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Implementation of the Caring for Providers to Improve Patient Experience intervention in Migori County, Kenya: Challenges, successes, and lessons

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Key drivers of poor person-centered maternal care (PCMC)—respectful and responsive care—include provider stress and bias. The *Caring for Providers to Improve Patient Experience (CPIPE)* intervention is a 5-component intervention including provider training, peer support, mentorship, embedded champions, and leadership engagement that addresses these drivers. This report describes the CPIPE implementation, challenges, and successes to demonstrate its feasibility and acceptability. CPIPE was piloted over 6 months in two health facilities in Migori County. Didactic and interactive content to promote PCMC and address stress, burnout, difficult situations, and bias, was delivered during a 2-day training. Facility-based embedded champions then led monthly refreshers and facilitated peer support groups. Twenty-four mentors provided mentorship across various topics with paired mentees, and facility and county leadership were engaged through a Community Advisory Board. Challenges included limited training time, hierarchical facility culture which hindered cross-cadre activities, varying levels of site engagement, competing demands, and leadership changes. Successes included high participation and engagement; positive perceptions about the intervention activities; provider commitments to stress management, bias mitigation, and provision of equitable PCMC; and leadership commitment to address sources of stress and provide mental health support for providers. CPIPE is an innovative and practical intervention that centers the experiences of the providers and the care of vulnerable women. The pilot's success underscores the timeliness, relevance, feasibility, and acceptability of similar interventions in resource-constrained settings. CPIPE advances the evidence base for interventions to improve patient and provider experiences of maternal care.

Keywords: Kenya, Person-centered maternity care, Disparities, Explicit bias, Implicit bias, Maternity providers, Mistreatment, Patient–provider interactions, Quality of care, Respectful maternity care

Introduction

Despite progress, an estimated 800 pregnancy-related deaths occur daily—most in low- and middle-income countries (LMICs) and about two-thirds in sub-Saharan Africa (SSA) [1]. Skilled care in health facilities is critical to improving maternal and neonatal outcomes. Yet, in SSA, many births do not occur in health facilities—with wide disparities, especially by socioeconomic status (SES) [2]. The most recent Kenya Demographic and Health Survey (KDHS) found that only a third of the poorest women delivered in health facilities, as compared to over 90% of the wealthiest women [3].

Poor person-centered maternal care (PCMC) contributes to disparities in facility-based deliveries [4, 5]. Further, where facility-based childbirth rates have increased, poor PCMC contributes to morbidity and mortality through delayed, inadequate, unnecessary, or harmful care [6]. PCMC, care that is respectful of and responsive to people's preferences, needs, and values [7], is a priority in the global quality of maternal care discourse due to the prevalence of disrespectful, abusive, and neglectful treatment of women during childbirth [8–11]. Domains of PCMC include dignity and respect, communication and autonomy, and supportive care [12]. Low SES women often have the worst experiences, which impacts their care-seeking [10, 11, 13]. While studies have highlighted drivers of poor PCMC including inadequate provider knowledge, stress, burnout, and bias, there is limited research on interventions to improve PCMC in LMICs

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[14]. Further, past interventions have not explicitly addressed the drivers of inequities in PCMC [14, 15].

To address this gap in evidence-based interventions to improve PCMC, we designed *"Caring for Providers to Improve Patient Experience" (CPIPE)*, an innovative and theory-driven intervention to address poor PCMC and center the needs of vulnerable women and providers. *CPIPE*'s five components include provider training, peer support, mentorship, embedded champions, and leadership engagement (see **Table 1**). The training integrates content on PCMC, stress, burnout, and bias into emergency obstetric and neonatal care (EmONC) simulations to enable providers to manage stress, prevent burnout, and mitigate the effects of bias to advance high-quality equitable care. The other strategies create an enabling environment for change. *CPIPE* was informed by prior research [16–22], the Ecological Perspective [23], Social Cognitive Theory [24], and Trauma-Informed System framework [25], and designed through iterative research and stakeholder feedback [26].

