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Authors
Dr. Happy Agrawal[1], Assistant Professor, Department of Business Administration, St. Xavier's College Jaipur, Mobile: 9314246000, Email ID: guptahappy29@gmail.com, ORCID: 0000-0001-7247-668X

Dr. Shruti Rawal[2], Assistant Professor, Department of English, St. Xavier's College Jaipur, Mobile: 9694499950, Email ID: shrutivipul@gmail.com, ORCID: 0000-0002-2354-5631

Dr. Megha Choudhary[3], Lecturer, Department of English, Government Polytechnic College, Bhilwara, Mobile: 9461145767, Email ID: meghachoudharyy@gmail.com

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Does Service Access Alone Improve Maternal Health Experiences? A Study of PMMVY Beneficiaries in Jhunjhunu and Sikar

Abstract
In India, maternal health interventions are a significant contributor to maternal and child health outcomes. This study is based on one such intervention, Pradhan Mantri Matru Vandana Yojana (PMMVY) in two districts, Jhunjhunu and Sikar, of Rajasthan. It looks at the linkages between the three variables, namely, procedural accessibility, psychosocial support, and maternal health behaviour experiences among the beneficiaries. A questionnaire with 20 questions was structured to measure these dimensions for a sample of 600 beneficiaries of PMMVY. As for the instrument's validity, Exploratory Factor Analysis (EFA) was performed, followed by reliability analysis. Pearson correlation and simple linear regression were performed to examine the relationship between these variables. The correlational analysis revealed a moderate, but significant positive correlation between procedural accessibility and psychosocial support ($r = 0.333$, $p<.001$) and maternal health behaviour ($r = 0.337$, $p < 0.001$). The results of regression analysis showed that the variance of psychosocial support was 11.1 % explained by procedural accessibility, and the maternal health behaviour was 11.4% explained by procedural accessibility. These findings indicate that although the accessibility of the procedure does play a significant role in determining the experiences of women beneficiaries, other contextual factors such as socio-cultural norms, financial stability, household relations and educational level also have an impact on psychosocial support and maternal health behaviour. The inclusion of the psychosocial in maternal health interventions is a departure from the utilisation of benefits and financial outcomes in the existing literature. The study will also have significance for policymakers in designing maternal health programmes which are not only easier to administer but are also more supportive and community-based.

1. INTRODUCTION

Maternal health has been a major priority of public welfare and development in developing countries. Special attention has been paid to maternal health behaviours such as maintaining an appropriate nutritional diet, attending antenatal care, utilising healthcare facilities, ensuring child immunisation, and obtaining postnatal care [1–4]. Positive maternal health behaviour contributes to safer pregnancy and childbirth and improves the long-term well-being of mothers and their children [5,6]. In India, maternal and child health indicators have improved over recent decades; however, considerable differences remain in awareness, accessibility, and utilisation of public health services [7–9]. Although institutional deliveries have increased, barriers associated with administrative procedures, documentation requirements, and institutional access continue to influence the utilisation of health services and women's experiences during pregnancy [10–12].

Beyond their public health significance, maternal welfare programmes also represent large-scale public service systems that require the effective management of administrative processes, information, frontline personnel, financial benefits, and beneficiary interactions. Their effectiveness, therefore, depends not only on policy design but also on the efficiency, accessibility, responsiveness, and inclusiveness of the service-delivery system. From a management perspective, reducing procedural barriers can improve programme participation, beneficiary experience, institutional trust, and the sustainable delivery of public welfare services.

To address these concerns, the Government of India launched the Pradhan Mantri Matru Vandana Yojana (PMMVY) on January 1, 2017. This conditional cash-transfer scheme supports pregnant and lactating women by providing partial compensation for wage loss during pregnancy while encouraging the utilisation of public health services [13]. The scheme promotes health-seeking behaviour among women by providing a cash incentive upon completion of certain health behaviours like registration of pregnancy, antenatal visits, institutional deliveries, and child immunisation. By involving ASHA and Anganwadi workers in its implementation, the scheme seeks to provide a supportive environment for women to increase their awareness, accessibility, and uptake of public health facilities.

As a public welfare programme, PMMVY involves the coordination of beneficiaries, frontline workers, healthcare institutions, Anganwadi centres, banking systems, documentation processes, and government departments. Consequently, its performance is closely associated with operational efficiency, communication quality, workforce responsiveness, and the ability of implementing institutions to provide beneficiary-centred services. Effective coordination among these stakeholders can reduce administrative delays and contribute to more inclusive and sustainable programme implementation.

