REVIEW ARTICLE

Exploring the value of shared responsibility for improving birth preparedness and complications readiness practices: A literature review

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Abstract

Birth Preparedness and Complication Readiness (BPCR) is a comprehensive strategy to ensure a safer pregnancy. The BPCR shared responsibilities matrix describes the roles of policymakers, facility managers, health care providers, communities, families, and women in ensuring that women and newborns receive skilled and timely maternal and newborn care that can positively improve health outcomes for mothers and their babies. The objective of the study was to describe a shared responsibility on roles to improve childbirth readiness practices and readiness in the face of complications. The literature was systematically obtained from online journal databases namely PubMed, Google Scholar, ScienceDirect, and other related sources, from 2018 to 2023. Sixteen articles on BPCR Interventions were described. Existing literature identifies the value of health care providers, communities, families, and women in shared responsibilities that can improve BPCR practices. We conclude that this review indicates that the value of pregnant women, facility managers, and policy makers in BPCR is still limited. *(Afr J Reprod Health 2024; 28 [10s]: 273-281).*

Keywords: The value; shared responsibility roles; birth preparedness; complication readiness

Résumé

La préparation à l'accouchement et la préparation aux complications (BPCR) sont une stratégie globale visant à garantir une grossesse plus sûre. La matrice des responsabilités partagées de la BPCR décrit les rôles des décideurs politiques, des gestionnaires d'établissements, des prestataires de soins de santé, des communautés, des familles et des femmes pour garantir que les femmes et les nouveau-nés reçoivent des soins maternels et néonatals qualifiés et opportuns qui peuvent améliorer positivement les résultats de santé des mères et de leurs bébés. L'objectif de l'étude était de décrire une responsabilité partagée sur les rôles pour améliorer les pratiques de préparation à l'accouchement et la préparation face aux complications. La littérature a été systématiquement obtenue à partir de bases de données de revues en ligne, à savoir PubMed, Google Scholar, ScienceDirect et d'autres sources connexes, de 2018 à 2023. Seize articles sur les interventions de BPCR ont été décrits. La littérature existante identifie la valeur des prestataires de soins de santé, des communautés, des familles et des femmes dans les responsabilités partagées qui peuvent améliorer les pratiques de BPCR. Nous concluons que cette étude indique que la valeur des femmes enceintes, des gestionnaires d'établissements et des décideurs politiques dans la BPCR est encore limitée. *(Afr J Reprod Health 2024; 28 [10s]: 273-281).*

Mots-clés: La valeur; les rôles de responsabilité partagée; la préparation à l'accouchement; la préparation aux complications

Introduction

Birth Preparedness and Complications Readiness (BPCR) is the process of planning for normal delivery and anticipating the actions needed in case of an emergency. It helps to ensure that women can reach skilled delivery care when labour begins and reduce delays in seeking care and arriving in health care facilities when women experience obstetric complications. In addition, it emanates from the fact that most pregnancy complications are sudden and unpredictable. The BPCR package promotes active preparation and decision-making of pregnant mothers and their families. However, their access to care is hampered by delays. Moreover, various delays contribute to high maternal and neonatal mortality in developing countries. The causes of these delays have been identified as logistic and financial concerns, unsupportive policies, and gaps in services. In Ethiopia, efforts have been made to

encourage the implementation of BPCR by promoting focused antenatal care (ANC) while stressing the counselling of women as an important element of the strategy[1].

Birth Preparedness and Complications Readiness should be endorsed as an essential component of safe motherhood. Programs to reduce delays in care-seeking for obstetric emergencies has been proven to positively impact birth outcomes. Birth preparedness and complication readiness (BPCR) is the process of planning for normal delivery and anticipating the actions needed in case of an emergency. It helps to ensure that women can reach skilled delivery care when labour begins and reduce delay to seek care and to reach health care facilities that occur when women experience obstetric complications. In addition, it emanates from the fact that most pregnancy complications are sudden and unpredictable. Exposure to BPCR interventions was associated with a reduction of 18% in neonatal mortality risk and reduction of 28% in maternal mortality risk. BPCR interventions were also associated with an increased likelihood of care use in the event of newborn illness, clean cutting of the umbilical cord, and initiation of breastfeeding in the first hour of life. With adequate population coverage, BPCR interventions reduce maternal and neonatal mortality in low-resource settings[2] while a well-prepared pregnant woman is more likely to be less anxious during the birthing process[3].

