Health Survey (NFHS-5) 2019-21, the prevalence of anaemia among pregnant women (52.2%) in India is alarmingly high, while 35.5% of children under 5 years are stunted, indicating chronic undernutrition conditions among pregnant women and children under 5 years of age (IIPS,

2019-21) (Behera, 2023). These persistent nutritional deficiencies during the critical periods of pregnancy, lactation, and early childhood may have long-lasting impacts on cognitive and motor development, educational and skill attainment, and overall human capital formation (Victora, et al., 2008) (Hoddinott, Maluccio, Behrman, Flores, & Martorell, 2008).

In acknowledgement of these challenges, the Government of India launched the Pradhan Mantri Matru Vandana Yojana (PMMVY) in 2017, a centrally supported conditional cash transfer (CCT) scheme aimed at providing additional financial support to pregnant and lactating women for improved health and nutrition outcomes (Development, 2017) (Kumar & Shobana, 2023). The key objectives of the schemes reported as providing particle compensation for the wage loss to take adequate rest before and after delivery and this cash incentive also would lead to improve health seeking behaviour among pregnant and lactating mothers (Development, 2017).

In PMMVY, financial assistance of ₹5,000 are provided in three instalments to women for the first live birth, subject to fulfilling specific conditions such as early registration of pregnancy, received at-least one antenatal check-up after 6 months of pregnancy, and registration of childbirth and child has received the first cycle vaccination in stipulated time-frame (Development, 2017).

This literature review aims to synthesize the existing research evidence to evaluate the effectiveness and impact of PMMVY on various maternal and child health outcomes in India across various regions and regions. The review examines the scheme's effectiveness in achieving its intended objectives, identifying implementation challenges, and exploring potential areas for improvement.

Methodology (Literature Selection):

A comprehensive search for relevant literature was conducted using multiple electronic databases, including PubMed, Scopus, Web of Science, and Google Scholar. Additionally, websites of prominent organizations such as the World Bank, UNICEF, and relevant government ministries were searched for reports and policy briefs. The search terms were carefully designed to capture relevant studies and included a combination of keywords and subject headings related to "Pradhan Mantri Matru Vandana Yojana," "PMMVY," "conditional cash transfer," "maternal health," "child health," "India," and their variations.

The search strategy employed Boolean operators (AND, OR) to combine the search terms and apply appropriate filters to refine the results. The reference lists of relevant studies were also conducted to identify additional potentially relevant publications.

Inclusion and Exclusion Criteria: To ensure the accuracy and quality of the included studies, predefined inclusion and exclusion criteria were employed. The inclusion criteria were studies focused on PMMVY or similar conditional cash transfer schemes in India, published between 2017 (the year PMMVY was launched) and 2024, Reporting on maternal and child health outcomes or implementation aspects related to PMMVY, Published in English language.

The exclusion criteria followed by excluding commentary pieces, editorials, or opinion articles or news articles, studies focused solely on other schemes or interventions without relevant information on PMMVY, studies with insufficient methodological details or unclear reporting of findings.

Data Synthesis and Analysis:

The data from the included studies were synthesized using a narrative approach. The findings were presented based on the crucial maternal and child health outcomes identified, like antenatal care services utilization, conducting institutional deliveries, complete and time bound childhood immunization, and maternal and child nutrition indicators.

Implementation challenges and facilitators were also summarized and analyzed.

Due to the heterogeneity in study designs, interventions, and outcome measures, a meta-analysis was not feasible. Instead, a narrative synthesis method used, which included critically analyzing and incorporating the findings from the selected studies, considering the quality of the evidence and the strength of the reported associations or effects on the maternal and child nutrition.

After screening the search results based on the inclusion criteria and pre-defined conditions, a total of twenty-one studies (16 research articles and 3 reports/policy briefs and 2 scheme guidelines) were identified relevant for the final review. The studies identified relevant for the review reported different research methodologies, such as quantitative analyses of secondary data from national surveys (e.g., NFHS, RSOC), primary surveys at the state or district level, and qualitative surveys through in-depth interviews and focus group discussions.

