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Original Article

Efficacy of Fractional Co2 Laser with PRP for Cutaneous Leishmaniasis Scar

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ABSTRACT

Background: Family-planning use in underserved communities is influenced not only by service availability but also by social norms, myths about contraception, gendered decision-making, privacy concerns, and trust in frontline workers. Community-based models such as the Marvi Markaz/BiB approach may improve access and acceptability, but routine monitoring alone cannot explain how such interventions are experienced or under which conditions they are perceived as workable and sustainable. Objective: To explore perceptions of the Marvi Markaz/BiB family-planning model, identify barriers and facilitators affecting communication and access, and assess its perceived acceptability and sustainability among community and district stakeholders. Methods: An interpretative qualitative endline evaluation was conducted from 18 to 22 November 2024 using in-depth interviews and focus group discussions with married women of reproductive age, men, Marvi workers, and district-level stakeholders. Participants were purposively selected based on their direct experience of the intervention or its service pathways. Data were audio-recorded, transcribed, anonymized, and analyzed thematically. Results: The findings indicated that trust in local female workers, nearby safe access, respectful counselling, repeated follow-up, and community familiarity were central to perceived acceptability. Persistent barriers included myths and fear of side effects, male-dominated decision-making, elder-family influence, privacy-related constraints, and interruptions in commodity continuity. Participants linked the model to improved awareness, greater comfort in discussing family planning, better perceived service acceptability, and, in some accounts, improved couple communication. Perceived sustainability was tied mainly to reliable supplies, worker support, and district-level supervision. Conclusion: The Marvi Markaz/BiB model was perceived as acceptable primarily when trusted community relationships were supported by accessible services and implementation reliability. Strengthening male engagement, refresher training, supervision, monitoring, and commodity continuity may improve the sustainability of similar community-based family-planning interventions. Keywords: family planning; qualitative endline evaluation; community health workers; acceptability; thematic analysis; Pakistan

INTRODUCTION

Family planning remains a central public health and development priority in Pakistan, yet progress in contraceptive use and informed reproductive decision-making continues to be shaped not only by service availability but also by social norms, misinformation, gendered power relations, and uneven trust in community-facing health systems (1-4). In many underserved settings, women's access to family-planning information and commodities is mediated through husbands, mothers-in-law, mobility restrictions, local moral discourse, and concerns about safety, privacy, and social judgment, which together influence whether contraception is discussed, accepted, initiated, or continued (5-8). These

influences are especially important in rural and low-resource contexts, where household dynamics and community perceptions may affect service uptake as strongly as the formal availability of methods or counselling (9,10).

In this context, community-based family-planning platforms are often expected to do more than extend service coverage; they also serve as social entry points through which trust, counselling, negotiation, referral, and commodity access are built within everyday community life (11,12). The Marvi Markaz/BiB model reflects this broader implementation logic by combining community health worker engagement with local access mechanisms intended to bring family-planning information and services closer to women and families in their own social environment. However, endline evaluation of such a model cannot rely on service statistics alone, because routine indicators do not adequately explain why an intervention is perceived as acceptable in some communities, resisted in others, or sustained only under specific enabling conditions (13,14). A qualitative approach is therefore necessary to examine the meanings, experiences, and contextual realities that shape how community members and implementers interpret and use the intervention.

Qualitative inquiry is particularly important in family-planning research when the phenomenon of interest includes myths surrounding contraception, religious framing, gendered decision-making, service experience, confidentiality concerns, and the acceptability of counselling delivered through frontline workers (15-18). These are not merely background influences; they are often the mechanisms through which interventions either gain legitimacy or fail to become embedded in routine practice. Community-level family-planning programs may improve awareness, but awareness alone does not reveal whether women feel able to act on information, whether men interpret the intervention as supportive or threatening, whether frontline workers are trusted, or whether commodity access is seen as reliable enough to support continued use (19-21). Similarly, district-level program actors may perceive implementation success differently from beneficiaries, making it essential to compare perspectives across participant groups rather than treating the intervention as a uniform experience.

