

Community Health Workers' Involvement in Mother-Child Care During the First Year After Birth, in Kaya Health District, Burkina Faso: A Contribution Analysis

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Abstract

Background: Maternal and infant morbidity and mortality remain high in the world and particularly in sub-Saharan Africa. However, actions to strengthen postpartum care are still weak and mainly limited to health facilities (HFs). The Missed Opportunities in Mother and Infant Health (MOMI) project implemented in the Kaya health district in Burkina Faso included community-based health workers (CHWs) in the care of women and children during the first year postpartum through home visits, accompanying mothers to health facilities and outreach sessions. The aim of this study was to assess the contribution of CHWs to postpartum women's health facilities attendance.

Methods: We conducted an effect assessment using Mayne and Lemire's contribution analysis framework. This was a mixed methods study. Qualitative and quantitative data were collected through project document review and individual semi-structured interviews with key-informants.

Results:

The CHW carried out home visits, accompanied women to HFs, conducted outreach sessions and referred to health facilities, mothers or children who were showing signs of danger.

All the participants interviewed acknowledged that the number of women, who came to postpartum care, had increased since the implementation of the project activities. Postpartum consultation rates within the first week postpartum increased from 29% in 2011 to 80% in 2015 and from 19% to 50% within 6 weeks. Other interventions such as the Performance based financing, the Save The Children (NGO) nutritional project and the health services component of MOMI were the alternative explanations.

Conclusions: Community-based health workers involvement in the care of women contributed to improve their adherence to postpartum consultations in Kaya health district.

Background

Maternal and infant morbidity and mortality remain high in the world and particularly in sub-Saharan Africa. In 2017, the number of women who died from pregnancy or delivery complications was estimated at 295 000^[1].

Almost all maternal deaths (94%) occur in developing countries and most could have been prevented. Sub-Saharan Africa and Southern Asia accounted for approximately 86% (254 000) of the estimated global maternal deaths in 2017. Sub-Saharan Africa alone accounted for roughly two-thirds (196 000) of maternal deaths, while Southern Asia accounted for nearly one-fifth (58 000) ^[1].

Although most maternal deaths occur between the third term of pregnancy and the first week after childbirth, women still face a high death risk beyond six weeks postpartum^[2,3].

In 2013, in sub-Saharan Africa, 17.6% of maternal deaths occurred in the intrapartum period and within the 24 hours following delivery, 47.8% between 24 hours and the 42nd day. Some women (13.1%) died from postpartum complication between the 43rd day and a year after delivery^[4].

Despite a clear pattern of mortality and morbidity during the postpartum period, actions to improve postpartum care remain poor and are mostly implemented at the health facility level, sometimes not including the communities^[3].

However, since the Alma Ata conference, communities have been largely involved in the health systems in most developing countries through community health workers (CHWs).

Studies on community involvement in the improvement of maternal and child health in general, and specifically in the postpartum period, have already been conducted in several countries through different approaches ^[2,4-7]. The evaluation of these programs has shown that CHWs can contribute to community health development by acting as a bridge between the community and health services.

However, most of these evaluations have focused on the effectiveness, feasibility^[8,9] or impact of these programs^[10]. Few impact evaluation studies have examined the context and mechanisms that led to the observed results^[11,12]. In addition, the majority of these evaluations used counterfactual elements or control versus intervention groups to attribute an observed result to a given program^[13]. However, in complex interventions, it is often difficult to fully attribute observed effects to the intervention^[14-17]. It would therefore be interesting to determine the contribution of each component of an intervention or a programme to the achievement of the obtained results, in order to optimize and improve strategies for public health interventions^[11,12,14].

Missed Opportunities in Mother and Infant Health (MOMI) project was implemented in four countries of sub-Saharan Africa, including Burkina Faso in 2011 for 5 years; the project aimed at improving maternal and child health with a focus on the year following birth through two components, community and health services.

Our study aims to analyse the effect of the intervention of community health worker as component of the MOMI project in the Kaya health district in Burkina Faso, by using a mechanistic approach rather than a counterfactual one.

The specific aims of this study are to analyse the contribution of CHW involvement in the achievement of the effect, in particular the attendance of health facility in postpartum women; to identify the factors that have contributed to or limited women's access to postpartum health services; and to identify elements of the intervention that contributed to health facility attendance by women during one the year after birth.

Description of the MOMI project

The Missed Opportunities in Maternal and Infant Health (MOMI) project is funded by the European Union and implemented in four African countries: Kenya, Malawi, Mozambique and Burkina Faso. In Burkina Faso, the project was implemented in 12 health facilities in Kaya health district, including eight rural and four urban HF. These 12 health facilities were selected based on the low rate of postpartum consultation and their location in the Kaya health demographic site (Kaya HDSS)^[18]. The objective of the MOMI project at the community level was to improve maternal and child health through women's adherence to postpartum consultations. Through the involvement of the CHWs, the project aimed at increasing the rate of postpartum consultations in these 12 health facilities. These CHWs were the same individuals selected by the community and were already working in collaboration with health workers. They were involved in health promotion and their routine activities were only focused on pregnant women (accompany some women for delivery, home visit...) but were rarely interested in postpartum women.

