"If really we are committed things can change starting from us providers"

Improving postpartum care

A facilitation intervention at government-owned health institutions in a low-resource suburb in Dar es Salaam, Tanzania

EUNICE PALLANGYO
Abstract

Globally, postpartum care is a neglected area in the continuum of maternal and newborn services. Facilitation interventions focusing on addressing local problems report positive results in improving the health of mothers and newborns in low-resource settings. The aim of this thesis was to investigate a facilitation intervention to improve postpartum care at government-owned health institutions in a low-resource suburb of Dar es Salaam, Tanzania. A before-and-after study design was used to describe and evaluate the intervention in this thesis. Data were collected using mixed methods in the intervention group and the control group, before and after the intervention and were used for making comparisons.

The baseline studies showed that postpartum care practices were next to non-existent at the institutions, that most healthcare providers had high levels of knowledge, positive attitudes towards postpartum care and declared themselves ready to engage in its improvement. Mothers coming with their newborns for immunisation were satisfied with the services.

The intervention to improve postpartum care involved healthcare providers in six geographical clusters, each including 3–6 institutions, with one facilitator for each cluster. Using a participatory approach, they facilitated colleagues in identifying and addressing the provision of postpartum care at institutions. Data were collected among healthcare providers, facilitators and mothers using: focus group discussions; questionnaires; observations; and interviews, and by making field notes, written at each institution.

In the intervention, facilitators and healthcare providers used four strategies to improve postpartum care: increasing awareness and knowledge on postpartum care of healthcare providers and mothers; mobilising professional and material resources; improving care routines, communication and documentation; and promoting an empowering and collaborative work style.

The endline evaluation showed that postpartum care was conducted in the intervention group with some care items performed for 80% of observed mothers. The quality grading, which involved nine experts and was based on national guidelines, showed that none of the healthcare providers reached the level of good quality of care. In the comparison group, postpartum care continued to be next to non-existent. The healthcare providers’ knowledge increased in both groups but to a higher extent in the intervention group. The t-test indicated a significant difference in knowledge between the intervention and comparison groups and between before and after the intervention in both groups. The difference in differences for knowledge was 1.3. The attitudes showed no major difference between baseline and endline in the intervention and comparison groups.

This facilitation intervention was an acceptable and applicable approach and indicates promising results in improving the quality of postpartum care and in increasing mothers’ attendance.

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This thesis is based on the following papers, which are referred to in the text by their Roman numerals.


II. Pallangyo E, Mbekenga C, Källestål C, Rubertsson C, Olsson P. “If really we are committed things can change starting from us”: Healthcare providers’ perceptions of postpartum care and its potential for improvement in low-income suburbs in Dar es Salaam, Tanzania. *Sexual and Reproductive Healthcare* 2017; 11: 7-12


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### Abbreviations

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<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
</tr>
<tr>
<td>AMO</td>
<td>Assistant Medical Officer</td>
</tr>
<tr>
<td>ANC</td>
<td>Antenatal Care</td>
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<td>CG</td>
<td>Control Group</td>
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<tr>
<td>CO</td>
<td>Clinical Officer</td>
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<tr>
<td>ENM</td>
<td>Enrolled Nurse Midwife</td>
</tr>
<tr>
<td>HCPs</td>
<td>Healthcare Providers</td>
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<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<tr>
<td>IPPC</td>
<td>Improving Postpartum Care</td>
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<tr>
<td>IG</td>
<td>Intervention Group</td>
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<tr>
<td>MO</td>
<td>Medical Officer</td>
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<tr>
<td>NGT</td>
<td>Nominal Group Technique</td>
</tr>
<tr>
<td>NIMR</td>
<td>National Institute of Medical Research</td>
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<tr>
<td>PARIHS</td>
<td>Promoting Action on Research Implementation in Health Services</td>
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<tr>
<td>PDSA</td>
<td>Plan, Do, Study, Act</td>
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<tr>
<td>RCH</td>
<td>Reproductive and Child Health</td>
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<tr>
<td>RNM</td>
<td>Registered Nurse Midwife</td>
</tr>
<tr>
<td>TNM</td>
<td>Trained Nurse Midwife</td>
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<td>WHO</td>
<td>World Health Organization</td>
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This thesis evolved as a result of my long-standing interest in maternal and child health. My role as a Tanzanian nurse-midwife and a lecturer at a private university since the early 2000s entailed teaching reproductive and maternal health and clinical practice supervision. My experiences of supervising students at health institutions exposed me to the suboptimal quality of care and numerous problems related to lack of resources.

Why postpartum care (PPC)? The greatest attention in the continuum of maternal and child care is given to antenatal care and childbirth and is very minimal for PPC. Research into mothers’ and midwives’ understanding of postpartum health and care in low-resource settings performed in Dar es Salaam by Helen Lugina and Columba Mbekenga indicated the need for PPC quality improvement and a positive commitment by healthcare providers (HCPs) for improvement. This work and the guidance of Pia Olsson influenced me to think about how “improving postpartum care” coincided with my interest. At that time, interventions and knowledge translation were common terminologies that I had heard in academic discussions without my full engagement or participation. Having gained a greater understanding of existing research into PPC, I realized that what was left on the plate was about translating knowledge into action. Conducting an intervention to improve PPC became more necessary and interesting.

I presumed a smooth and simple implementation process, as I had contextual knowledge. Despite good planning, the implementation presented several unpredictable barriers, especially at the beginning. And time was flying. A year was a short period of time for this complex intervention, but was long enough to initiate and improve PPC at some institutions, the start of a journey of lifelong learning for myself and the HCPs and an inspiration for future interventions. My understanding of the notion of “implementation of interventions” has totally changed. I would like to engage again in further interventions to improve the quality of care, as this is most needed in our setting.
Introduction

This thesis reports a facilitation intervention to improve PPC at government-owned health institutions in a low-resource suburb in Dar es Salaam, Tanzania.

In Tanzania, as globally, PPC is a neglected field in the continuum of maternal and newborn care despite the high risk of mortality and morbidity during the first weeks after childbirth [1, 2]. The terms “postpartum” and “postnatal” have been used interchangeably in the literature to refer to issues related to mothers and newborns after childbirth. In this thesis, “postpartum care” will refer to care provided at health institutions up to 42 days after childbirth. The role of institutional PPC is particularly important in the internationally fast-growing low-resource urban areas where a high proportion of the population is of childbearing age and where many women have very limited family support [3].

Maternal and newborn health in Tanzania

Globally, maternal and newborn mortality remains a challenge, despite significant reductions in its rate over the past decade [4]. Low-income countries are affected most, contributing to 99% of global maternal mortality [4]. About 66% of mothers who die reside in sub-Saharan Africa [4].

In Tanzania, the maternal mortality ratio is 556 deaths per 100,000 live births [2]. The causes for maternal deaths in this country and globally are attributed to haemorrhage, hypertensive disorders, sepsis and unsafe abortion [5, 6]. Despite the substantial reduction in under-five mortality globally, deaths due to preventable causes are still unacceptably high with neonatal mortality being most neglected [1]. In Tanzania, the neonatal mortality rate is estimated to be 26 deaths per 1,000 live births, which contributes to 40% of all under-five deaths [2]. Less than 60% of children under six months of age in this country are exclusively breastfed and about 44% of the infants below three months of age are given complementary feeds [2]. About 58% of the children suffer some degree of anaemia, 34% are stunted, and 14% of all children are underweight [2].
HIV prevalence during pregnancy is high (5%) [7] in Tanzania. High depression prevalence among HIV-positive mothers is reported [8]. Mental disorders during pregnancy predict potential problems after childbirth [9] and are associated with poor child health outcomes [10]. Intimate partner violence (IPV) in Tanzania is high (56%), and mothers have reported this to cause stress and disharmony within family life, which negatively affects child care [11, 12]. The HCPs report that silence and shame surrounds IPV and that it is difficult to create situations where clients can comfortably disclose this problem [13]. The provision of comprehensive care that addresses the physical and mental health consequences of violence experience is recommended [14]. Mothers who experience IPV could be well supported if identified early during antenatal care visits and if provided with continued support during PPC visits [8].

