

Good on paper: the gap between programme theory and real-world context in Pakistan's Community Midwife programme

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Objective To understand why skilled birth attendance—an acknowledged strategy for reducing maternal deaths—has been effective in some settings but is failing in Pakistan and to demonstrate the value of a theory-driven approach to evaluating implementation of maternal healthcare interventions.

Design Implementation research was conducted using an institutional ethnographic approach.

Setting and population National programme and local community levels in Pakistan.

Methods Observations, focus group discussions, and in-depth interviews were conducted with 38 Community Midwives (CMWs), 20 policymakers, 45 healthcare providers and 136 community members. A critical policy document review was conducted. National and local level data were brought together.

Main outcomes Alignment of programme theory with real-world practice.

Results Data revealed gaps between programme theory, assumptions and reality on the ground. The design of the programme failed to take into account: (1) the incongruity between the role of a midwife and dominant class and gendered norms that devalue such a role; (2) market and consumer behaviour that prevented CMWs from establishing private practices; (3) the complexity of public–private sector cooperation. Uniform deployment policies failed to consider existing provider density and geography.

Conclusions Greater attention to programme theory and the 'real-world' setting during design of maternal health strategies is needed to achieve consistent results in different contexts.

Keywords Community Midwife, implementation research, maternal health services, Pakistan, programme theory, skilled birth attendants.

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Introduction

Initiatives to increase levels of skilled birth attendance have garnered support as a key intervention that, when supported by emergency obstetric care, will reduce maternal deaths.¹ In countries where home births are preferred or facilities have inadequate capacity, the focus has been on deploying community-based skilled birth attendants to provide domiciliary care. These programmes have had mixed results. Sri Lanka introduced public health midwives in the early 1900s,² and reduced its maternal mortality rate (MMR) from 2000 to 31/100 000 live births between 1930 and 2011.^{3–5} Thailand and Malaysia

reduced their MMRs from 425 and 275/100 000 live births respectively in 1960 to <30 in 2010 using the same strategy.⁶ In contrast, implementation of a community midwifery programme in Indonesia over 30 years has had disappointing results, stagnating at 220 deaths per 100 000 live births.⁷ Afghanistan's community midwifery programme has produced little change in its MMR, currently at 1400/100 000 live births.^{6,8} Pakistan adopted a community midwifery programme in 2006 and is not showing significant gains in skilled birth attendance or maternal mortality.^{6,9}

Divergent experiences of maternal health interventions across countries suggest the need to understand how

similar strategies are implemented and how local factors support or hamper mechanisms through which an intervention is anticipated to work.¹ Implementation research is needed if interventions shown to be effective in some settings are to be rolled out in others.^{10,11} It is particularly useful for highlighting 'real-world' contextual factors that are either overlooked or not captured during planning.

Implementation research usefully takes as its starting point the articulation of programme theory. Programme theory is 'the construction of a plausible and sensible model of how a programme is supposed to work'¹² (p. 5), or a 'a set of hypotheses upon which people build their programme plans'¹³ (p. 55). An important element is the explanation of assumptions underlying causal pathways linking inputs to expected outcomes and the identification of potential intermediate bottlenecks.¹² Implementation research can thereby improve understanding of how and why interventions operate in practice, often revealing constraints that policymakers and health system managers may not even recognise.¹⁰

We present a theory-driven evaluation of the implementation of Pakistan's Community Midwifery Programme, providing new insights into programme function and avenues for improved performance. The value of taking a theory-driven approach to evaluating maternal healthcare interventions is demonstrated.

The Pakistan Community Midwifery programme

Pakistan adopted the community midwifery model of skilled birth attendance in 2006.¹⁴ The programme aimed to deploy 12 000 rural Community Midwives (CMW) over 5 years. CMWs were expected to provide domiciliary maternity care through the establishment of private practices in their home villages. Their training includes a 12-month classroom component followed by a 6-month practical clinical component.¹⁵ CMWs are trained to attend normal childbirths and to recognise and refer obstetric complications. The first cohort completed their training in 2008 and were deployed to their respective rural catchment areas, each serving a population of 10 000.

