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## Postpartum care content and delivery throughout the African continent: an integrative review

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### Abstract

**Objective**—The objective of this review was to describe and evaluate the content of postpartum care and models of delivery throughout the African continent.

**Design**—Integrative review was used to allow for the combination of studies using diverse research methodologies.

**Data sources**—A comprehensive search strategy using the phrases ‘postpartum period’, ‘healthcare delivery’, and ‘Africa,’ including all spelling variants and countries within the continent, was used in the following databases: PubMed, Cumulative Index of Nursing and Allied Health Literature Plus, and Embase for studies published through September 2019.

**Review method**—The integrative review process included five stages: problem identification, literature search, data evaluation, data analysis and presentation. Twelve studies from eight African countries were identified in the search and met the inclusion criteria for the review. The Mixed Methods Appraisal Tool was used to evaluate the quality of the studies included in the review. The theoretical framework developed by the World Health Organization Maternal Morbidity Working Group for healthcare interventions to address maternal morbidity was used for data analysis and to synthesize the results for presentation.

**Results**—Definitions of the postpartum period varied among studies with service delivery ranging from six weeks to one year postpartum. There was no standard package of postpartum care across studies. Based on the World Health Organization theoretical framework, five primary topics were covered in postpartum care interventions: preventive care and counseling, health systems innovation, a life course approach, family planning, and health literacy and education. In contrast, five gaps in content of postpartum care services and service delivery included: integration

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Ethical approval

Not applicable

Conflict of interest

None declared

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of screening and treatment of noncommunicable diseases with maternal healthcare, intimate partner violence screening, social protection, a rights-based approach, and social vulnerability. No study addressed all aspects of the World Health Organization framework to address maternal morbidity.

**Conclusions**—The results from this review indicate the need to address gaps in postpartum care services throughout the African continent in order to reduce maternal morbidity. Re-conceptualizing the paradigm of maternal health to take a life course approach and focusing future research on developing and building interventions to target postpartum care and healthcare delivery of postpartum care are necessary and important in efforts to reduce maternal morbidity and improve health outcomes for mother and child.

### Keywords

Africa; healthcare delivery; maternal health; postpartum period

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### Introduction

Postpartum care from the time of birth to the first year of life sets the stage for long-term health outcomes and well-being for both the mother and her child (ACOG, 2018; World Health Organization (WHO), 2013). Rates of maternal and infant morbidity and mortality are high throughout the African continent (Geller et al., 2018). The majority of maternal deaths occur in the first month postpartum, and the majority of infant deaths occur during their first month of life, making this a critical time in the lives of mothers and their newborn babies. The first month postpartum is critical, but maternal morbidity and mortality risks extend up to one year postpartum, with important events during the year including navigating breastfeeding challenges, issues with intimacy, and psychosocial adaptations and transitions to a parental role, all of which can make women and children vulnerable to poor health outcomes (Fahey and Shenassa, 2013; Finlayson et al., 2020). Further, women often disengage from care in the year following a birth. If Human Immunodeficiency Virus (HIV) positive or with other chronic health issues, they may drop out of treatment, leading to disease progression and increased risk of sexual and mother-to-child HIV transmission (Knettel et al., 2018). Thus increased attention to health risks and recovery beyond the immediate postpartum period is needed and the first year following childbirth is an important window for identifying and managing health and social challenges (Fahey and Shenassa, 2013). However, postpartum care is often a neglected part of the maternal and child healthcare continuum.

The World Health Organization (WHO) has care guidelines for the first six weeks postpartum in low resource settings. The guidelines discuss timing and content of postpartum visits based on recommendations in the literature. The WHO recommends that every mother and baby should have at least four postpartum visits within the first six weeks regardless of birth setting: 1) within the first 24 hours; 2) day 3 (48–72 hours); 3) between days 7–14; and 4) at six weeks postpartum (World Health Organization (WHO), 2013). Despite these clear guidelines, there remain unmet needs in postpartum care implementation in low and middle-income countries (LMICs) (Langlois et al., 2015). One study conducted in 30 LMICs found that only 40% of all women who had a live birth in the past five

years attended one postpartum care visit (Langlois et al., 2015). An integrative review of literature found that a lack of awareness of postpartum care, lack of autonomy, negative provider attitudes, low rates of health literacy, and low socioeconomic status negatively affect women's attendance of postpartum care in developing countries (Adams and Smith, 2018).

The WHO postpartum care guideline offers a helpful set of recommendations for postpartum care content for the first six weeks of the postpartum period. They include some of the content and services listed above: preventive care and counseling, mental health, intimate partner violence (IPV), and family planning. Further, recommendations include physical assessments of the baby and mother, as well as counseling on the following topics: exclusive breastfeeding; cord care; emotional wellbeing and postpartum depression screening; observation of any risks, signs, and symptoms of domestic abuse; resumption of sexual intercourse; maternal health warning signs (e.g. postpartum hemorrhage, pre-eclampsia, infection and thromboembolism); nutrition; hygiene; family planning; safe sex; insecticide-impregnated bed nets where indicated; exercise; iron and folic acid supplementation; and psychosocial support (World Health Organization (WHO), 2013). However, they do not extend any guidance past the first six weeks postpartum.

In the last several years, increasing attention is being paid to the extended postpartum period. The Global Burden of Disease study in 2015 found that late maternal deaths (from 42 days until one year postpartum), is a non-trivial contributor to maternal mortality even in low resource settings, and noted that HIV-related maternal deaths often occur in the late postpartum period (Kassebaum et al., 2016). Late maternal deaths are likely underestimated, as data are often lacking, therefore restricting measurement of maternal mortality to 42 days postpartum may underestimate total pregnancy-related deaths by up to 18% (Kassebaum et al., 2016; Lamadrid-Figueroa et al., 2016). Sub-Saharan Africa also has the highest burden of severe maternal morbidity with rates as high as 198 per 1,000 live births (Geller et al., 2018). Women who experience severe maternal morbidity or a near-miss event have been shown to have lower quality of life postpartum, increased risk of mortality, and increased risk of complications including from uncontrolled hypertension, cardiomyopathy, or congestive heart failure (Ferreira et al., 2020; Soma-Pillay et al., 2018). Other morbidities such as postpartum depression, urinary incontinence, obstetric fistula, and sexual dysfunction are less severe, but can be greatly distressing and last longer than the 6-week postpartum period (Andreucci et al., 2015; Gon et al., 2018; MacHiyama et al., 2017). Women may additionally face IPV and sexual and economic coercion in the extended postpartum period, which leads to significantly increased socioemotional problems in affected infants (Ahlfs-Dunn and Huth-Bocks, 2014; Mahenge et al., 2016).