Accessibility within maternal health policies includes ease of access to healthcare institutions, clarity of programme procedures, and beneficiaries' ability to fulfil documentation requirements [14–17]. These factors can influence beneficiaries' perceptions of inclusion, support, and responsiveness within public health programmes [18–21]. The participation and psychosocial experiences of women can be influenced by complex and cumbersome documentation requirements and bureaucratic processes [22,23]. On the other hand, easy-to-access processes can enhance beneficiaries' trust in public services, boost their interactions with front line staff and drive more healthcare service use [19,24].

Procedural accessibility can then be interpreted as a relevant aspect of public service and a public service operations management. Administering processes that are simple, transparent, and responsive can help to lighten the burden on the beneficiaries, increase the efficiency of programme delivery and foster trust in implementing institutions. The digitalisation of the registration and documentation procedures can help to improve access to services, but may also pose new barriers for disadvantaged beneficiaries, if there are insufficient digital literacy and support to help them with these procedures.

The role of psychological and social support systems for maternal health care has been observed worldwide. Females' motivation and capacity to access health care during pregnancy and lactation are shaped by family support, emotional stability, confidence in public health care services, and the experience they have with frontline workers [25–29]. ASHAs and Anganwadi workers act as intermediaries between the government health systems and beneficiaries, especially in rural and semi-urban settings. Women's trustworthiness, access to services, communication skills, and ability to advise beneficiaries on healthcare services and public welfare schemes can affect their trust in public health institutions [30,31]. Likewise, maternal health behaviours, including nutrition care, institutional deliveries and regular health checks, are affected by the availability of public health services [22,32].

In terms of management, ASHA and Anganwadi workers are the first line of human resources of the PMMVY service-delivery system. How responsive, competent, their communication skills, and their ability to help the beneficiaries complete documents and institutional procedures can significantly influence the beneficiary experience. The impact of PMMVY could thus be influenced not just by financial incentives, but also by interpersonal support and operational support during implementation of the PMMVY.

The effective delivery of maternal welfare programmes is also relevant to social sustainability and inclusive growth. Accessible and supportive welfare services can reduce institutional exclusion, promote women's health security, strengthen family well-being, and contribute to long-term human-capital development. Thus, improving procedural accessibility under PMMVY can create public value by ensuring that programme benefits are delivered equitably, efficiently, and responsively to intended beneficiaries.

This study seeks to examine whether perceived procedural accessibility influences the psychosocial support and maternal health behaviour among PMMVY

beneficiaries in two districts of Shekhawati region of Rajasthan: Jhunjhunu and Sikar. These districts have a similar socio-cultural and demographic profile and represent active implementation of PMMVY and frontline health systems. Although both districts perform relatively well in maternal health service delivery, Jhunjhunu demonstrates better quality of care and literacy, whereas Sikar has comparatively greater access to health institutions [33]. The study contributes to the literature on maternal health and well-being, policy implementation, and psychosocial dimensions of public health programmes while also extending the discussion to beneficiary-centred public service management, frontline service delivery, operational accessibility, and socially sustainable welfare implementation. By examining procedural accessibility as a predictor of psychosocial support and maternal health behaviour, the study provides evidence that may assist programme administrators and policymakers in developing more efficient, inclusive, and responsive service-delivery systems.

LITERATURE REVIEW

2.1 Maternal Health Behavior and PMMVY

Maternal health behaviour refers to health-related practices followed by women during pregnancy and motherhood, including maintaining an appropriate nutritional diet, attending antenatal care, opting for institutional delivery, ensuring child immunisation, and obtaining postnatal care [11,12,34–36]. Following these practices can reduce maternal and child health complications while increasing women's interaction with healthcare institutions. Previous studies have also demonstrated that educational attainment, income, health awareness, trust in public institutions, and social support systems influence maternal health-seeking behaviour [10,37,38].

Research on maternal health programmes such as PMMVY and Janani Suraksha Yojana has demonstrated the influence of conditional cash-transfer programmes on the utilisation of maternal health services [15,38,41]. These schemes can increase women's engagement with health institutions and reduce financial barriers related to pregnancy and maternal healthcare needs [15,34,36]. But financial incentives are not enough to achieve lasting behavioural change, as women's access to health centres, the counselling by frontline providers, and their family and community support also influence the impact of incentives [14,17,29,30,41].

Public-service management aspects of conditional cash transfers involve various administrative and service delivery steps, such as identification of beneficiaries, enrolment, documentation, coordination of payments, verification of health services, and communication with frontline workers. Thus, the success or failure of PMMVY is not only measured with the monetary value of the benefit but also the efficiency, responsiveness and reach of the mechanism through which the benefit is to be provided.

The behaviour of maternal health is therefore seen as a result of individual-level factors and the quality of the programme. Organised institutional support, timely help, effective service procedures, and effective communication can enhance the involvement and commitment of beneficiaries in accessing maternal health services.

