






Health promotion actions and maternal near miss: an integrative review

Ações de promoção da saúde e near miss materno: revisão integrativa

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ABSTRACT

Objective: to identify health promotion actions to reduce maternal near misses. **Methods:** this is an integrative review of the literature. The search for the articles was carried out in the MEDLINE/PubMed, CINAHL, LILACS, SCOPUS, and Web of Science databases, using the following combination: Near Miss, Healthcare AND Health promotion AND Maternal Welfare OR Maternal Health. **Results:** the 17 studies selected addressed the following recommendations on health promotion actions to decrease maternal near miss: enhancing prenatal care; access to reproductive planning; guidance and preparation for childbirth; education as an inclusion policy; continuing education for professionals and improvement of the regulation system. **Conclusion:** health promotion actions were evidenced in the study: carrying out effective prenatal care and actions related to management concerning professional training, adequate physical support in health units, and an organized and effective care network. **Descriptors:** Near Miss, Healthcare; Health Promotion; Maternal Health; Review.

RESUMO

Objetivo: identificar as ações de promoção da saúde para a redução do *near miss* materno. **Métodos:** trata-se de uma revisão integrativa da literatura. A busca dos artigos foi realizada nas bases de dados MEDLINE/PubMed, CINAHL, LILACS, SCOPUS e *Web of Science*, utilizando-se a seguinte combinação: *Near Miss, Healthcare AND Health promotion AND Maternal Welfare OR Maternal Health*. **Resultados:** os 17 estudos selecionados abordaram as seguintes recomendações sobre as ações de promoção da saúde para a redução do *near miss* materno: fortalecimento do atendimento pré-natal; acesso ao planejamento reprodutivo; orientação e preparação para o parto; educação como política inclusiva; educação continuada para profissionais e melhora do sistema de regulação. **Conclusão:** evidenciaram-se, no estudo, as ações de promoção da saúde: realização de pré-natal efetivo e as ações relacionadas à gestão no que concerne à capacitação profissional, suporte físico adequado nas unidades de saúde e rede de atenção organizada e eficaz. **Descritores:** Near Miss; Promoção da Saúde; Saúde Materna; Revisão.

Introduction

Worldwide, in 2018, nearly 830 women died a day because of preventable causes associated with pregnancy and childbirth. Based on the perception that it is possible to accelerate its decline, the member countries of the United Nations (UN) established a goal to decrease maternal mortality by the year 2030. It was established, aiming three of the Sustainable Development Objective, the reduction of world mortality rate to less than 70 per 100,000 live births so that countries do not exceed twice the world average of maternal mortality of the year 2015, of 239 per 100,000 live births in developing countries versus 12 per 100,000 in developed countries⁽¹⁾.

It is understood that maternal death is the end of a sequence of events in which, in most cases, interventions could be applied that would avoid cases of maternal death. Furthermore, although still alarming, the maternal death event presents low rates when compared to incidents related to morbidities and, in most cases, the events associated with mortality are predominant⁽²⁾. Thus, besides measuring the prevalence of maternal deaths, it is crucial to know the causes of these events to outline intervention strategies to prevent such cases.

In this context, the term maternal near miss emerges, conceptualized by the World Health Organization (WHO) as “a woman who almost died, but survived a complication during pregnancy, childbirth or within 42 days after the end of pregnancy”^(3:7), that is: women are classified as a maternal near miss when they survive some organ dysfunction.

Many maternal deaths, in underdeveloped and developing countries, occur during labor, delivery, and in the immediate postpartum period and, when considering the conditions that cause such an event, treatments for these conditions need to be quickly available. The study showed that, if the necessary interventions were available for pregnant women, pregnancy-related mortality rates would be closer to the rates observed in high and middle-income countries⁽⁴⁾.

Thus, nursing professionals, who work in obstetric care, should focus their care mainly on detecting risks to maternal morbidity and promote actions during care that favor equity in terms of gender and human rights of women⁽⁵⁾. Therefore, there is a need for knowledge of health promotion actions in the face of maternal near miss events to support and provide knowledge of such practices to improve the quality of care for these women.

In this context, this study aims to identify health promotion actions to reduce maternal near misses.