Postpartum care in Tanzania

In Tanzania, overall progress has been made in strengthening the continuum of care during the childbearing period. About 98% of mothers receive antenatal care from skilled providers at least once, 64% are delivered by skilled attendants, and 75% of children receive basic vaccinations [2]. Similarly, 98% of mothers in Dar es Salaam receive antenatal care from a skilled provider at least once, 95% are delivered by a skilled provider, and 86% of children receive basic vaccination [2]. However, PPC assessment of mothers within 2 days after childbirth, as recommended by the World Health Organization (WHO), has remained persistently low with only a slow increase over several years; 13% in 2004 [15], 31% in 2010 [16], and 34% in 2015 [2]. The PPC assessment of newborns is also low, with only 42% assessed within two days after birth [2]. Half of the mothers in Dar es Salaam receive a PPC assessment in the first 2 days after childbirth, which is a better proportion than of the country as a whole.

Low family planning utilization is reported among married (32%) and unmarried (56%) women [2]. Tanzanian mothers’ reported health concerns during the postpartum period include; infant behaviour and care, nutrition, breastfeeding, haemorrhage, and contraceptive use [17-19]. The timing of resumption of sexual intercourse after childbirth and its relationship with breastfeeding, multiple sex partners and risks for HIV, were concerns expressed among new mothers [17], new fathers [20], and support persons [21] in Ilala suburb, Dar es Salaam.

National policies for strengthening reproductive and child health (RCH) are in place with a strategic plan targeting 80% PPC coverage by 2020 [22]. The PPC national guidelines were issued in 2011 and aim at promoting high-quality care.
ity integrated maternal and newborn healthcare [23]. The guidelines recommend four PPC visits for maternal and newborn assessment: 24 hours, and within 7, 28, and 42 days after childbirth [23]. HCPs claim that they lack guidelines and supervision in becoming good resources in PPC [24, 25].

Quality of care

Low quality of care is widely reported in health institutions [4, 26, 27]. The WHO vision defines quality of care as the extent to which the care provided to individuals improves health outcomes [27]. Mothers’ and HCPs’ positive experiences of care are claimed to be a result of the appropriate use of effective interventions, a functioning infrastructure, and the good skills and positive attitudes of HCPs [27]. The characteristics of quality care are described as safe, effective, timely, efficient, and equitable, and where the HCPs consider each individual’s own preferences and aspirations [28].

The translation of knowledge is paramount in improving quality of care [27]. Regrettably, strategies to increase knowledge translation, defined as the exchange, synthesis and ethically-sound application of knowledge in practice are uncommon [29]. Therefore, the gap between “what is known” and “what is actually practiced” [30] is a barrier to using new discoveries for quality of care improvement [31]. It is estimated that the implementation of simple and low-cost interventions, such as exclusive breastfeeding for the first six months of life, could avert 70% of neonatal deaths globally [32].

Approaches for translating knowledge into practice require an adequate consideration of the evidence and the context [33]. Facilitation is one of the knowledge translation approaches, and is defined as a process by which a group is helped to achieve its goal with the involvement of all team members [33]. This approach has rarely been used to improve the quality of maternal and newborn care in the healthcare system. However, community-based facilitation interventions with women’s groups have proved to be effective in improving maternal and newborn survival in low- and middle-income countries [34, 35]. This approach has also improved community knowledge of the health of mothers and children. To balance the demand for care from the community and the supply of the healthcare resources, efforts to improve quality of care in health institutions are recommended [36].

Study setting

This thesis is based on studies conducted at government-owned health institutions at three levels of care (dispensary, health centre and hospital) in two low-
resource suburbs; Ilala, for the intervention group (IG), and Temeke, for the control group (CG), in Dar es Salaam, Tanzania. This East African low-income country has a total population of 44.9 million [37], of which 31.3 are living in extreme poverty [38]. Globally and Africa-leading, the urbanization of Tanzania is growing fast, leading to overcrowding and growing health, social and economic problems [3].

![Map of Africa with Tanzania and Dar es Salaam](image)

**Figure 1: Map of Africa with Tanzania and Dar es Salaam**

Dar es Salaam is the third-fastest growing city in Africa [3] and the population growth rate (5.6%) is higher compared to that of the country as a whole (2.9%) [37]. This city is the most densely populated in the country, the smallest in land area, and highly congested [37]. Dar es Salaam is the largest commercial city of Tanzania and about 4.4 million inhabitants are distributed in its 3 suburbs: Ilala, Temeke and Kinondoni. The suburb allocated to the IG is the most urbanized and is densely populated with the smallest number of households compared to other suburbs. About 16% (IG) and 29% (CG) of households live in extreme poverty as compared to 14% of households in Kinondoni. About 1.2 and 1.4 million of the population in Dar es Salaam reside in the suburbs allocated to the IG and CG, respectively.
Most of the inhabitants of Dar es Salaam are immigrants from other parts of Tanzania who have come in search of new economic opportunities in urban areas [3]. Both suburbs (the IG and CG) are resource-constrained and characterized by people living in mushrooming squatter settlements, with high rates of unemployment, poverty, poor sanitation, poor health conditions, and traffic congestion [3]. The infrastructure is under-developed and the quality of the health services is below both the national and WHO standards and is associated with shortages of resources that contribute to poor quality of care [3]. Diseases are many, with malaria, pneumonia, pregnancy complications, HIV/AIDS, tuberculosis and diarrhoea being the most common causes of morbidity and mortality [3]. Congestion in the public transport system, markets, and health institutions, and poorly ventilated housing, increases the transmission of tuberculosis [3]. Severe malnutrition is high in Dar es Salaam, with those residing in the IG suburb being the most affected over any other suburb of this city [3]. The IG suburb has two hospitals (one referral), one health centre, and twenty-eight dispensaries, while the CG suburb has two hospitals (one referral), one health centre, and twenty-six dispensaries.

Reproductive health care system in Tanzania

Healthcare in Tanzania is decentralised and is delivered at five different levels in government-owned and private health institutions at: dispensaries, health centres, and district, regional and consultant hospitals [3]. All levels have RCH units that mostly provide services in antenatal care, HIV/AIDS, under-
five care, family planning, vaccinations and PPC. The district councils are responsible for the planning, implementation, monitoring and evaluation of health services. Health institution committees for community participation in healthcare are described as being less effective [39]. Most of the HCPs caring for mothers and newborns at the RCH units have two and three years’ training in midwifery. The services and types of HCPs employed at the three levels of care in the suburb where this intervention was focused are summarised in Table 1.

Table 1. Health institutions, services and healthcare providers

<table>
<thead>
<tr>
<th></th>
<th>Dispensary</th>
<th>Health centre</th>
<th>District hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>10,000</td>
<td>50,000</td>
<td>300,000-500,000</td>
</tr>
<tr>
<td>Healthcare providers</td>
<td>CO, ENM, MCHA</td>
<td>CO, RNM, ENM</td>
<td>MO, AMO, CO, RNM, ENM</td>
</tr>
<tr>
<td>Services</td>
<td>Outpatient, Normal deliveries, RCH, community outreach programmes</td>
<td>Outpatient/inpatient care, RCH, minor surgeries</td>
<td>Advanced outpatient/inpatient care, diagnostic services, surgeries, emergency obstetric care, RCH</td>
</tr>
</tbody>
</table>

MCHA Maternal and Child Health Aiders with 1 year of training in midwifery
ENM Enrolled Nurse Midwife with 2 years of training in nursing and midwifery
RNM Registered Nurse Midwife with 3 years of training in nursing and midwifery
MO/CO Medical Officer and Clinical Officer with 5 and 3 years of training in medicine, respectively
AMO Assistant Medical Officer-Clinical Officer with 2 years of advanced training in medicine
Rationale and research questions

The low levels of PPC attendance and quality contribute to maternal and newborn deaths and health problems, and improvement is needed [6] in Tanzania and elsewhere [1]. The translation of existing PPC knowledge into practice that would improve the health of mothers and newborns is deficient. A Tanzanian national PPC guidelines was issued in 2011 [23] and it has been identified that HCPs are interested in improving PPC if given adequate support [24]. Thus, efforts to engage HCPs working with RCH services to translate existing knowledge into practice could be a way to improve PPC at health institutions.