2.2 Psychosocial Support and PMMVY

The maternal health literature has consistently highlighted the importance of psychosocial support in influencing the health and well-being of pregnant women [39–42]. Women who experience stronger social and emotional support are generally more likely to utilise maternal health services [25,29]. Emotional stability and a supportive family environment can increase women's confidence in health-related decision-making and improve compliance with health and nutritional recommendations [40,43,44]. Trust in public institutions and perceptions of government services may also shape women's health behaviour and influence maternal and child health outcomes [41,42].

Frontline workers like ASHA and Anganwadi workers also play a major role in determining women's psychosocial experiences with government health interventions. The ability of these workers to build trust among beneficiaries and use context-specific communication can influence women's health behaviour during pregnancy [45,46]. Interaction with frontline workers has also been associated with greater awareness of institutional services, antenatal care, vaccination schedules, and nutritional practices [45–47]. In rural areas, beneficiaries are often dependent on these workers for policy information, enrolment and documentation assistance, and emotional support related to pregnancy and childbirth [30,48,49].

From a human resource and service-management perspective, ASHA and Anganwadi workers function as frontline service personnel who translate programme policies into actual beneficiary experiences. Their communication skills, responsiveness, empathy, reliability, and ability to solve procedural problems may influence beneficiary trust, programme participation, and perceptions of service quality.

Existing PMMVY studies have primarily focused on implementation outcomes, beneficiary awareness, service utilisation, and financial support under the scheme [20,25,35,42,50–54]. However, the psychological and social experiences associated with PMMVY have not been examined adequately, particularly in relation to the quality of frontline interaction and the accessibility of programme procedures.

This gap is important from a management perspective because psychosocial support may represent an important dimension of beneficiary-centred service delivery. Supportive interactions can improve confidence, reduce uncertainty, strengthen institutional trust, and increase the likelihood that beneficiaries remain engaged with both the welfare programme and associated healthcare services.

2.3 Procedural Accessibility in Maternal Health Policies

Accessibility to healthcare services is considered one of the major factors influencing maternal health outcomes in India [15,20,21,35]. Challenges such as distance from health institutions, transportation barriers, staff shortages, and limited-service availability can reduce the utilisation of antenatal and postnatal services among pregnant women [14,16,17]. Barriers tend to be greater for women

who are economically and socially disadvantaged [20,35,50].

The beneficiaries of maternal health interventions such as PMMVY must hold bank accounts, meet with paperwork requirements and deal with institutional processes and digital processes to receive benefits. Bureaucratic issues or the paperwork involved, as well as institutional procedures, can make it less attractive for a beneficiary to join the scheme and may add to the problems faced by beneficiaries who lack literacy, digital skills or a strong institutional support [20,50,52,53].

Accessibility, then, can be considered as part of the operational efficiency in the delivery of public services. Formal programmes can be available but hard to access when the beneficiaries face complex documentation, unclear eligibility, repeated visits to institutions, delays in getting programmes approved, and a lack of guidance. These administrative requirements can decrease participation and decrease the trust of implementing institutions.

Research on maternal health programmes has revealed that the way that programmes are operational can affect women's experiences of public welfare programmes [21–23,50]. Women who can access services and finish enrolment processes more easily might feel more confident, emotionally stable, and confident in the government systems [18,19]. Better access could also contribute to more communication with frontline workers and more maternal health service uptake [19,24]. However, few research studies have investigated the relationship of these variables in relation to maternal health policies such as PMMVY.

Electronic registration, digital documentation, bank-linked payments and application tracking are increasingly being part of the public welfare administration through digitalisation. Although digital systems may improve speed, transparency, and administrative coordination, they may also create barriers for beneficiaries with limited digital literacy, inadequate device access, or dependence on intermediaries. Assisted digital support from frontline workers is therefore essential for ensuring that digital transformation improves inclusion rather than creating new forms of exclusion.

In the context of PMMVY, procedural accessibility includes not only physical access to institutions but also clarity of information, ease of documentation, responsiveness of frontline workers, and beneficiaries' ability to navigate digital and banking requirements. These dimensions are directly relevant to service quality, operational management, and beneficiary-centred programme implementation.

2.4 Theoretical Framework

The present study uses Social Support Theory to develop a conceptual understanding of procedural accessibility, psychosocial support, and maternal health behaviour in the context of PMMVY. Social Support Theory proposes that informational, emotional, and instrumental support positively influence individual health and well-being [55,56]. According to this theory, supportive relationships can buffer stress and increase an individual's ability to manage difficult circumstances, thereby promoting positive health behaviour [55–57].

In the context of PMMVY, women who perceive enrollment procedures as accessible and manageable may experience greater confidence in participating in public health services. Support from family members and frontline workers may lead to improved health and well-being among pregnant women.