Evidence to date suggests that the programme is falling short of its goals. A survey of 1457 women in two districts found that CMWs had attended just 8% of births in the previous 2 years despite 4 years of deployment.⁹ A study of 56 CMWs found that nearly half had not performed a delivery in the previous 3 months.¹⁶ Evaluations identified lack of trust in CMWs, inability to cover large catchment areas, restrictions imposed by family, deficiencies in knowledge and competence,^{15,16} and antagonism from other healthcare providers as key barriers.¹⁶

This study adds to our understanding of this emerging picture of poor CMW programme function.

Methods

This article draws on the qualitative component of a mixed methods implementation study which explored the functioning of the CMW programme in Punjab province and particularly examined whether CMWs were achieving a key policy objective to provide skilled birth attendance to poor, marginalised and disadvantaged women.⁹

The study involved investigation at both the national/provincial level and the local level. During fieldwork, a constitutional amendment transferred policymaking and delivery functions from the Federal Ministry of Health to Provincial Departments.¹⁷ National policies regarding the CMW programme were adopted by the provincial departments without modification. For the national/provincial level investigation, we retrospectively drew upon the Maternal Neonatal Child Health (MNCH) programme aspirational policy document, the PC-1, and interviews with programme personnel to identify the underlying CMW programme theory. Aspirational documents are valuable as they are 'deliberate and conscious statements of policies and strategies at particular points in time and can at the very least be regarded as public avowals of commitment to certain objectives and even values'¹⁸ (p. 261). We also conducted a document review ($n = 5$) of programme meeting minutes and consultancy evaluations. In addition, 20 programme policymakers and managers were interviewed using a semi-structured guide.

At the local level, work was undertaken in two contrasting districts of Punjab province—relatively well-developed, Jhelum and poorly developed Layyah—chosen because they were the first districts in which the CMW programme was launched in 2006. Data were generated in two modules over a 9-month period in 2011/12 using institutional ethnography.^{19,20} This approach draws on local actors' descriptions of their daily activities, together with observation, to develop a picture of the network of relations and processes that organise and govern social environments. This enables researchers to produce a detailed account of sociocultural, political and economic contextual factors that support or hamper desired outcomes.¹⁹ Module 1 focused on CMW programme functioning and Module 2 on community knowledge and perceptions of the programme (Table 1). Pretested guides in the local language and digital recording were used in all but five cases where detailed notes were taken instead. All participant names have been changed.

Data were translated and transcribed verbatim into English by native speakers. A random sample of transcripts was double-checked for accuracy.

Data analysis

Analysis involved two inter-linked elements. The first involved an exploration and mapping of the explicit and

Table 1. Data collection strategies and respondents

Method	Type of respondent	No. of respondents	Details
Module 1			
In-depth interviews	CMW	38	Total 91 interviews, 1–5 per CMW depending on how quickly information was forthcoming
	CMW family members	37	Husbands, mothers fathers, aunts
	Healthcare providers	45	Physicians, lady health visitors, facility midwives, both public and private sector
Observations	CMW classroom sessions	6 sessions	
	CMW clinical training in obstetrics ward and labour room	20 hours of observation	District Layyah only, both during daytime and at night between 7.00 p.m. and 2.00 a.m.
	CMW monthly meetings	5 meetings	Monthly meetings are held in each district to provide continuing education for CMWs
	Patient–CMW interactions CMWs home clinic.	6	Accompanied CMW on antenatal and postnatal home visits If CMW had a home clinic, observed for availability of equipment, cleanliness and evidence of use.
Module 2			
In-depth interviews	Community women	78	Women who had given birth in the 2 years before data collection
	Husbands	35	Of women who had given birth in the 2 years before data collection
	Older women	23	Mothers-in-law, mothers
Focus Group discussions	Community men and women	18	Six to ten participants in each, separately for women and men, representing all castes and socio-economic groups
Informal observations	Community in general	170	The research team lived in the field-sites enabling frequent interactions with local residents

implicit meaning¹⁸ embedded within the programme design as there was no logic model or assumptions articulated in policy documents. We adopted an iterative process informed by previous theory and empirical research on reproductive health in Pakistan and South Asia. Previous research^{21–23} alerted us to the need to consider assumptions about gender and class hierarchies and the role of organisational culture.²⁴ The process involved critical reading and re-reading of the PC-1, other programme documents, and policymaker and programme manager interview transcripts to draw out key elements of the programme theory and its underlying assumptions. A logic model diagram was developed to represent and make these findings explicit.

