The Needs of Women Who Have Experienced “Maternal Near Miss”: A Systematic Review of Literature

Abstract

Background: Maternal Near Miss (MNM) event is associated with emotional, psychological, and social effects on women. Determining the needs of women with these experiences is the key to programming for providing high-quality care and reducing its burden. Hence, this study was conducted to determine the needs of women who have experienced MNM.

Materials and Methods: In this literature systematic review, to achieve the intended information, articles published in Web of Science and PubMed databases were systematically searched. The search strategy focused on three keywords or phrases: “maternal morbidity” OR “maternal near miss” AND “needs.” Publication date was all relevant articles before 2019, and publication language was restricted to English. Article search was conducted by two independent reviewers. After the primary search, 2140 articles were found. Eventually, 77 articles, including 20 qualitative studies and 57 quantitative studies, were enrolled for final evaluation. Results: According to the results, the needs of these women could be categorized into six groups of “Management and care needs of health system,” “Educational needs of health system,” “Follow up and continuity of care at the primary care level,” “Need to develop a physical, psychological and social of care packages,” “Social support,” and “Psychosocial support and counseling.” Conclusions: The near-miss events change the mothers’ living conditions, and therefore, they need to receive special support, given the difficult conditions they are undergoing. It is necessary that a supportive program be designed to follow-up MNM after the discharge to be run by the primary care team.

Keywords: Childbirth, maternal morbidity, maternal near miss, pregnancy, systematic review

Introduction

Maternal Near Miss (MNM) refers to a condition when a woman nearly dies but survives from a complication occurring during pregnancy, childbirth, or within 42 days of termination of pregnancy.

Near-miss cases have similar characteristics with maternal deaths and can tell us the root causes of acute complication. Accordingly, they provide valuable information on obstetric care allowing for reformatory action to be taken on identified delays to reduce the related mortality and morbidity. The prevalence of near-miss mothers in Brazil and India is 12.8 and 15.1 per 1,000 live births, respectively. In addition, in a meta-analysis study in Iran, it was reported as 2.5 per 1,000 live births. MNM has received less attention and often failed to access standard support as mothers’ experiences are very extreme or different to the norm.

Nevertheless, recent research and reviews have sought to address this. The reason is that although the absolute number of annual maternal deaths is approximately 500,000, a further 9 million women are estimated to suffer from maternal mortality or near miss. Of these, a lot of them will experience long-term physical and psychological effects, thereby contributing to the maternal complications; all the mothers and their partners experience some unpleasant long-term consequences of their near-miss event. The health of women and their empowerment in the community are a central concept in the Sustainable Development Goals and there have been calls for “rethinking maternal health” throughout the life cycle.

For many mothers, hospitalization in the intensive care unit and separation from the infant is hard. Mothers who experience near miss have progressed to death, such
that they may have organ failure or discharged from hospital having had a major emergency treatment or spent time in the intensive care. Some of them may even have lost their baby as a result of their complications; Babies delivered premature may need to be admitted to the Neonatal Department. Their experiences are very different from a normal delivery. Meanwhile, additional studies are required to enhance the knowledge about the overall burden of severe maternal morbidity, its relationship with the motherhood role, and pathological conditions such as traumatic childbirth as well as occurrence of posttraumatic stress and anxiety, panic attacks, flashbacks, fear of repregnancy in the future, lack of support and social isolation, and developing postpartum depression.

Therefore, by gaining a deeper understanding of the MNM and adverse consequences of pregnancy-related events, opportunities may be found for preventive intervention. Furthermore, available data should be collected to understand mother’s needs and to manage the burden resulting from this event which affects millions of women in the world. Hence, determining the needs of mothers with these experiences is the key to programming and integrated postpartum care. Indeed, it is important to recognize the mothers’ needs for evaluating the physical, psychological, and social burden of maternal near-miss conditions. Because no study has been conducted that is consistent with the purpose of the present study, this study was conducted to identify the needs of mothers who have experienced MNM.

Materials and Methods

This study was designed based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist. This literature review was conducted in March 2019. In this study, to achieve the intended information, systematically published articles in PubMed and Web of Science databases were searched, where 498 and 617 of the published articles before March 2019 were found in each, respectively. We reviewed the list of reference of the relevant articles. Furthermore, to cover more articles, the Google Scholar database was searched, whereby 1022 articles were extracted. All articles were searched in English. The search strategy focused on three keywords or phrases: “maternal morbidity” OR “maternal near miss” AND “needs.” We used broad inclusion criteria to provide a detailed systematic review of the topic. It must be noted that article search was conducted by two independent reviewers and all the studies reviewed eligible articles by reviewing the title and abstract. Any disagreement between these two was resolved through discussion and by considering the goals of the study, and the opinion of a third person was requested, if necessary. The full texts of the selected abstracts were, subsequently, screened. After the primary search of different databases, 2140 articles were found. The extracted articles were evaluated according to the inclusion criteria in two steps. During the first step, 2052 articles out of 2140 were eliminated because of being a duplicate or qualifying the exclusion criteria. During the second step, nine articles were eliminated for having different (irrelevant) titles and goals as well as due to lack of a full text. Eventually, 77 articles including 20 qualitative and 57 quantitative studies were enrolled for final evaluation [Figure 1].