Internationally, few intervention studies are reported in this field and innovations are called for [14]. Facilitation has been used in various knowledge translation interventions in low- and middle-income countries with promising results [40-42]. Based on these results, a literature review, and discussions and previous studies in the area [8, 13, 17, 24], four main research questions were phrased:

1) What are the PPC knowledge, attitudes, perceptions and practices of HCPs?

2) Is a facilitation intervention acceptable and applicable at health institutions in a low-resource suburban Tanzanian setting?

3) Could a facilitation intervention contribute to improved quality of PPC?

4) Which strategies do HCPs employ to improve PPC in a facilitation intervention?

The answers to these questions can contribute to the limited body of knowledge about PPC practices and facilitation interventions for knowledge translation in low-resource settings in Tanzania and internationally.
The aim of this thesis was to investigate a facilitation intervention to improve postpartum care at government-owned health institutions in a low-resource suburb of Dar es Salaam, Tanzania.

The objectives were to:

1. Assess postpartum care knowledge, attitudes and practices among healthcare providers (Paper I)

2. Explore healthcare providers’ perceptions of postpartum care practice and its potential for improvement (Paper II)

3. Explore the strategies used within a facilitation intervention to improve postpartum care (Paper III)

4. Describe the outcomes of a facilitation intervention to improve postpartum care (Paper IV)
Conceptual framework

This thesis has been inspired by two conceptual frameworks. First, the ‘Promoting Action on Research Implementation in Health Services’ (PARIHS) framework [33], and second, the ‘WHO Quality of Care Framework for maternal and newborn health’ [27]. The PARIHS framework embraces the use of facilitators in building the capacity of teams, which is in line with the design of the improving postpartum care (IPPC) intervention. The WHO framework is adapted from a widely used quality of care framework for maternity services and was modified based on the research feedback. The new framework is more specific, applies to a whole system, and includes quality assessment from clients’ perspectives [27].

The PARIHS theoretical framework

The PARIHS framework helped in conceptualizing the implementation of a facilitation intervention [43]. PARIHS builds on the assumption that the successful implementation of research in practice obliges the developers and implementers of an intervention to consider the nature of the evidence, the context, and the method in which the process is facilitated [33]. Evidence involves a combination of research, clinical experience, patient preferences and local data [33]. Context relates to the setting of the intervention with consideration of its particular culture, leadership and evaluation [43]. Facilitation is the active ingredient in the framework and involves the use of facilitators who help people to change their attitudes, habits, skills, and ways of thinking and working [43]. The PARIHS framework inspired the designing of the IPPC intervention, and its elements are used to guide the discussion of the results presented in this thesis.

The WHO Quality of Care Framework for maternal and newborn health

As quality of PPC was a key interest in this thesis, the recent WHO Quality of Care Framework for maternal and newborn health [27] was helpful for understanding and discussing aspects relating to the quality of PPC. Quality of care
is a complex and evolving phenomenon and encompasses three core concepts; structure, process, and outcome [44, 45]. The WHO quality of care framework [27] describes the connection between these concepts as: the health system creates the ‘structure’ within which the care ‘process’, with its two interlinked dimensions, provision and experience of care, takes place and produces the ‘outcome’. The outcome includes both person-related and health-institution outcomes as a result of improved care. To achieve good quality of care, the availability of competent and motivated human resources, essential physical resources, and good clinical skills are needed. The integration of evidence with the communication of information to mothers and families, and the integration and networking of care within and between institutions, are crucial components of quality improvement [27].
A facilitation intervention entitled Improving Postpartum Care (IPPC) was designed, inspired by the community facilitation interventions in low- and middle-income countries, which have reported improved maternal and child health [34, 35, 46, 47]. The purpose of this intervention was to improve PPC in government-owned institutions. Facilitation [33] was chosen as the implementation strategy in the IPPC intervention. Active participation of all involved was encouraged and the facilitation was led by trained facilitators who were HCPs engaged in RCH services at the health institutions. The identification of potential facilitators was conducted by myself (PhD student and principal investigator of the intervention) in collaboration with health facility management. It was anticipated that the facilitation intervention would increase the HCPs’ knowledge and access to information, awareness of rights and responsibilities, and critical thinking and innovations about their own situation, and thus take appropriate actions [48].

The IPPC intervention was developed over four phases: preparation, implementation, evaluation, and dissemination.

The preparatory phase comprised baseline studies and various activities to enhance the understanding of PPC practices, gain acceptance for the intervention, and for the designing of the intervention. All government-owned health institutions that provide RCH services in the IG (n=27) were grouped into six clusters, based on geographic proximity. Thus, the type and number of institutions differed between the clusters. All HCPs who are involved in PPC provision formed IPPC teams. For each cluster, one HCP was selected to facilitate the improvement process. The recruitment of facilitators was guided by the following selection criteria: good PPC knowledge; positive attitude towards PPC; committed to improving PPC practice; and accepted and trusted by other HCPs [33].

The implementation phase, lasting 12 months, encompassed 9 days of facilitators training. This training was led by the principal investigator of the intervention who also enacted the role of supervisor to the facilitators and included interactive sessions in groups (3 days), fieldwork (5 days) and follow-up (1 day). Topics included in the training were; PPC as per the national guidelines [23], findings from research previously undertaken in the suburb [8, 13, 17,
A specific facilitator’s guide was developed for the intervention. It described various methods for enabling participation and quality improvement that were all practised during the training: brainstorming, nominal group technique, the Plan-Do-Study-Act (PDSA) cycle and, the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis. This guide and the national PPC guidelines were introduced and distributed to the facilitators. During the training fieldwork, the facilitators trained the HCPs in their clusters using the same methods as those used in their training. The facilitators met with the supervisor for follow-up on the last day of training to share experiences, and reflect upon and refine their understanding of PPC knowledge and facilitation methods.

During the implementation phase, the IPPC teams, with the assistance of their facilitators, identified existing problems and possibilities for PPC quality improvement at their institutions, prioritized actions, enacted change, and monitored the use and feasibility of the adopted actions. The improvement process was interactive and was characterized by regular revision of the prioritized problems and activities as they dealt with complex and multiple barriers when improving PPC. PDSA was used as a quality improvement method.

The facilitator with representatives from IPPC teams held three joint meetings in their respective cluster during the implementation phase. The team members shared experiences and reflected together over the problems and solutions to improve PPC. Facilitators visited health institutions to support IPPC teams based on their needs and used phone calls and text messages for follow-up. Facilitators’ documentation about the implementation progress and the minutes from the meetings with HCPs indicated problems, planned actions, evaluations of previous actions, and a summary of lessons learnt.

Figure 3: IPPC intervention logo produced on initiative of facilitators to highlight PPC in health institutions
Evaluation was performed using mixed methods designs at the end of the intervention. These evaluations and their results are described in the “Research methods” and “Results” sections of this thesis.

Dissemination of the results was done in a stakeholders’ meeting that had the representation of high- and mid-level policy makers from the Ministry of Health and the Municipal Councils of Ilala and Temeke. The implementers from government and non-governmental organizations, academics, and researchers attended. One Kiswahili and two English newspapers reported on the stakeholders’ meeting.