The present study was therefore designed as a qualitative endline evaluation of the Marvi Markaz/BiB community family-planning model to explore how married women of reproductive age, men, Marvi workers, and district-level stakeholders perceived the intervention within its implementation context. Specifically, the study sought to examine perceptions of the model and its service experience, identify barriers and facilitators affecting family-planning communication and access, assess the acceptability of counselling and commodity provision mechanisms, and explore whether the approach was perceived as feasible, trusted, and sustainable within community and district systems (18).

MATERIALS AND METHODS

This study employed an interpretative qualitative endline evaluation design using in-depth interviews and focus group discussions, with data analyzed through thematic analysis. A qualitative design was selected because the study aimed to understand perceptions, lived experiences, social norms, and implementation realities surrounding the Marvi Markaz/BiB family-planning model rather than to quantify intervention effects or test statistical associations (19). The endline orientation allowed the evaluation to assess how the intervention was understood after implementation, how participants interpreted its acceptability and usefulness, and which contextual conditions appeared to support or constrain family-planning communication, counselling, and commodity access in routine community settings.

The study was conducted in program implementation areas that included districts, villages, and Marvi Markaz sites during 18-22 November 2024. Participants were selected purposively to capture a broad range of perspectives relevant to family-planning use, community delivery, and district implementation oversight. The sample included married women of reproductive age aged 16-49 years who were current users and had direct experience of family-planning services in the intervention setting, men from the

same communities, Marvi workers involved in counselling or service delivery, and district stakeholders including DPMs and DPWDOs. Purposive sampling was used to ensure inclusion of information-rich participants across the key implementation and beneficiary groups and to capture variation in experience, role, and perspective relevant to the endline evaluation (18).

Recruitment was conducted through the local implementation structure to identify eligible participants with direct experience of the intervention or its service pathways. Individuals were approached according to their relevance to the study objectives and invited to participate after the purpose of the evaluation had been explained. Sampling continued until the research team judged that thematic sufficiency had been achieved, meaning that additional interviews and group discussions were no longer generating substantively new insights across the principal domains of acceptability, barriers, facilitators, and service experience. Saturation was assessed through ongoing review of emerging patterns during fieldwork and early analytic discussion among the research team, with attention to consistency across participant groups and districts (14).

Data were collected through a combination of in-depth interviews and focus group discussions using semi-structured guides developed to explore perceptions of family planning, experience with the Marvi Markaz/BiB model, barriers to uptake and continuation, enabling factors, gender and household decision-making, counselling experience, and views on sustainability. Focus group discussions were conducted with group sizes consistent with qualitative field practice, generally involving 8-12 participants where appropriate, and each interview or discussion lasted at least 30 minutes. Data collection was carried out in local languages familiar to participants to facilitate open expression and contextual accuracy. Interviews and discussions were conducted in settings that supported privacy and participant comfort, and field notes were recorded alongside audio capture to document non-verbal context, group dynamics, and immediate analytic impressions (30,31).

Informed consent procedures were followed before participation. Participants were informed about the purpose of the study, the voluntary nature of participation, their right to decline or withdraw, and the measures taken to protect confidentiality. Permission for audio recording was obtained prior to recording. Identifiable details were removed during transcription and data management, and all interview and discussion materials were anonymized prior to analysis. De-identified transcripts and field materials were stored securely and handled in a manner intended to maintain confidentiality and minimize disclosure risk, particularly given the sensitivity of family-planning discussions in community settings (13-16).

Audio recordings were transcribed verbatim, and where interviews or discussions were conducted in local languages, transcripts were translated into English for analysis while preserving meaning as closely as possible. The research team reviewed transcripts for completeness and internal consistency against field notes. Reflexivity was considered throughout the study process by recognizing the influence of researcher roles, positionality, and prior engagement with the program setting on data generation and interpretation. To reduce interpretive bias, the team used repeated transcript review, comparison across participant categories, and analytic discussion to challenge assumptions and keep coding grounded in participant accounts rather than program expectations (17).