The articles presented in conferences and seminars, case reports, and letters to editor were excluded. Furthermore, lack of access to the full texts of the articles was considered as an exclusion criterion. Eventually, the selected articles were studied to determine the needs of mothers who have experienced MNM.

Ethical considerations

Research ethics confirmation (ethics code: IR.MUMS. NURSE.REC.1398.009) for this study was received from the Ethics Committee of Mashhad University of Medical Sciences.

Results

Study selection outcome

After reviewing the results of studies, considering the extensive and various needs of MNM mothers, the needs
### Table 1: Studies in the field of the needs of the women who have experienced maternal near miss

| Row | Authors | Year | Design study | Country | Study title | Type of needs |
|-----|---------|------|--------------|---------|-------------|---------------|
| 1   | Ahmed, Dawud Muhammad | 2018 | Cross-sectional study | Ethiopia | Incidence and factors associated with outcomes of uterine rupture among women delivered at Felegehiwot referral hospital, Bahir Dar, Ethiopia | Management and care needs of health system |
| 2   | Tuli, Arti | 2018 | Retrospective descriptive | India | Foetomaternal outcome in eclampsia in tertiary care hospital | Educational needs of health system |
| 3   | Zafar, Hania | 2018 | Cross-sectional | Pakistan | Low socioeconomic status leading to unsafe abortion-related complications: A third-world country dilemma | Management and care needs of health system |
| 4   | Kasahun, Abebaw Wase | 2018 | Case-control | South Ethiopia | Predictors of maternal near miss among women admitted in Gurage zone hospitals, South Ethiopia, 2017: A case control study | Management and care needs of health system |
| 5   | Filippi, Veronique | 2018 | MMM* framework | WHO, UNDP***, UNFPA ****, UNICEF *****; WHO, World Bank | A new conceptual framework for maternal morbidity | Follow-up and continuity of care at the primary care level |
| 6   | McCauley, Mary | 2018 | Descriptive observational cross-sectional | India, Pakistan, Kenya, and Malawi | Burden of physical, psychological and social ill-health during and after pregnancy among women in India, Pakistan, Kenya and Malawi | Need to develop a physical, psychological, and social care packages |
| 7   | Shorey, Shefaly | 2018 | Randomized controlled trial | Singapore | Evaluation of technology-based peer support intervention program for preventing postnatal depression: Protocol for a randomized controlled trial | Social support Counseling and psychosocial support |
| 8   | Iwuh, I. A | 2018 | Retrospective observational study | South Africa | Maternal near-miss audit in the Metro West maternity service, Cape Town, South Africa: A retrospective observational study | Management and care needs of health system |
| 9   | Mahmood, Naeema A | 2018 | Cross-sectional | Bahrain | Thromboembolism prophylaxis after cesarean section | Management and care needs of health system |
| 10  | Khashab, Sahar | 2018 | Cross-sectional survey | Egypt | Maternal morbidity and mortality in ElShabty and Dar Ismail maternity hospitals in Alexandria: A comparative study | Management and care needs of health system |
| 11  | Iliadis, Stavros I. | 2018 | Cohort | Swedish | Self-harm thoughts postpartum as a marker for long-term morbidity | Counseling and psychosocial support |
| 12  | Jain, Joses A | 2018 | Review | United States | SMFM Special Report: Putting the “M” back in MFM: Reducing racial and ethnic disparities in maternal morbidity and mortality: A call to action | Management and care needs of health system |
| 13  | Aborigo, Raymond A | 2018 | Focus group discussion | Malaysia | Male involvement in maternal health: perspectives of opinion leaders | Social support |
| 14  | Widyansingsih, Vibri | 2018 | Cross-sectional survey | Indonesia | The patterns of self-reported maternal complications in Indonesia: Are there rural urban differences? | Educational needs of health system |
| 15  | Liyew, Ewnetu Firdawek | 2018 | Nested case-control | Ethiopia | Distant and proximate factors associated with maternal near-miss: A nested case-control study in selected public hospitals of Addis Ababa, Ethiopia | Educational needs of health system |
| 16  | Ahmad, Muhammad Ashfaq | 2018 | Descriptive study | Pakistan | Pregnancy hypertensive disorders frequency and obstetric outcome | Management and care needs of health system |
| 17  | Angelini, Carina R | 2018 | Retrospective cohort | Brazil | Post-traumatic stress disorder and severe maternal morbidity: Is there an association? | Counseling and psychosocial support |
| 18  | van Stralen, Giel | 2018 | Description | The Netherlands | Major obstetric hemorrhage: A follow-up survey on quality of life of women and their partners | Counseling and psychosocial support |
| Row | Authors                        | Year | Design study | Country               | Study title                                                                 | Type of needs                          |
|-----|-------------------------------|------|--------------|-----------------------|-----------------------------------------------------------------------------|-----------------------------------------|
| 10  | Merriam, Audrey A              | 2018 | Nationwide inpatient sample | United States         | Risk for postpartum hemorrhage, transfusion, and hemorrhage-related morbidity at low, moderate, and high volume hospitals | Management and care needs of health system |