![Figure 4: The stakeholder meeting reports by the Citizen and Mwananchi newspapers on 12th July, 2017](http://www.thecitizen.co.tz/)

This meeting may have increased the possibilities that “the improving PPC” message was heard by other stakeholders, HCPs and the community. Oral and poster presentations were given at national and international scientific conferences and seminars in both Sweden and Tanzania. The results are published in international scientific journals.
<table>
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<tr>
<th>Phases</th>
<th>Activities</th>
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<tr>
<td>Preparation</td>
<td>Identifying PPC evidence from research, national and WHO guidelines</td>
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<td></td>
<td>Exploring PPC practices, local resources, partnerships and identifying facilitators</td>
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<td></td>
<td>Conducting baseline studies to assess knowledge, attitudes and practices among HCPs</td>
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<tr>
<td></td>
<td>Meeting stakeholders in IG and policy makers to share the baseline results, gain acceptance and support</td>
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<td>Implementation</td>
<td>Training facilitators</td>
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<td></td>
<td>HCPs’ implementation of strategies to enact change</td>
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<td></td>
<td>Facilitators’ meetings with the intervention principal investigator</td>
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<td></td>
<td>IPPC teams meetings with their facilitator</td>
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<tr>
<td>Evaluation</td>
<td>Conducting endline studies and comparing results with the baseline evaluation</td>
</tr>
<tr>
<td>Dissemination</td>
<td>Presentation of results to policy makers, implementers, academics and researchers</td>
</tr>
<tr>
<td></td>
<td>Oral and poster presentation at conferences and seminars in Tanzania and Sweden</td>
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Research methods

Study design

A before-and-after study design was used in order to describe and evaluate the intervention in this thesis. Data were collected using mixed methods [49] (Table 3) in both the IG and CG before and after the intervention, and these were used to make comparisons.

Data collection and Participants

Similar data were collected before and after the intervention using focus group discussions (FGD), questionnaires, observations, exit interviews and field notes.

Eight FGD, one at each institution, were conducted with HCPs before the intervention in the IG and CG at all hospitals, health centres and at two dispensaries (one from each suburb) to explore providers’ perceptions of the current PPC practice and its potential for improvement. Four FGD were conducted with HCPs at the mid-point of the intervention in the IG to assess the progress of the intervention: successes, challenges, and suggestions for a way forward. Two FGD with facilitators and four with HCPs were conducted after the intervention in the IG to explore providers’ perceptions of the intervention outcomes and to gain insight into the various strategies used for the implementation of the intervention. The FGD were conducted in institutions where enough providers were obtained to form a group. HCPs from various professions (Table 1) were involved to enable opportunities for the exploration of different views and to facilitate joint reflections [50].

A questionnaire, modified from one developed by Eriksson et al. [42], was used to assess HCPs’ knowledge about and attitudes towards PPC before and after the intervention in the IG and CG. The modifications were based on the national PPC guidelines [23], the WHO recommendations [51], and previous studies [8, 13, 21, 24]. All HCPs who were at work during data collection period and who had agreed to participate were involved in the study.
Observations of PPC were conducted among HCPs while providing care to mothers and newborns in the first week after childbirth. The observation checklist, developed from PPC national guidelines with additions drawn from similar sources as those for the questionnaire, was used to assess the conducted care items. In order to define the quality of PPC, nine Tanzanian experts in RCH were consulted to suggest the level of quality of care items on the checklist, which were defined as: excellent, good, or not needed for quality care.

Exit interviews were conducted with mothers immediately after the observation of the assessment of the PPC provided to them and their newborns to explore their views on the received care. The interview guide topics were: satisfaction with services, providers’ skills, duration of the visit, and suggestions for improving PPC.

Field notes were written by the principal investigator and research assistants after their visit to and performing of the data collection at each institution. The field notes guide included the following topics: presence and use of national PPC guidelines; staff and space allocated for PPC; and general impressions of the quality of PPC.

Analysis
The Kiswahili audio recordings from all FGD were transcribed and translated into English to allow the participation of non-Kiswahili-speaking researchers. Qualitative data were analysed using thematic [52] and qualitative content analysis [50]. Statistical analysis of quantitative data was conducted using R commander software [53]. The outcome variables were: PPC knowledge; PPC attitudes; and observed PPC; and the background variables included gender, age, education, profession and institution. The frequencies of the variables were compared using Chi-square tests [54]. The comparison between baseline and endline evaluation was conducted using Student’s paired t-tests [54], and between the IG and CG with an independent t-test [54]. A multiway ANOVA was used to find the difference in quality scores between health institutions.
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Ethical considerations

The National Institute of Medical Research (NIMR) Ethics Review Committee (ERC) in Tanzania granted ethical approval of the study in 2014, ref: NIMR/HQ/R.8a/Vol. IX/1737. Permission to conduct the study was obtained from the municipal councils in Ilala and Temeke and from the management of each participating government-owned health institution.

The ethical considerations related to this thesis concern the potential increase in workload at the health institutions, and the confidentiality of the participating HCPs and mothers. The high workload at health institutions following acute shortages of HCPs is widely recognised. The studies and the implementation of the intervention could place more constraints and possibly interfere with care delivery, causing delays and possible harm to the health of the mothers and their newborns.

Negotiation and careful planning of the timing of the data collection at the participants’ convenience was observed throughout. Financial support for alternative transport was provided to participating HCPs and facilitators when the data collection extended their normal working hours.

The principal investigator visited the institutions in the study area in the IG and CG and held meetings with facilitators and HCPs prior to the studies to provide the information orally and in writing about the nature of the study; the objectives, procedures, the importance of voluntary participation, the possibility of withdrawal when necessary, and the need for obtaining informed consent from each participant. They also responded to any questions relating to the study. Data were collected only after HCPs had agreed and had signed a consent form. Although informed consent forms for signature were provided to participating mothers, they preferred, and were provided the opportunity, to give their verbal consent.

Safeguarding confidentiality for FGD is challenging as participants see and know each other. A room that would allow privacy and promote smooth discussion was organised. Participants were requested to keep the discussion confidential and pseudonyms were used for reporting the discussion and in transcripts.
Major results

The results of this thesis, which investigates a facilitation intervention to improve PPC, are developed from baseline studies (Papers I and II), intervention studies (Paper III), and an endline study (Paper IV). These results are summarised below (Figure 3).

**Questions**

- What are the PPC knowledge, attitudes, perceptions and practices of HCPs?
- Is a facilitation intervention acceptable and applicable at health institutions in a low-resource setting?
- Could a facilitation intervention contribute to improved quality of PPC?
- Which strategies do HCPs employ to improve PPC in a facilitation intervention?

**Main results**

- HCPs’ high knowledge and positive attitude
- Suboptimal PPC in understaffed institutions
- Lack of guidelines, space and material resources
- Top-down leadership style
- HCPs’ less involvement in research and policies
- Inadequate referral system and continuity of care
- High commitment by HCPs for PPC improvement

- Facilitators and HCPs’ high commitment
- Leadership approval and support of the intervention
- National PPC guidelines availability
- RCH units existence at health institutions
- Antenatal clinic and under-five services ongoing

- Increased HCPs knowledge of PPC and professional confidence
- Increased number of mothers at health institutions seeking for PPC
- Improved PPC provision and physical resources
- Mother’s high satisfaction with PPC provision

- Increasing PPC awareness and knowledge to HCPs and mothers
- Mobilizing professional and material resources
- Improving care routines, communication and documentation
- Promoting an empowering and collaborative work style

*Figure 5: Questions and summary of the main results in the thesis*
Healthcare providers’ knowledge, attitudes and perceptions on postpartum care

The baseline evaluation revealed that few or no PPC consultations were conducted with mothers and newborns after childbirth in both the IG and the CG. Mothers who visited the RCH units at health institutions with their newborns for Bacillus Calmette–Guérin (BCG) immunization were mostly satisfied with the services. The frequency distribution indicated that 64% (n=104) of HCPs had a high level of knowledge of PPC, 72% (n=108) had positive attitudes towards PPC, and 66% (n=98) were highly committed to PPC improvement. The HCPs with higher educational levels showed more positive attitudes (OR=2.5 CI 95% 1.03–6.13) than providers with low educational levels. The suburbs showed no significant difference in background factors (education level p=0.616, number of HCPs p=0.614, number and type of institution p=0.779); HCPs’ perceptions of quality of PPC (p=0.859); and attitudes towards practicing PPC (p=0.848). However, health professionals in the CG presented significantly lower levels of knowledge (p=0.009) (Paper I).