Methods

It is an integrative review that allows the synthesis of information, providing a summary of evidence found in studies on a specific theme⁽⁶⁾, in which the following steps were followed: formulation of the research question; establishment of inclusion and exclusion criteria for the identification and selection of primary studies; data collection and organization from primary studies; critical analysis of selected primary studies; summarizing and discussing the results and presenting the integrative review.

The study guiding question was: What evidence is available about health promotion actions to reduce maternal near miss? The bases selected for the search for the articles were Medical Literature Analysis and Retrieval System Online (MEDLINE/PubMed); Cumulative Index to Nursing and Allied Health Literature (CINAHL); Latin American and Caribbean Literature on Health Sciences (LILACS); SCOPUS and Web of Science.

The controlled descriptors were selected in the Medical Subject Headings (MeSH) according to the research guiding question. The Boolean operators “OR” and “AND” were used, resulting in the following combinations for each database: “Near Miss, Healthcare” AND “Health promotion” AND “Maternal Welfare” OR “Maternal Health” (MEDLINE/PubMed, LILACS, SCOPUS, and Web of Science) and “Near-Death Experiences” OR “Adverse Health Care Event” AND “Health promotion” AND “Maternal-Child Welfare” OR “Mater-

nal-Child Health” (CINAHL).

Inclusion criteria were defined including primary online studies, complete, published in scientific journals available in full through the access to the journal portal of the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (Coordination for the Improvement of Higher Education Personnel), founded by the Ministry of Education, in the databases selected for the study, in the last ten years (20 years after the United Nations Millennium Development Goals agreement and five years of the Sustainable Development Goals) and without language restriction, suitable to the study’s guiding question. As exclusion criteria, dissertations, theses and monographs, abstracts in annals of events and expanded abstracts were established. The search for articles in the selected databases was carried out by two researchers, independently, in July 2020.

For the extraction of data from primary studies, a validated instrument was used, which comprises the following information: “the original article identification, methodological characteristics of the study, evaluation of methodological rigor of the interventions measured, and findings”^(7,126). After extracted, the data were organized in a summary table, presented in the results section, addressing the following data: identification data; objective; design; causes of near miss; associated factors and health promotion actions.

The assessment of the studies’ quality included in the review was carried out with the help of the critical assessment tools of the Joanna Briggs Institute⁽⁸⁾, an initiative that aims to assess the reliability, relevance, and results of published works, assisting professionals in decision-making based on scientific evidence.

The level of evidence was categorized using the hierarchical criteria presented by the Agency for Healthcare Research and Quality (AHRQ), of the United States of America⁽⁹⁾, namely: Level I: a meta-analysis of multiple controlled studies; Level II: an individual study with experimental design; Level III: experimental or case-control study; Level IV: non-experimental or case studies; Level V: case reports, of provable quality, or program evaluation data and Level VI: opinion of authorities or expert committees, interpretations of information not based on research and regulatory or legal opinions.

The stages of analysis, synthesis of results will be presented and discussed below. The sampling process followed the subsequent phases by the researchers: identification through the first search; screening by using the inclusion/exclusion criteria; eligibility by analyzing title and abstract and inclusion after reading the full article. Such information is described below in the flow diagram of selection and identification of studies according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)⁽¹⁰⁾ (Figure 1).

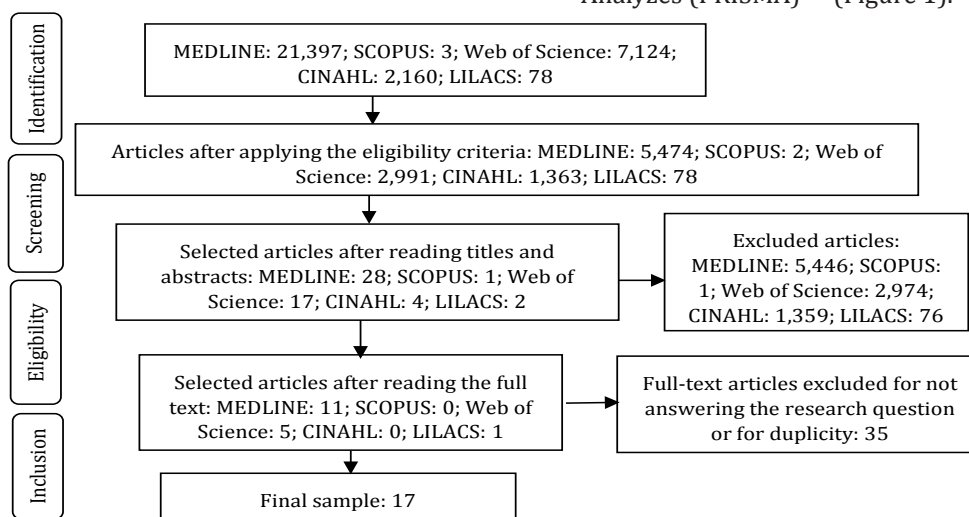


Figure 1 – Flowchart for the selection of publications - PRISMA⁽¹⁰⁾. Fortaleza, CE, Brazil, 2020