MOMI project introduced activities for postpartum women and their child (home visit, outreach sessions, reference of mother/child to HF and accompaniment for postpartum consultation). However, because of the context, only female CHWs were involved in MOMI project activities.

The MOMI project included three intervention components selected through a participatory process. One component was implemented at the community level; specifically the support of the mother-infant by the CHWs in the first year following delivery. The other two interventions were implemented at the health facility level – specifically, improved immediate postpartum care and integration of maternal and infant health services^[19].

At the community level, each CHW had to carry out three home visits to any mother and infant in her coverage area during the first year following delivery. The first one was before the tenth day from the delivery, the second visit was between the sixth and the eighth weeks and the last visit was between the ninth and the twelfth months.

These home visits corresponded to the different periods of postpartum consultation or immunization at the health facility level. In our context, according to the ministry of health schedule, the first postpartum visit occurs between the sixth and eighth day after delivery and the second between the sixth and eighth week. Vaccination against measles takes place between the ninth and the twelfth month.

During home visits, the CHW had to take care of both mother and child, look for signs of danger and refer if necessary. They must also refer home delivery women to the HF. Depending on the visit time period, using a picture box, the CHW also carried out outreach sessions on the signs of danger, family planning, and the importance of postpartum consultations, etc. Outreach sessions were carried out in households, at HFs, during wedding or baptism ceremonies, or during any other activity involving a group of women.

As much as possible, the CHW was to accompany the woman to the health facility for postpartum consultations.

The project was initiated in 2011 with a situational analysis. After the stakeholders training, the implementation of activities at the community and health facility level began in September 2013 and ended in December 2015.

CHWs were supervised one month after the training and then every three months until the end of the project. This supervision was led by the project team in collaboration with the Kaya health district management team.

The project opted for a non-financial motivation, CHWs were not provided any incentives for carrying out the activities. They received bicycles at the project beginning and during each supervised session, meeting and training, they were compensated with a daily subsistence allowance and transportation fees. They received certificates of participation at the end of the project.

Methods

Theoretical framework

For our evaluation, we used the six steps of the contribution analysis framework proposed by Mayne, combined with Lemire's framework, the Relevant Explanation Finder (REF)^[20].

Based on the observation that the rates of postpartum consultations had increased since the introduction of the MOMI project interventions in the Kaya health district, we developed cause-effect questions, which we would answer to throughout the analysis (Steps 1–3):

- Did the involvement of the CHW in the care of women and their children contribute to increasing the use of postpartum health services by women?
- Which factors contributed to or limited the use of health services by women during the postpartum period?
- What aspects of the intervention have contributed?

To answer these questions, we retrospectively developed the theory of the intervention programme at the community level (Fig. 1) and then tested the assumptions contained therein. We then used Lemire's framework, REF (steps 4 to 5), to examine the mechanisms of change and to understand the influencing factors and alternative explanations. The components of the REF are presented in Table 1.

Finally, we wrote the contribution story (Step 6), which is an iterative process of identifying the elements of the intervention that contributed to increase postpartum women's use of health services.

To reinforce the plausibility of the results of the contribution evaluation, our analysis focused on the two main assumptions used in the REF.

Study setting:

The MOMI project was implemented in the Kaya health district, which is located in the Centre Nord health region of Burkina Faso. The health district of Kaya covers 342 villages and seven urban areas. This district is centred on a regional hospital centre (CHR) with 60 health facilities, including 54 health and social promotion centres (CSPSs) and a central private medical centre with surgical satellite facilities (CMA). Kaya Health District is a pilot site for several reproductive health interventions, but reproductive health indicators remain low^[18].

At the community level, there are two CHWs per village, usually a man and a woman responsible for carrying out health promotion activities and malaria case management, diarrhoea, etc.

Study Design

We carried out a case study using a mixed method approach (qualitative and quantitative).

For quantitative approach, all of 12 health facilities are included in the study.

For qualitative study, conducted from June to September 2015, four health facilities were selected according to their localization and performance (2 health facilities with low performance versus 2 HFs with high performance).

Study Population

The quantitative survey concerned all the 72 CHWs involved in the 12 HF of MOMI project. The population of qualitative survey was constituted by postpartum women, CHWs, health facility workers, policymakers and MOMI team members.

Sampling Approach And Sample Size

For the qualitative survey, two areas were first chosen according to their location (urban versus rural). In each area, we then selected two HFs, based on their performance (low versus high) in providing post natal services.

In each site, women were selected from among those who came to the HF either for vaccination, consultation of healthy infants, postnatal consultation or family planning. For the health workers, those involved in immunization and postpartum care were selected. All rural health facility's workers were interviewed. For the urban HF, only those health workers present on the day of the survey and meeting our criteria were interviewed.