The theory is particularly relevant because procedural accessibility may determine whether beneficiaries receive the information, guidance, and institutional assistance needed to participate effectively in the scheme. Frontline workers can provide informational support by explaining procedures, instrumental support by assisting with documentation and enrolment, and emotional support by reducing uncertainty and building confidence.

To strengthen the management orientation of the study, Social Support Theory is also interpreted through the perspective of beneficiary-centred public-service delivery. From this perspective, public programmes create greater value when services are accessible, responsive, equitable, and capable of addressing beneficiaries' practical and emotional needs. Procedural accessibility can therefore serve as an operational mechanism through which institutions improve beneficiary experience and programme participation.

The proposed relationship can be understood as follows: accessible programme procedures reduce administrative burden and facilitate interaction with frontline workers; improved interaction strengthens psychosocial support; and stronger psychosocial support can encourage positive maternal health behaviour. This framework connects service-process accessibility with beneficiary experience and behavioural outcomes.

Although national and international studies have demonstrated the importance of accessibility, psychosocial support, and maternal health behaviour, few studies have examined these dimensions together in the context of PMMVY. Most PMMVY research has focused on financial benefits, awareness, implementation barriers, and patterns of service utilisation [20,25,35,50,52,53]. Limited attention has been given to procedural accessibility as a service-management construct, the psychosocial experiences of beneficiaries, and the role of frontline support in shaping behavioural outcomes.

This limitation also reflects a broader gap in understanding how public welfare programmes create social value through effective service delivery. Research has rarely examined whether the simplicity, responsiveness, and inclusiveness of programme procedures influence beneficiaries' confidence, institutional trust, and engagement with maternal health services.

Therefore, examining the relationship between procedural accessibility, psychosocial support, and maternal health behaviour is important for informing future policy design and programme management. The study contributes by positioning accessibility not only as a health-system issue but also as an operational, human-resource, and beneficiary-experience dimension of socially sustainable public-service delivery.

METHODOLOGY

3.1 Research Objectives

This study is guided by the following research objectives:
To examine the association between procedural service accessibility and psychosocial support among PMMVY beneficiaries in Jhunjhunu and Sikar.
To examine the association between procedural service accessibility and maternal health behaviour among PMMVY beneficiaries in Jhunjhunu and Sikar.
These objectives also support an assessment of procedural accessibility as an operational component of beneficiary-centred public-service delivery under PMMVY. By examining its relationship with psychosocial support and maternal health behaviour, the study seeks to generate evidence relevant to programme administration, frontline service delivery, and inclusive welfare implementation.

3.2 Research Hypotheses

To achieve the above-stated objectives of this study, the following hypotheses have been formulated:
H1: Procedural service accessibility significantly predicts psychosocial support among PMMVY beneficiaries in Jhunjhunu and Sikar.
H2: Procedural service accessibility significantly predicts maternal health behaviour among PMMVY beneficiaries in Jhunjhunu and Sikar.
The hypotheses were framed to assess whether the accessibility of programme procedures and institutional support mechanisms is associated with beneficiaries' psychosocial experiences and health-related behaviour.

3.3 Study Design and Participants

The study employed a cross-sectional quantitative research design across two districts of Rajasthan, namely Jhunjhunu and Sikar. This design was deemed to be suitable in the current study to explore the associations between procedural accessibility, psychosocial support and maternal health behaviour at a single time.
The data from the beneficiaries of PMMVY were collected using the random sampling technique in these areas. The target population consisted of women from the selected districts who were enrolled as beneficiaries of the PMMVY. The inclusion criteria were beneficiaries registered in the scheme from 2018 to 2025.
After data cleaning procedures, the final sample consisted of 600 beneficiaries, including 300 participants from each district. The equal representation of beneficiaries from both districts supported a balanced assessment of experiences across the two programme-implementation settings.
All participants provided informed consent to take part in the study. Participants were also informed about their voluntary participation and right to withdraw at any time during the study. All ethical standards of confidentiality and anonymity were followed.
From a public-service management perspective, the study setting allowed an examination of how beneficiaries experienced programme procedures, frontline assistance, and institutional accessibility within the PMMVY service-delivery system.