Because the extended postpartum period is such a critical time period in the life course of women and infants, effective interventions that reduce maternal and infant morbidity and mortality during this time period are necessary. Recognizing the need to re-conceptualize maternal morbidity to include the diverse complications women face, including in the postpartum period, the WHO convened a Maternal Morbidity Working Group (MMWG) in 2012 (Say et al., 2018). Based on the findings of the WHO MMWG, Firoz et al.

(2018) developed a conceptual framework for healthcare interventions to address maternal morbidity centered on a life-course approach to maternal health (see Figure 1).

This WHO MMWG framework re-conceptualized maternal morbidity in order to integrate noncommunicable diseases (NCDs) into the maternal health agenda and to be inclusive of social determinants of health and factors that affect maternal morbidity beyond the immediate postpartum period, including IPV, mental health and social vulnerability across the lifespan (Firoz et al., 2018). The framework depicts the links between the concepts of pre-pregnancy, antenatal, postpartum, and long-term health of women. The framework highlights health systems innovation and systems strengthening (such as implementing novel group care models and strengthening linkages to primary care services) as an important facet of healthcare interventions, and depicts widening the scope of maternal health services and preventive care and counseling. By adding a focus on health systems innovation and health systems strengthening, the underlying causes of maternal morbidity and the importance of the health system's role in influencing maternal health outcomes are prioritized (Firoz et al., 2018). The framework also depicts maternal health as linked to governmental policies such as universal health coverage, health literacy and education, and social protection (to provide a minimum level of subsistence), demonstrating that maternal health is directly related to social determinants of health (Firoz et al., 2018). It thereby shifts the focus from surviving to thriving for women around the world (Firoz et al., 2018).

Currently there are no reviews examining the content and delivery of postpartum care, and there are no standardized postpartum care packages throughout the African continent beyond the first six weeks of the postpartum period. A previous systematic as well as an integrative review have examined factors that influence women's use of postpartum care in developing countries, but not care content (Adams and Smith, 2018; Langlois et al., 2015). Our purpose was to conduct an integrative review to describe and evaluate the content and service-delivery models existing for postpartum care throughout the African continent and determine remaining gaps using the WHO MMWG conceptual framework for healthcare interventions to address maternal morbidity and the WHO guidelines for postpartum care. This synthesis of evidence seeks to provide a first step to inform the development of future postpartum care interventions to reduce maternal and infant morbidity and mortality throughout the African continent.

## Methods

This review followed the five-stage integrative review framework of Whittemore and Knafl (2005): problem identification, literature search, data evaluation, data analysis and presentation. This integrative review approach allowed for the inclusion of articles that employ diverse methodologies including both experimental and non-experimental research (Whittemore and Knafl, 2005).

### Stage 1: Problem Identification

Increasing attention is being paid to the importance of the postpartum period. Simultaneously, attention is being drawn to the need to re-conceptualize the concept of maternal morbidity and recognize that it extends beyond the immediate postpartum period,

typically defined as 6 weeks after birth. Throughout the African continent there are high rates of maternal morbidity and mortality and no standardized package of postpartum care exists (Geller et al., 2018). Greater understanding of effective interventions to address maternal morbidity in the postpartum period is a first step to developing a standardized care package for women and their infants that can be adapted for each context in which it is implemented. Therefore, the purpose of this review was to describe and evaluate the content of postpartum care and models of delivery throughout the African continent.

### **Stage 2: Literature Search**

Two of the authors developed the search strategy with assistance from a university health science informationist. The search focused on postpartum care and healthcare delivery throughout the African continent. The search terms were first developed for the PubMed database (see Appendix A). The search was then adapted for additional databases - the Cumulative Index of Nursing and Allied Health Literature Plus (CINAHL Plus) and Embase. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flow diagram depicts the search process used for this review (see Figure 2) (Moher et al., 2009).

We identified 3091 potentially relevant sources, and after removal of duplicates 2735 remained for review by the primary author. Of the 2735 records, 2642 were deemed not applicable to the focus of the review based on the abstract review. The 93 abstracts remaining were then assessed by the primary author using the following inclusion criteria: primary research, conducted in the African continent, and addressed content of comprehensive postpartum care beyond the immediate 48 hours after birth. The exclusion criteria included: studies that took place before 2013; studies that focused on only one aspect of postpartum care for example, HIV or family planning as this does not give an understanding of all services provided to women based on guidelines; studies that did not include women in the postpartum period in the sample or outcomes; studies that only focus on utilization of services; and studies for which no full-text articles were available. Through the full text review, 81 articles were excluded based on the above inclusion and exclusion criteria. A total of 12 studies were included in the review.

### **Stage 3: Data evaluation**

The final sample included experimental and non-experimental studies. Study methodologies included a wide variety of methods: randomized control trial (n=2), cross sectional (n=1), mixed methods (n=4), qualitative (n=4), and quality improvement (n=1). Studies were grouped according to study design in order to evaluate overall study quality during the data analysis (Whittemore and Knafl, 2005).

### **Stage 4: Data analysis**

Data from the final sample were extracted and summarized, coded, and categorized into an integrated display of the content and services of postpartum care in order to identify areas covered and gaps in care delivery by two of the authors (Whittemore and Knafl, 2005). A constant comparison method was used as the overarching approach to take extracted data and create systematic categories and find themes and relationships in the data as

described in Whittemore and Knafl's (2005) integrative review method (Whittemore and Knafl, 2005). This involved a four-phase process including: data reduction (organizing studies based on methodology); data display (used Microsoft Excel to collate data into codes); data comparison (examined data display to find patterns); and conclusion drawing and verification (interpreting the data and presentation of results) (Whittemore and Knafl, 2005). We used the WHO MMWG to create initial categories and themes were added as they emerged. This was primarily a deductive process. The categories and themes are all depicted in Table 1.

### **Stage 5: Presentation of results**

A synthesis table (see Table 1) was developed to comprehensively display the content of postpartum care as found in the literature search. Results were categorized based on the constructs and concepts of the WHO MMWG framework for healthcare interventions to address maternal morbidity in addition to two themes that emerged from the data.