For the quantitative study, all female CHWs of the 12 HFs, which made 72 CHWs are included to the study.

Data Collection

We collected non concomitant quantitative and qualitative data.

Quantitative data on CHW's activities and women postpartum attendance were collected quarterly by the research team through the tools put in place within the project framework: the ideogram, reference card, CHW diaries and postpartum care records. Data on women HF attendance concerned the period before and after the intervention in the 12 health facilities and were collected monthly, 12 months before the implementation of the intervention (Sep 2012 to Aug 2013) and 27 months throughout the project (Sep 2013 to Dec 2015). CHWs' activities data were collected during the implementation period.

The variables of interest were the proportion of home visits from a CHW, postpartum women accompanied to the HF for post-natal consultation, mother/child reference to health facility for danger sign, postpartum consultations in health facilities and the number of sensitizations.

Qualitative data were collected through semi-structured interviews and document reviews. The interviews were conducted in French and Mooré (local language) at the HF level and in the policymaker's office, using an interview topic guide. They were all audio-recorded with participants' permission, lasting between 30 and 75 minutes.

The data sources for document review included supervision reports, policy advisory board (PAB) meeting minutes, stakeholder and community leader meeting minutes, the critical review of the policy report (Work package or WP2) ^[21], the situational analysis report (WP3) ^[22], the selection of interventions report(WP4) ^[19], and the event log.

Data analysis

Quantitative data were entered using Epi data and analysed with Excel 2007 and Stata 13 software. We realize descriptive statistical analyses. Women HF attendance was represented by monthly proportion of pair mother-child received at the HF for postpartum visit. The monthly proportion of mother-child who received CHW visit or accompaniment designed CHWs activities.

All interviews were recorded on electronic media, and translated into French for those who were in local language, then transcribed in verbatim. The data thus entered were coded and analyzed with the Nvivo 11 software. We performed a content analysis based on the following themes from the conceptual framework: activities carried out by the CHWs, women's use of health services, influencing factors, alternative explanations and contribution elements. The quantitative method measured the degree of implementation, and the qualitative method enabled us to assess the context and collect additional details on the degree of implementation through the document review and the interviews. Thus, by triangulation, the factors affecting the implementation, the alternative explanations and the elements of contribution were identified.

Results

1. Characteristics of the studied population.

Of the 72 CHWs trained, 65 completed the activities to the end of the project. The majority of them lived in rural areas (84.6%) with a low level of education (66.2%) and used to accompany women to health facilities for childbirth prior to the installation of the MOMI project (61.5%). The average age was 47 (± 10) years. Length of service ranged from 3 to 32 years with an average of 11 (± 8) years.

A total of 49 participants were interviewed during the case study, including 13 CHWs, 13 postpartum women, 16 health workers, 04 policymakers, and 03 project team members in Burkina Faso. The health workers included four head nurses, three maternity officers, four Expanded Program on Immunization (EPI) officers, and five other staff. Among the rural participants were six postpartum women, five CHWs, and six health workers.

2. Contribution analysis (CA)

Applying Step 1–3 of contribution analysis

The application of Steps 1 to 3 helped to define the causal issue, develop the theory of change, and gather evidence to support the hypotheses made. The evidence collected at this step is the activities carried out by the CHWs and the use of postpartum services by women.

Intervention activities carried out by the CHW

The proportion of women giving birth who were visited by CHWs or accompanied to a health facility varied according to time period and setting (> 50% in rural areas). Thus, 56.8% (6633/11675) of women received the first visit, 34.3% (3999/11675) the second visit and 9% (1067/11675) the third visit. Figure 3 shows the evolution of home visits by month from September 2013 to December 2015. During the same period, respectively, 57.3% (3803/6633), 51.4% (2056/3999) and 32.5% (342/1067) of women were accompanied to health facilities. A total of 5681 awareness-raising activities were carried out.

Women's attendance at health services

The sixth day's consultation rates increased from under 40% at the beginning of the intervention to 80% after, and the sixth week's consultation (42nd day) rates increased from under 20% to over 50% for all the health facilities. All of the participants interviewed in this case study acknowledged that the number of women who came to postpartum care, including those who gave birth at home, had increased considerably since the implementation of the project activities. The observations during supervision and the data collected during monitoring confirmed this assertion. In addition, health workers who were interviewed reported that the number of women who received postpartum consultations was higher on the sixth day than in the 42nd day (Fig. 4).

Applying The Relevant Explanation Finder (step 4–5)

These steps were used to understand the influencing factors and alternative explanations

Influencing factors

Among the facilitating factors, we noted the participatory approach adopted by the project for the selection of CHWs and their activities, CHWs commitment, the involvement of community leaders, the health workers collaboration, the non-financial motivation system, the influence of the other women and regular supervision of the activities.

- *CHWs' commitment and motivation*

The majority of CHWs (90.3%) conducted the activities until the end of the project. Their main motivation was the moral duty towards the community that had chosen them because they felt valued by this community. They had the conviction that their work had a positive impact on maternal and child health because they thought they were influencing women in the use of health services.