Table 1. CPIPE intervention strategies

1. Training
• Person-centered maternity care
• Understanding stress and burnout and developing positive coping mechanisms
• Introduction to mindfulness
• Bias awareness and mitigation
• Dealing with difficult situations
• Emergency obstetric and neonatal care
• Teamwork and communication
• Mentorship and peer support
2. Peer support groups
Group peer support based on cadre to discuss issues, brainstorm solutions, and provide support to one another.
3. Mentorship
Mentor–mentee relationships that provide the opportunity to coach junior providers on professional development, work–life balance, clinical skills, career advancement, and other topics. Mentors develop their mentorship and leadership skills.
4. Embedded champions
To facilitate ongoing engagement and sustainability at the facility-level, we identified champions who lead activities at their facilities, including facilitating peer support groups and refresher trainings and serve as role models.
5. Leadership engagement
Engagement of county leadership at the onset of the project through a Community Advisory Board, who advised on intervention adaptations, for example, format, content, length, and training group composition. Regular updates of the study and findings and discussing systemic gaps that impact provider stress and bias.

The overall aims of the CPIPE study were to (1) design the CPIPE intervention, (2) pilot it to assess feasibility and acceptability, and (3) assess preliminary effectiveness. The first aim is described in detail in a previous publication [26]. This manuscript reports on the second aim. We thus focus on the implementation process and highlight challenges, successes, and lessons learnt during implementation. A third manuscript presents the effectiveness results from a more formal outcome evaluation [27].

Methods

The CPIPE intervention was piloted over 6 months (October 2021 to April 2022) in two health facilities in Migori County. The County is described in detail in prior publications [26, 28]. The first facility, Migori County Referral Hospital (MCRH), is the referral hospital for the county, with a 225-bed capacity, 28 doctors, and 145 nurses and midwives. It conducts over 4,200 deliveries annually, with about 23 nurses/midwives, 3 doctors, 2 clinical officers, and 4 support staff in the 100-bed maternity unit. The second, Kuria West Sub County Hospital (*Kehancha*), is an 84-bed facility with an average of 3 doctors and 25 nurses and midwives. It conducts about 1,300 births annually, with about 7 nurses/midwives, 1 doctor, and 4 support staff in the 24-bed maternity unit. Sites were selected with input from the CPIPE study Community Advisory Board (CAB) following formative work. The CAB is described in more detail under the "leadership engagement" section. All providers working in maternity units in the intervention facilities were eligible to participate in the intervention. The impact evaluation, which employed a mixed-methods pretest–posttest-nonequivalent-control-group design using surveys from 80 providers (40 in the intervention and 40 in the control group) and the 20 in-depth interviews, is described elsewhere [27].

The data for this manuscript are from process data documenting the implementation process. These data were obtained using both quantitative and qualitative methods from project logs, attendance sheets, training evaluations, unstructured observations by the project teams, and minutes from the peer support group and CAB meetings [29, 30]. We also draw on data from in-depth-interviews with 20 providers who participated in the intervention. We applied a group-based analytic approach to the qualitative data for rigor and interrater reliability. The initial coding framework was developed based on the interview guides and domains for the intervention implementation. The team, BO, EO, MG, JK, and PA, developed a collaborative coding framework, which was then applied using Dedoose software, discussing emerging themes and iteratively refining the coding framework; inductive codes were added at this stage, and discrepancies were resolved through discussions. We developed a memo that was reviewed by the full team and served as a basis for this report.

Our measure of feasibility is fidelity: the ability to implement the intervention as planned [31]. We thus first describe how the pilot was implemented and the challenges we had to overcome during implementation. We assess acceptability using participant responsiveness and

perceptions about the intervention. We reviewed the process data to describe the implementation and identify themes under challenges and successes. Data from the in-depth interviews related to participants' experiences participating in the intervention activities, their interest and engagement, and their perceptions about the various intervention strategies are used to assess acceptability. The in-depth interviews were audio-recorded, transcribed, and coded. Code queries were then reviewed to identify themes. Themes related to acceptability are reported under successes. Other themes related to impact are described in detail in the impact evaluation [27]. Finally, we report on lessons learnt based on our reflections during the implementation.