In the second element, interviews, focus group discussions and observational notes were analysed using a social constructivist, interpretive approach.²⁵ Data were coded inductively and common themes were identified using ATLAS-TI.²⁶ The focus of this stage was on rich description of programme functioning and the lived experiences of CMWs and local women seeking maternity services. Data analysis was ongoing and iterative throughout data collection.²⁷ An audit trail using personal memos and journaling was also maintained to ensure dependability and confirmability.^{28–30} Interpretive accuracy was assessed by triangulation of findings and research team peer debriefing.

The national and local elements of analysis were brought together to examine how programme theory related to the real-world practice context we described. Through this process we were able to identify elements of the programme theory that were found to be operating in practice as well as missing causal links and unexamined assumptions.

Results

CMW programme theory and assumptions

Figure 1 is a logic model of the CMW programme and a graphic articulation of its programme theory. Overall, the programme impact theory is that an increase in the number of skilled birth attendants will reduce maternal mortality. This assumes that the low level of skilled birth attendance is due to a lack of skilled attendants in rural areas. The programme process theory is that if women from rural areas are recruited and trained in midwifery skills, they will go back to their home villages and provide skilled domiciliary maternity care to local women, including poor women, through the establishment of private practices.

While at first sight this intervention appears plausible, a closer examination reveals the complexity of its programme theory and highlights a number of assumptions including:

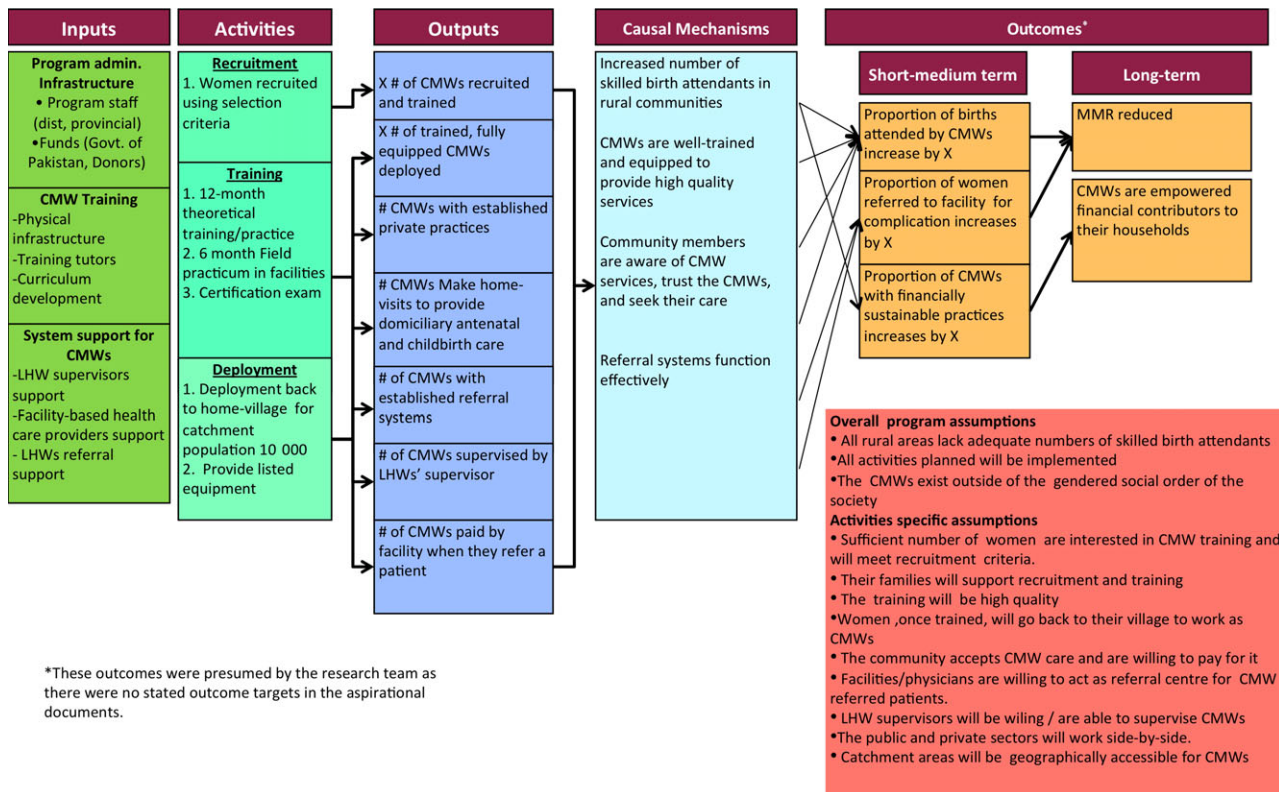


Figure 1. Logic model of Pakistan's CMW programme.

- 1 Sufficient numbers of women who meet education and residency criteria will be recruited and successfully trained.
- 2 Once trained, CMWs will go back to their home villages and work as midwives.
- 3 CMWs will be able to establish private practices and attract fee-paying clients (who will opt to switch from paying a traditional birth attendant (*dai*) to paying a CMW).
- 4 CMWs will work in cooperation with the public-sector to receive and make referrals appropriately.
- 5 CMWs will be able to provide domiciliary care to the 10 000 people in their catchment areas.
- 6 CMW services will be accessible to poor, socially marginalised women who currently do not receive skilled maternity care.

Our ethnographic investigation allowed us to understand, in detail, how the CMW programme was functioning on the ground and, in particular, how the sociocultural and economic context shaped the CMWs' practices and relationships with their catchment populations.

Our data suggest that while a number of the programme theory assumptions were valid, and that some elements of the programme mechanisms did operate as predicted on the ground, many more were not borne out in practice.

Assumption 1: sufficient numbers of women who meet CMW recruitment criteria will be recruited and successfully trained

This assumption was, for the most part, well founded. The CMWs believed that there was so much interest in the programme that they resorted to seeking political support for their applications. However, according to some programme managers, the number of applicants barely met targets and everyone who applied was accepted. The young women who entered the programme were mostly supported by their families, as evidenced by the fact that they were permitted to live in hostels away from home, a bold step in this conservative society. Also, as assumed, the majority of the recruits completed their training. However, our observations raised concerns about the quality of the training received. Systematic assessment of training was not undertaken but we observed CMWs unable to measure blood pressure or identify risk factors of pregnancy, findings that are supported by other training evaluations.¹⁵

Assumption 2: once trained, CMWs will go back to their home villages and work as midwives

This assumption was also partially met because the CMWs did return home after training. However, the assumption that they would actually work as midwives was found to be

invalid. Of a sample of 38 CMWs, 30 were not practicing midwifery. Two, of eight, 'functional' CMWs had well-established practices while the remaining six were struggling.

Social, cultural and economic contextual factors were found to discourage CMWs from using their newly acquired skills. First, the CMW programme theory assumed that women with a secondary education would be willing to work as a midwife. This assumption did not take into account the fact that women's education in rural Punjab is restricted to higher socio-economic classes, and midwifery practice is viewed as a low status job. The requirement that CMW recruits have a minimum of 10 years education coupled with the manner in which the recruitment was advertised in newspapers and word-of-mouth in government health departments, biased recruitment towards relatively wealthy women. An additional factor that led to the recruitment of better-off women was the practice of *sifarish* (nepotism). According to one local programme manager, up to 40% of the recruitment was nepotistic. The relatively wealthier women recruited were well-supported financially by fathers or husbands and did not need to work for wages. Indeed, in this context, where gendered norms situate men as providers and idealise women as dependants, these women were not expected to take up paid employment.