### **Quality Appraisal**

The Mixed Methods Appraisal Tool (MMAT) was used to evaluate the quality of the studies (Hong et al., 2018). Because there is no standard critique instrument across study methodologies for an integrative review, Whittemore and Knafl (2005) suggest critiquing each study based on its study design. Therefore, the MMAT was used to evaluate the quality of each study according to study design as it provides guidance for appraising qualitative, quantitative and mixed methods studies. Similar to other appraisal tools, the MMAT discourages scoring studies, but rather using the tool as guidance for looking at criteria to gauge the quality of each study. While the majority of qualitative studies met all quality criteria, one study did not include enough detail to appraise data collection methods. Of the quantitative studies, in general they met all the quality criteria, although one randomized control was unable to blind all outcome assessors. Of the mixed methods studies, they met all the quality criteria except for some studies did not provide a detailed rationale for using a mixed methods approach. After quality appraisal, all studies from the final sample were retained for the review.

### **Conceptual Model/Synthesis**

Data were grouped according to each construct and concept depicted in the WHO MMWG framework: integration of NCDs and maternal health, universal health coverage, health literacy and education, social protection, IPV, mental health, social vulnerability, rights-based approach, widen scope of care, preventive care and counseling, and health systems innovation. Health systems strengthening and family planning were added as emergent themes from the data. These categories aided in synthesizing the results and revealing gaps in postpartum care content and delivery.

## **Results**

### **Study Characteristics**

All 12 studies were original research articles published from 2015 to 2019.

Diverse research methods were included in the sample, as stated above: four qualitative studies, five mixed-methods studies and 10 quantitative studies were included in the review. The studies included were conducted in Burkina Faso (n=3), Ghana (n=1), Kenya (n=3), Malawi (n=2), Mozambique (n=1), Rwanda (n=1), South Africa (n=1), and Tanzania (n=3) (one study was a multi-country study).

### **Sample Characteristics**

Samples consisted of either women or providers and sample size varied from 41 to 1,511 women, and 10 to 57 healthcare providers and governmental officials per study. The ages of women participants ranged from 15 to 49 years old. Providers included skilled birth attendants (nurses, midwives and doctors), traditional birth assistants (TBAs), and community health workers (CHWs). Other participants included experts in midwifery and government officials.

The following categories for synthesizing the results from the final sample on postpartum care content and services are based on the WHO conceptual framework for healthcare interventions to address maternal morbidity (see Figure 1) (Firoz et al., 2018). Results are summarized below and in Table 1 and Table 2.

### **Noncommunicable diseases (NCDs) and intimate partner violence (IPV)**

No studies included in this review addressed the integration of screening and treatment of NCDs into postpartum care delivery, nor screening and/or interventions for IPV as a part of postpartum care.

### **Universal health coverage**

Five studies discussed universal health coverage in Kenya, Tanzania, and Burkina Faso. Two studies examined integrating maternal and child health services in the postpartum period into existing free healthcare services in Burkina Faso to increase access to care and patient satisfaction while reducing costs (Yugbaré Belemsaga et al., 2018a, 2018b). One study described an intervention to bring healthcare services to the community to reach more women and children in Kenya (Kermode et al., 2017). Two qualitative studies of providers in Tanzania revealed that even though the government promotes free and universal postpartum care coverage, frequent stock outs and other barriers prevent realization of universal health coverage (Kohi et al., 2017; Macdonald et al., 2019).

### **Health literacy and education**

Six studies included health literacy and education. Here health literacy and education are broadly defined based on the Firoz et al. (2018) framework to mean ability of women to access resources, better understand counseling, and make informed decisions leading to improved maternal and child health outcomes (Firoz et al., 2018). Focusing on the health facility, three studies incorporated health literacy and education to postpartum care with provider training to provide increased health education during visits in areas such as breastfeeding and infant feeding, review of newborn and maternal danger signs, preventing health problems (use of insecticide-treated nets, immunizations), newborn and infant cognitive development, self-care, and other healthy practices (Sayinzoga et al., 2018;

Yugbaré Belemsaga et al., 2018a, 2018b). One study in Malawi reported on utilizing health surveillance assistants for maternal postpartum health education through home visits, but they were only able to reach coverage of 30% of sampled households (Guenther et al., 2019).

### **Social protection**

Social protection is defined as ensuring a minimum level of subsistence, for example income generating activities, temporary or permanent housing and access to healthcare services (Firoz et al., 2018). Achieving universal health coverage is a key component of ensuring social protection (Firoz et al., 2018). One qualitative study exploring provider's perspectives in Tanzania on postpartum care noted that there is a disconnect between politicians rhetoric around free healthcare for mothers/newborns and the reality of costs of healthcare services which leads to delays in care and endangers maternal and child health outcomes (Pallangyo et al., 2017).

### **Mental health**

Three studies mentioned postpartum mental health. As part of the Missed Opportunities in Maternal and Infant Health (MOMI) project in Mozambique, an intervention was planned to improve facility healthcare worker assessment of postpartum mothers including their "mental/emotional status" through use of standardized assessment checklists, but no specific details were provided on checklist content (Duysburgh et al., 2015). Two studies mentioned the importance of maternal mental health, but did not specifically describe how to address assessing for postpartum depression as a part of postpartum care interventions (Kohi et al., 2017; Pallangyo et al., 2017). Two studies in this sample that addressed mental health included assessing maternal mental/emotional status as part of a postpartum care package in healthcare facilities (Duysburgh et al., 2015; Kohi et al., 2017). One qualitative study in Tanzania examining provider's perspectives on postpartum care noted they felt that provider's knowledge of mental health needed to be strengthened to improve quality of services given in postpartum care (Pallangyo et al., 2017).

### **Social vulnerability**

Social vulnerability is defined as a comprehensive view of health and nonclinical risk factors or social determinants of health (Firoz et al., 2018). This includes focusing on addressing social vulnerabilities such as intimate partner violence, mental health and malnutrition (Firoz et al., 2018). No studies addressed social vulnerability nor social determinants of health as they related to postpartum care.

### **Rights-based approach**

One study addressed maternal care as a right to health in the approach to postpartum care, but did not address ways to achieve it (Macdonald et al., 2019).