During the interviews, some of them expressed themselves as follows:

"I agreed to do this work because when the members of your community meet and choose you to entrust you with a responsibility, you have the duty to do it otherwise it will seem like you are not concerned about people's health." (CHW from a rural HF)

"It's for our well-being because health is priceless. And also, it is our village, and we have the duty to contribute to its development. If we are concerned about the development of our village, we must wholeheartedly support the well-being of the population. This is the reason for our involvement in contributing to the improvement of health." (CHW2, Rural HF)

However, 9.7% of CHWs left the project because of the non-financial incentive. During supervision and interviews, a CHW from the urban area who left the project expressed herself:

"I warned you from the beginning that your volunteering story was not going to go far. Anyway, I am not visiting women anymore because we earn nothing in your project. I manage with my small business to feed my children and you want me to stop this and go visiting women with nothing in exchange?" (CHW, urban HF)

- *CHWs' bridging role*

The baseline study showed that women's acceptance of the CHW would depend on her reputation within the community and her collaboration with health workers. Via this relationship, the CHWs conducted home visits and outreach sessions. Data from the various interviews confirmed this assumption.

"Our CHW helps us a lot. Even at night, when a woman is in labour, she accompanies her to the HF without any hesitation. Sometimes she gets on her bike to follow (the woman) to the HF." (Postpartum woman, rural HF)

The messages they conveyed were welcomed by women. The women interviewed described them as a benchmark for maternal health in the village and advocates for women in interactions with their husbands and health workers. Their presence broke down barriers such as fear and mistrust that some women might feel in the presence of a health worker.

The following statements collected during the interviews confirmed these facts:

"There are women who want to go to the HF, but they are afraid of health workers. But they say that if the CHW working with the health workers accompanies them, they will no longer be afraid and will express themselves freely because the CHW is there." (ICP, urban HF)

- *Involvement of community leaders*

The involvement of community leaders and male CHWs facilitated the work of the CHWs in the field. Several CHWs interviewed reported that the community members consented to participate in their activities since the community leaders themselves were involved in the project. Thus, they had access to households for outreach sessions, and women were receptive.

"They [women] simply believed that it is for their benefit because an activity that village leaders and authorities are involved in can only be beneficial to the community. So, they consent as well." (CHW6, urban FS)

However, other factors have limited women's access to these services, such as geographical and financial accessibility (especially during the rainy season), and the weak decision-making power of women, especially in rural areas. Women, health workers and the CHWs interviewed confirmed these obstacles.

"Here in the city there is no problem because women are autonomous. But in the villages, men decide where, when and how their wives can go. They decide whether their wives must go to the HF or not. Sometimes women or children can fall sick for more than a week, but they are waiting because their husbands did not give permission to go to consultation." (Health worker, urban HF)

During the monitored supervision sessions, the CHWs reported that some women did not come to postpartum consultations because of the cost of consumables.

"You know, madam, I will tell you the truth. Our women do not come on the 42nd day because your health workers asked them to pay for gloves, speculum, etc. So, if you do not have money and your husband also refuses to give you some, you have to stay home." (Rural CHW)

Alternative explanations

The health services component of the MOMI project, the performance-based funding (PBF) and the Save the Children NGO's project called "*Victoire sur la Malnutrition*" (VIM) implemented in 2014, were alternative explanations.

Indeed, the health services component of MOMI advocated the integration of maternal and infant health care so that some health workers would include postpartum visits with mothers and their infants during immunization visits or healthy infant consultations. For example, in some health facilities, appointments for postpartum visits on the sixth day were scheduled at the same time as the child's BCG vaccination, and the sixth-week appointments were scheduled at the same time as the child's PENTA1 vaccination or healthy infant consultation appointment. In addition, within all the health facilities, the health worker keeps the mother's health record after delivery. The records were delivered only on the sixth postpartum day. An urban health worker said the following during supervision:

"Since we are keeping the health records, women come back, if only for their health records, and we seize this opportunity to treat them. But sometimes we are obliged to hand over the notebook before the consultation when the woman is not from the same location". (Supervision Report)

The performance-based financing (PBF) was funding some maternal health indicators, such as postpartum consultation rates. This led some health workers to become more involved in postpartum services. Their collaboration with the CHWs in the search for women who were absent at the various appointments was intensified.

The VIM project distributed food to pregnant and breastfeeding mothers in rural areas. This distribution was based on the mothers' adherence to prenatal consultations and the immunization schedule for children. Another influence of the VIM project may lie in the fact that some CHWs who worked in the MOMI

project were also working on the VIM project. These CHWs took advantage of the food distribution incentive to sensitize women. These facts were corroborated by supervisory data and interviews.