The prevalence of birth preparedness practices in developing countries has been identified. In northern Ethiopia, the prevalence is low below 50%[4]. Similar results were also obtained in northeast Ethiopia and southwest Ethiopia[1,5]. This is influenced by several factors including married women, governmental employed women, those who attend antenatal care service, planned pregnancy, those who had saving habits, duration of pregnancy near to 9 months, education[4].Experience of obstetrical complications, starting time for antenatal care visits, advice about birth preparedness and complication readiness, and awareness of key danger signs during childbirth and the postpartum period were associated with birth preparedness and complication readiness[1]. The place of residence, occupation, knowledge about birth preparedness and complication readiness, and knowing danger signs during pregnancy were the factors associated with birth preparedness and complication readiness[5].Only 42.0% were knowledgeable about BPCR, and 57.0% were birth-prepared and complication ready. Primiparity and knowledge of BPCR were predictive of BPCR[6].

The objective of this review is to map and summarize published studies on shared responsibility for the value in birth preparedness and complication readiness to help identify research gaps, and to make recommendations to strengthen practice, public health policy formulation, and future studies.

Methods

Literature was obtained from online journal databases, namely PubMed, Google Scholar, and ScienceDirect, Google Scholar search engine and other related sources, systematically from 2018 to 2023.The analysis of articles followed the previously established inclusion and exclusion criteria. To be included, articles had to meet the following criteria: (1) Population: pregnant women, husbands or families, service providers, facility managers, and communities in developing countries (2) Intervention: Intervention provided to improve BPCR practices in pregnant women, husbands or families, service providers, facility managers, and communities during pregnancy (3) Study design: cross sectional study and experimental study. Unpublished studies and publications without original data, for instance, reviews, were excluded. The literature search was limited to human subjects. Articles in languages other than English were excluded. A total of 16 studies were included in the synthesis. The following search terms were combined: [(“BPCR” OR “birth preparedness” OR “birth preparedness and complication readiness”) AND ("pregnancy" OR "pregnant woman" OR “pregnant” OR “prenatal” OR “antenatal” OR “perinatal” OR “pregnancies”) AND (“intervention”) OR ("experimental study") AND (“husband”) OR (“family”) OR (“provider”) OR (“facility managers”) OR (“policy makers”) OR (“community based”)]

A total of 782 records were retrieved from the three main databases (PubMed=705, ScienceDirect=69, and Google Scholar =8). All of the records were retrieved and screened for duplicates. The results of the review yielded a total of 16 articles. A detailed search result is presented in Figure 1.