### **Widen scope of care**

Firoz et al. (2018) recommends widening the scope of maternal care from emphasis on emergency obstetric care to continuity in care, extending the length of postpartum care,



and integration with other services. Five studies addressed this. Three studies in Burkina Faso showed that integrating maternal and neonatal care at the health facility increased coverage of maternal postpartum visits (Duysburgh et al., 2015; Yugbaré Belemsaga et al., 2018a, 2018b). This model was also utilized in Mozambique (Duysburgh et al., 2015). In Rwanda, group postpartum care was implemented additionally integrating well-child checks. Two studies provided more postpartum services through community outreach programs in Kenya and Malawi (Guenther et al., 2019; McConnell et al., 2016). The randomized trial in Kenya found that community health workers (CHWs) conducting postnatal home visits with a standardized checklist could lead to more timely care seeking behaviors and recognition of health problems (McConnell et al., 2016). The cross-sectional surveys conducted in Malawi showed that despite expanding services to community-based home visits, there was still low coverage in the postpartum period (Guenther et al., 2019).

### **Preventive care and counseling**

Preventive care and counseling was the most widely addressed topic, featured in 10 studies. All of the studies addressing preventive care and counseling discussed including maternal and newborn danger signs in their postpartum care interventions. Other topics included in preventive care and counseling included newborn care, nutrition, breastfeeding and infant feeding, bed net use, return to fertility and sexual activity, and HIV and sexually transmitted infection (STI) screenings. In Burkina Faso, Ghana, Mozambique, and Rwanda health workers at health facilities delivered counseling (Duysburgh et al., 2015; Okawa et al., 2019; Sayinzoga et al., 2018; Yugbaré Belemsaga et al., 2018a, 2018b). Community health workers performed counseling during postpartum home visits in Burkina Faso, Kenya, and Malawi (Duysburgh et al., 2015; Guenther et al., 2019; McConnell et al., 2016). Two studies examined counseling performed by traditional birth attendants (TBAs), one in Kenya with women in pastoralist communities (Kermode et al., 2017) and another in South Africa (Ngunyulu et al., 2015). The study of TBAs in South Africa showed that TBAs do routinely counsel on need for good nutrition postpartum, how to prevent postpartum bleeding, and need for infection prevention, but some of their practices including counseling to delay return to sexual activity for two years postpartum are not evidence-based (Ngunyulu et al., 2015).

### **Health systems innovation**

Seven studies addressed novel ways to approach postpartum care. Two studies described health systems innovation through community-based initiatives related to postpartum care (Kermode et al., 2017; McConnell et al., 2016). In Kenyan pastoralist communities, an innovative partnership between TBAs and skilled birth attendants (SBAs) was created to attempt to improve postpartum care and promote respectful maternity care (Kermode et al., 2017). One study examined the feasibility of using groups to deliver postpartum care integrated with well child care (Sayinzoga et al., 2018). Five of these studies examined some way to change the delivery of postpartum care in the health facility by either strengthening the quality of facilities, introducing programs to increase access to care or improve continuity of care, or integrating services to increase coverage and quality of postpartum care (Duysburgh et al., 2015; McConnell et al., 2016; Okawa et al., 2019; Yugbaré Belemsaga et al., 2018a, 2018b).

### Health system strengthening

All four studies that addressed this included provider trainings on postpartum care in order to strengthen services. These studies found that there was a need to reinforce training on postpartum care knowledge among providers to manage immediate postpartum complications and for extended postpartum care and counseling. Three studies in Burkina Faso included training of facility healthcare workers to improve postpartum care and were able to achieve improved coverage through integration with well-child checkups after focused training of primary care health workers (Duysburgh et al., 2015; Yugbaré Belemsaga et al., 2018a, 2018b). Increased training of TBAs was performed to help SBAs monitor women postpartum in pastoralist communities in Kenya (Kermode et al., 2017).

### Life course approach

The five studies that addressed a life course approach discussed linkages to either antenatal care or long-term health in designing, implementing and evaluating the interventions studied. Three studies looked at providing a continuum of care from antenatal to postpartum (Guenther et al., 2019; Okawa et al., 2019; Sayinzoga et al., 2018). The interventions to integrate postpartum care with immunizations in Burkina Faso focused on extending maternal healthcare contact past 6 weeks postpartum, a key life-course approach concept (Firoz et al., 2018; Yugbaré Belemsaga et al., 2018a, 2018b). They found that rural areas were more likely to meet targets than urban areas, particularly for postnatal coverage at 6–8 weeks postpartum (Yugbaré Belemsaga et al., 2018b). However, Yugbaré et al. (2018b) in Burkina Faso found integration past 6 weeks postpartum was difficult and thus did not report on any outcomes related to the 9 month postpartum visit. Yugbaré et al. (2018a) did find that care between postpartum day 45–90 significantly increased, but remained quite low overall (3% pre- and 17% post-intervention). Qualitative data from this study showed women did not deem extended postnatal care necessary (Yugbaré Belemsaga et al., 2018a). Similarly, small but significant gains occurred in HIV diagnosis and treatment (0% vs. 10%) and counseling on HIV prevention (5% to 12%) at postpartum days 45–90 (Yugbaré Belemsaga et al., 2018a).

### Family planning

Eight studies directly addressed family planning. Facility-based healthcare worker training improved counseling and family planning uptake in Burkina Faso (Duysburgh et al., 2015; Yugbaré Belemsaga et al., 2018a, 2018b). Tanzanian providers additionally provided rapid family planning counseling in the health facility postpartum prior to discharge, as overcrowding precluded women from staying for the recommended 24 hours postpartum (Kohi et al., 2017). Each of the studies that addressed family planning discussed health education around postpartum family planning and providing access to family planning for women during postpartum care visits. In Malawi, community health care workers discussed family planning during postpartum home visits, but no outcome data were available (Guenther et al., 2019). Family planning counseling was additionally incorporated into the novel group antepartum and postpartum care intervention in Rwanda, but no outcomes were provided (Sayinzoga et al., 2018). Studies in Kenya, Malawi, Rwanda, and Tanzania, Kenya

referred to family planning as a part of postpartum care services (Guenther et al., 2019; Kohi et al., 2017; McConnell et al., 2016; Sayinzoga et al., 201

## Discussion

No study incorporated all components of the WHO framework for healthcare interventions to address maternal morbidity and the WHO postnatal care guidelines. This further highlights the lack of a standardized postpartum care package beyond the first six weeks postpartum, and the need for one in order to provide quality services for women and families. Synthesizing the literature according to Firoz et al.'s (2018) framework revealed both gaps and strengths of postpartum care content and services and models of service delivery throughout the African continent.