Pilot intervention implementation

All five strategies of the CPIPE intervention, summarized in **Table 1**, were implemented during the pilot study.

Initial training

The CPIPE training was conducted with providers from the two intervention facilities in October 2021. We first engaged facility leadership and obtained a list of all providers in the maternity unit at each intervention facility to identify the number eligible. Facility leaders then shared information about the study with providers in their facility and invited them to participate. To facilitate facility culture change, all providers from intervention facility maternity units were invited, and all agreed to participate. To prevent gaps in patient care, facility leads formed two groups of providers who attended two separate 2-day trainings. Each training included a mix of providers and support staff from the two intervention facilities. Trainings were conducted at a hotel in the County and all providers had permission from their facility head to attend. We provided reimbursement for transport, meals, and refreshments. The first day included didactic and interactive sessions on PCMC, stress and burnout, mindfulness, bias, and difficult situations. On the second day, these concepts were applied using two simulations: (1) birth with a nonresponsive baby and (2) postpartum hemorrhage (training agenda in supplement). We utilized PRONTO International's high-fidelity simulations, where providers play the role of the patient, enabling them to engage with the patient's perspective to advance PCMC [32, 33]. Simulations were followed by a debrief on the patient and provider experience. Providers then developed individualized self-care plans to reduce stress and the impact of bias and improve PCMC. Peer support and mentorship activities were introduced at the end of the second day. The training was attended by 29 providers from MCRH, 17 providers from Kehancha, and 14 CAB members inclusive of county health leaders. Most participants were nurses or midwives (40), with 3 doctors, 1 clinical officer, and 4 support staff from the intervention facilities.

Embedded champions and refresher trainings

At the end of the second day of the 2-day training, providers who attended the training nominated two embedded champions per site based on the nominee's commitment to maternity care and potential for leadership. Champions served as the point of contact for the facility, led activities including monthly refresher trainings and peer support groups, and were role models and change agents for intervention sustainability for the 6 months of implementation. We conducted a leadership orientation for the champions and developed materials for them to facilitate refreshers in their facilities. The initial 2-day training was followed by four refresher trainings. Our study team facilitated the first two refreshers, in November 2021 and January 2022, on peer support and mentorship; and the champions facilitated the other two on stress management and unconscious bias in March and April 2022. The refreshers included didactic and facilitated discussions using case studies. To facilitate ongoing learning, we created a *WhatsApp* messaging group for providers, where the study team shared resources and content with them. Weekly materials on PCMC, bias, stress management, mindfulness, and self-care activities were shared. We also connected providers with two clinical psychologists for mental health support in the county.

Peer support

Following consultation with site-based teams, we facilitated the formation of cadre-specific groups to openly share experiences. MCRH formed 4 peer groups: two groups of 7 and 8 nurses, respectively; one group for 3 doctors and 2 clinical psychologists; and a group for 5 support staff. Kehancha formed two support groups for 14 nurses (7 each), and a group for 4 support staff (no doctor in maternity unit during this period). Meetings were held monthly and led by a peer leader selected by each group. Groups engaged in stress management and teamwork activities including practicing breathing exercises, songs, and dance during meetings. In addition, they discussed issues such as experiences at work, supply chain shortages, delayed salaries, lack of proper toilet facilities, and challenges with night duty. Peer groups brainstormed, championed, and advocated for solutions with leadership. Health care providers shared their meeting minutes with their facility leaders, who in turn shared them with the county health leadership during CAB meetings.