About Pradhan Mantri Matru Vandana Yojana: As and when a women will conceive the first pregnancy needs to get registered at adjoining Anganwadi Centre of that area. Anganwadi Worker will register the pregnant women and connect with ASHA worker for first Antenatal Check-up at Health & Wellness Centre or other health facility. After getting the first Antenatal check-up, ASHA worker will fill the mother and Child Protection Card. Then pregnant women will get at least two antenatal checkups before delivery and will be eligible for the first instalment (3000/-) under the PMMVY scheme (Initially there were two instalments of

3000 rupees). After that, the delivery must be conducted in an institution. When the lactating mother completes the first round of immunization of the baby in 120 days after birth will fulfil second condition, she would apply for second instalment (2000/-) and get benefitted (MoWCD, 2023).

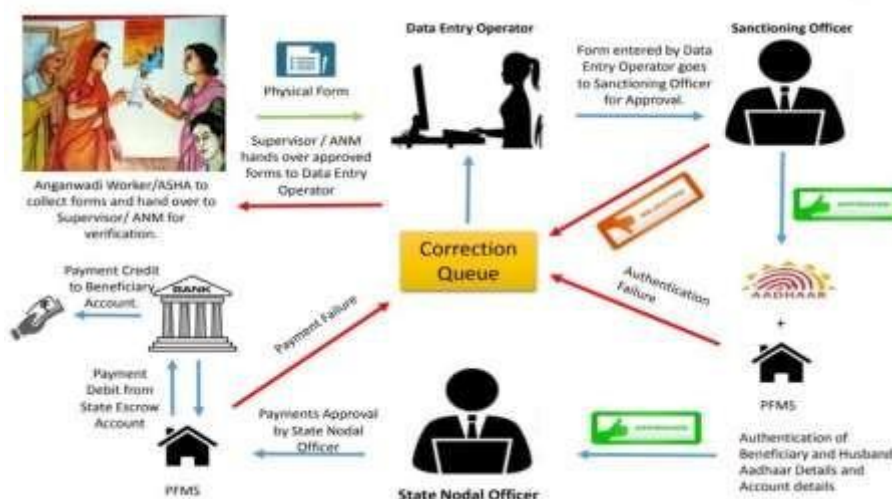
These instalments not only motivate the pregnant women and lactating mother for getting registered with health care center early and access the antenatal checkups, institutional delivery, and complete immunization of baby, but also develop health seeking behaviour, receive counselling during the ANC, monitor the growth of baby during the pregnancy and lactation period.

These all processes complement the maternal and child health outcome and improve overall health indicators. The impact of the scheme can be seen on the NFHS indicators (IIPS, 2019-21):

Table 1: Health indicators related to mother and child health in NFHS 4 and NFHS 5 in India

S No	Indicator	NFHS- 4 2015-16	NFHS-5 2019-21
1	Mothers who had an antenatal check-up in the first trimester	58.6%	70% (increased)
2	Mothers who had at least 4 antenatal care visits	51.2%	58.1% (increased)
3	Registered pregnancies for which the mother received a mother and Child Protection (MCP) card	89.3%	95.9% (increased)
4	Children under 5 years who are stunted (height-for-age)	38.5%	35.5 (decreased)
5	Children under 5 years who are wasted (weight-for-height)	21%	19.3% (decreased)
6	Children under 5 years who are underweight (weight-for-age)	35.8%	32.1% (decreased)

After April 2022, the scheme is extended to the second parity of PW&LM in case of girl child. The beneficiary is eligible for single instalment (6000/- in case of girl and 4000/- in case of boy) if delivered the baby in health care institution and complete the first round immunization cycle within stipulated period. This scheme is implemented through a highly tech enabled system where many checks are there at every stage. Scheme registration started with Adhar numbers and data saved in the system (MoWCD, 2023). There is no chance of duplication in the scheme implementation. The detailed process of beneficiary’s registration and instalment disbursement is given in the flow chart.