## Content and Services

Based on this review, the five topics primarily covered in postpartum care interventions were: preventive care and counseling, health systems innovation, family planning, universal health coverage, and health literacy and education. Preventive care and counseling subjects varied among studies. Content covered included counseling about: infant feeding practices, HIV/STI testing, family planning, cervical screening, return to fertility/sexual activity, deworming, maternal danger signs, infant danger signs, and bed net usage in malaria endemic areas. No study reviewed included all of the recommended care and counseling that is outlined in the WHO guidelines. Notably missing from the studies was counseling on signs and symptoms of IPV, mental health and postpartum depression counseling, exercise, and psychosocial support counseling. This review highlights the need to incorporate more preventive care and counseling in addition to what is already being provided, consistent with the WHO guidelines listed above including: exclusive breastfeeding; cord care; emotional wellbeing and postpartum depression screening; observation of any risks, signs and symptoms of domestic abuse; resumption of sexual intercourse; maternal health warning signs (e.g. postpartum hemorrhage, pre-eclampsia, infection and thromboembolism); nutrition; hygiene; family planning; safe sex; insecticide-impregnated bed nets where indicated; exercise; iron and folic acid supplementation; and psychosocial support.

The studies that involved a health systems innovation such as the integration of postpartum care in well-child and child immunization services reported implementation challenges such as difficulties re-organizing and integrating already fragmented services (Yugbaré Belemsaga et al., 2018a, 2018b). Understanding implementation barriers highlights the importance of health systems strengthening and policy frameworks to support the integration of services in order to increase access to postpartum care services and enable providers to work as efficiently and cost effectively as possible. Similar implementation barriers were described in qualitative studies with midwives reporting challenges with the following resources: space, equipment, staffing and government responsibility (Kohi et al., 2017; Pallangyo et al., 2017). Studies relying on home visits to increase access to postpartum care suffered from plateaus in coverage, particularly in Malawi where the community health-

workers are not residents of their covered communities and have many other essential duties to perform (Guenther et al., 2019; McConnell et al., 2016).

Postpartum family planning was included in the majority of studies and some reported the rates of family planning uptake, but these studies did not describe what types of family planning methods were offered. Other studies in the literature focus specifically on postpartum family planning and were not included in this review as only studies reporting full-scope postpartum care were included, and therefore we might have missed some family planning content that is incorporated into postpartum care content.

Five gaps in postpartum care content and services as well as models of service delivery include: integration of non-communicable diseases (NCDs); IPV screening; social protection; a rights-based approach; and consideration of social vulnerability. Discussion of NCDs was not incorporated in any of the studies reviewed. There is an increasing burden of chronic diseases and NCDs among pregnant and postpartum women underscoring the importance of integrating the agendas of NCDs and maternal health (Firoz et al., 2018). For example, pregnancy complications such as gestational hypertension and gestational diabetes lead to increased risk of cardiovascular disease and type II diabetes respectively (Kim et al., 2002; Robbins et al., 2011). Re-thinking the paradigm for maternal health to view it in a life course approach necessitates integrating NCDs into all maternal health activities. Future research should examine how to integrate NCDs and maternal health to meet evolving needs of women in LMICs (Azenha et al., 2013). This may additionally help women see the value of extended postpartum care, increasing demand generation.

Intimate partner violence (IPV) was not addressed in any of the studies in this sample, highlighting another major gap in postpartum care content. Strengthening the health system response through compassionate, competent and confidential care across the lifespan including the postpartum period is critical (World Health Organization (WHO), 2013). Studies throughout the African continent show the negative impact of IPV on pregnant women and women in the postpartum period, suggesting a need for increased awareness and IPV screening by skilled providers that should be incorporated in to all care, including postpartum care (Groves et al., 2015; Mahenge et al., 2016; Munro-Kramer et al., 2018). IPV in the postpartum period can have not only detrimental effects on a woman, but also negatively impact infant development further highlighting the importance of identifying families at risk (Ahlf-Dunn and Huth-Bocks, 2014). Further research should focus on determining best practices for assessing/screening for IPV in the postpartum context and respectfully responding to women to improve health and safety when they disclose violence.

Mental health was only addressed in three studies, and there was no mention of postpartum depression screening specifically. Postpartum depression is one of the most common complications in the postpartum period, affecting approximately 20% of women in low and middle-income countries (LMIC) (Gelaye et al., 2016). Therefore, it is important to incorporate it into preventive care and counseling, health education and literacy and screening during all postpartum health assessments. The Edinburgh Postnatal Depression Scale (EPDS) has been translated in to over 50 languages and validated in the following languages spoken throughout the African continent: Arabic, Amharic, French, Igbo,

Portuguese, and South African-English. Mental health is a neglected area in LMICs and future research should examine best practices for assessing mental health disorders such as postpartum depression and how to incorporate mental health assessments into postpartum care as well as ensure that resources for treatment are available and accessible (Gelaye et al., 2016).

### **Modes/models of Service Delivery**

It is also important to discuss the modes/models of delivery documented in this sample of studies. The mode of care delivery can impact the feasibility and affordability of programs, as well as the content that is delivered to women. Studies identified the need to increase training for providers and to work collaboratively with skilled or traditional birth attendants depending on the context of the provision of postpartum care (Kermode et al., 2017; Ngunyulu et al., 2015; Pallangyo et al., 2017). However, it is important to note that prior to training the content of postpartum care services needs to be enhanced, as increased contacts with providers does not always result in increased quality of care (Okawa et al., 2019).

Two studies focused on home visits as another strategy to deliver postpartum care. These studies revealed that home visits have the potential to lead to improved care seeking behavior and recognition of health problems as they arise for both mothers and infants (Guenther et al., 2019; McConnell et al., 2016). However, these were limited by coverage of home visits and relied heavily on community health worker notification of birth, which was difficult where community health workers did not reside within their communities (Guenther et al., 2019).

Another strategy to deliver postpartum care in this sample of studies was the use of group care as an innovative method to deliver postpartum care services (Sayinzoga et al., 2018). There is evidence that the group process improves maternal and infant health outcomes in the antenatal setting in several African countries but this has yet to be studied extensively in the postpartum care setting (Eluwa et al., 2018; Lori et al., 2017; Patil et al., 2017, 2013). It is recommended that further research be done to test the group care model in the postpartum period. It would be helpful to explore further strategies at the health systems level to improve the quality and content of postpartum care services in order to ensure comprehensive health services.