"We also take advantage of the distribution of VIM to raise awareness on FP (family planning), the importance of meeting (health consultations) appointments, and signs of danger (for mother and child's health). We generally finish our sensitization before we start to share food; otherwise, women may leave." (Supervision Report)

Assembling the performance story of contribution (Step 6)

This is an iterative process of identifying elements of the intervention that contributed to increasing the attendance of health services by postpartum women. Among the causal links established in the theory of change, we believe that the participatory approach adopted by the MOMI project for the identification of the activities and the selection of the CHWs enabled the appropriation of the intervention by the different actors. The involvement of the community through male CHWs and community leaders helped boost female CHWs in their actions in the sense that they felt valued and considered. Regular training and supervision boosted the CHWs' self-esteem and confidence.

This perception of the importance of their role motivated them to carry out the project activities among women. These activities enabled women to become aware of the dangers that could arise after delivery and the importance of postpartum care at the health centre, which explained their agreement to attending postpartum health services.

However, of all the activities carried out, we believe that home visits and outreach sessions, as well as a good collaboration between health workers and CHWs, contributed more to the attendance of health services by women.

On the other hand, the accompaniment of women to the HFs seemed to have a smaller contribution because this activity was not carried out by all the CHWs because of the lack of adapted means of transport: while the CHWs were riding a bicycle or were walking, the postpartum woman would ride a motorcycle or a bicycle.

Discussion

Relevant Explanation Finder element analysis showed that there was a link between the activities of the project and the use of health services by women during the postpartum period. The analysis also showed that some factors contributed to, or limited women's access to health services; however, other factors might also explain the increase in the use of postpartum services.

Activities and influencing factors

During the project implementation, most of CHWs provided home visits, accompanied women in health facilities and carried out outreach sessions. These activities varied according to the period and the health facility. In general, the health facilities located in rural areas had a home visit rate of more than 50%, while in urban areas are less than 50%. The participative approach adopted by MOMI project to select the intervention activities and CHWs and the commitment of the CHW can explain these results. Community involvement in the selection of interventions was significant in facilitating the work of community health workers within villages ^[23-25]. In fact, community recognition was the main source of motivation of several CHWs to conduct the project activities. This has also been observed in several studies conducted in Nepal, Gambia and Ethiopia ^[24,26,27]. CHWs were selected by their community, and they represented the resource persons of the community in these locations. Therefore, they were motivated to help their community in matters of health. We found, as in the other MOMI project countries (Kenya, Malawi, Mozambique), that the trust between CHWs and their community motivated them to provide an effective bridging function^[12]. The mutual trust between the CHW and her community, as well as the collaboration between the CHW and the formal health workers, made a bridge between the community and health services. The CHW was perceived as a real asset by the community and health services. The messages they conveyed were welcomed by women. However, CHWs were more respected and paid more attention to by the population in rural than the urban areas. This may explain the high rate of visits observed in rural areas. Other factors may also explain the high rate of visits, particularly the seniority of the CHWs, their advanced age and the dynamics of the voluntary CHWs in the health facility. In addition, older CHWs had no young children, were supported by their loved ones and were freer to provide home visits than young CHWs. Sensitization through social networks with an appropriate timetable as implemented by the female CHW proved positive for behavioral change and raised attention to PPC^[28,29]. Monitoring and supervision were revealed to be an important factor of success for the interventions ^[12].

Women in rural areas had a higher rate of home visits than women in urban areas. This situation in urban areas could be explained by the difficulties encountered by the CHWs in conducting home visits, particularly difficulties relating to their social status. Therefore, the scaling up of such intervention must take this reality into account and consider only the rural environment in order to ensure the success of the intervention. Monica O. et al. found in a similar study in Uganda that the poor education level of community health workers negatively affected their activity in urban areas ^[30].

Alternatives explanations

On the other hand, the alternatives explanations to the health services component of the MOMI project, the performance-based financing (PBF) and the Save the Children NGO's project called "*Victoire sur la Malnutrition*" (VIM). Belemsaga et al. in their study had shown that key contextual factors of the successful upgrade of postpartum care interventions in Burkina Faso were the retention of the health book at the health facility until the day 6-10visit^[10]. The fact that

the PBF buys certain postpartum indicators (6th and 42nd day), health workers have stepped up their monitoring of postpartum women and strengthened their collaboration with CHWs in the search for those lost to follow-up. This has contributed to women's use of health services.

Contribution story

PBF and VIIM were mainly implemented at the health facility level. Moreover, these projects were established well after MOMI project and do not have community activities, although they are interested in postpartum women. The postpartum indicators collected in the HFs before and after the implementation of MOMI showed an increase in the use of postpartum services since the arrival of the project. This trend continued with the arrival of the other projects. That suggest that MOMI contributed to the observed effects, and the contribution elements could be attributed to CHWs activities, including home visits, outreach sessions, etc.