Data were analyzed using thematic analysis. The analytic process involved repeated familiarization with the transcripts, initial coding of meaning units, grouping of related codes into categories, and development of higher-order themes and subthemes that reflected recurrent patterns across interviews and focus group discussions. Coding was undertaken iteratively, with themes refined through comparison across participant groups, districts, and data sources. Where more than one analyst was involved, coding decisions were discussed to reach consensus and strengthen analytic consistency. An audit-oriented approach was maintained through preservation of transcripts, coded extracts, field notes, and theme development records so that analytic decisions remained traceable during interpretation (18).

Trustworthiness was strengthened through triangulation across participant groups, comparison between interviews and focus groups, iterative review of emerging themes, and careful linkage between interpretations and verbatim participant accounts. Credibility was supported by using multiple respondent categories and by grounding thematic claims in direct narratives. Dependability and confirmability were supported through structured coding, team discussion, and maintenance of analytic records, while transferability was addressed by describing the implementation context, participant categories, and field setting in sufficient detail to allow readers to judge the relevance of findings to similar programs and districts. Particular attention was paid to ensuring that themes were supported by representative quotations identified by participant type and district in the reporting stage (16). Ethical approval for the study was obtained from the HANDS Ethical Review Board before field implementation. All procedures were conducted in accordance with ethical principles for voluntary participation, confidentiality, and respectful engagement in research involving potentially sensitive reproductive health topics. Because family-planning discussions may involve private beliefs, household conflict, and gendered vulnerabilities, data collection was conducted with attention to privacy, non-coercion, and protection of participant dignity throughout the study process (17).

RESULTS

The qualitative endline evaluation identified interconnected themes across married women of reproductive age, men, Marvi workers, and district-level stakeholders regarding the acceptability, barriers, facilitating mechanisms, service experience, and perceived outcomes of the Marvi Markaz/BiB family-planning model. The findings suggest that participant perspectives converged around a set of recurring structural and relational issues rather than isolated experiences. In general, themes related to trust, accessibility, respectful counselling, and repeated engagement were described as enabling conditions, whereas myths, male-dominated decision-making, elder-family influence, privacy-related constraints, and interruptions in commodity access emerged as persistent barriers. To avoid over-quantification, findings are presented as thematic patterns across participant groups with qualitative intensity labels and analytic linkage to the underlying coded material.

Table 1. Theme Matrix of Perceived Barriers, Facilitators, Service Experience, and Outcomes Across Participant Groups

Major Theme	Subtheme	MWRAs	Men	Marvi Workers	DPMs/DPWDOs	Analytic Linkage
Acceptability of community model	Trust in local female workers	Frequent	Rare	Frequent	Moderate	Repeatedly linked to comfort, familiarity, and willingness to discuss FP
Acceptability of community model	Preference for nearby safe access	Frequent	Moderate	Frequent	Moderate	Associated with reduced hesitation and easier service approach
Core barriers	Myths and fear of side effects	Frequent	Frequent	Frequent	Moderate	Raised as a major source of doubt, delay, and discontinuation concerns
Core barriers	Male-dominated decision-making	Frequent	Frequent	Frequent	Moderate	Linked to restricted autonomy and delayed uptake
Core barriers	Elder-family influence	Moderate	Rare	Moderate	Rare	Connected with resistance within household decision structures
Core barriers	Mobility/privacy constraints	Moderate	Moderate	Frequent	Moderate	Related to discomfort in seeking services openly
Core barriers	Commodity interruptions	Moderate	Moderate	Frequent	Frequent	Linked to reduced confidence in continuity of care
Service experience	Respectful counselling	Frequent	Moderate	Frequent	Moderate	Associated with trust-building and clearer understanding
Service experience	Repeated follow-up	Moderate	Rare	Frequent	Moderate	Linked to reinforcement of counselling and continued engagement
Service mechanisms	Community familiarity	Frequent	Moderate	Frequent	Moderate	Strengthened local legitimacy and approachability
Service mechanisms	Supervision/refresher support	Rare	Rare	Moderate	Frequent	Associated with service quality and implementation continuity
Perceived outcomes	Improved awareness	Frequent	Moderate	Moderate	Moderate	Commonly linked to counselling and repeated contact