The reluctance of most CMWs to work as midwives was compounded by the fact that childbirth care in rural Punjab, as in much of South Asia, is understood as polluting. Traditionally such work is performed by *dais*, usually low-caste, poor women. These women are perceived to be ritually polluted and suited to this work. CMWs viewed their childbirth attendant responsibilities as demeaning. The few CMWs we encountered who were practicing reported that kin and peers often looked down upon them, calling them '*becharis*' (connoting pity and smugness) and making them feel 'small' for working as a '*dai*'.

An important finding was that most CMWs had no clear understanding of what becoming a midwife would entail before recruitment. The word 'midwife' is an English word, largely unfamiliar in rural Punjab. Interviews revealed that most recruits had applied to the programme believing they would obtain government employment much like the Lady Health Workers (LHWs). The LHWs job was widely viewed as a 'comfortable job' performed from home, with minimal day-to-day supervision and involving relatively easy tasks.

The [programme recruiter] told us this and told us that if we do this we will not have to go outside of our houses or be in hospitals. He said we would be able to earn money sitting at home and working from home... we knew we would get some medicines to give out for

fevers and flus but we did not know that we would have to do visits and deliveries. (CMW Kaneez)

Our interviews and observations revealed that the few CMWs who were working were doing so primarily because of poverty. In most cases their family's financial circumstances had recently deteriorated. For instance, Madiha started working as a CMW after the death of her father to support her younger siblings. Noshaba and Kokab reported needing to work as their husbands were poor providers and they were the only sources of household income.

Assumption 3: CMWs will be able to establish private practices and attract fee-paying clients

The expectation that CMWs would attract fee-paying customers to their newly established private practices appears to be based on an assumption that there was an unmet demand for skilled birth attendants throughout rural Pakistan. As a result, CMWs were recruited from and deployed to all rural union councils. This uniform approach did not take into account the availability of existing providers, locating the CMWs in competition with physicians, Lady Health Visitors and other government and private-sector midwives, many of whom were already long-time and trusted providers. In some cases, CMWs were also located within walking distance of government facilities such as Basic Health Units and Rural Health Centres. Our observations suggested that the situation was exacerbated by CMWs clustering in more developed, provider-dense areas, possibly because of a social climate conducive to female training. Meanwhile, more remote areas remained underserved. For example, a union council, with a population of 20 000, is supposed to have two CMWs. Instead we found 11 CMWs on one road that passed through two union councils. All were located within a driving range of 15 minutes, while their target catchments remained unserved. There were also numerous private facilities and a central military hospital on this road.

Now this, Dina Rural Health Centre provides free delivery services. There are good doctors there as well. ... Dina is very close to us and that is why everyone goes there. People rarely come to us and no one comes here for delivery. (CMW Kokab in Dina)

Then how can Rukhsana's clinic work well in an area where four trained midwives are available, the hospital is very near and there are many *dais* also. (CMW's Aunt)

Not unexpectedly, the few CMWs who tried to establish practices in provider-dense areas failed to attract paying patients. Asifa was struggling to establish her practice, despite making home visits and providing free antenatal

care. Kokab was also struggling and her reports to us suggested that she was so keen to establish her practice that she put herself in potentially dangerous situations, such as accepting a ride from two unknown men at night to provide services in a nearby nomadic tent settlement. She told us: 'I went there out of greed so that I would get a new delivery case.'

They told us that our salary would be the fees we would charge for check-ups and deliveries... But from where can we make these salaries? Rich people don't even go to government hospitals, why would they come to us? They always go to private hospitals... the middle class people go to government facilities, wherever they can get a good deal... so the only clients left for us are the very poor people. (CMW Mehnaz)

The CMWs also failed to attract patients away from traditional providers—the *dais*—because their clients were largely very poor women who could only afford the *dai* mode of payments. Traditional *dai* payments consist of a small cash fee, commonly referred to as a 'gift from the heart', and goods in kind, such as clothes, some flour or a chicken. In contrast, the CMWs expect to be paid in cash and, despite the programme recommendation of Rs. 150 (US\$ 1.50) per delivery,¹⁸ were found to be charging 10–20 times more, a rate they deemed reflected the worth of their services. In this way the expectations of the CMWs and their potential clients were incompatible and the poor continued to use traditional providers.