Sustainability

One of the difficulties encountered in implementing the interventions at the community level was the financial incentive of the CHWs. It was very difficult to find the kind of motivation that would suit everyone. While some people were advocating fee-for-service, others opted for non-financial motivation such as being equipping with a bicycle^[31]. To ensure the sustainability of the intervention, the project team had opted for a system of non-financial motivation of CHWs. But this type of non-financial incentive had a mixed impact on the project implementation. In fact, it encouraged the majority of CHWs to carry out the activities, but it also resulted in the resignation of 9.7% of them. Studies conducted in Nepal and South Africa reported similar results^[26,32]. In Tanzania and South Africa have studies had shown that while money was an incentive, non-financial learning incentives were favoured^[24,26,27]. However, in 2016, the ministry of health decided to motivate the CHW with 60 USD (30 000 XOF per month).

Limitations

The limitations of our study were mainly related to the evaluation approach used, that is, the contribution analysis. How a contribution analysis-based approach can account for the "cause-effect" relationship remains controversial. However, the methodology used enabled us to collect high-quality data and reliable information that could raise questions for further research.

The benefit of the CA (contribution analysis) is that it focuses on examining contextual factors and other explanations that affect the success and outcomes of the programme.

Conclusion

The involvement of CHWs in the management of women during the postpartum period contributed to increasing the attendance of these women in health facilities. Several factors helped achieve these results, including the non-financial motivation system. However, although the system adopted by the MOMI project did not have a negative impact on the majority of CHWs, it should be noted that it is difficult to continuously work without being paid in a context of poverty. It is time to find a permanent mechanism to motivate CHWs or find other adapted interventions to ensure the sustainability of interventions involving the community. This could involve the pooling of resources and the integration of the various activities of the different NGOs working in the field with the same CHWs.

Abbreviations

CA	contribution analysis
CHR	regional hospital centre
CHWs	community-based health workers
CMA	medical centre with surgical satellite facilities
CSPS	health and social promotion centres
DO-10	before the tenth day from the delivery
FP	family planning
HF	health facility
M9-12	between the ninth and the twelfth months
MOMI	Missed Opportunities in Mother and Infant Health

PBF
performance-based funding
REF
Relevant Explanation Finder
RMM
Maternal mortality rate
VIM
Victoire sur la Malnutrition
W6-8
between the sixth and the eighth weeks

Declarations

- Ethics approval and consent to participate

The study received the approval of Ethics Committee for Research in Health of Burkina Faso under the deliberation number: 2015-5-074. This committee belongs to the health ministry. We obtained written informed consent and guaranteed the confidentiality of all participants prior to the interviews.

- Consent for publication

Not applicable

- Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

- Competing interests

The authors declare that they have no competing interests

- Funding

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- Authors' contributions

HT supervised the intervention, collected the data, performed the analyses and drafted the paper. SK obtained funding for the study. RC, AMO, BB and MT reviewed the paper and SK completed it in collaboration with all authors who read and approved the final version of the manuscript.

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Tables

Table 1: Relevant Explanation Finder (REF)

Assumptions	Mechanism	Influencing factors/Alternative explanations	Type of rival	Level	Degree of influence				
					Certainty	Robustness	Range	Prevalence	Impact
Trained CHWs are available and agree to conduct home visits, outreach sessions and accompany women to HFs without being paid	Promotion activities led by CHWs boost their trust in the role they are playing for the improvement of PPCs	The participatory approach used by the project to select interventions and CHWs	Primary rival	Structural	High	High	High	High	High
	CHW support systems such as trainings, supervision and non-financial incentives build their capacities and encourage them to carry on their activities.	The adherence of CHWs and health workers to the project strategy	Primary rival	Individual	High	High	High	High	High
	The CHW is a community member; therefore, she can easily conduct home visits, and advise, she can be more trustworthy, and she can serve as link between the community and health facilities	Collaboration between CHWs and health workers	Primary rival	Interpersonal	High	High	High	High	High
		Motivation system adopted by the project	Commingled rival	Individual	Medium	High	Medium	Medium	Medium
		The educational level and social status of some CHWs	Direct rival	Individual	Low	Low	Low	Low	Low
	The interventions are carried out in order to motivate community leaders to get more involved.	Cooperation of the Policy advisory board (PAB)	Implementation rival	Institutional	Medium	Medium	Medium	Medium	Medium
		Monitoring/assessment of the activities	Implementation rival	Institutional	High	High	High	High	High
		Mother and child health national policy	Implementation rival	Institutional	Medium	Low	Medium	Low	Low
Women who delivered in the community are receptive to the advice given by CHWs; they understand and apply recommendations.	The CHW represents a link between the community and health service, which helps remove barriers such as fear and suspicion of the community towards	Postpartum women's attitude, enthusiasm and interest in postpartum care	Primary rival	Individual	High	High	High	High	High
		Trust between the CHWs and women	Primary rival	Individual	High	High	High	High	High