The HCPs revealed in the FGD that they found the quality of PPC to be suboptimal and fragmented at understaffed institutions. They were unaware of the existence of the national PPC guidelines and claimed to be less involved in its development and studies conducted in their area. Despite these, their commitment to improve PPC was high and they perceived themselves as the main agents of change. The HCPs claimed that they could have prevented maternal deaths had the care been better.

*Any change that we are talking about here starts from us care providers. I see us as change makers. Even those things we say management is responsible for we can advise them and they will listen. If we are really committed for postpartum care, things can change starting from us. If we want men to come to the clinic, this depends on how we care for them when they come but also how seriously we call them. So to me changes will be influenced by us and supported by others (leaders).*  

*(FGD, Health center)*

The leadership style is organized in a top-down structure and the culture is one of waiting to be told what to do. The HCPs called for allocation of space, time and resources, and suggested the improvement of: the communication and referral system; providers’ knowledge; and supervision and feedback. Their motivation to enhance PPC quality was high (Paper II).

Thus, the baseline evaluation indication of low quality of PPC and the HCPs’ motivation to improve the same supported the idea to conduct an intervention to improve PPC in low-resource government health institutions in the IG area.
The providers’ strive for implementation of the IPPC intervention

The IPPC intervention was set up to improve PPC in low-resource government-owned institutions in the IG. The focus of the intervention was to strengthen participation by HCPs and their capacity development in order to take control of the PPC work.

The facilitators and HCPs used four main strategies to improve PPC: increasing awareness and knowledge of PPC of HCPs and mothers; mobilizing professional and material resources; improving care routines, communication and documentation; and promoting an empowering and collaborative working style (Paper III).

Increasing awareness and knowledge of PPC was an important strategy in training, meetings and clinical practice to promote understanding and acceptance of the implementation of the IPPC intervention. The initial facilitators’ training built confidence for raising awareness and spreading PPC knowledge among HCPs and mothers. Facilitators and HCPs developed educational displays produced from locally available materials to demonstrate key contents of the PPC guidelines and research results.

The main barrier to improving PPC was the limited staff and material resources. Resource mobilization was introduced on the agenda in the institutional meetings and HCPs strived to identify space, staff and equipment to conduct PPC. Facilitators encouraged colleagues to develop innovative skills, which would enhance the utilization of existing resources and add more.

Improving care routines, communication and documentation was another strategy, and this included the assessment and care of mothers and newborns as per the national guidelines, the documentation of care, and communication within and between institutions.

Promoting an empowering and collaborative working style within and between institutions was encouraged by facilitators and was practiced in various ways during the implementation of the IPPC to make the intervention participatory.
The intervention’s potential to improve quality of care

The endline evaluation indicated that the facilitation intervention contributed to improved professional confidence and knowledge; improved PPC attendance and quality of care; and increased PPC awareness among mothers in the IG. Some PPC actions were noted in more than 80% of the observations and mothers reported high satisfaction with care. However, the quality grading, which was based on the national guidelines and involved the input of nine experts, showed that none of the providers reached the level of good quality of care. In the CG, PPC continued to be next to non-existent.

The HCPs’ knowledge of PPC increased after the intervention in both groups but to a higher extent in the IG. The t-test indicated a significant difference in levels of knowledge between the IG and CG at endline ($p=1.063\times10^{-8}$) and at baseline ($p=0.018$) and a difference in levels of knowledge before and after the intervention in the IG ($p=2.2\times10^{-16}$). The difference in differences for knowledge was 1.3.
Figure 6: Distribution of items in knowledge at baseline and endline in the two groups

The attitudes showed no major difference between baseline and endline in both the IG and the CG.
Positive attitude when agreed on

A1: Strengthening postpartum care is likely to improve mothers and new-borns health in the country
A2: It is necessary to involve male/support system to postpartum care of mothers and new born
A3: A discussion with mother and partner on sexuality and resumption to sexual practice has health implications for the mother and the family
A4: It is appropriate for postpartum care health providers to ask about intimate partner violence
A5: The postpartum care guidelines should not be kept in matrons office
A6: Male involvement to PPC services has health implications to mothers, newborns and families
A7: It is necessary for a normally delivered mother to attend three postpartum care visit
A8: Health providers of postpartum care require adequate knowledge and skills

Figure 7: Distribution of the items in attitudes at baseline and endline in the two groups
The HCPs perceived the intervention to have contributed to: growing professional confidence and knowledge; improved PPC quality; and mothers’ positive responses.

*Before we started the intervention one year ago we had PPC service but it was not done the way we are doing now. It was not seriously considered and most of the time we used to receive clients delivered on scissor (caesarean section), just for stitch removal. (...) After the intervention there are differences in how we deal with it, because we assess the mother and a newborn as well and give them advice.*

*(FGD, hospital)*
Discussion

The overall results in this thesis highlight that this IPPC facilitation intervention was an acceptable and applicable approach in improving the quality of PPC in this low-resource suburb. Facilitation is likely to have contributed to HCPs critical thinking and reflections of their practices which in turn, led to identification of problems and solutions to improve PPC. To organise the discussion, the elements of the PARIHS framework: evidence, context and facilitation will be used to further the understanding of the IPPC intervention results. The WHO Quality of Care Framework for maternal and newborn health [27] will be used as a lens for advancing thoughts on PPC quality improvement results of this intervention.

The use of evidence paradox in low-resource settings

The understanding of the nature of available evidence in the context in which the knowledge is to be used is of upmost importance, particularly in low-income countries [33]. Evidence, as outlined in the PARIHS framework, constitutes four sub-elements: research, clinical experience, patient experience, and local information [33]. This framework considers that evidence is multifaceted and that negotiation along each four sub-element is crucial. A successful implementation process is likely if: robust and rigorous research evidence exists; clinical opinion consensus is reached; patients are actively involved and their views valued; and local information is systematically analysed and evaluated [33].

The baseline results of the present thesis highlighted gaps in each of the four sub-elements of evidence in the PARIHS framework, which is alarming, considering the implication for barriers to the implementation of improvement interventions. The HCPs were unaware of the national PPC guidelines and the local information related to PPC was deficient [23]. They reported lacking access to knowledge produced by research conducted locally and beyond [55]. These results are similar to other previous studies conducted in the country [24, 56, 57].

The low involvement of HCPs in the development of guidelines, and in designing and conducting studies in their area, may have contributed to the lack
of access and familiarity with existing evidence. This also means that the development of policies and the knowledge produced is less influenced by the contextual experience. The general lack of resources in the health institutions in the suburbs contributes to low levels of information literacy, which negatively affects access to knowledge. A study in southern Tanzania on information systems indicated that HCPs lack skills in data interpretation and use, which was considered an impediment for evidence utilization in their practices [58]. Globally, unfamiliarity and low use of guidelines in clinical practice is reported, and this undermines the utilization and translation of scientific knowledge into practice [59]. These studies, and those that contribute to this thesis, support the concept that the knowledge-do gap in Tanzania is grave, similar to a widely reported observation, globally.

Herein lies the paradox: while HCPs are keen to improve care by operating at the local level, they lack access to the necessary knowledge to act on existing evidence. Thus, it is because they are without the resources to build on global evidence that they are unable to make links between the knowledge of the local context with any of the other elements of the PARIHS framework. The very resource that should facilitate their engagement in providing better care is the one that is preventing them from doing so.

Inefficiency of knowledge [60], low levels of applicability and usability, and a lack of implementation strategies [61] are major reasons reported for low use of guidelines in different settings. The quality grading employed in this thesis, is based on national PPC guidelines after its introduction in the IG, and showed that none of the HCPs reached the level of good quality of care. The difficulty to attend to the excessive care items in the guidelines could be one explanation for failure to achieve a good quality of care. The low use of research evidence reported in the current and previous studies [60, 61] in this area limit opportunities for feedback and critique of these studies from the practice and its ability to influence policies, such as, for example, guidelines.