3.4 Measures

A structured questionnaire of 20 items was designed based on the existing literature on maternal health policies. The instrument was developed to capture both beneficiary characteristics and experiences associated with programme access, frontline support, and maternal health practices.
The questionnaire was developed in both English and Hindi, and collected information on socio-demographics, procedural accessibility, psychosocial support and maternal health behaviors. The bilingual format was used to improve clarity and accessibility for participants with different language preferences.
Socio-demographic information including age, education, and social category was collected from all the participants.
Procedural service accessibility was assessed using four items that examined beneficiaries' ability to access Anganwadi centres or government offices, obtain assistance from ASHA or Anganwadi workers, complete documentation requirements, and use digitalised enrolment procedures. Psychosocial support was assessed using five items. These items captured beneficiaries' perceptions of family support, emotional security, institutional responsiveness, and accessibility of frontline workers.
Procedural accessibility and psychosocial support were assessed using 4 items and 5 items, respectively, all collecting responses on a 5-point Likert scale from 1 ("Strongly Disagree") to 5 ("Strongly Agree").
Maternal health behaviour was assessed using 5 items collecting responses in different formats, including dichotomous answers (yes/no), Likert scale from 1 ("Strongly Disagree") to 5 ("Strongly Agree"), and a categorical measure of the number of antenatal visits. The maternal health behaviour items covered nutritional practices, antenatal care, child vaccination, health check-ups, and beneficiaries' ability to manage maternal and child health needs.
Dichotomous and categorical items were coded numerically before applying statistical analysis. The coding procedure enabled the responses to be included in the exploratory factor analysis and subsequent construction of the maternal health behaviour measure.
In the context of the present study, procedural accessibility was treated as a service-delivery construct reflecting the ease with which beneficiaries could navigate programme institutions, documentation requirements, frontline assistance, and enrolment processes.

3.5 Statistical Analyses

All data analyses were performed using Statistical Package for the Social Sciences (SPSS) version 32.0. Following data cleaning, descriptive statistics were used to describe the characteristics of study sample. Frequencies and percentages were calculated for the socio-demographic characteristics of participants, while the principal study constructs were evaluated through factor, reliability, correlation, and regression analyses.
Exploratory factor analysis (EFA) was conducted to examine the latent structure of procedural accessibility, psychosocial support and maternal health behavior items. EFA was used to determine whether the questionnaire items grouped according to the three theoretically proposed dimensions.

The results of EFA helped in identifying items with satisfactory factor loadings and only those items were retained for further analysis. The final constructs were based only on the retained factor structure. Items with inadequate factor loadings were excluded to improve the conceptual clarity and internal consistency of the measures.

Reliability analysis was subsequently conducted using Cronbach's alpha to assess the internal consistency of the retained items within each construct.

Pearson correlation analysis was performed to examine the relationship between the variables among PMMVY beneficiaries. The analysis assessed the direction and strength of the associations between procedural service accessibility, psychosocial support, and maternal health behaviour.

The significance of correlation was understood from the criteria identified by Cohen [58], which are small, moderate and large correlation effects at 0.1, 0.3 and 0.5, respectively.

A linear regression was used to explore the predictive relationship between the procedural accessibility and psychosocial support and maternal health behaviour. Two simple linear regression models were estimated. Model 1 included the psychosocial support as the dependent variable and the procedural service accessibility as the independent variable. The second model had the maternal health behaviour as the outcome and procedural service accessibility as the predictor.

The level of variance of psychosocial support and maternal health behaviour with changes in accessibility to the procedure was determined by calculating R^2. Procedural accessibility contributed to the two outcomes, which were evaluated using the regression coefficients, confidence intervals, significance values and coefficients of determination.

The analytical strategy had to test the hypotheses, in addition to providing evidence to support programme management. In particular, the results were examined to determine if the availability of PMMVY processes could help to enhance more positive experiences for beneficiaries and increase uptake of maternal health practices.

4. RESULTS

4.1 Descriptive Statistics

The general description of the sample of the study is summarised in Table 1. They were participants from rural and urban areas. The participants were mostly of the Other Backward Classes (OBC) category and were in the age group of 26-35 years. Most of the participants reported secondary as their highest educational qualification. The frontline workers, such as ASHA and Anganwadi workers, play a key role in programme communication and reaching out to beneficiaries, and almost all participants (99%) first heard about PMMVY from ASHA or Anganwadi workers.

Table 1. Descriptive Statistics

Variables	N	Percentage
Name of District		
Jhunjhunu	300	50
Sikar	300	50
Area of Residence		
Rural	310	51.7
Urban	290	48.3
Social Category		
Scheduled Castes (SC)	47	7.8
Scheduled Tribes (ST)	56	9.3
Other Backward Classes (OBC)	456	76
General	41	6.8
Age		
19-25 years	7	1.2
26-35 years	582	97
36-45 years	11	1.8
Education		
No formal education	8	1.3
Primary education	28	4.7
Secondary education	481	80.2
Higher education	83	13.8
How did you first hear about PMMVY?		
ASHA/Anganwadi Worker (AWW)	594	99
Family/Neighbors	3	0.5
Hospital/Health Center	3	0.5

4.2 Bartlett's Test of Sphericity and Exploratory Factor Analysis

Before conducting EFA, Bartlett's test of sphericity was performed and was statistically significant, χ^2 (55) = 6613, $p < 0.001$, indicating that the correlation matrix was suitable for factor analysis (Table 2). EFA was performed to examine the latent structure of questionnaire items. The Kaiser–Meyer–Olkin measure of sampling adequacy was