Results

five databases resulted in the inclusion of seventeen articles in the study (Figure 2).

The collection and selection of articles in the

Author/Year/ Language/Country	Causes of Maternal Near Miss	Factors Associated with Maternal Near Miss	Recommendations for Health Promotion Actions
Ali et al./2011 ⁽¹¹⁾ English/Sudan	Hemorrhages, infection, hypertensive disorders, anemia and dystocias	Lack of prenatal services, education and residence	Prevent maternal near miss events (hemorrhage, infections, hypertension, and anemia) at all levels of care, including primary care.
Adeoye et al./2013 ⁽¹²⁾ English/Nigeria	Hemorrhages, hypertensive disorders, dystocia, infections, and anemia	1 st delay, history of chronic hypertension, previous cesarean section and assisted vaginal delivery	Prevention and treatment of malaria in pregnancy; health promotion and preventive services; early detection and treatment of existing complications and diseases; preparation for childbirth and guidance for complications.
Jabir et al./2013 ⁽¹³⁾ English/Iraq	Hemorrhages, hypertensive disorders, and infections	Anemia and previous cesarean section	Promote the use of evidence-based interventions for life-threatening complications; improve referral systems and optimize the use of intensive care.
David et al./2014 ⁽¹⁴⁾ English/Maputo	Hemorrhages, hypertensive disorders, and anemia	1 st , 2 nd and 3 rd delays and misinformation	Educate families, women, and health professionals; acknowledge health problems in advance and make immediate referrals; prioritize sexual and reproductive health services.
Echoka et al./2014 ⁽¹⁵⁾ English/Kenya	Dystocias and hypertensive disorders	1 st , 2 nd , and 3 rd delays	Guide pregnant women on preparation for childbirth; guide signs of seriousness and seek emergency care.
Litorp et al./2014 ⁽¹⁶⁾ English/Tanzania	Hypertensive disorders and bleeding	Cesarean	Early detection of hypertensive disorders during prenatal care; guide pregnant women about signs of severity and search for the emergency service; improve surveillance in labor.
Tunçalp et al./2014 ⁽¹⁷⁾ English/Switzerland	Hemorrhages, hypertensive disorders, infections, and anemia	Maternal educational level	Guarantee education as an essential policy; strengthen health systems to prevent maternal morbidity and mortality.
Cecatti et al./2015 ⁽¹⁸⁾ Inglês/Brazil	Hemorrhage and infection	Ethnicity, 2 nd and 3 rd delays, pilgrimage, cesarean section and public prenatal	Improved monitoring and quality of the public health system.
Adeoye et al./2015 ⁽¹⁹⁾ English/Nigeria	Hemorrhages, hypertensive disorders, dystocias, infections and anemia	2 nd delay, complications in prenatal care and labor	Strengthening of the reference system; preparation for childbirth; improve nutrition in childhood and adolescence; strengthen sexual and reproductive health services with an emphasis on counseling; guide signs of severity and search for emergency care.
Nansubuga et al./2016 ⁽²⁰⁾ English/Uganda	Hemorrhage	Unwanted pregnancy, previous history of maternal near miss, primiparous, showing signs of danger of pregnancy, ethnicity and education levels of partners	Enable access to contraceptive products; postpartum counseling on long-acting reversible contraceptive methods; enhanced counseling about signs of pregnancy and serious pregnancy complications; increased access to births attended by qualified professionals and emergency obstetric care.
Norhayati et al./2016 ⁽²¹⁾ English/Malaysia	Hemorrhages and hypertensive disorders	Low gestational risk	Train professionals to attend obstetric emergencies; develop continuous evidence-based guidelines; minimize delays in referrals.
Mawarti et al./2017 ⁽²²⁾ English/Indonesia	Hypertensive disorders, hemorrhages and sepsis	History of postpartum hemorrhage and 3 rd delay	Improve the quality of care in hospitals; increase the coverage of prenatal care and the referral system.
Sultan et al./2017 ⁽²³⁾ English/Egypt	Hypertensive disorders and hemorrhages	Maternal educational level, husband's occupation, short interval between births and inadequate prenatal care	Promote broad knowledge and prenatal education on reproductive health and family planning.
Chikadaya et al./2018 ⁽²⁴⁾ English/Zimbabwe	Hemorrhages and hypertensive disorders	Maternal age, parity, marital status, education and profession	Increased surveillance in low-risk prenatal consultations; multidisciplinary approach in the management of high-risk pregnant women; improve management protocols for hypertensive disorders and post-abortion complications.
Panda et al./2018 ⁽²⁵⁾ English/Odisha	Hypertensive disorders, anemia and infection	Age, parity and gestational age	Early identification of risk factors for hypertensive disorders and immediate initiation of treatment; improve prenatal care to prevent complications.
Reena; Radha/2018 ⁽²⁶⁾ English/Kerala	Hypertensive disorders, bleeding infections	Social and financial delay, inadequate prenatal care, and 3 rd delay	Promote social development and equity; ensure the preparation of health professionals, appropriate and timely interventions, and optimize and expand existing obstetric services.
Ma et al./2020 ⁽²⁷⁾ English/Zhejiang	Hemorrhages, hypertensive disorders, anemia, liver disease and infection	Maternal age, education, parity, lack of prenatal examinations, history of abortion, place of delivery and cesarean section	Reinforce strategies to reduce unnecessary cesarean sections; targeted interventions to decrease the incidence of anemia and postpartum hemorrhage.