The results of this thesis indicate an improvement in the use of the national PPC guidelines which facilitated the uptake of research and its integration in practices in the IG. The HCPs gained an ability to realise gaps in their practices, for instance, identifying discrepancies in registers, reaching consensus, and taking actions on its improvement. This is a step towards strengthening the uptake of evidence and providing feedback from practice that should be considered during policy development. Such an improvement, derived from the bottom up, may contribute the sustainability of high quality care.
The influence of contextual factors on the intervention

Context is the second element of the PARIHS framework and is defined as the environment in which the intervention is implemented [43]. The sub-elements of context are: culture, leadership, evaluation and resources.

The results of this thesis indicate that a lack of material, space and low numbers of health professionals were the main barriers to improving the quality of PPC in health institutions. The top-down leadership approach dominates and the culture encourages HCPs to wait to be told what to do. These results are similar to those of other studies conducted in Tanzania [39, 62] and from other low-income countries [63]. Although the decentralization of power in the health system is stipulated in the policies aiming to encourage involvement and local decision-making, studies report the persisting centralization of power [39]. The dominating top-down authority structure limits HCPs’ levels of engagement in critical reflection of their own practices, including the use of evidence to change practice.

The improvement, aided by such strategies as increasing material resources in the IPPC intervention, were brought about as a result of facilitated team efforts through the exploration of better and cheaper options available locally and improvisation in the use of existing resources. The use of facilitators who are aware of the context may have contributed to these positive results. While interventions in the community in other settings have increased attendance and access to care, poor quality of care is increasingly reported to contribute to mortality at health institutions [27], suggesting the need for interventions to target health systems and the community simultaneously.

Facilitation interventions are a potential means for promoting quality improvement

Facilitation, according to the PARIHS framework, is considered to be an active component where the facilitator applies a variety of methods to enable the implementation of evidence into practice [33]. The facilitators’ role is to empower individuals to assume goal-oriented actions that lead to the improvement of their practices [33].

The IPPC intervention involved facilitators who interacted regularly with their colleagues and the supervisor in improving PPC. The supervisor, along with the facilitators, created an awareness of the suboptimal quality, the importance of PPC and the HCPs’ roles in promoting it, and their potential for improving care for mothers and newborns. Interactions among facilitators and between
facilitators and IPPC teams encouraged critical reflection and clinical consensus regarding PPC at their workplaces. The clinical consensus [33] reached among HCPs and their high motivation [64] in improving PPC are considered to be crucial enablers of a successful implementation.

Interventions using facilitators from women’s groups have been widely used, particularly in community sensitization to improve the maternal and newborn health in low- and middle-income countries [34, 35, 47]. Contrary to these studies, the facilitators in the IPPC intervention were recruited from among HCPs, and they focused on improving quality of care in health institutions. These interventions recruited facilitators from women’s groups, who held influential positions in the community and were thus able to identify problems and mobilize actions, which is considered to have contributed to the improved outcome [35]. Similarly, the facilitators in the IPPC intervention had good knowledge of the health system, a better understanding of IPPC teams work situation, and were capable of leading others in identifying local problems, taking appropriate actions, and attracting mothers to utilize PPC. In that way, HCPs were able to identify problems and mobilize actions within their own context of health institutions. These interventions and the IPPC intervention show common results, including: improved knowledge and professional confidence, collaboration and teamwork; improved motivation; and improved communication among participants.

The current facilitation intervention improved mothers’ PPC attendance and awareness, a result comparable to those reported from similar interventions. In Canada, facilitation intervention improved HCPs’ communication and enhanced reflection on their practices [65]. Furthermore, facilitation interventions in Bangladesh reported the improved decision-making of women in relation to accessing healthcare [47] and their health knowledge related to child health [46]. The facilitation interventions thus contribute to improved health knowledge for both HCPs and mothers, which, in turn, improves care outcomes.

The training provided for the facilitators in the IPPC intervention focused on strengthening their capacity to enable the meaningful participation of IPPC teams, the promoting of teamwork, self-assessment of their own practices, and taking control of the PPC practices at their workplaces. To enact change by IPPC teams, the planning of activities, communication, networking, teamwork and collaboration were central to improvement and facilitation was considered instrumental in promoting these attributes. The HCPs claimed that their teams were strengthened during the course of the intervention, particularly as they jointly engaged in problem-solving activities. A systematic review on teamwork effectiveness revealed similar results [64]. This review indicated that teamwork in various contexts, including healthcare, improves performance,
particularly if attention is given to adequate preparation (e.g. setting goals and actions), support (the facilitators in this thesis), and reflection on performance and feedback [66]. The review also indicated that teamwork is strengthened through practices and not merely the educational lectures that may be provided [66]. Another systematic review that involved 26 studies indicated that teamwork contributes to quality of care improvement through collaboration and cohesiveness among HCPs [67].

While teamwork and collaboration are important for quality improvement, the development of effective and sustainable teams is challenging, and sometimes HCPs’ differences in perceptions about teamwork contribute to a team’s ineffectiveness [67]. For instance, a team’s breakdown was reported to have occurred due to different types of knowledge being referred to by nurses and physicians about the same patient and to different training programmes being suggested for generating such knowledge [68]. To ensure the team’s effectiveness, an understanding of the team’s characteristics and the facilitation of its improvement [67] was encouraged in the present intervention.

**Improving postpartum care quality is a multidimensional agenda**

The quality of care is described as a complex phenomenon using three concepts: structure, process, and outcome. These concepts in the WHO Quality of Care Framework for maternal and newborn health are described as: the health system (structure) which enables the two dimensions of provision and experiences of care (process) to occur; and improved quality of care, which increases the desired individual and institutional outcomes [27].

The results of this thesis indicate that the IPPC intervention improved HCPs’ knowledge and skills, professional confidence, and motivation to improve PPC. Using various strategies, HCPs mobilized physical resources and improved their practices in PPC provision. These are likely to have contributed to improve PPC. Competent and motivated HCPs and the availability of resources are described as being critical in improving the quality of care for mothers and newborns in health institutions [27].

Evidence-based practices, actionable information systems and functioning referral systems are important domains for quality improvement outlined in the WHO framework. Implementation of PPC guidelines in the IPPC intervention is a step for evidence-based practices. However, based on the definition of quality of care as per the experts described in this thesis, none of HCPs
achieved good quality of care. This result is partly related to the accepted notion that many care items in the national guidelines affect their applicability. Despite that, using guidelines to guide PPC practices created opportunities for critical reflection of practices and improvement by HCPs. For instance, they discovered that registry books consisted of inadequate space for the care items that were outlined in the guidelines. As a response to this gap, they sought alternatives and suggestions for improvement from the responsible authority. This should be considered a milestone in HCPs’ utilization of evidence and contribution to the health information system in institutions in the IG. The improvement of guidelines to promote evidence utilization and an information system capable of enabling the review and audit of care are called for.

The results also highlight that PPC in the studied area is fragmented, lacks continuity, and there is inadequate communication of care provided to mothers and newborns within and between institutions. Despite the known levels of care in the health system as a whole; the dispensary, health centres, and the hospital, referral system between these levels is claimed by HCPs to comprise deficiencies such as delays of care. These insufficiencies are barriers to good quality of care.

Effective communication, respect and dignity, and emotional support are experience of care domains in the WHO framework that emphasize the need for HCPs to create awareness of, and to provide care with, respect and dignity to mothers and newborns. Mothers in the baseline studies reported high levels of satisfaction with care when injection for immunization was the main type of care available. A similarly high satisfaction level was reported in the endline studies, but this time, mothers enthusiastically described their fulfillment by referring to the care provided to them and their newborn as well as sharing their views for further improvement. While high levels of satisfaction in both studies can be seen as paradoxical results, it can also be understood that mothers were unaware of what to expect during the baseline studies and that the awareness of PPC and their expectation of care increased after the intervention. Similar paradoxical results have been reported by studies in low- and middle-income countries, which also concluded that low expectations and inadequate understanding about the care provided are contributing factors [57, 69]. It is likely that HCPs in the IPPC intervention improved on the mentioned domains of quality of care, increasing mothers’ urge to seek out PPC and increase their attendance at health institutions, as reported in the studies of this thesis.