0.849, exceeding the recommended minimum value of 0.60 and confirming that the data were suitable for EFA [59]. Principal axis factoring with oblimin rotation was used to identify the underlying structure of the questionnaire items. Oblimin rotation was selected because the dimensions of procedural accessibility, psychosocial support, and maternal health behaviour were theoretically expected to be correlated. Table 3 represents the factor loadings obtained from the analysis. Three factors corresponding to the proposed conceptual dimensions were retained. Factor 1 represented psychosocial support, Factor 2 represented procedural service accessibility, and Factor 3 represented maternal health behaviour. One psychosocial support item and two maternal health behaviour items were removed because their factor loadings were below the predetermined threshold of 0.40. Reliability analysis was subsequently conducted to assess the internal consistency of the retained items. Cronbach's alpha was 0.881 for procedural service accessibility, 0.957 for psychosocial support, and 0.901 for maternal health behaviour. All values exceeded the commonly accepted threshold of 0.70, indicating strong internal consistency. health behaviour, indicating high internal consistency among the items within each factor.

Table 2. Bartlett's Test of Sphericity

Parameter	Value
Chi-squared	6613
Degree of freedom	55
p-value	<.001

Table 3. Exploratory Factor Analysis of Questionnaire Items with Oblimin Rotation

Item	Factor Loadings		
	Factor 1	Factor 2	Factor 3
I can easily reach out to the Anganwadis or local government offices to apply for PMMVY benefits.		0.687	
ASHA workers or Anaganwadi services have helped me during the application process.		0.925	
I am able to complete the documentation process easily.		0.794	
Digitalization made enrollment easier for me.		0.868	
I took care of my diet and nutritional habits.			0.862
I took my child for vaccination and other health check-ups regularly.			0.961
I can manage my own and my child's health needs.			0.812
I can easily ask ASHAs and AWWs about PMMVY benefits and procedures.	0.878		
My family supported me better due to PMMVY during the pregnancy.	0.958		
I felt secure during my pregnancy under PMMVY.	0.973		
I believe PMMVY values the needs of pregnant women	0.891		

4.3 Correlational Analysis

Pearson's correlation method was used to examine the relationship of procedural accessibility with psychosocial support and maternal health behavior. Table 4 represents the correlation of procedural accessibility with psychosocial support and maternal health behavior among PMMVY beneficiaries. The results show a moderate but significant positive correlation between procedural accessibility and psychosocial support experienced under the scheme ($r = 0.333$, $p<.001$). A moderate but significant positive correlation was found between procedural accessibility and maternal health behavior among beneficiaries ($r = 0.337$, $p<.001$).

Table 4. Correlational Analysis

Variables	Procedural accessibility	Psychosocial support	Maternal health behavior
Procedural accessibility	1	0.333***	0.337***
Psychosocial support	0.333***	1	
Maternal health behavior	0.337***		1

*Note. *** p<.001*

4.4 Regression Analysis

Table 5 presents the results of two simple linear regression models examining whether procedural service accessibility predicted psychosocial support and maternal health behaviour among PMMVY beneficiaries. In the first model, psychosocial support was entered as the outcome variable and procedural service accessibility as the predictor. Procedural service accessibility significantly and positively predicted psychosocial support ($B = 0.525$, $\beta = 0.333$, 95% CI: 0.406–0.644, $p < .001$). The model explained 11.1% of the variance in psychosocial support ($R^2 = 0.111$), indicating a statistically significant but modest explanatory effect. The unstandardized regression equation was PS = 7.745 + 0.525(PA), where PS represents psychosocial support, and PA represents procedural service accessibility. In the second model, maternal health behaviour was entered as the outcome variable and procedural service accessibility

as the predictor. Procedural service accessibility significantly and positively predicted maternal health behaviour (B = 0.280, β = 0.337, 95% CI: 0.218–0.343, p < .001). The model explained 11.4% of the variance in maternal health behaviour (R^2 = 0.114), again indicating a statistically significant but modest explanatory effect. The unstandardized regression equation was HB = 7.554 + 0.280(PA), where HB represents maternal health behaviour, and PA represents procedural service accessibility.

To examine if procedural accessibility predicts maternal health behaviour among beneficiaries, maternal health behaviour was used as the outcome variable, and procedural accessibility was used as the predictor variable. The results indicate that procedural accessibility significantly predicts maternal health behaviour among beneficiaries (β=0.337, p<.001). The value of R2 = 0.114 shows that procedural accessibility explains 11.4% variance in maternal health behaviour among beneficiaries. The regression equation for this model is

HB = 7.554 + 0.280PA

where HB represents maternal health behaviour among beneficiaries, and PA represents procedural accessibility.