Mentorship

We conducted a brief survey on mentoring capacity, needs, and preferences with all maternity providers in the intervention facilities and identified 24 mentor–mentee pairs after the training. As part of the surveys, the health providers chose to either be mentors or mentees and noted areas they could provide or needed mentorship. Mentees selected senior and experienced providers as mentors. Mentors and mentees participated in an introductory session designed to facilitate effective mentorship relationships. Mentors also attended the embedded champions training to strengthen their role as supportive mentors. Mentor–mentee pairs were encouraged to meet at least monthly. Each pair met formally at least once a month, with additional informal meetings among some pairs. Mentorship topics included stress management, PCMC, unconscious bias as well as clinical topics such as neonatal

resuscitation, postpartum hemorrhage management, and breastfeeding support. Some mentors provided experiential learning opportunities during their regular work in the maternity units, while others met mentees in their skills labs for simulations.

Leadership engagement

To promote sustainability, we engaged facility and county leadership and key stakeholders early and throughout the process. This was also in recognition of the fact that the intervention would be unable to directly address some issues, including staff shortages, lack of drugs, supplies, and equipment, and infrastructural issues. Thus, we needed to engage leadership in discussions to address these broad systemic challenges. We formed a 15-member CAB, which included the County Director of Health, Deputy County Directors of Health (medical services and public health), County Reproductive Health Coordinator, facility and maternity unit heads, clinical and support staff, and community representatives. The CAB meetings held quarterly, were led by the CAB chair (the County Executive Committee Member for Health at project inception). Meeting dates, agendas, and venues were determined in consultation with CAB members. During these meetings facility leaders, embedded champions, as well as providers who were part of the CAB, were able to raise concerns from their facilities. The study team coordinated the logistics of the meetings including scheduling and organizing refreshments and transport reimbursement.

Challenges

The successful implementation of the study, despite the challenges of the COVID-19 pandemic, was proof of its feasibility. Nonetheless, there were some challenges we had to overcome during implementation.

1. ***Facilitating cross-cadre learning***: While we endeavored to facilitate cross-cadre collaboration and teamwork among doctors, clinical officers, nurses, midwives, and support staff, differing levels of literacy and comprehension made it challenging to have different cadres of providers in the same training. For instance, some support staff struggled with some of the content, while some doctors felt uncomfortable being in the same training with support staff.
2. ***Location, time, and timing***: Given budget limitations, we were unable to house trainees at the meeting venue; many arrived later than anticipated since they were traveling from afar. This delay limited time for applied skills and team building. A few nurses also attended the training fatigued following their night shifts, which negatively impacted their participation.
3. ***Varied momentum in intervention activities across sites***: While one facility was able to kick start peer support activities almost immediately, the first two peer support meetings in November and December 2021 at the referral facility were delayed. Activities resumed in January 2022 with nurses and support staff participating enthusiastically—even wishing the study period could be extended. However, due to competing demands, doctors, clinical officers, and clinical psychologists at the referral facility were not able to participate in peer support groups.
4. ***Mentorship capacity***: Some mentors did not feel prepared for their role. While the study intended for mentoring to be self-driven, many had no previous mentorship experience or had only previously experienced structured clinical mentorship; thus, they had similar expectations for this project. Clinical mentorship was also hindered by competing demands and the lack of a skills lab in one facility.
5. ***Leadership changes***: We experienced several leadership changes during the intervention. While we engaged various leaders within the county to facilitate buy-in and promote sustainability, some were political appointees whose tenures changed during the intervention period. The study thus had to reiterate, reintroduce, and reorient new leaders to the project, impacting momentum.
6. ***Managing expectations***: Some providers initially had high expectations of the project, including expectations for large financial incentives to participate in intervention activities and expectations that the study would directly resolve health systems challenges. The study team often had to manage these requests and reiterate the position of the study, as well as advocate for system issues to be managed with the county leadership.
7. ***Limited mental health resources***: Migori County has two trained clinical psychologists—both working in the referral hospital (one of the intervention sites), yet providers were not utilizing these services. Providers were ambivalent about accessing their support mainly due to privacy and confidentiality concerns, as services were provided in the same area where patients and other providers may see or hear discussions. Further, psychologists were often busy with patient care due to the high patient-to-psychologist ratio. Finally, psychologists were not very accessible to providers from other sub-counties, who found it difficult to travel far to seek support.