health workers.									
Women's adherence depends on their husbands or their mothers-in-law.	Weak decision-making power of women mainly in rural areas	Primary rival	Institutional	Medium	Medium	Medium	Medium		f
Behavioural change is adopted when postpartum care is promoted within the community.	The low purchasing power of some women represents a financial barrier	Implementation rival	Individual	Medium	Medium	Low	Low		f
Women who were supported by CHWs share their experience with other women.	Peer-to-peer education	Implementation rival	Individual	High	Medium	Medium	Medium		f
Men are more receptive to men's or leaders' messages	Involvement of the community through community leaders and male CHWs	Implementation rival	Institutional	High	Medium	Medium	Medium		f
The attendance at health facilities can be motivated by other interventions.	HF component with inclusion of care for mother and child.	Implementation rival	Institutional	High	High	Medium	Medium		f
	PBF with more involvement of health workers	Implementation rival	Institutional	Medium	Medium	Medium	Medium		f
	Food distribution by the project VIM to women who attend HF appointments	Implementation rival	Institutional	High	Medium	Medium	Medium		f

Figures

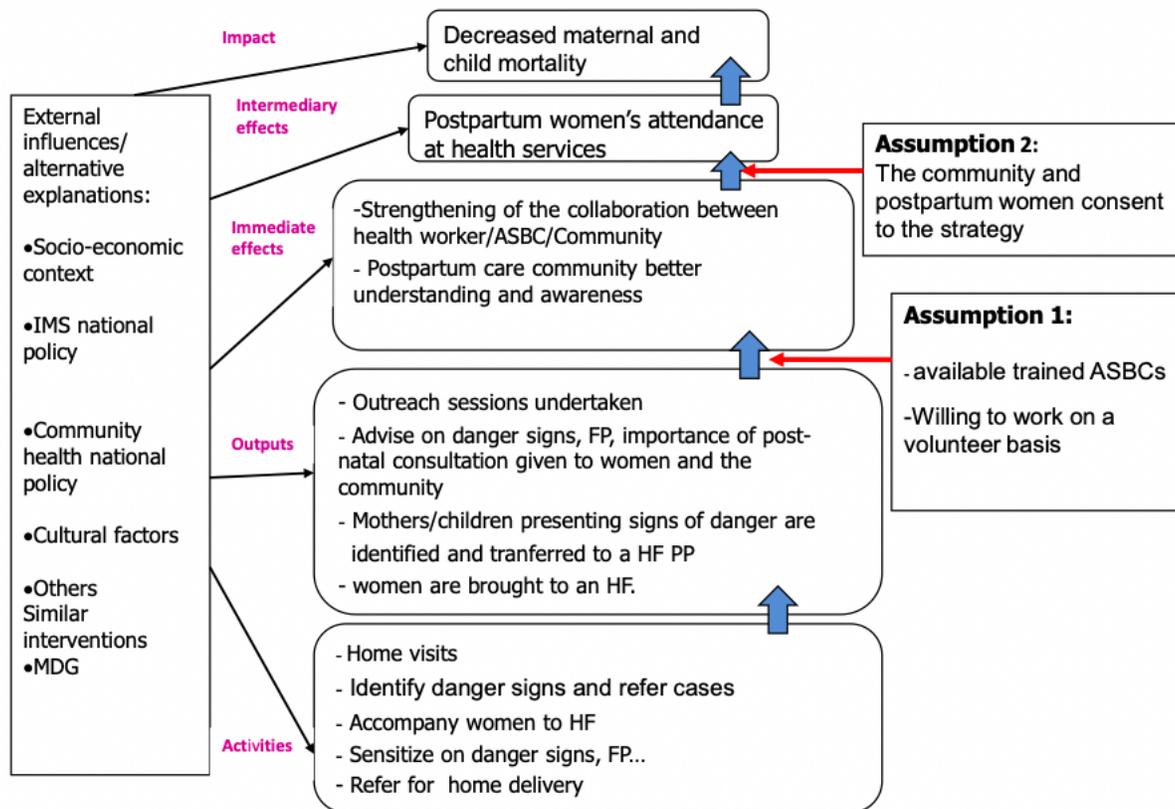


Figure 1

Logic model of the MOMI project at the community level (adapted from Mayne's 2012 model, quoted by Stocks-Rankin)