The notion of outcome, defined as the consequences of care [45], and constituting coverage of key practices and people-centered outcomes [27], was not addressed in this thesis. However, evidence from other settings [70, 71] has shown that PPC is beneficial for the health of mothers and newborns, and the
use of evidence-based PPC guidelines [23, 51] have been established to improve the quality of care provided to mothers and newborns.

In conclusion, the IPPC facilitation intervention in this thesis highlights promising results in improving the quality of PPC. Despite evidence paradoxes and several contextual barriers to implementation, HCPs demonstrated potential for addressing these deficits and translating knowledge into practice to improve quality of PPC at health institutions in the studied area.

Methodological considerations

This thesis describes the level of quality improvement based on the changes seen and perceived but does not test the effect of the intervention on the quality of PPC. The almost non-existent PPC consultations observed during the baseline study hindered statistical testing of the difference between the IG and CG at endline.

The involvement of external Tanzanian RCH experts to provide comments on the definition of quality of PPC is a strength. However, the outcome of this process was limited and should be seen as the start for further discussion among experts on definition of good quality of PPC in this setting. The response rate was low and perhaps the method we used to approach them—emails and phone calls—could have discouraged their participation. Employing a combination of these methods with face-to-face discussions using a Delphi method [72, 73], or further Delphi discussions alone, could probably hold experts together and yield consensus.

Trustworthiness

The criteria set to judge the trustworthiness in qualitative studies are credibility, transferability, dependability and confirmability, while the terms reliability and validity are often used for quantitative studies [74].

Credibility refers to the congruency between the findings and the data [75]. Triangulation was used in the studies of this thesis to enhance credibility. Triangulation, which could be of data, investigators or methods, is defined as the examination of a phenomenon from different perspectives [76]. The studies in this thesis used data from multiple sources collected using different methodologies and involving researchers with differing expertise. Data were handled carefully, codes were repeatedly compared with data during analysis, and writ-
ten memos and descriptions of the codes were recorded to maintain their consistency and the meanings assigned to them. Regular discussions took place between the research assistants during data collection, which allowed the researchers to be open to critical reflection and to contribute collectively to the refinement of the results, this adds significantly to the credibility of the studies in this thesis.

Transferability is defined as the extent to which the findings can be applied in other contexts [76]. The detailed descriptions of the study context and the characteristics of participants, and the presentation of participant quotes, enable the readers to evaluate the transferability of the results to other contexts. Similarly, providing this level of description also facilitates the evaluation of the consistency and accuracy of the findings with regards to the data, which is often referred to as dependability [76]. The transcripts were verified against the FGD audio-recordings as well as after translation was completed to reduce the risk of losing information when handling these data.

Confirmability means that the reader is able to approve that the findings are drawn from the data and not the researcher’s own pre-understanding and assumptions [74, 76]. Providing detailed descriptions about the study’s methodology, as well as notes about my pre-understanding/thoughts during the process, and having continuing discussions with supervisors and co-authors, enhanced a more conscious process, which helped to focus on the participants’ responses.

Validity, in quantitative studies, determines whether the measurements are accurate and that they measure what they intend to [76, 77]. Adopting a validated questionnaire is a strength of the studies in this thesis. However, the modifications made to this established questionnaire may have distorted its original validity and reliability, thus its further validation by Tanzanian professional experts in RCH, who could also address contextual issues, became necessary to further promote the validity of the measurements used in these studies.

Reliability is defined as the degree of consistency in the scores reported in repeated measurements [76]. Six research assistants were trained on data collection procedures and research tools during the endline evaluation. The kappa statistics were used to test the inter-rater reliability, meaning the extent to which they agreed in the scoring of the care items in the checklist while observing PPC practices at the same location and time. The results reflect that the scores were correct representations of the variables measured.
Reflexivity

Reflexivity is defined as researchers’ critical reflection on their own roles, actions, relationships with participants and how these elements may affect the outcome of the research process [74]. This self-reflection contributes to strengthening the credibility of the study [76]. My pre-understanding of the context and my role in the clinical supervision of midwifery students in government-owned institutions contributed to personal insights on the barriers to providing good PPC and how these could be addressed to promote an improvement in quality. Addressing the barriers was more complicated than I had previously thought. Furthermore, my engagement for a year with facilitators may have positively contributed to the achievement of the intervention. However, this could also affect the kind of data received from them for the evaluation of the intervention outcomes. To obtain a reflected critical position in relation to my pre-understanding and relationship with; the participants, the data, and the results, frequent discussion were conducted with supervisors and research colleagues. This helped me to become more conscious and to advance my thoughts and understanding about the advantages and potential risks in the research process. The reflections and discussions that I engaged in with my own supervisors, and by using co-researchers and research assistants in the data collection process, contributed to a multifaceted understanding of the research process and the results of this thesis.
Conclusion and recommendation

Conclusion
Facilitation intervention was an acceptable and applicable approach and indicates promising results in improving the quality of PPC and increasing mothers’ attendance. The facilitators and the HCPs perceived that the intervention improved their knowledge, professional confidence, and mothers’ positive responses. They developed skills in collaboration and teamwork, networking, innovation, planning, and communication, which made them more proactive in lobbying and negotiation with leaders in relation to quality improvement in their workplace. Our findings suggest the need for a revision of the definition of quality of PPC to prioritize care.

Recommendations for future interventions
The IPPC intervention, as far as we know, is the first of its kind in Tanzania. The results of this intervention add to the internationally growing knowledge on facilitation interventions and has inspired researchers, HCPs and policy makers to identify useful strategies for the improvement of quality of care, particularly in low-income settings. The facilitation interventions are recommended to strengthen and scale-up PPC. The facilitation of HCPs, and the encouragement of teamwork and collaboration within and between health institutions, may earn promising results in PPC quality improvement in Tanzania and elsewhere.

To further develop the definition of quality of PPC, we recommend more work on the PPC guidelines to define the minimum package requirements for PPC, which will help to define and measure quality of care. The one-year duration of the implementation of this intervention was short, given the contextual realities of multiple barriers and the new approaches to working introduced to the HCPs, thus, it is suggested that more time is provided in developing similar facilitation interventions.
Huduma ya afya baada ya kujifungua imekuwa haipewi kipaumbele kwa ujumla duniani kote, hasa katika nchi maskini bila kujali umuhimu wake katika kuboresha afya ya mama na mtoto. Lengo la andiko hili ilikuwa kutafiti njia na mipango inayoweza kuboresha huduma ya afya kwa akinamama na watoto baada ya kujifungua katika taasisi za afya zinazomilikiwa na serikali wilaya ya Ilala, Mkoa wa Dar es Salaam. Kuboresha Afya ya Mama na mtoto baada ya kujifungua ni kipaumbele katika utoaji huduma ya afya nchini Tanzania. Hata hivyo huduma hii ni eneo lililosahaulika kwani watoto na akina-mama wachache tu hufanyiwa uchunguzi ndani ya siku mbili baada ya kujifungua kipaumbele katika uroaji huduma kwa akina mama na watoto baada ya kujifungua ili kuboresha huduma ya mama na mtoto. Usimamizi wa huduma hii ni ule unaoanzia juu kuja chini. Watoa huduma ya afya kwa akina mama na watoto baada ya kujifungua katika vitcho vya afya vinavyomilikiwa na serikali, wanaona kuwa huduma hii ni ya msingi na ampambo inayoweza kuboresha huduma na uzazi. Huduma ya afya kwa akina mama na watoto baada ya kujifungua kwa mtazamo watoa huduma kwa kuwa inakuwa imetawanyika na haina mwenyewe, inakumbwa na adha ya kukosa watalalamu wa kutosha na inakosa mipepezo madhubuti ya uwezo. Usimamizi wa huduma hii ni ule unaoanzia juu kuwa chini hvivo kushindwa kupaicha kamili kutoka ngazi ya jamii na uzoa huduma. Watu walioshi- riki kwenye utafiti utafiti huu wanaamini kuwa huduma inaweza kuboresha kwa kutenga eneo malumi la kutolea huduma vitooni, kuratibu uoaji wa huduma, kutenga muda, rasilimali na kuboresha mawasiliano katika mfumo wa rufaa;
kujengea uwezo watoa huduma na usimamizi unao ruhusu kupeana mrefesho. Hari ya kuona huduma ina boresha kwa ujumla ni ya juu na ya kurudhisha.