**Strengths and Limitations**—To our knowledge, this is the first integrative review exploring the content and delivery of postpartum care throughout the African continent. This is an important addition to the literature to provide a basis for future research to guide the implementation of interventions to address maternal morbidity. The review was conducted using a robust methodological framework and theoretical framework to guide synthesis of the data.

Limitations to this review included a lack of a standardized definition of the postpartum period making comparisons across studies difficult as content varied according to timing of postpartum assessments from 24 hours to one year postpartum. The inclusion criteria allowed for general content of postpartum care assessments but excluded those studies that focused on one particular aspect of postpartum care, therefore potentially excluding some

relevant publications. Studies included in the final data sample were not representative of all of the countries in the African continent (with only eight countries represented that met inclusion criteria) and were conducted in different contexts with different study designs making the ability to generalize limited. Only peer-reviewed studies were included, which excludes results from grey literature which could have provided more country specific data. Recognizing this limitation, we recommend that future inquiries look specifically at the grey literature and country specific postpartum care guidelines. In addition, only reviewing studies written in English is a potential limitation.

### **Implications for Policies**

The WHO MMWG framework for healthcare interventions to address maternal morbidity offers a foundation to base content and delivery of services past the first six weeks of postpartum care. It is recommended that further research examine providing postpartum care beyond the first six weeks and its impact on maternal and child health outcomes. One multi country study included in this review conducted a needs assessment and stakeholder analysis to find context-specific solutions for postpartum care (Duysburgh et al., 2015). It is recommended to use this same strategy or some form of participatory action research in future research to determine context-specific content for postpartum care in addition to determining the best way to deliver care. The WHO MMWG framework for healthcare intervention to reduce maternal morbidity can be used as a helpful tool to guide this research. It is crucial to address all of these important areas of maternal health in order to address maternal morbidity and mortality.

One multi-country study found that while maternal and newborn health is a national priority in countries, policies are not in place to prioritize postpartum care services (Duysburgh et al., 2015). One of the reasons for this is the lack of a standardized package of evidence-based practice for postpartum care on which to base programs and policies (Duysburgh et al., 2015). This review supports the results of Duysburgh et al. (2015) that strategies to improve postpartum care should include community outreach programs, home visits, the integration of maternal and child health services, and increased training of providers using a standard postpartum care package that can be adapted to diverse contexts and settings. Using the results of this review in addition to findings from previous integrative reviews examining factors that influence women's utilization of postpartum care could assist to create effective interventions to reduce maternal morbidity and mortality (Adams and Smith, 2018).

### **Implications for Practice**

This research is of particular importance for the field of nursing and midwifery as nurses and midwives are at the forefront of care throughout the African continent and represent over 50% of national health workforces in most countries (World Health Organization (WHO), 2020). When women and infants receive postpartum care it is most often delivered by a nurse or midwife, meaning it is essential to increase nursing and midwifery knowledge of best practices to create a standard of care for postpartum assessments and ultimately improve maternal and child health outcomes. It will be important to establish collaborations between nurses, midwives, physicians, policy makers, and most importantly women to

determine how to create a package of postpartum care to meet the needs of women and families.

### Implications for Research

Future studies should explore barriers and facilitators to the integration of maternal and well-child services in order to further the implementation science of postpartum care delivery and the integration of these services as recommended by Firoz et al. (2018). Qualitative data reported in this review support further research on demand-generation for postpartum care. This is particularly important in regards to integration of NCDs and consideration of care using a life-course approach. Future research in nursing and midwifery should be dedicated to developing a standardized package of postpartum care beyond the first six weeks of the postpartum period that can be adapted for contexts throughout the African continent as well as exploring group healthcare service delivery models.

### Conclusions

Postpartum care is an area that is often neglected in maternal health. The results from this review indicate there are major gaps in postpartum care content, most notably a lack of integration of NCDs, IPV screening, mental health, and a rights-based approach to care. No study included all aspects of the framework for healthcare interventions to address maternal morbidity and the WHO guidelines for postnatal care. These results indicate there is a need for future research to develop a standardized package of postpartum care that can be adapted for specific contexts from birth to one year postpartum to reduce maternal morbidity. Once a standardized package of postpartum care is developed, implementation studies should be conducted to examine the most cost-efficient and effective modes/models of healthcare delivery of postpartum care for women and families. Modes of care delivery that are promising to improve maternal health outcomes based on preliminary results include home visiting, community outreach programs, group models of care, and integration of maternal and child health services. Re-conceptualizing the paradigm of maternal health to take a life course approach and focusing future research on developing and building interventions to target postpartum care are necessary and important in efforts to reduce maternal and neonatal morbidity.

### Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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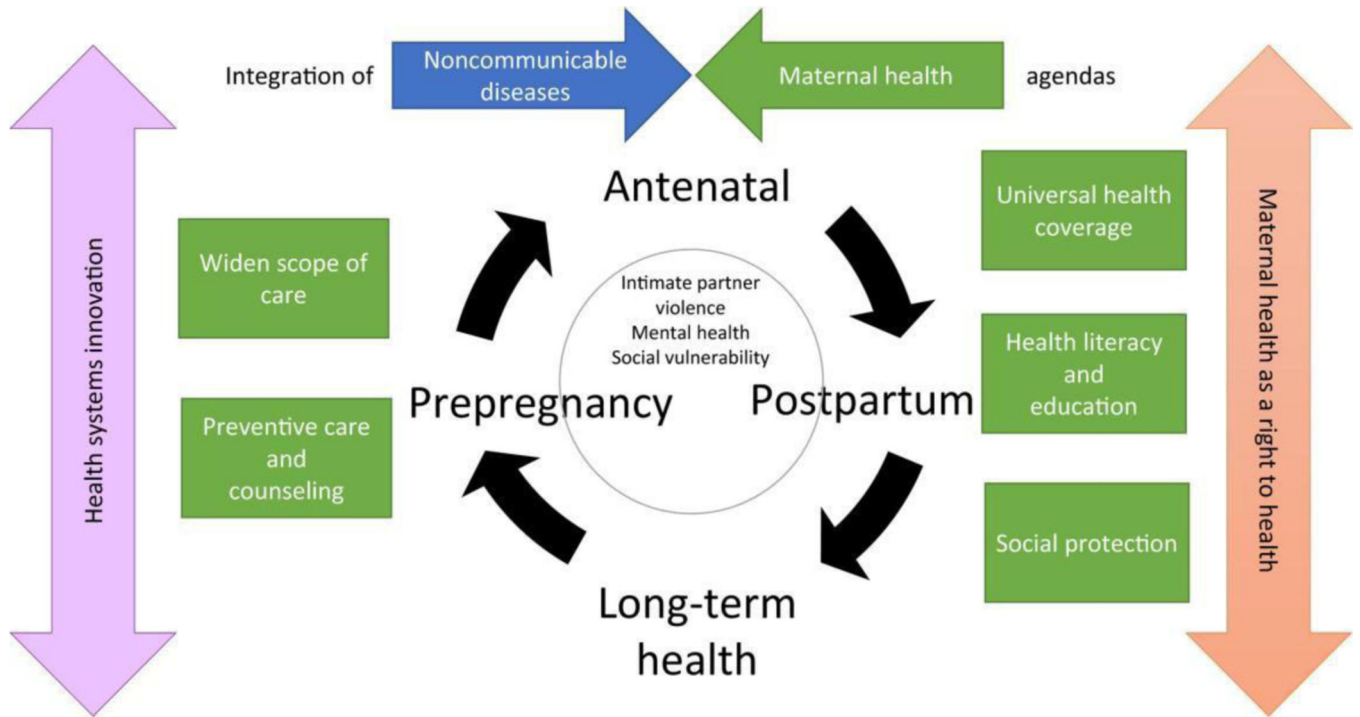
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### Highlights

- There is a lack of a standardized definition of the postpartum period.
- Identifies gaps in the literature related to postpartum care content and services.
- Provides a basis for future research to identify areas to improve postpartum care.



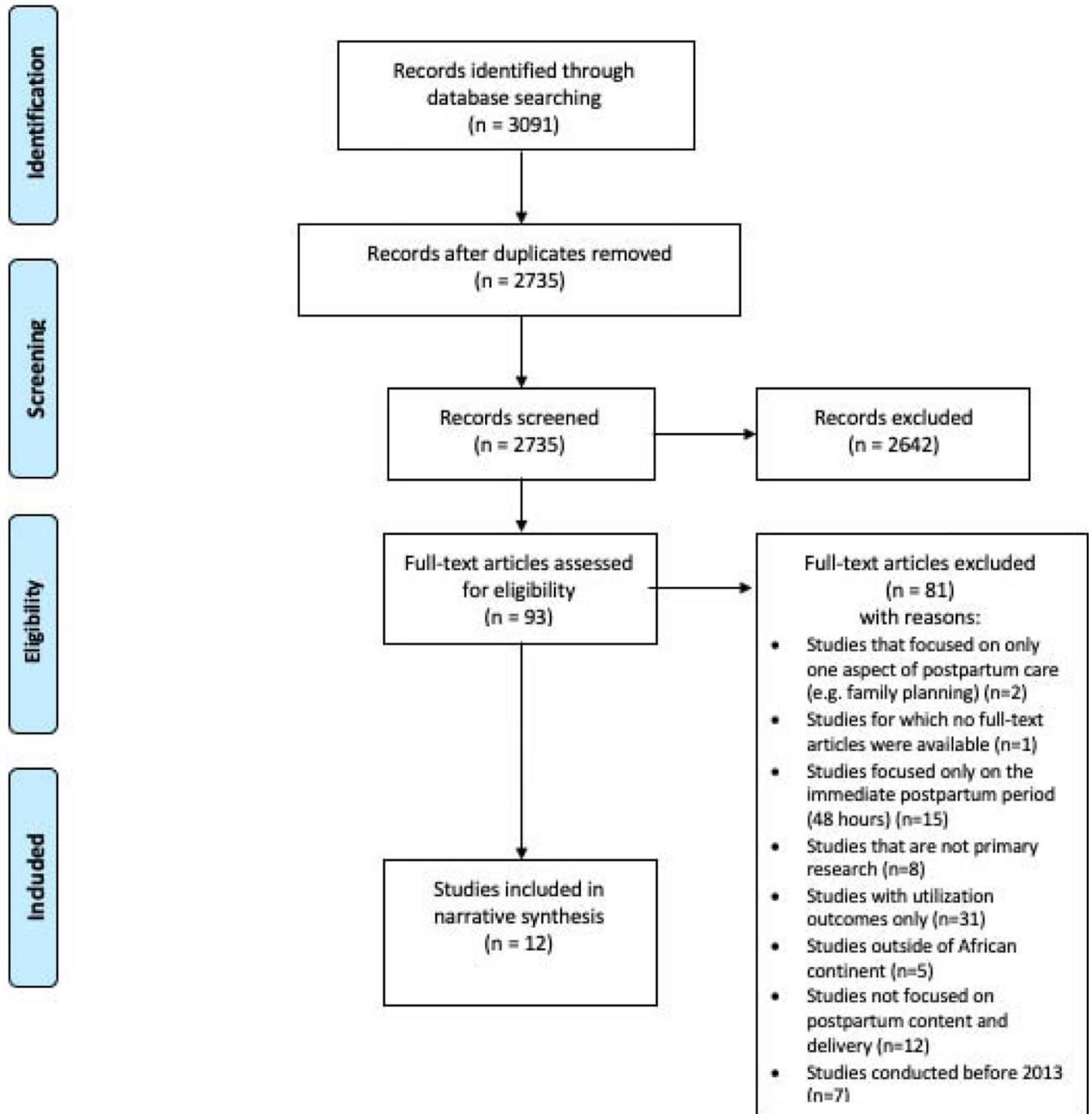
**Figure 1:** Framework for healthcare interventions to address maternal morbidity (Firoz et al., 2018)

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**Figure 2:**  
PRISMA flow diagram for the search process

**Table 1**

Synthesis of results grouped according to the framework for healthcare interventions to address maternal morbidity