Successes

The project's nimbleness, including alignment with county-wide initiatives, facilitated success in several areas. These successes also reflect the acceptability of the intervention.

1. ***High participation***: Due to the high interest in the intervention and training, we trained 60 people (vs. the 40 initially planned). Refresher trainings revealed that providers took a keen

interest in intervention activities. Due to the refresher training locations, other providers outside of the maternity unit were also exposed to the intervention. For example, one of the monthly refresher trainings attracted staff from other departments who actively participated in the training sharing their various stressful experiences. Providers also shared that they are aware of and willing to work on their biases. For example, during one of the refresher sessions, providers acknowledged their preferential treatment of women of higher SES and resolved to treat all mothers respectfully, regardless of their SES. Further, providers shared experiences of how they have applied stress management techniques, including breathing techniques to manage difficult situations.

2. ***Supportive work environment***: Peer support meetings were perceived to be an outlet for providers who were suffering silently. Groups used music and dance for stress management, allowing providers to return to work feeling more invigorated. Providers were reported to be more open, closer to their peers, and successfully making space to address the stressors in their work. Further, peer support meetings allowed the discussion of topics that may have been considered sensitive such as seeking mental health support. Providers' attitudes have reportedly shifted because of the peer support meetings, and this has been reflected in the care for mothers.

   It went well because people like me opened up, and we got help from colleagues, something which I did not know was so easy that I could be feeling much lighter and happier coming to work. (Nurse 0106)

3. ***Increased agency and self-advocacy***: Providers reportedly feel more empowered to advocate for their rights and the resources they need. For example, nurses and midwives were able to raise the issue of unavailable and uncommitted doctors on night calls, which was stressful for the nurses on duty. This prompted the replacement of one medical officer. They also advocated for a room for the doctors to spend the night in and help manage overnight emergencies, rather than being called in from their homes, which affected the timeliness of managing emergencies. Further, advocacy for the lack of essential supplies led to discussions on supply chain management in the facility and the provision of some essential commodities, such as blood pressure machines, thermometers, and other non-pharmaceuticals. Additionally, support staff in the referral facility who had not received their salaries for 11 months discussed their situation with leadership and decided to walk off their jobs when unable to reach a collective bargain, which prompted action to pay them from a different budget allocation. This made the other intervention site to come up with a way of paying their support staff to avoid what was experienced in the other facility.

   I think you did engage them well because even if we were discussing issues like for lack of toilets, we could just discuss and give the reports to the nursing officer, and he could take the information to the county because the toilets have been constructed by the county. So, I feel that our complaints reached them. The essential commodities we have complained about them for a long time, nothing was done about it until when you came in. After our peer support meetings I don't know how you did it, but the county team brought us the commodities which we have not been having for so many years. So, I believe that the complaints we gave you is what you went and sat with the county managers on the table during your meetings with them . . . for us we just saw the results . . . (Nurse 0104)

4. ***Increased advocacy for patients***: Providers also reported advocating for the rights of patients following the training on respectful care. For example, one of the intervention sites had no toilet facility in the maternity unit, forcing mothers in labor or postdelivery to bathe or use the toilet outside in the open. Providers noted the lack of privacy, respect, or dignity for the mothers and raised this issue with the facility in-charge. As a result, the facility is now in the process of digging and constructing proper toilet facilities. The county is also planning to hold open maternity days with the assistance of the facility management team to allow mothers to talk about the kind of care they receive from the health care providers.