When we went to the CMW, she told us her care will cost about Rs 3500. When I asked her "what if I do not have this much money" ...and she said "this is what it costs". If she was not so expensive, we might have gone to her ...this was the only reason and nothing else other than this. (New mother, poor)

Assumption 4: CMWs will work in cooperation with public-sector providers to receive and make referrals appropriately

The programme theory assumes that CMWs will smoothly augment the pre-existing public-sector maternal healthcare landscape. The LHWs, a cadre of community health workers, are supposed to refer pregnant women to CMWs. LHWs maintain household registers, which include data on all pregnant women in their catchment areas. CMWs, in turn, are supposed to refer pregnancy and childbirth complications to physicians in government facilities.

In practice we found the LHWs were not referring pregnant women to CMWs but rather to government facilities, reporting pressure from government facility staff to do so. The facility staff did so because they also are under

pressure from senior programme managers to demonstrate functionality, measured by number of deliveries conducted. At the same time, we found the CMWs were reluctant to refer patients to government facilities for fear of being blamed for 'spoiling the case' (CMW Mehnaz). There were even reports of patients who, having been referred to a government facility by CMWs, were reprimanded for seeking CMW care first.

On the whole, our data painted a picture of hostile competition between CMWs and public-sector providers. One important reason for this is that most public-sector providers regularly 'moonlight' in the private-sector and compete for the same clientele.

Amna's OT [operating theatre] is so dirty that one cannot imagine. She places her instruments in a pot (cooking pot). Though she charges less but there is no sterilisation concept there. She does C-section operations over there as well. No sterilisation... no cleanliness. (CMW Seher talking about a district nurse)

Nothing... nil.. They are nil... they even don't know what an Apgar Score is... I was shocked... I told them... what have you people learnt so far? (Rural Health Centre physician talking about CMW competency)

Assumption 5: CMWs will be able to provide domiciliary care to a population of 10 000 in their defined catchment areas

A key element of the programme is delivery of door-step services to overcome women's gendered mobility restrictions. This element of programme design assumes that CMWs can travel freely to people's houses. Our data, however, show that CMWs are subject to the same mobility restrictions that necessitated their appointment in the first place. All the CMWs interviewed or observed found this job requirement stressful and difficult to perform because it meant violating a key gendered norm with potentially serious consequences. This finding was starkly illustrated in an interview with a programme manager who narrated the story of a CMW who had been divorced by her husband because she was seen by neighbours getting out of a car driven by strangers at 3:00 a.m. The CMW was being driven home after attending a birth.

We found that few CMWs were willing to risk such potentially serious ramifications and this further discouraged them practicing midwifery. The few CMWs who were practicing had adopted strategies to both minimise their movements and reduce the condemnation associated with their mobility by seeking a suitable escort. All this greatly increased the complexity and opportunity costs of midwifery practice for CMWs and their families.

Nimra (CMW): In daylight my mother used to accompany me, while my father and younger brother used to look after the girls at home (two young teenage sisters). For night calls, my father and uncle used to accompany us. This is a dangerous area at night... there are bandits roaming at night... at least two men are required for safety. We also used to hire my uncle's car.

Interviewer: Who pays for the car?

Nimra (CMW): The patient's family. But now my father is dead and my brother has gotten a job in the police. So my mother cannot accompany me as the girls cannot be left home alone even during daytime. There is no father to accompany me at night. I am shutting down my practice.

If a delivery takes place at night, I tell the family that they will have to come and get me. And my husband comes with me and then I call my mother and bring her here to my home. It is very difficult... (CMW Kaneez)

Another factor that prevented CMWs from providing care was that their catchment areas were based on existing administrative boundaries which did not take into account the challenges of local geography or transport infrastructure. Some CMWs' catchment areas spanned large geographic areas, particularly in Layyah, where houses are scattered, each being situated on 3–4 acres of farmland. For rural women without motorised transport these large areas were challenging and prevented even active CMWs from travelling to people's homes to provide services, leaving geographically remote houses un-served.