Author (year)	Country	Design	Participants and sample size	Intervention	Results	Integration of NCD and maternal health	Universal health coverage	Health literacy and education	Social protection	Intimate partner violence
Duysburgh et al., 2015	Burkina Faso, Kenya, Malawi, Mozambique	Mixed methods	4 health districts	Used the four steps in systems thinking approach to design and select interventions	Specific policies for postpartum care are weak and there is very little evidence of effective postpartum care implementation. Based on findings the interventions selected by stakeholders mainly focused on increasing the availability and provision of postpartum services and improving the quality of postpartum care through strengthening postpartum services and care at facility and community level. This includes the introduction of postpartum home visits, strengthening postpartum outreach services, integration of postpartum services for the mother in child immunisation clinics, distribution of postpartum care guidelines among health workers and upgrading postpartum care knowledge and skills through training.			✓		
Guenther, et al., 2019	Malawi	Cross sectional surveys	Women with children 0 to 6 months (n=140). Health Surveillance Assistants (n=31)	Survey to evaluate the Community-Based Maternal and Newborn Care (CBMNC)	Low coverage of home visits soon after delivery - questions the feasibility of the current visitation			✓		



Author (year)	Country	Design	Participants and sample size	Intervention	Results	Integration of NCD and maternal health	Universal health coverage	Health literacy and education	Social protection	Intimate partner violence
				package which includes three postnatal home visits within the first 8 days of delivery	schedule. Only 42.9% of mothers reported that the health surveillance assistant (HSA) was informed of the delivery. Most HSAs doing home visits had the necessary equipment and supplies.					
Kermode et al., 2017	Kenya	Mixed methods	19 focus groups (traditional birth attendants (TBAs), community health workers, women and men); 15 interviews with stakeholders	Qualitative investigation, TBA survey, facility audit and meetings with policymakers and film and booklet to document lives and work of TBAs and SBAs	Creating a collaborative skilled birth attendant (SBA) and traditional birth attendant (TBA) model of care has the potential to maximize safety of women and accelerate the transition from births attended by TBAs to being attended by SBAs		✓			
Kohi et al., 2017	Tanzania	Qualitative	Providers (n=13)	N/A	Assessment was a major theme that emerged with three subthemes surrounding postnatal care. Guidelines impacted daily practice; providers were frustrated to deal with inadequate working conditions; providers voiced the importance of completing comprehensive assessments and believed mother were sent home too early.		✓			
Macdonald et al., 2018	Tanzania	Qualitative	Providers (n=13)	N/A	Four main themes emerged providing postpartum care: space, equipment, staffing and government responsibility		✓			

Author (year)	Country	Design	Participants and sample size	Intervention	Results	Integration of NCD and maternal health	Universal health coverage	Health literacy and education	Social protection	Intimate partner violence
McConnell et al., 2016	Kenya	Randomized trial	Women/ infant dyads(n=109)	Community health worker home visits or phone calls with a checklist	Home visits with checklist increased likelihood women recognized postnatal problems and seek care. Both home visit and phone checklist led to earlier initiation of care. Evidence that CHW administered postnatal checklists can lead to more timely care-seeking and recognition of problems.			✓		
Ngunyulu, Mulaudzi & Peu, 2015	South Africa	Qualitative	Traditional birth attendants (n=15)	N/A	Researchers highlighted similarities and differences between indigenous and Western postnatal care practices. Similarities included: maintenance of good nutrition, breastfeeding, prevention of postpartum bleeding and infection. Differences included: importance of colostrum, exclusive breastfeeding practices, timing of cutting of umbilical cord and methods of contraception.					
Okawa et al., 2019	Ghana	Cluster randomized controlled effectiveness-implementation hybrid trial	Women (n=1490 at endline)	Continuum-of-care intervention package on adequate contacts of women and newborn with healthcare providers and their reception of high-quality antenatal, peripartum	The interventions improved contacts with healthcare providers and quality of care during postnatal care. However, having adequate contact did not guarantee high-quality care.					

Author (year)	Country	Design	Participants and sample size	Intervention	Results	Integration of NCD and maternal health	Universal health coverage	Health literacy and education	Social protection	Intimate partner violence
				and postnatal care						
Pallangyo et al., 2017	Tanzania	Qualitative	Nurse-midwives (n=42); medical and clinical officers (n=13)	N/A	Perception that postpartum care was suboptimal, fragmented and lacks guidelines. Motivation to enhance postpartum care was high.				✓	
Sayinzoga et al., 2018	Rwanda	Quality improvement	Rwandan stakeholders (n=10)	Use of a facilitated group process to design and implement a group antenatal and postnatal care program	A customized group ANC and PNC model and guidelines for its introduction were developed as well as a description of the model and implementation plan.			✓		
Yugbare Belemsaga et al., 2018a	Burkina Faso	Mixed methods	Quantitative: women within 1 year postpartum (n=1511); qualitative: CHWs (n=18); FHWs(n=24); key informants (n=15)	Intervention package that included the integration of maternal postpartum care in infant immunization services In 12 health facilities	Increase in the coverage of postpartum services from 50% before the intervention to 81% one year after start of intervention. Integration of maternal postpartum care in immunization clinic was low. Difficulties in restructuring and organizing services hindered the integration.		✓	✓		
Yugbare Belemsaga et al., 2018b	Burkina Faso	Mixed methods	Health facility (n=12)	Intervention package that included the integration of maternal postpartum care in infant immunization services in 12 health facilities	Increased trend of monitoring indicators. Large improvements in the detection and management of postpartum hemorrhage, sepsis and newborn fever or low temperature. Intervention was less successful to raise postpartum care at 6–8 weeks and later due to the existence of		✓	✓		

Author (year)	Country	Design	Participants and sample size	Intervention	Results	Integration of NCD and maternal health	Universal health coverage	Health literacy and education	Social protection	Intimate partner violence
					structural barriers (e.g. lack of collaboration among health workers and high staff turnover).					

Abbreviations: ANC, antenatal care; CHW, community health work; FHW, facility health worker; HSA, health surveillance assistant; NCD, non-communicable diseases; PNC, postnatal care; SBA, skilled birth attendant; TBA, traditional birth attendant

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**Table 2:**

Summary of the total number of studies including conceptual framework constructs in content and delivery of postpartum care

Construct	Number of studies that include construct (n=12)
Integration of NCDs and maternal health	0
Universal health coverage	5
Health literacy and education	6
Social protection	1
Intimate partner violence	0
Mental health	3
Social vulnerability	0
Rights-based approach	1
Widen scope of care	6
Preventive care and counseling	10
Health systems innovation	7
Health system strengthening	4
Life course approach	5
Family planning	8

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