Utekelezaji wa uboreshaji huduma baada ya kujifungua

Wawezeshaji na watoa huduma walitumia njia kuu nne katika utekelezaji wa namna ya kuboresha huduma ya mama na mtoto mara baada ya kujifungua. Njia hizo zilikuwa ni: kuongeza ulewa wa huduma ya afya kwa wamama na watoto baada ya kujifungua kwa watoa huduma na akina mama, kuhamasisha wataalamu wa afya na kupambania upatikanaji wa rasilimali na vifaa vinyohitajika, kuweka ratiba inayokubalika ya kutoa huduma, kupeana uwezo watoa huduma wa mamana na mtoto, katika kutoa huduma kwa akina mama, kuhamasisha wataalamu na kupeana taarifa na kuimarisha ushirikiano ndani na nje ya vitu. Uongezaji ulewa na utayari kwa watoa huduma vilifanyika kwa kutoa mafunzo ya kimakakati, mikutano na kuendeshaji kwa vitu. Mbinu iliyoitumika katika kuhakikisha huduma inatolewa kwa usahihi iliwa na pamoja na kufanya uchunguzi mteje ya kutoa huduma kwa mama na mtoto, uratibu na wataalamu wa afya na kutoa huduma ndani na nje ya kituo cha afya. Ushirikiano wa kati ya watoa huduma ndani na nje ya kituo ulitisha hamasa na wawezeshaji na kutoa huduma kwa mamana tofauti kipindi chote cha utekelezaji. Watoa huduma walifanya kazi kwa ushirika na kutengeza mtandao ndani na nje ya vitu.

Matokeo ya uwezeshaji katika kuboresha huduma baada ya kujifungua

Matokeo ya uwezeshaji na utekelezaji wa huduma kwa mama na mtoto baada ya kujifungua yanaridhisha. Utekelezaji wa mradi huu unaweza kuwa umechangia kuboresha huduma ya mama na mtoto mara baada ya kujifungua katika vitu vinavyomilikiwa na serikali katika eneo la utafiti. Katika vitu vya ulinganishi, huduma ya mama na mtoto baada ya kujifungua bado hai kuwe po kabisa. Katika eneo la utekelezaji wa mradi ilishidiwa kuwa asilimia 80 ya huduma ilitolewa kwa akina mama na wao walikiri kurudhisha sana na huduma hiyo. Ulewa wa kwa washiriki wote uliongezeka lakini lile kundani lilo tekeza mradi, ulewa wao ulikuwa juu zaidi. Upimaji na ubora wa huduma ulitumia mipango na mikakati ya Kitaifa ya wizara ya Afya na ilijumuisha wataalamu tisa wa masuala ya ujazi. Hata hivyo, ilijidhihirisha kwamba hakuna mtoa huduma ambaye aliweza kuhudumia kwa kutoa huduma kwa kutoa uwezo vya huduma kama inavyoainishwa kwenye muongozo wa kitaifa wa

Kwa kuhitimisha, utafiti huu umedhihirisha kuwa utekelezaji na uwezeshaji ni njia mahususi ya kuboresha huduma ya mama na mtoto baada ya kujifungua hasa katika maeneo ambayo hayana rasilimali za kutosha. Kutumia kwa ustadi rasilimali chache zilizopo na kuboresha huduma kutokana na mazingira, pia kuwezesha watoa huduma ni kitu cha msingi na kinaweza kuboresha ubora wa huduma.
Postpartum care is neglected, globally, especially in low-income countries, despite its potential to improve maternal and newborn health. The aim of this thesis was to investigate a facilitation intervention to improve PPC at government-owned health institutions in Ilala suburb, Dar es Salaam, Tanzania. Healthcare has been made a priority in Tanzania, to improve the health of mothers and newborns after childbirth. Despite this, PPC is a forgotten area in the continuum of care, with very few mothers and newborns being assessed within two days after childbirth, a period when the risk of deaths is highest. Data were collected before and after the implementation from healthcare providers, facilitators, and postpartum mothers in government-owned institutions in Ilala, the intervention area, and Temeke, the comparison group area, to inform the designing and evaluation of the intervention.

This thesis assessed HCPs’ knowledge, attitudes and PPC practices in government-owned health institutions in Dar es Salaam, Tanzania. The baseline mixed methods study indicated that no or few PPC consultations are conducted during the first week after childbirth in both the intervention and comparison groups. Typically, the mothers come to the clinics with their newborns for BCG immunization only and are mostly satisfied with these services. Sixty-four percent of the providers had high levels of knowledge, and most had positive attitudes (72%) towards PPC. Healthcare providers with higher educational levels showed more positive attitudes (OR=2.5 CI 95% 1.03–6.13) than providers with low educational levels.

The HCPs’ perceptions of PPC and its potential for improvement in government-owned health institutions were gathered in both the intervention and comparison areas in Dar es Salaam, Tanzania. The providers perceived that PPC was suboptimal and that good care could have prevented maternal deaths. The existing PPC was described as being fragmented at understaffed institutions, lacked guidelines, and was organized in a top-down structure of leadership. The participants believed that PPC could be improved, and called for the improvement of: the organization of space, time, resources, communication and the referral system; providers’ knowledge; and supervision and feedback. Their commitment to advancing the quality of postpartum care was high.
The implementation of the intervention to improve postpartum care

Four main strategies were used by the facilitators and HCPs to improve PPC: increasing awareness of and knowledge about the PPC by HCPs and mothers; mobilizing professional and material resources; improving care routines, communication and documentation; and promoting an empowering and collaborative working style. To increase awareness and knowledge of PPC in HCPs and mothers was an overarching strategy in the training sessions, meetings and in clinical practice. The most prominent strategy for the mobilization of professional and material resources was the unleashing of the participants’ own potentials, their ability to conduct postpartum care, and to act as change agents. The strategies used to improve care routines included the assessment and care of mothers and newborns, the documentation of care, and improved communication among HCPs within and between institutions. Collaboration within and between institutions was encouraged by facilitators and was practiced in various ways during the implementation. Healthcare providers demonstrated improved teamwork and networking within and across institutions in the suburb.

The outcomes of a facilitation intervention to improve postpartum care

The intervention may have contributed to improved quality of PPC in government-owned health institutions in the intervention area. In the comparison group, PPC continued to be next to non-existent. In the intervention group at endline, some PPC practices were observed in more than 80% of the consultations and mothers were highly satisfied with the care. The HCPs’ knowledge levels increased in both groups but was higher in the intervention group. The grading of the quality of PPC was based on the national guidelines and involved nine Tanzanian reproductive health experts. It showed that none of the providers reached the level defined in the grading as good quality of care. The facilitators and HCPs perceived that the intervention improved: their PPC knowledge and professional confidence; and mothers’ increased attendance at health institutions to seek for PPC.

To conclude, this thesis highlights the facilitation intervention as a promising approach for the implementation of evidence into practice and its potential for improving quality of care in a low-resource setting. To maximise the utilization of limited resources and the improvisation of contextually relevant options, the facilitation of HCPs is crucial and may contribute to improvement of quality of care.
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