Table 5. Regression Analysis

Outcome	Constant (Intercept)	β	95% CI	R2	P
Psychosocial support	7.745	0.333	0.406-0.644	0.111	<.001
Maternal health behavior	7.554	0.337	0.218-0.343	0.114	<.001

5. DISCUSSION

This study examined the relationship between procedural accessibility, psychosocial support, and maternal health behaviour among PMMVY beneficiaries in Jhunjhunu and Sikar. Addressing the first and second hypotheses of the study, the findings of the correlation and regression analyses revealed that procedural accessibility significantly predicted psychosocial support and maternal health behaviour among beneficiaries. While the strength of the correlation and explanatory power of regression models was moderate, the findings are still important in explaining the influence of procedural accessibility on women's experiences with the scheme. The findings are also relevant from a public-service management perspective because they demonstrate that administrative processes and service accessibility can influence beneficiaries' engagement with a welfare programme. The study has conceptualised accessibility as a procedural dimension, and not just the presence of health services. The findings indicate that beneficiaries who perceived the scheme procedures as easier to manage, including access to Anganwadi centres and completion of documentation and enrolment processes, also experienced greater psychosocial support and more positive maternal health behaviour under the scheme. This is in line with the policy studies that indicate the role of accessibility in building confidence, institutional trust, and interaction with health services [18,19]. Procedural accessibility can therefore be understood as an important component of beneficiary-centred service delivery, as clear and manageable processes may strengthen confidence in the institutions responsible for implementing PMMVY.

The positive association between procedural accessibility and psychosocial support can be interpreted by using the perspectives of Social Support Theory [55–57]. Women who are able to access the health services and complete the enrolment processes easily may experience more confidence and emotional stability and may be more comfortable in interacting with frontline health workers. Within PMMVY, assistance with information, documentation, and enrolment may function as informational and instrumental support that reduces uncertainty among beneficiaries. ASHA and Anganwadi workers work as mediators between the government and beneficiaries by helping women with information about government policies, providing guidance on enrollment procedures, and facilitating communication with health institutions [30,48,49]. From a human resource management perspective, these workers function as frontline service personnel whose responsiveness, communication skills, and ability to resolve procedural difficulties shape the beneficiary experience. Therefore, accessibility in health policies may not just influence inclusion, but also perceptions on institutional support. The findings have also shown a positive association between procedural accessibility and maternal health behavior. Beneficiaries who perceived better access were more involved in positive maternal health behaviour. Easier access to programme processes and institutional support may encourage beneficiaries to remain connected with healthcare services and follow nutritional, antenatal, vaccination, and postnatal recommendations. These findings are in line with studies on maternal health policies which reflect that accessible health environments may encourage women to interact with health systems more frequently and lead to increased engagement of women in health services [20–23]. From an operations-management perspective, this finding indicates that documentation, enrolment, institutional coordination, and frontline assistance are important components of effective welfare-service delivery.

At the same time, the moderate value of correlation coefficients and variance explained reflect the influence of other interacting factors besides procedural accessibility. Maternal health behavior and psychosocial support experienced under the scheme may be influenced by other economic, socio-cultural, and structural factors. These factors may include financial security, literacy, family dynamics, traditional health beliefs, perceptions of government health systems, and community-level contexts [7,9,25,50]. While procedural accessibility was found as a significant predictor, it may represent only one factor among the multiple dimensions influencing maternal health experiences [20,35,52]. The modest explanatory power shows the multi-dimensional nature of psychosocial well-being and maternal health behaviour experienced under PMMVY. The modest R^2 values also

indicate that programme effectiveness may depend on other service-related factors, including staff responsiveness, communication quality, payment timeliness, grievance handling, digital assistance, institutional coordination, and beneficiary trust. These dimensions were not directly examined in the present study but may explain additional variation in beneficiary experiences and health behaviour.