Major Theme	Subtheme	MWRAs	Men	Marvi Workers	DPMs/DPWDOs	Analytic Linkage
Perceived outcomes	Greater couple communication	Moderate	Moderate	Moderate	Rare	Reported as emerging where discussion became normalized
Perceived outcomes	Better service acceptability	Frequent	Moderate	Frequent	Moderate	Linked to trust, respectful interaction, and proximity
Perceived outcomes	Perceived sustainability	Rare	Rare	Moderate	Frequent	Framed mainly in relation to supply, worker support, and oversight

The findings indicate that acceptability of the Marvi Markaz/BiB model was primarily shaped by relational trust and proximity. Married women of reproductive age most consistently linked positive experience to trust in local female workers, the availability of nearby safe access points, and counselling delivered in a respectful and understandable manner. Marvi workers also strongly emphasized these themes, suggesting that the model's effectiveness was perceived to depend not only on information delivery but also on familiarity, repeated contact, and interpersonal reassurance. Men referred less often to trust in frontline female workers directly, but they were moderately linked to themes involving access, household communication, and the broader social acceptability of family-planning discussion.

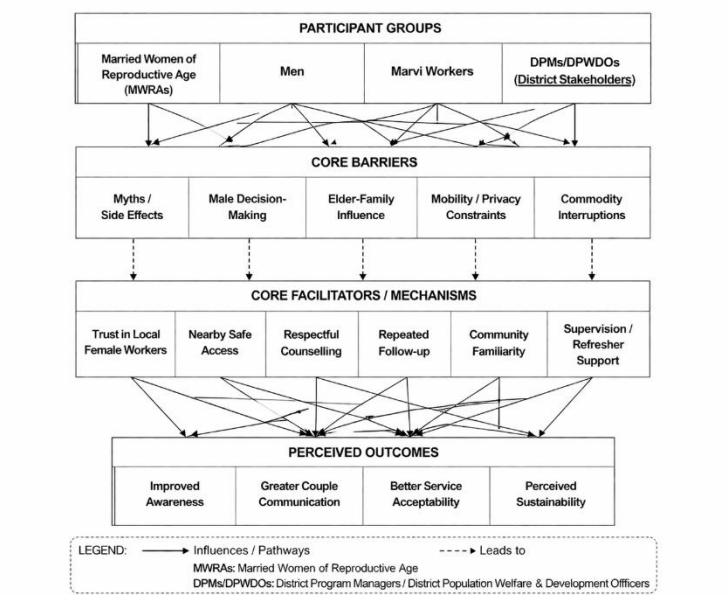

Figure 1 Thematic network matrix illustrating how different participant groups

Barrier-related themes were distributed across nearly all participant groups, with myths and fear of side effects emerging as one of the most persistent cross-cutting concerns. Male-dominated decision-making also appeared prominently, particularly in accounts involving women and frontline workers, where family-planning choices were often described as negotiated within wider household authority structures rather than determined by women alone. Elder-family influence was less universal but remained relevant, especially where senior household members shaped reproductive decisions or limited open discussion. Mobility and privacy constraints further complicated access, indicating that service availability alone did not eliminate the social risks associated with seeking family-planning support.

Themes related to service experience suggested that respectful counselling and repeated follow-up acted as important enabling mechanisms. These were most strongly emphasized by married women and Marvi workers, indicating that ongoing interpersonal engagement was perceived as central to clarifying doubts, building confidence, and encouraging continued contact with the intervention. Community familiarity also emerged as a recurring mechanism through which the program gained local legitimacy. In contrast, district stakeholders more commonly highlighted supervision, refresher support, and commodity continuity, reflecting a more implementation-oriented understanding of what would be required for the program to function effectively over time.

The perceived outcomes described by participants were primarily qualitative and relational in nature. Improved awareness and better service acceptability were the most consistently linked outcomes,

particularly where trust, counselling quality, and proximity operated together. Greater couple communication was described more selectively, suggesting that while the intervention may have opened space for discussion in some households, this was neither universal nor independent of pre-existing gender dynamics. Perceived sustainability was raised mainly by implementers and district actors, who tied long-term viability to reliable supplies, ongoing worker support, and stronger program oversight. Overall, the findings suggest that the intervention was perceived to work through trust-based and access-oriented pathways, while its continued success remained contingent on addressing persistent social barriers and operational weaknesses.