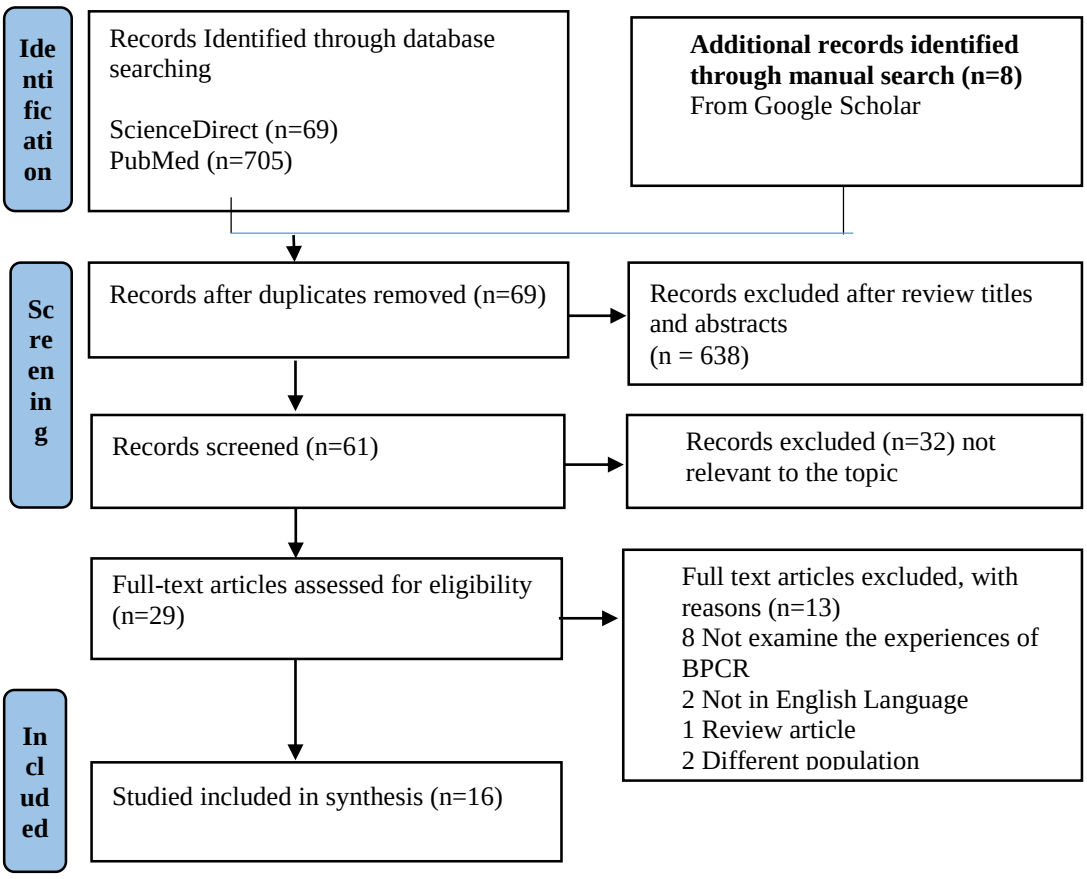

Figure 1: Literature search flowchart (PRISMA)

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram was applied to indicate the screening of the literature studies, as shown in Figure 1. This review was conducted and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMAuded studies.

Out of the 16 studies included in this review, eleven were quality cross-sectional studies, two were quasi-experimental, one was a facility-based follow-up study, one was a pre-post intervention study and one was a cluster-randomized trial. In addition, the included studies recruited 3675 pregnant women, 2923 husbands, 1271 couples (pregnant women and husbands), 194 pregnant women and families, and 80 Nurses/midwives. Of the 16 included studies from developing countries, 3 were from southern Ethiopia, 1 from eastern Ethiopia, 1 from northern Ethiopia, 2 from Tanzania, 2 from India, 1 from Bangladesh, 1 from Indonesia, 4 from Nigeria, and 1 from Pakistan.

Narrative synthesis

The results of the included articles are synthesized into the following 5 themes of the roles of shared responsibility to improve BPCR practices: (1) Women; (2) Family involved; (3) Providers; (4) Facility managers and policymakers and (5) Community-based.

The Maternal and Neonatal Health Program of Johns Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO) developed the BPCR matrix, which is a standard set of indicators that could be used across countries. The BPCR matrix explains the roles of policymakers, facility managers, healthcare providers, communities, families, and women in ensuring that women and newborns receive timely skilled maternal and neonatal care is based on the theory that preparing for childbirth and being ready for complications reduces delays in seeking and obtaining appropriate care[7].