Source: Ministry of Women & Child Development

Impact, Challenges and Opportunities of PMMVY on Maternal and Child Health Outcomes:

Antenatal Care and Institutional Deliveries: A substantial research studies have reported a positive impact of PMMVY on increasing the utilization of antenatal care services and institutional deliveries, which are crucial for ensuring safe pregnancies and reducing maternal and child mortality (Sinha, 2022) (Kumar & Shobana, 2023) (Kumari & Lahiri, 2022). These findings are further confirmed by studies conducted in West Bengal (Kumari & Lahiri, 2022), (Shukla, Ray, & Basu, 2023), Uttar Pradesh (Kapur & Yangki, 2021). These studies reported higher utilization of antenatal care and institutional delivery services among PMMVY beneficiaries compared to non-beneficiaries. Uttar Pradesh reported a significant increment in ANC check up by eight points in 2018-19 to 2019-20. A report (Kapur & Yangki, 2021) found that institutional deliveries

increased by 9% from 83% (2013-14) to 93% (2019-20). Also, 14 states/UTs reported 99% deliveries happened institutionally where PMMVY cash transfer impacted positively.

Childhood Immunization: The review also found evidence of PMMVY contribution towards improved childhood immunization rates across states and regions and encouraging people towards more health seeking behaviour. (Nandeep, et al., 2024) (Sekhar & Alagarajan, 2019). This scheme impacted on childhood immunization due to conditions of full immunization within stipulated period to get the benefits.

Maternal and Child Nutrition: The impact of PMMVY on maternal and child nutrition has been less conclusive, with mixed results across different studies and regions. A few of studies reported improvements in maternal weight gain during pregnancy and child anthropometric measures like height-for-age and weight-for-age (Von Harren & Klonner, 2020) (Haaren & Klonner, 2021). For instance, (Von Harren & Klonner, 2020) analysed data from the NFHS-4 and NFHS-5 and found that children born to PMMVY beneficiaries had significantly higher height-for-age and weight-for-age Z-scores compared to non-beneficiaries, indicating better nutritional status. However, the study did not find a significant impact on stunting or wasting rates which are crucial indicators to assess the nutritional status among children below five years of age. These mixed findings highlight the complex interplay of factors influencing maternal and child nutrition outcomes and suggest that while PMMVY may have contributed to improvements. The impact and effectiveness of PMMVY has been limited by the relatively modest cash transfer amount and the need for complementary interventions targeting dietary diversity, nutrition education, and access to affordable and nutritious foods (Von Harren & Klonner, 2020).

Implementation Challenges: Some studies have highlighted different implementation challenges faced by PMMVY, which affecting adversely and hindered the potential impact on maternal and child health outcomes. The key challenges reported is the delay in cash transfers due to administrative and logistical bottlenecks (Dhariwal, Divakar, & Gupta, 2020) (Behera, 2023) (Sekhar & Alagarajan, 2019). As reported in a study (NITI Ayog, 2020), since inception of PMMVY January 2017 to December 2019, 1.37 crore beneficiaries registered in the scheme, and 87%, 83% and 56% received the first, second and third instalments respectively, the average time calculated with respect to last menstrual period and registration in the scheme, the average time taken was 293 days. Only 17% beneficiaries received the first instalment within 150 days with respect to last menstrual period which is the first condition to get the benefit of PMMVY. Similarly, Gujarat reported 80% beneficiaries' registration in PMMVY, and average time taken in direct benefit transfer 239, 278 and 416 days respectively in first, second and third instalments. Another report found that although 83.5% beneficiaries received the first instalment but only 22% were paid within stipulated time limit (Narayanan & Saha, 2019). Another significant challenge highlighted by multiple studies is the exclusion of eligible beneficiaries due to lack of awareness (registration after crossing the timeframe conditions), documentation issues (Immunization card, Aadhar Card, Bank Account), or errors in beneficiary identification in PMMVY Common Application Software (Von Harren & Klonner, 2020) (Dhariwal, Divakar, & Gupta, 2020) (Kumar & Shobana, 2023).