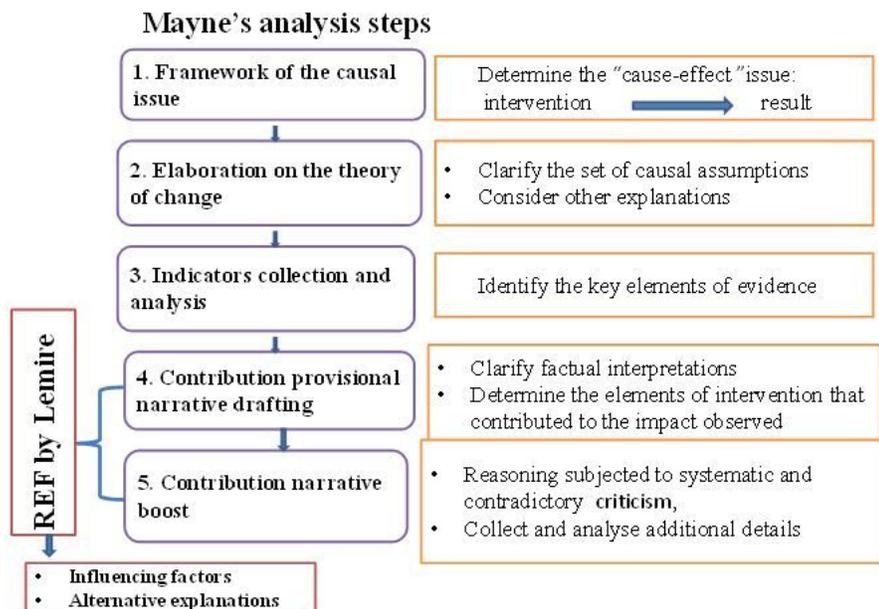


Figure 2

Conceptual framework: contribution analysis

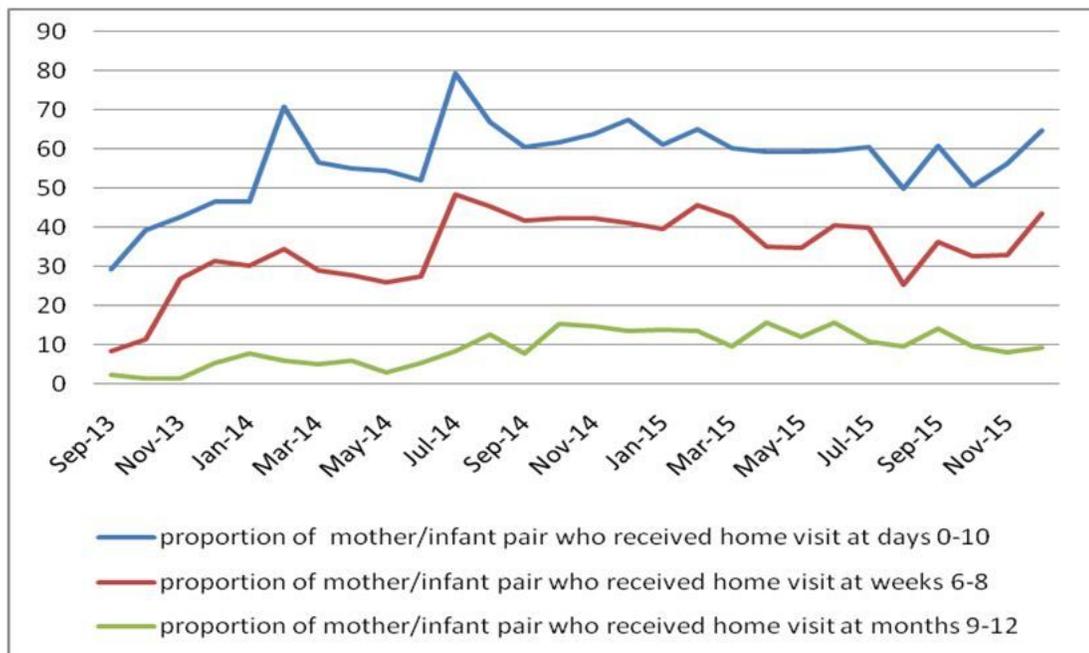


Figure 3

Home visit evolution per month from September 2013 to December 2015

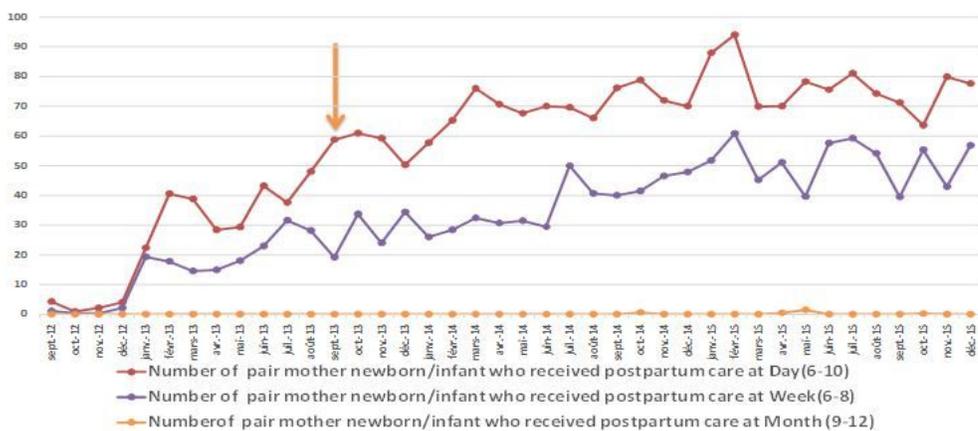


Figure 4

Proportion of pair mother /infant who received postpartum care before and after the intervention

Supplementary Files

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- [questionnairemomiendevaluation.doc](#)