1. Women

Two studies discussed the intervention of pregnant women in BPCR. One article explained that pregnant women who were given goal-oriented prenatal education intervention had better knowledge and practice of BPCR, a higher number of institutional deliveries[8]. BPCR practice includes identification of the Skilled Birth Attendant (SBA) with whom they intended to deliver, choosing a birth location, arranging for transportation to a health facility whenever labour commences, buying necessary birth supplies as required by the health facility, arranging for a temporary family carer while away for delivery and saving money for skilled care at childbirth. Another article revealed that efforts to improve BPCR practices by empowering pregnant women by strengthening pregnant women's forums and involving pregnant women in antenatal care since early pregnancy. Pregnant women becoming members of forums and participating in antenatal check-ups before or at four months of pregnancy are predictors of BPCR practices[9].

2. Family Involved

Approximately 50% (n=8) of the included studies described family involvement in BPCR practices. Two general articles discussed family interactions in BPCR practices[10,11]. One article described that within the family scope the role of the mother-in-law, the level of education of men and women, and relationships between families were still the most influential factors in BPCR. The tendency to do antenatal check-ups with mutual understanding between husband and wife and a good relationship between the mother and her mother-in-law and this relationship was important to ensure BPCR practices[10]. Another article revealed that key factors for improving birth outcomes were better in families given family-oriented antenatal education program interventions including variables of knowing health facilities in case of emergency, arranging assistance to go to health facilities for delivery, deciding the place of delivery with or by the pregnant mother, and visiting the antenatal clinic more than four times. The intended birth outcomes were less bleeding or convulsions during labor and delivery, fewer Caesarean sections, and fewer neonatal complications[11].

Six studies found that husband involvement can improve BPCR practices. Men were found to have a major role in BPCR. Their role includes supporting their pregnant wives by maintaining their health, providing financial support, assisting them in decision-making regarding treatment, providing support for complication readiness by arranging transportation, and facilitating hospital admission[11]. Husbands have strong decision-making power over their partners at both the community and household levels, and women have traditionally been restricted from decision-making. Cultural barriers, knowledge in recognizing potential complications, and facility service factors all contribute to the husband's involvement in BPCR planning[11].

Factors associated with husband involvement in BPCR planning are higher husband education level, high frequency of pregnancy check-ups, and long distance to health facilities[12]. Husband involvement is better in rural areas than in urban areas[13]. Common BPCR practices carried out by husbands are buying birth supplies and saving money for childbirth, allowing wives to attend ANC, and arranging transportation for childbirth. BPCR practices that are still lacking in husbands are accompanying wives to ANC, arranging transportation. and arranging blood for emergencies[14,15]. Predictors of husband involvement in BPCR in rural areas are young age higher education, and place of residence[13]. The influence of husband involvement in BPCR practices, namely the use of skilled midwives[16] and husband participation in BPCR in mothers treated with obstetric referrals in hospitals is positively associated with knowledge of danger signs, pregnancy planning status, and discussions with wives about pregnancy, but husbands still play a lesser role in identifying skilled midwives and blood donors[14].

3. Provider

Of the 16 articles, 2 discussed the role of health service providers in BPCR practices[17,18]. One article by Yuliana *et al*. identified that birth preparation increased with a strong midwife role, but did not specifically describe the form of midwife role in BPCR[17]. Another study by Mgbekem *et al*. reported that the role of nurses/midwives had a very strong positive relationship with BPCR practices in pregnant women[18]. The role of nurses/midwives in BPCR is to be responsible for maternal health education, discuss birth plans with the mother, collaborate with other health workers during birth-related emergencies, provide information on family

planning services, and teach about postnatal infant care skills, coordinate the BPCR process and must advocate for good roads and other facilities with community leaders[18].

4. Facility managers and policymakers

There has been no study that specifically addresses policies or programs from facility managers and policymakers. Studies for health program evaluation from managers of healthcare facilities and policymakers in the health sector are needed and should prioritize the implementation of activities and interventions that increase women's autonomy in decision-making, job opportunities, and economic capability to enhance their health-seeking behaviour. The local administrative bodies should also work to enhance household enrollment in health insurance schemes[19].