Figure 2 – Description of the articles included in the integrative review. Fortaleza, CE, Brazil, 2020

The databases selected at the end of the systematic search were LILACS, MEDLINE, and Web of Science. The articles found were published in the English language, being predominantly international studies and only one national⁽¹⁸⁾. As for the year of publication, it ranged from 2011 to 2020. Concerning the design used, most studies were observational, being cross-sectional studies^(11,13-14,16-18,20-21,23-27), case-control^(12,19) and cohort⁽²²⁾, and classified with level IV of evidence. Also, there was only one article with a qualitative design, being classified with level VI of evidence⁽¹⁵⁾.

The selected studies addressed the main causes of maternal near miss, with hemorrhagic causes leading in all articles, followed by hypertensive disorders^(11-17,19,21-27), anemia^(11-12,14,17,27), infections^(13,17-18,22,25-27) and dystocia during labor and delivery^(11-12,19). It is worth mentioning that postpartum hemorrhage, pre-eclampsia, eclampsia, malaria, sepsis, and prolonged labor were the main complications within each disorder presented, respectively.

Furthermore, we could identify factors related to a maternal near miss, from sociodemographic factors, such as maternal age, education, income and profession^(11,17,23-27), to obstetric factors, such as the parity^(24-25,27), prenatal care^(11,17-18,23,26) and delivery^(16,18,27), also showing delays in seeking health care^(12,14-15), upon arrival the emergency service^(14-15,18-19) and the care of health professionals^(14-15,18,22,26) as an important factor associated with a maternal near miss.

In the end, all articles provided recommendations for health promotion actions related to the causes and associated factors identified to contribute to the decrease of maternal near miss cases, such as strengthening prenatal care^(11-14,17,20,22,25,27), promoting access to reproductive planning^(14,20,23), guidance on signs of severity in pregnancy and seeking emergency care^(15,16,19,20), preparation for childbirth^(12,15-16,19), strengthening the continuing education of professionals who are directly linked to the assistance of these women^(14,21,26) and improving the systems of allocating and transferring patients to tertiary units^(13-14,18-19,21-22).

Discussion

The limitation of this study is focused on a time restriction for the search of articles, and some articles may not have been included as they were out of this time range. Furthermore, the use of articles available only in full may have excluded some relevant studies and the predominance of observational studies, which limits the level of evidence of the findings. A strong point of this review was the inclusion of studies able of verifying the association between risk factors and the outcome, valuing the results found, enabling recommendations for health promotion actions aimed at the prevention of maternal near miss cases.