These findings contribute to the existing literature and debate on public health policies. They also contribute to public-service management literature by demonstrating that welfare outcomes are influenced not only by policy entitlement but also by the way services are delivered. The study shows that while financial incentives form an important component of the scheme, the informational and institutional support experienced also shape the experiences of beneficiaries in PMMVY. Women who might be disadvantaged by difficulties in documentation/registration may feel uncertain, which diminishes their confidence and involvement in health services. These problems may be interpreted as administrative problems, as they make it more difficult to receive public benefits, which then take longer and more effort and are emotionally more demanding. Interpersonal interaction, which is important for maternal health policies and welfare-service implementation, is also important in the study; frontline workers provide this support. To enhance the capacity of ASHA and Anganwadi workers to help beneficiaries, regular training, clear operational guidelines, digital support tools and effective grievance-resolution mechanisms could prove useful. The study suggests that enhancing procedural accessibility could result in better social and psychological experiences and maternal health outcomes for beneficiaries. The study employed a cross-sectional design; however, the results are to be considered predictive associations and do not necessarily imply causation. The study also indicates the importance of viewing accessibility to maternal health services not just as an administrative component, but also as an important part of inclusive and supportive health systems. Accessible procedures can contribute to public value generation by enhancing welfare services in terms of equity, responsiveness and accessibility for the service recipients. Although access matters to the implementation of health policies, the relatively weak results suggest the need for and value of a more comprehensive perspective. Communities will be supported; maternal health counselling will be increased; awareness will be created, and interaction with frontline workers will be improved, which will help create a more supportive environment for beneficiaries. The documentation should also be simplified, digital enrolment should be facilitated, application tracking systems should be put in place, grievance mechanisms should be streamlined and made accessible, and coordination between Anganwadi centres, healthcare providers, banking institutions and government offices should be enhanced.

Certain limitations to this study must be noted when interpreting the findings: The findings of this study may not be generalizable to other geographical and socio-cultural settings since data were collected from beneficiaries of PMMVY in two villages of Jhunjhunu and Sikar. Data was collected using a random sampling method, but it is not equally distributed across all demographics. Differences in demographics like age and education may have influenced the results of the study. All the data has been self-reported by PMMVY beneficiaries, which may have introduced social desirability bias and recall bias while recalling experiences with the scheme. The cross-sectional design also limits the ability to establish causal relationships among procedural accessibility, psychosocial support, and maternal health behavior. In addition, the study did not directly measure beneficiary satisfaction, institutional trust, frontline-worker performance, service quality, grievance-handling effectiveness, or payment timeliness as separate constructs. Digital accessibility was represented only through an item related to digitalized enrolment; therefore, the study does not provide a comprehensive assessment of digital literacy, device access, online-service usability, or digital exclusion. The study also did not assess the adequacy or timeliness of financial benefits or the cost-effectiveness of programme implementation.

Future studies on public policies should include more balanced samples to compare these relationships across demographic categories like rural-urban residence, caste, age groups, socio-economic status, and educational qualification. Studies should also investigate the influence of additional variables like decision-making autonomy, gender norms, and economic vulnerability on psychosocial support and maternal health behaviour experienced under the scheme. Examining other structural and socio-cultural factors may lead to more explanatory models of maternal health under such interventions. Comparison across different states or maternal health programmes will also help in identifying regional challenges in implementation and the best practices to improve the experiences of beneficiaries with maternal health interventions. Future studies should additionally examine management-related variables such as beneficiary satisfaction, service quality, institutional trust, administrative burden, staff responsiveness, grievance handling, payment timeliness, and digital accessibility. Longitudinal research may help determine whether improvements in procedural accessibility produce sustained changes in psychosocial support and maternal health behaviour over time. Structural equation modelling may also be used to examine direct and indirect relationships among procedural accessibility, frontline support, institutional trust, beneficiary satisfaction, and maternal health behavior. Qualitative interviews with beneficiaries, ASHA workers, Anganwadi workers, and programme administrators may provide deeper insight into procedural barriers, service bottlenecks, and operational challenges in PMMVY implementation.

6. CONCLUSION

This study sought to explore the association between procedural accessibility, psychosocial support and maternal health behaviour among the PMMVY beneficiaries of the two districts of Jhunjhunu and Sikar. Procedural accessibility was a significant predictor of psychosocial support and maternal health behaviour, as revealed by the findings. Beneficiaries who felt that the enrolment, documentation, access to institutional

services, and programme procedures were easier to manage also reported higher levels of psychosocial support and more positive maternal health practices. The findings suggest that the success of PMMVY is not just dependent on financial support but also on efficient and accessible service delivery processes. From a PSM point of view, easy-to-understand documentation, open enrolment, helpful frontline support, and efficient coordination of institutions can boost beneficiary participation and enhance the programme's consumer experience. The overall low level of explanatory power for the several regression models suggests that this is not the only factor that may influence the beneficiaries' outcomes. Other factors such as economic conditions, family support, education, institutional trust, social norms and service quality can also influence psychosocial support and maternal health behaviour. It also emphasises the role of ASHA and Anganwadi workers as first responders and bridgebuilders between the beneficiaries and public institutions. Enhancing their communication skills, digital skills, and procedural assistance can enhance programme implementation. Overall, enhancing the accessibility of procedures can help to make welfare delivery more inclusive, more beneficiary-centred and more socially sustainable. Emergence of simplified processes may help strengthen PMMVY implementation and enhance maternal welfare outcomes through facilitating access to digital, effective grievance mechanisms and evidence-based programme management.

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