Actually they assigned me that area to complete my population... but I told them that Khatia is so far and it would not be possible for me to cover that area. (CMW Kokab)

Assumption 6: CMWs services will be accessible to poor, socially marginalised women who currently do not receive skilled attendance at birth

A key objective of the programme was to provide services to poor, marginalised women. The programme theory assumed that this new cadre of private-sector providers would be able to provide care to this population who, by definition, cannot pay. Unexpectedly, our data showed that the few CMWs who were trying to establish their practices were indeed providing services to poor women. Further analysis, however, revealed that providing care to any patient, even those who could not pay, was seen as a way to bolster their delivery numbers and gain experience. Ultimately, their

stated target clientele were wealthy women. Moreover, most poor CMW clients had not sought CMW services proactively as their first choice of provider, but had done so in an emergency situation. For the most part, providing services to the poor was done begrudgingly, with one CMW lamenting 'Why are only the poor left for us?' (CMW Nimra).

Discussion

Our data provide important insights into the current functioning of the Pakistan CMW Programme and demonstrate the need for greater attention to programme theory during design and early implementation phases of maternal health strategies if more consistent results are to be achieved across settings. By not articulating its programme theory upfront, the programme failed to take into account: (1) the incongruity between the role of the CMW and the dominant class and gendered norms; (2) market and consumer behaviour; and (3) level of infrastructural development. The result is a set of programme processes not geared to meeting programme goals within the operating context.

Some of our findings, such as the gendered mobility restrictions faced by female healthcare providers, are not new. Women health workers' constrained geographic mobility and their need for escorts both for respectability and protection are well documented in Pakistan.^{31–33} Indeed, the polio programme has considered this, providing money to pay escorts for LHWs as they travel house-to-house delivering vaccinations. Similarly, the devalued role of traditional birth attendants in South Asia is widely documented.³⁴ Had programme designers undergone an explicit process of developing a programme logic model and unpacked the assumptions underpinning the design, some of these issues might have been flagged earlier.

Other findings are new, particularly in the Pakistani context. For example, the programme's business model requires the CMWs to attract fee-paying clients to establish financially sustainable private practices. To function effectively, this design requires information about the magnitude of customer demand versus the existing supply of providers in any given region as well as what type of 'product' in this case 'maternal health provider' the consumers demand. It is well known that there are many reasons for consumption of a specific good including: inherent utility; individual preference and status value.^{35–39} Our data showed that wealthier groups were using public and private-sector skilled birth attendants and physicians, while the poorer groups sought the care of a *dai* or a relative and only 'resorted' to use of a skilled birth attendant in case of an emergency, for which they mostly could not pay. At the time of our fieldwork, CMWs were not managing to compete successfully for fee paying clients, suggesting that their offer was not attractive to local women and their families.

All this begs an important question: is the CMWs' location in the private sector fundamentally flawed? Evidence from elsewhere highlights the need for a critical examination of the 'logic' and functioning of private sector models across contexts. Both Sri Lanka and Malaysia—countries with examples of midwifery programmes that achieved universal coverage—have public, tax-payer funded models.⁴⁰ Indonesia's private sector model has failed to reduce the country's MMR below 220/100 000 live births.⁷ Evaluations of the Indonesian midwifery initiative have suggested a number of probable causes for this stagnation, including the finding that village-midwife services were considerably skewed towards wealthier groups.⁴¹ The midwives, in the interest of developing financially sustainable practices, saw little incentive in serving the poor. Our research suggests the Pakistani CMW programme is modelled on the Indonesian private sector model and is facing similar challenges.

Besides the obvious financial implications, the CMWs' location in the private sector may also have limited their opportunities for connecting with the formal health infrastructure. Evaluations of the LHW programme show that the relative success of the programme is partly due to supportive supervision and connections with the local Basic Health Unit, where they meet monthly to submit reports and pick up supplies. This regular connection facilitates relationship building, thereby promoting referrals, ensuring reporting and, to a certain extent, improved quality of LHW care.⁴² The CMWs' location in the private sector has resulted in a 'hands-off' approach with minimal supervision and no material support.