The studies found in this research showed, predominantly, as causes of maternal near miss, hemorrhages and hypertensive disorders, which include preeclampsia and eclampsia, found in fourteen of the analyzed articles, supporting descriptive and transversal research that pointed hypertension and hemorrhage as the main disorders associated with severe maternal morbidity⁽⁵⁾.

Regarding the factors associated with a maternal near miss, there is a predominance of delays in arriving at the hospital and in the management of cases^(12,14-15,18,22), including the three delays⁽¹⁴⁻¹⁵⁾, considering that the identification of these works as a way for measuring the quality of care and service.

Subsequently, regarding the complications related to prenatal care^(11,19,23,26-27), followed by the low level of education and income of both women and partners^(17,23,26-27), the results of the integrative review on maternal near miss are confirmed as an indicator of health care in which, that presents in its findings, the absence of prenatal care as a risk factor for the onset of maternal near miss and that the educational level can behave as a protection factor to the promotion of maternal and child health⁽²⁸⁾.

Prenatal care is one of the essential strategies regarding health promotion actions directed at the maternal near miss. According to the studies found, it was observed, as health education, that guidance on

preconception, labor, delivery, and the puerperium can positively influence the outcome of a pregnancy.

Four articles addressed cesarean delivery as a risk factor related to near miss^(12,16,18,27). In this perspective, the referred procedure may have a direct or indirect relationship involving maternal morbidity.

Health promotion actions were designed in the studies of this research according to the main causes and factors associated with maternal near miss. The articles showed that the actions were aimed at promoting the strengthening of prenatal care^(11,16,18,22-25), with the absence of the referred service being pointed out in ecological research as one of the determining factors of the cases of severe maternal morbidity and mortality. This study confirmed the recommendation of the findings regarding the early initiation of prenatal care by pregnant women⁽²⁵⁾, which emphasizes the need to provide basic quality care, as the detection of diseases occurs predominantly in prenatal care⁽²⁹⁾.

Considering the recommendations found, there is a predominance of actions focused on intensifying prenatal activities, with an emphasis the early initiation of prenatal care, guidance on labor and delivery, which are inexpensive and can be applied by health professionals in care practices.

Concerning actions related to the continuing education of health professionals who assist women, from the primary to the tertiary level of care, the authors suggested in-service training to deal with obstetric emergencies, basing their practice on scientific evidence^(13,21,24,26) and reducing unnecessary interventions during childbirth care, including performing cesarean sections with no real indication⁽²⁶⁻²⁷⁾. In this way, the relevance of professional training for the conduct of maternal near miss cases is understood, directly influencing maternal outcomes.

Within the scope of the regulatory system, the authors recommended that health service managers improve the referral and timely referral system for pregnant women with signs of severity to tertiary care services as a way of reducing the progression to fatal cases^(13-14,19,21). In line with the aforementioned recom-

mendations, it is suggested, in the study carried out in Somaliland, in a reference hospital, that actions such as the use of prenatal care, associated with the most effective referral service, can indirectly reduce cases of maternal near miss and deaths in Somaliland⁽³⁰⁾.

In this sense, the importance of actions in the scope of management was evidenced in the studies, which involve institutions and their respective managers and health professionals to provide an adequate structure, effective regulation system and professional training. Such actions would assist in the early identification of serious cases and the prevention of maternal near misses.

Concerning the research findings there is a need for reflection on health promotion actions associated with a maternal near miss, such as prenatal actions, family planning and management-related practices, such as permanent education for professional training, adequate physical structures, and organized care network flow. Most of these actions can be accomplished by health professionals, who are vital to their execution. Moreover, they are low cost and most of them, when it comes to prevention, do not require hard technologies.

Conclusion

It emerged, in the study, as health promotion actions to reduce maternal near miss, carrying out effective prenatal care and actions based on the quality of management, such as the training of health professionals, health units with the adequate physical structure and organized and effective care network.

Some of the actions found in the articles are simple, low-cost, and easy to apply, such as, the strengthening of guidelines for health promotion in prenatal care, promoting the relevance of investing in this level of care. Furthermore, the findings reflect on the magnitude to which health professionals are essential to the performance and quality of a significant part of these actions.

Collaborations

Araújo LM, Almeida MEM, Damasceno AKC, Vasconcelos CTM and Castro RCMB contributed to the conception and design, analysis, and interpretation of data, writing of the article, relevant critical review of the intellectual content and final approval of the version to be published.

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