Additionally, studies reported few challenges like limited or inadequate monitoring, evaluation and grievance redressal mechanisms (Behera, 2023) and lack of knowledge of grievance mechanism system among the beneficiaries and family members (Dhariwal, Divakar, & Gupta, 2020), implementation level gaps on-ground and lack of accountability (Behera, 2023).

Discussion

This concentrated literature review suggests that PMMVY has contributed to improving certain key maternal and child health outcomes, particularly in terms of increasing the utilization of essential health services like antenatal care, institutional deliveries, and childhood immunization. This aligns with the scheme's objectives of promoting positive health-seeking behaviour and reducing maternal and child mortality by encouraging timely access to healthcare services.

However, the effectiveness of PMMVY on key maternal and child nutrition outcomes reported less stable, with some studies reported positive effects while others found no or less significant improvements. This review highlights the complex relationship of factors influencing nutrition outcomes and suggests that the relatively modest cash transfer amount coupled with the need for complementary interventions like limited awareness, may have limited the scheme's impact in addressing malnutrition (Von Harren & Klonner, 2020) (Kumar & Shobana, 2023). Furthermore, the review has identified several implementation challenges, such as delays in cash transfers (Kumar & Shobana, 2023), exclusion of vulnerable beneficiaries limiting to first live birth (Behera, 2023), women with early marriage (Sekhar & Alagarajan, 2019), and limited or poor monitoring and grievance redressal mechanisms, which may have hindered the scheme's effectiveness and limit the reach among eligible and needy beneficiaries, especially among marginalized communities (Sekhar & Alagarajan, 2019) (Shukla, Ray, & Basu, 2023).

Recommendation

Based on the review findings, this study provides some key recommendations which help to enhance the effectiveness of PMMVY and address the identified gaps. Efforts to enhance the PMMVY include streamlining

the process of cash transfers by addressing administrative and logistical bottlenecks. These could involve the process of strengthening and leveraging digital platforms, simplifying verification processes (Adhaar, Vaccination Card, Bank Account), strengthening coordination among stakeholders involved in fund transfers like Anganwadi Worker, ASHA, ANM, Adhaar Centre, ICSD and Banks. Also, there is a need to review the current transfer amount of ₹5,000 considering inflation, regional cost-of-living differences, transportation, accessibility and availability of health care facilities. Increased the transfer amount or indexing it to inflation could potentially have a significant impact on household income and nutrition.

Integrating PMMVY with complementary interventions, such as focusing on dietary diversity or locally available products, nutrition education, and access to affordable and nutritious foods could address the complex determinants of maternal and child malnutrition effectively. Also, efforts to increase awareness about PMMVY, its eligibility criteria, and application processes, especially in marginalized and hard-to-reach communities, a specific information, education, and communication interventions can help in improvement the scheme's inclusivity and accessibility. Further, instituting strong monitoring and evaluation instruments is crucial to track the pace of scheme's implementation, identify gaps, and address grievances in stipulated time and transparent manner. This may involve leveraging technology and ensuring accountability at all levels. The evaluations and impact assessments on regular basis can provide insights into the effectiveness of the scheme, identify best practices, and guide to make evidence-based policy decisions for effective implementation. Also, collaboration with research institutions like universities, utilizing data from national surveys like NFHS, District Health Survey, other administrative records like scheme database from CAS dashboard can facilitate the process of supplementary intervention designs which further can be region specific. Lastly, promoting inter-sectoral collaboration across various sectors, including health, nutrition, education, and social protection, is essential for addressing maternal and child health challenges effectively.

Limitations

This literature review on the effectiveness, impact, and implementation challenges of Pradhan Mantri Matru Vandana Yojana (PMMVY) found potential limitations. The less or limited publication may have influenced the results. The studies were conducted in varied geographical and socioeconomic settings within India, limiting the generalizability of the findings. Out of the literature available, most of the studies conducted in Northeastern State of India, Gujarat, Bihar, and West Bengal. Potential confounding factors, despite attempts to control them, could have influenced the observed associations. Despite these limitations, this review provides valuable insights into PMMVY's impact on maternal and child health outcomes. Future research should address these limitations to strengthen the evidence base on the scheme's implementation and effectiveness in India.

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