5. Community-based

The reviewers found four studies describing communities improving BPCR practices[20,21,22,23]. The study provides interventions in the form of Behavioural Change Intervention[20], Community-Based Continuous Training[21,22], and Community-Based Continuous Training[23]. The parties involved in the study were stakeholder engagement, household members, leaders of community associations/groups[20], community health workers (CHWs)[20,21], couples, village health workers[22], community volunteers, health extension workers, maternity waiting house services[23], and pregnant women[20,21,22,23]. The intervention components provided health education, emergency transportation facilitation, and fund-saving system, distribution of educational brochures/posters[20], socialization of pregnancy danger signs, BPCR and emergency response, trainings, routine socialization, and follow-up sessions. The impact of the interventions provided was an increase in BPCR practices especially in saving money[20], an increase in knowledge of elements of BPCR[20,22], the proportion of mothers undergoing antenatal care and giving birth in health facilities, participation in community-related BPCR activities, encouraging positive behaviours with increased levels of BPCR practices[21], having better pregnancy outcomes[22], and increasing utilization of institutional delivery care[23].

Discussion

This review provides important insights into the evidence on the role of shared responsibility in BPCR practices in developing countries. The results were synthesized from 16 articles. The evidence found describes the roles of pregnant women, husbands or family members, providers, and communities that can improve BPCR practices. The BPCR Matrix was introduced by the Maternal and Newborn Health (MNH) Programme of JHPIEGO and involves pregnant woman, her families, communities, health service providers, health institutions, and policymakers during pregnancy, labour and the postpartum period[24].

The role of pregnant women in BPCR is a form of empowerment as the rights and responsibilities of pregnant women towards their health and that of their babies which will then lead to improved health, including pregnancy and childbirth. Women's empowerment is generally positively associated with birth and postpartum outcomes in developing countries. feasible strategies to achieve positive birth outcomes for women and their babies[25]. BPCR facilitates safe childbirth through prenatal planning. BPCR is measured using a series of questions, including awareness of at least eight 'serious warning signs' during pregnancy, labour and delivery, and the postpartum period. In addition, planning for a trained midwife, saving for pregnancy, considering a health facility for delivery, transportation planning, and identifying blood donors in case of emergency. If women identify four or more components, they are considered ready for BPCR[24]. The findings of the two articles indicate that BPCR practices are a series of intervention research processes and not programs or policies from a region that can be evaluated and followed up.

The John Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO) created the BPCR shared responsibilities matrix, which further defines it as a process in which women, their husbands and their families (a) identify a skilled birth attendant and know how to contact and reach him or her, (b) identify a place for the birth to happen, (c) prepare items for the delivery, (d) attend antenatal care visits, (e) know the danger signs that signal maternal complications and implement a complication readiness plan, (f) know where to go and how to get

there for help during the delivery or in an emergency, (g) save money for the delivery and emergency situations, and (h) identify a blood donor. Preparing adequately by following these guidelines can greatly improve a woman's chance of survival[10]. The findings also explain that the involvement of men or families in BPCR practices has been implemented but not all elements are fulfilled such as blood donor preparation practices, transportation, and accompanying his wife during ANC. Similar findings were discussed by Chacko *et al* who also showed that men play a major role in BPCR, namely supporting their pregnant wives by maintaining their health, providing financial support, and assisting them in the decision-making process regarding treatment, providing support for complication readiness by arranging transportation, and facilitating the admission process at the hospital. This indicates a change in attitudes and practices from generation to generation regarding the role of men in childbirth preparation and their participation during childbirth. However, there is still a long way to go to realize the knowledge transfer and cultural transformation that is needed[26].

Limited studies show that the role of providers in improving BPCR practices is carried out by nurses and midwives with roles that are not clearly described and are incomplete according to recommendations. The role carried out is that nurses/midwives are responsible for maternal health education about the dangers of pregnancy and discussing birth plans with mothers[18]. Similarly, the implementation of the role of the community in the reviewed articles is described in community-based intervention studies from each party involved according to the needs and settings in the intervention study. Several studies that conducted interventions involved pregnant women and their partners, their families, providers, health facilities, and community-based to improve BPCR practices.