The figure presents a structured thematic network matrix illustrating how different participant groups—married women of reproductive age (MWRAs), men, Marvi workers, and district stakeholders (DPMs/DPWDOs)—interact with and influence key dimensions of a community-based family planning program. At the top, participant groups are positioned as primary sources of perspectives, with multiple directional arrows indicating their interconnected influence on a set of core barriers, including myths and fear of side effects, male-dominated decision-making, elder-family influence, mobility and privacy constraints, and interruptions in commodity availability. These barriers are shown to transition into core facilitators and mechanisms through directed pathways, emphasizing the role of trust in local female workers, accessibility of nearby safe spaces, respectful counselling, repeated follow-up, community familiarity, and structured supervision or refresher support. The diagram then demonstrates how these enabling mechanisms collectively contribute to perceived outcomes, namely improved awareness, enhanced couple communication, better service acceptability, and perceived sustainability of the intervention. The dense network of arrows highlights the non-linear and interdependent nature of these relationships, suggesting that program effectiveness emerges from dynamic interactions between social constraints, enabling conditions, and stakeholder engagement rather than from isolated factors.

DISCUSSION

This qualitative endline evaluation suggests that the Marvi Markaz/BiB family-planning model was perceived as most acceptable when it operated through trust, proximity, respectful counselling, and repeated engagement rather than through information transfer alone (41,42). Across participant groups, the findings indicate that service acceptability was closely tied to relational mechanisms, particularly trust in local female workers and the availability of nearby, socially safer points of access. This is consistent with qualitative family-planning literature from Pakistan and similar low-resource settings, where community-based programs are often judged not only by method availability but also by whether they reduce embarrassment, enable private discussion, and provide culturally intelligible counselling within familiar social environments (9-14). In the present study, these elements appeared to function as enabling conditions that allowed participants, especially married women of reproductive age, to engage with family-planning information in a manner perceived as more approachable and less socially risky than conventional facility-based pathways.

At the same time, the findings underscore that social and household barriers remained deeply embedded despite the perceived value of the intervention. Myths and fear of side effects were raised across nearly all participant categories, indicating that misinformation was not confined to intended users but circulated widely within the community ecology that shapes contraceptive decision-making (45). Similarly, male-dominated decision-making and the influence of elder family members, including mothers-in-law in some accounts, suggest that reproductive choices continued to be negotiated within household power structures rather than made solely at the individual level. These patterns are highly consistent with prior qualitative evidence from Pakistan and Sindh, where family-planning uptake is often mediated by gender hierarchy, intergenerational authority, and moral framing around fertility and contraceptive use (46,47). The present findings therefore support the interpretation that community-based service delivery may improve access and dialogue but does not automatically dissolve the

normative constraints that regulate whether women can act on information and whether men perceive family planning as legitimate or necessary.

An important contribution of the study is its indication that frontline trust and systems reliability are interdependent rather than separable dimensions of program performance. Married women and Marvi workers most often emphasized interpersonal mechanisms such as respectful counselling, repeated follow-up, and community familiarity, whereas district stakeholders more frequently highlighted supervision, refresher support, and continuity of commodity supply. This divergence is analytically important because it suggests that community acceptability may be built through human relationships, but long-term confidence in the model depends on whether those relationships are supported by functional implementation systems (15). If counselling is trusted but commodities are intermittently unavailable, or if workers are accepted but insufficiently supervised or refreshed, perceived legitimacy may weaken over time. Thus, the findings point toward a dual implementation requirement: community-facing trust must be sustained by back-end reliability in supply, support, and oversight.