   . . . we saw a change like sanitation at least has improved, now patients are having their meals. The ones who are admitted in the wards, unlike before when they had to buy food from outside, and also some commodities have been bought . . . the bad smell in the maternity is no longer there, the county unblocked the toilets, one toilet was also constructed outside here. The casual workers got paid and so now they are working and doing their cleanings well and so we have seen a lot of benefits. (Nurse 0109)

5. ***Mentorship enhancement***: Although the CPIPE mentorship program was not initially intended to be a clinical mentorship program, it helped resurrect clinical mentorship in the facility. For example, one of the intervention sites had a skills

lab that was not operational because they lacked surgical towels. Given the interest in using the lab to provide mentoring on clinical skills, the study purchased the surgical towels, which cost 5,000 Kenya shillings, helping the lab become operational. Providers were able to mentor each other on handling difficult clinical cases using simulations, where they continued to focus on respectful maternity care. Nurses report being more confident in managing PPH, which helped reduce stress among the nurses and burnout among champions who previously bore the burden of managing such cases.

> *I have been mentoring one of the support staff, this is a newly employed in the labor ward and as we speak my mentee can now conduct delivery and even assist in delivery, and as well assist in PPH and when you give her the instruction on what to do, she is of a great help to the providers in the labor* . . . (Nurse 0216)

6. ***Opportunity to engage with leadership***: The project has provided several opportunities for providers to engage with one another, and with county leadership on issues related to respectful care provision through the peer support and CAB meetings. Health care providers credited the study for facilitating collaborative relationships with leaders and the possibility of advocating for situations they previously thought were difficult, as discussed.

> *County engagement . . . it was good because when we raised the challenges that we had at the peer support meetings, the County was able to resolve them.* (Nurse 0110)

7. ***Facilitated system changes***: The leadership engagement strategy of CPIPE has led to county leadership taking steps to address some of the issues that have been uncovered during the intervention period. For example, discussions on high staff turnover, identified as a major stressor, motivated the county management team to reassess the policy on staffing transfers. Leadership is now conducting a staffing needs assessment and workload evaluation prior to staff being transferred to other facilities. This additional step will help reduce the frequency of transfers and consider facility-wide needs prior to making changes. Further, to address the high workload, especially among providers in the referral facility, county leadership discussed the concerns raised by the facility in-charges and committed to providing resources and training at the lower-level facilities to increase their capacity to manage more cases that would otherwise be referred to the referral facility. Further, county leadership took steps to address delayed salaries, producing a temporary strategy of using money from a different budget line, to pay support staff their back pay. A new policy is also being developed to have the support staff's contracts be issued by the public service board, which will be a permanent solution to the issue of delayed salaries at the county level. Finally, following discussions on the lack of monetary incentives at the maternity wards, the county health expenditure committee is drafting a policy for monetary rewards to maternity staff from the money generated from the Linda Mama Program (a health insurance program by the Kenyan government for pregnant women with a focus on those living in the slums and rural areas) [34] to sustain interventions strategies such as peer support groups.
8. ***Mobilizing mental health support***: *CPIPE* has created an increased awareness of the mental health needs of providers at the county health management level. Discussions highlighted high rates of alcohol use, absconding of duties, and self-harm (including suicide) due to high stress and the lack of mental health support for providers. The County is thus developing a provider mental health strategy, where they are planning to train psychological counselors in different subcounties and create friendly environments for providers to access mental health support.
9. ***Sustainability***: CPIPE is a timely intervention that has elevated the importance of developing a strategy to better support health care workers in Migori to improve both provider and patient experience. The county leadership values the intervention, highlighting that soft skills like stress management and unconscious bias mitigation are critical gaps in health care systems. With guidance from the study's embedded champions, intervention strategies such as the refresher trainings, peer support, and mentorship are being integrated into the County's annual work plan. This will ensure budgetary allocation to support ongoing activities.