The BPCR Matrix also explains the role of policymakers and facility managers in preparing for childbirth and being ready for complications[27], but based on the review of the article, no research has been found that has conducted interventions or implemented programs/policies related to BPCR in health facilities or certain areas. Several studies have found that recommendations are made as a form of follow-up to the study results to be used as policies. Findings related to the BPCR practice policy for high-risk pregnant women according to the perception of health cadres are that the implementation of BPCR is significantly influenced by the understanding of standard procedures and policy targets, technical support from the health centres, interpersonal/organizational communication, the attitude of the implementer, and the availability of resources[28].

Major research gaps

There are significant gaps observed in the availability of evidence in this review. Most studies focused on evaluating BPCR practices and few described the specific roles they play to improve BPCR practices. Quantitative studies that are evaluations of BPCR-related policy programs have been conducted by facility managers and policymakers. Research that describes the ability of pregnant women as a form of empowerment and responsibility for their pregnancy in BPCR practices is still limited. The role references described in the studies are not as detailed as in the WHO or MNH JHPIEGO recommendations, more roles are carried out as intervention settings in research and involvement in programs to improve BPCR practices by pregnant women. In addition, there are still few studies that describe in detail the types of roles played, the impact of each role, and programs/activities/policies related to BPCR practices.

Interventional studies

Studies on interventions involving the synergy of the roles of all responsible parties through empowerment to improve BPCR practices are a type of study that is still limited. Intervention studies found Community Based Continuous Training, behavioral change intervention studies and community-based intervention packages but not all of these interventions explain in detail and comprehensively the roles of the parties involved.

Implications for future research

The gaps identified in this review provide opportunities for future research. In many developing countries, there is insufficient evidence on the roles of all stakeholders in improving BPCR practices. Future research could focus on evaluating the implementation of roles in BPCR practices according to WHO recommendations or evidence-

based practices by all stakeholders and involving them in program interventions that can be used as policies for implementation in health facilities and in the community.

Implications for policy, programs, and practices

The results of the study indicate that in developing countries, all parties have not been adequately evaluated regarding their shared responsibilities in BPCR practices. Policies, programs, and practices can be focused on increasing the level of knowledge and practice through empowering pregnant women, husbands, families, and community-based. Evaluations are also carried out on the role of health workers and evaluations of programs or policies carried out in health facilities and policymakers related to BPCR. All interventions implemented have been adjusted to needs and can encourage awareness of all parties to carry out their roles to improve BPCR practices.

Strengths and limitations

This review was strengthened by following the PRISMA guidelines for review criteria. We highlighted the role of shared responsibility in improving BPCR according to the Maternal and Newborn Health Program of the Johns Hopkins Program for International Education in Gynaecology and Obstetrics. Findings identified limited interventions to empower pregnant women themselves to fulfill their rights and responsibilities for their own and their babies' health and the absence of a role for facility managers and policymakers to improve BPCR practices. The information provided can be used to guide researchers in designing comprehensive interventions involving all stakeholders that can be formulated as policies to reduce maternal and newborn mortality. This review has several limitations. First, the literature comes from a few countries that are not representative of developing countries in general. However, in all studies, there is at least some information to suggest that our research terminology and techniques were appropriate for our research questions. Second, our review addresses the limitations of methodological weaknesses that may have affected the review findings. Third, the scope of the review was limited to studies published in English. There is no doubt that there may be relevant studies published in other languages that were not included. Nevertheless, our strict adherence to pre-established inclusion and exclusion criteria has added a dimension of quality to this review.

Conclusion

The existing literature identifies that the involvement and roles of policymakers, facility managers, health service providers, communities, families, and women in their shared responsibility to improve BPCR practices will ensure that women and newborns receive skilled and timely care that can improve maternal health outcomes. The review also shows that the significant roles of pregnant women, facility managers, and policymakers in BPCR are still limited.

Authors contribution

Irmayani: conceptualized and designed the study
Mahmudah: reviewed and contributed to the manuscript
Budi Prasetyo: provide input on the topic and content.

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