The finding that greater couple communication emerged as a selective rather than universal outcome also warrants careful interpretation. Some participants linked the intervention to increased comfort in discussing family planning within marriage, which may reflect the role of repeated counselling and normalized local dialogue in reducing silence around reproductive decisions. However, these accounts should not be interpreted as independent evidence of behavior change or measurable increases in contraceptive uptake, because this study was designed to explore perceptions and experiences rather than causal effects (17). Instead, the qualitative value of this finding lies in identifying a plausible social pathway through which community-based interventions may create openings for discussion, particularly where men are engaged constructively and women feel safer seeking information. This has direct programmatic relevance for male engagement strategies, since the persistence of male-dominated decision-making in the findings suggests that women-only outreach, while necessary, may be insufficient in contexts where contraceptive choices are socially shared or controlled.

These findings have several implementation implications. First, community health worker models in family planning appear more likely to be acceptable when workers are recognized as familiar, trustworthy, and respectful interlocutors rather than merely distributors of messages or commodities (50). Second, male engagement should be treated as a deliberate program component rather than an assumed spillover effect, particularly in settings where husbands remain influential gatekeepers of family-planning use. Third, supervision and refresher training for Marvi workers should be strengthened to maintain counselling quality, message consistency, and confidence in addressing persistent myths and concerns. Fourth, reliable commodity supply and simple monitoring systems are essential not only for logistics but also for preserving community trust in the continuity and seriousness of the intervention. In this respect, the study suggests that sustainability is perceived less as an abstract policy goal and more as the practical alignment of trusted workers, available methods, supportive supervision, and consistent local access.

The study also contributes by foregrounding the contextual and relational dimensions of endline evaluation. Rather than assessing the intervention only through outputs, it shows how participants interpreted the model within existing social realities of mobility restriction, privacy concerns, household negotiation, and service experience. This is important because qualitative endline evidence can illuminate why a program is experienced as meaningful, partial, fragile, or locally credible even when quantitative indicators alone appear neutral or incomplete. The findings therefore support the use of qualitative methods in community family-planning evaluation, particularly where the intervention's effectiveness depends on social legitimacy, local trust, and culturally navigated communication as much as on formal service design (13).

Several limitations should be acknowledged. As a qualitative endline evaluation, the study captures participant perceptions and reported experiences rather than independently verified changes in

contraceptive behavior or population-level outcomes. Social desirability bias may have influenced responses, especially where participants were recruited through program-linked structures or where family-planning discussions were shaped by perceived expectations of researchers or implementers. Translation from local languages into English may also have introduced some loss of nuance, particularly in culturally embedded expressions related to fertility, morality, or household authority. In addition, because the study reflects endline perspectives without direct baseline qualitative comparison, the findings are best interpreted as insights into perceived acceptability, mechanisms, and constraints rather than definitive evidence of change over time. These limitations do not diminish the value of the findings, but they do reinforce the need for cautious interpretation and for triangulation with routine program, service, and, where available, quantitative outcome data (12-16).

Overall, the discussion indicates that the Marvi Markaz/BiB model was perceived as valuable primarily because it localized family-planning support through trusted interpersonal channels while reducing some access-related and communication barriers. Yet the persistence of myths, household power asymmetries, privacy concerns, and implementation fragilities suggests that community trust alone is insufficient unless reinforced by male engagement, stronger commodity continuity, refresher support, and responsive district oversight. The findings therefore support a view of sustainability rooted in both social legitimacy and implementation reliability, and they offer a practical basis for strengthening future community-based family-planning strategies in similar settings (8).

CONCLUSION

This qualitative endline evaluation indicates that the Marvi Markaz/BiB family-planning model was perceived as most acceptable when it combined trusted local workers, nearby safe access, respectful counselling, and repeated follow-up within a familiar community setting. Participants linked the model to improved awareness, greater comfort in discussing family planning, and better perceived service acceptability, while also identifying persistent barriers related to myths, male-dominated decision-making, elder-family influence, privacy constraints, and interruptions in commodity continuity. The findings suggest that the program's perceived value lay not only in service access but also in the relational mechanisms through which trust and communication were built. Its longer-term sustainability, however, appeared conditional on stronger male engagement, continued refresher training and supervision for frontline workers, dependable commodity supply, and practical monitoring support at district level. These results should be interpreted as evidence of perceived acceptability, mechanisms, and implementation conditions rather than population-level effect, but they provide a useful qualitative basis for refining community-based family-planning programming in similar contexts.

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