Lessons learned

We highlight several lessons learned during the CPIPE intervention that could benefit other program planners and implementers:

- Off-site and on-site training must be balanced to minimize patient-care interruptions and distractions. Offsite training is particularly helpful to energize providers, take them away from their normal settings, minimize distractions, and provide the environment for focused learning. However, if the training location is too far out, it may be more efficient if providers are housed at the training location or provided with transportation to help ensure that they arrive on time. In the absence of these, having the training on health facility grounds, if there is an appropriate

conference facility, may be efficient. Training decisions should thus be made in consultation with facility leadership.
- There is a need to balance bringing different cadres together and having separate trainings. While cross-cadre trainings promote integration and interaction across the different provider groups, some aspects of the training are impacted by differing levels of understanding and thus may not be conducive to mixed-cadre groups. Further, training in and of itself can end up being a source of stress or serve as a break from work stress, depending on how it is organized. Thus, it requires careful and context-dependent planning in consultation with local stakeholders.
- Building and utilizing local capacity is critical. Our all-Kenyan training team included two Kenyan nurses (PRONTO International Master Trainers©), the Kenyan lead investigator (psychiatrist and physician-researcher), one masters-level, and two bachelors-level researchers and implementors. Facility-level providers can also deliver refresher trainings and sustain the intervention given the right support. This can be achieved through the embedded champions approach and contributes to the future sustainability of the intervention.
- Interactive group activities, including music and dance conducted during peer support sessions, not only help in relieving stress but also improve communication, participation, and connectedness.
- Programs need to anticipate leadership changes and plan for them. This can include having leaders who will be motivated to continue with their roles, even when their positions change, or who will commit to orienting new leaders taking up their roles to assume their responsibilities on the CAB.
- Though many of the structural level stressors are beyond the scope of this intervention, low-cost solutions can have a significant impact. Further, structural level stressors can be addressed when prioritized by leadership, as illustrated in our successes.
- Finally, issues addressed by CPIPE, such as stress, burnout, and unconscious bias, impact all cadres and departments, underscoring the intervention's utility in other units beyond maternal health.

Discussion

CPIPE is a multilevel theory and evidence-based integrated provider intervention that seeks to improve PCMC by addressing provider stress and bias as key interrelated drivers of poor PCMC [21, 35, 36]. It addresses a major gap in interventions to promote responsive, compassionate, respectful and equitable maternity care [15, 37]. Most published interventions to improve PCMC focus on just training and quality improvement strategies [15, 38, 39]. Although a few have involved multicomponent strategies [14, 40], they do not emphasize provider well-being, as well as critical pathways such as supportive work environments and facility culture change [41–43]. CPIPE is thus unique in its focus on these factors, in addition to the focus on bias mitigation. Our process evaluation presented here shows that such an intervention is feasible and acceptable, and the mixed-methods outcome evaluation described elsewhere provides preliminary evidence of its effectiveness [27].

Given this was a pilot study, there are some limitations such as limited generalizability given the small sample size from only two facilities in one County. Also, success data does not include patient reports and covers only the implementation period; social desirability bias and limited information on sustainability are, thus, potential limitations. Nonetheless, by describing the implementation process and reflecting on challenges and successes, we believe other studies can learn from our process. This pilot data will also inform the next phase of our work, which is a cluster-randomized trial in Kenya and Ghana to generate robust effectiveness data on the impact of CPIPE.

Conclusion

CPIPE, an innovative yet practical intervention to improve PCMC grounded in research and theory, was successfully piloted in Migori County. Despite the challenges during implementation, our nimble and adaptive approach addressed COVID-19-related challenges, political landscape changes, and competing demands from county and national-level priorities. The successes underscore the timeliness, relevance, and feasibility of similar interventions in resource-constrained settings. The lessons from this pilot are useful for future health system interventions requiring widespread culture change to better advance patient outcomes.

Data accessibility statement

As this is a process and implementation paper, the authors have no data to share.

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Competing interests

The authors declare no competing interest.

Author contributions

BO contributed to the study implementation and led the drafting of this manuscript. LO, MG, EN, JK, IO, and JO contributed to the implementation and writing of the manuscript. PA led the design and implementation of the study, conceived the manuscript, and contributed to the writing. All authors have read and approved the manuscript.

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