There is also the matter of supply and demand. Uniform application of programme policies meant that CMWs were deployed in areas already well supplied with other, often highly trained, providers. Patients who could afford to pay remained with these more skilled providers, while the poor could not afford CMW care with the result that even the few CMWs who wanted to work could not establish their practices. Articulation of programme theory would have identified these assumptions earlier, which could then have been addressed with focused research in pilot sites.

Looking beyond Pakistan, a failure to articulate programme theory appears to be relatively common for maternal health initiatives. For instance, the unsuccessful Indonesian 'One Village, One Midwife' programme has been examined but evaluations have not tended to articulate its programme theory. It appears that the roll out of programmes to increase skilled birth attendants in rural areas has been largely based on rational logic and historic evidence without due regard to matching programme design to local contexts. Articulation of programme theory and its underlying assumptions can help identify gaps in programme design and strategy.^{43,44}

Moving forward?

Our findings have important policy implications as the programme evolves. First, there is a need to recruit women who want to practice midwifery. The current practices have led to the recruitment of CMWs not interested in practicing, suggesting a need to change recruitment criteria and methods. This should include clearly informing potential recruits what midwifery practice entails and increasing transparency in recruitment. Our research shows that most practising CMWs were doing so to contribute to economically struggling households. Assessing this need during recruitment may be considered as research has shown that if applicant needs and programme goals align, the recruit is more likely to perform effectively and efficiently.⁴⁵

At the same time, efforts need to be made to raise the status of the role of CMWs. While the demeaning role of the *dai* is well known, the fact that physicians have managed to sustain their status while delivering babies suggests that it might be possible to improve the status of CMWs as well. Further research that explores in greater depth differences of status and respect that exists between physicians, Lady Health Visitors, and midwives based in health facilities would be useful to identify ways and means to address the issue. The programme also must address gendered mobility restrictions and the consequent opportunity costs that create barriers to CMWs practicing midwifery. As learning from the LHW programme suggests,³¹ there may be a case for exploring the feasibility and acceptability of a formal system of escorts. Areas that could be explored include asking the community/village to provide the necessary company, for instance older women. Physical and social geography of CMWs should be taken into account when recruiting and allocating catchment areas. CMWs tend to limit their coverage to areas to which they can walk comfortably and safely, meaning areas with scattered populations require larger numbers of CMWs while densely populated areas require fewer.

There is also a need to find ways to increase CMWs' willingness and ability to provide sensitive care to poor, socially marginalised women. Some areas that could be explored include ways to reimburse CMWs for providing care to the poor at market rates. There is some evidence in the literature that maternal voucher schemes do lead to increased uptake of private-sector maternal health care services.⁴⁶ However, most of these are pilot projects with little to no evidence of effectiveness of scale-up. There is also a need to explore incentives and accountability mechanisms to promote collaboration between CMWs and public-sector providers.

Conclusion

Evaluation, reflection and adaptation throughout the course of the project are essential to a programme's success. Unpredicted (and sometimes unpredictable) ground realities

can emerge out of complex interactions between contextual factors after initial implementation, many of which hinder the achievement of objectives. Policymakers introducing future maternal health interventions should consider taking an implementation research approach, which emphasises the importance of 'real world' contextual factors in development of not only a 'plan of action' based on what has worked elsewhere, but also on the underlying assumptions that underpin the project. Future interventions, to be successful, must move towards more context-specific and evidenced-informed decision-making to make 'what is possible in theory a reality in practice'¹⁰ (p. 8).

Disclosure of interest

The authors have no competing interests to declare.

Contribution of authorship

ZM was responsible for conception and design of the study, data collection, analysis and manuscript development. AL contributed to data analysis, and manuscript development. AB collected the data. SS contributed to interpretation of data, application of implementation methods and manuscript writing. All authors were involved in drafting the article and revising it for critically important intellectual content and all approved of the final version to be published.

Details of ethics approval

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