| 20  | Bolnga, John W                 | 2017 | Prospectively | Papua N Guinea        | Maternal near-misses at a provincial hospital in Papua New Guinea: A prospective observational study | Management and care needs of health system |
| 21  | Sayinzoga, Felix               | 2017 | Case-control study | Rwanda                | Severe maternal outcomes and quality of care at district hospitals in Rwanda - A multicentre prospective case-control study | Management and care needs of health system |
| 22  | Rosendo, Tatyana Souza         | 2017 | Population-based survey of a | Northeastern Brazil  | Prevalence of maternal morbidity and its association with socioeconomic factors: A population-based survey of a city in Northeastern Brazil | Management and care needs of health system |
| 23  | Santana, Danielly S.            | 2017 | Prospective surveillance | Brazil              | Severe maternal morbidity and perinatal outcomes of multiple pregnancy in the Brazilian Network for the Surveillance of Severe Maternal Morbidity | Management and care needs of health system |
| 24  | Suplee, Patricia D.            | 2017 | Descriptive   | United States         | Nurses’ knowledge and teaching of possible postpartum complications          | Educational needs of health system      |
| 25  | Mbachu, Ikechukwu Innocent     | 2017 | Cross-sectional | Rural Nigeria         | A cross sectional study of maternal near miss and mortality at a rural tertiary centre in southern Nigeria | Management and care needs of health system |
| 26  | Eadie, Isabelle J.             | 2017 | Qualitative   | New Zealand           | Midwives’ experiences of working in an obstetric high dependency unit: A qualitative study | Management and care needs of health system |
| 27  | Mohammadi, Soheila             | 2017 | Audit study   | Iran                  | Afghan migrants face more suboptimal care than natives: A maternal near-miss audit study at university hospitals in Tehran, Iran | Management and care needs of health system |
| 28  | Govindappagari, Shravya        | 2017 | Nationwide inpatient sample | United States         | Using publicly reported hospital data to predict obstetric quality             | Management and care needs of health system |
| 29  | Kennady, G                     | 2017 | Observational study | India              | Maternal and neonatal outcomes in pregnancy induced hypertension: an observational study | Management and care needs of health system |
| 30  | Wahlberg, Asa                  | 2017 | Cross-sectional survey | Sweden              | Self-reported exposure to severe events on the labour ward among Swedish midwives and obstetricians: A cross-sectional retrospective study | Educational needs of health system     |
| 31  | Lisonkova, Sanka               | 2016 | Retrospective population-based cohort | Canada              | Maternal morbidity and perinatal outcomes among women in rural versus urban areas | Management and care needs of health system |
| 32  | Kleppel, Lisa                  | 2016 | Review        | United States         | National initiatives to improve systems for postpartum care                  | Management and care needs of health system |
| 33  | Mateus, Julio                  | 2016 | Review        | United States         | The burden of severe maternal morbidity in contemporaneous obstetrics         | Educational needs of health system     |
| 34  | Furuta, Marie                  | 2016 | Cohort        | England              | Severe maternal morbidity and breastfeeding outcomes in the early post-natal period: A prospective cohort study from one English maternity unit | Social support                          |
| 35  | de la Cruz, Cara Z             | 2016 | Cohort        | United States         | Post-traumatic stress disorder following emergency peripartum hysterectomy | Counseling and psychosocial support    |

Contd...
| Row | Authors                                | Year | Design study          | Country     | Study title                                                                 | Type of needs                                                                 |
|-----|----------------------------------------|------|-----------------------|-------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 36  | Abha, Singh                            | 2016 | Prospective observational | India       | Maternal near miss: A valuable contribution in maternal care                 | Management and care needs of health system                                      |
| 37  | Norhayati, Mohd Noor                    | 2016 | Cohort                | Malaysia    | Immediate and long-term relationship between severe maternal morbidity and   | Counseling and psychosocial support                                             |
|     |                                        |      |                       |             | health-related quality of life: A prospective double cohort comparison study|                                                                                  |
| 38  | Shilpa, Venkatesh                       | 2016 | Audit                 | India       | Implementation of WHO near-miss approach for maternal health at a tertiary    | Management and care needs of health system                                      |
|     |                                        |      |                       |             | care hospital: An audit                                                     |                                                                                  |
| 39  | Norhayati, Mohd Noor                    | 2015 | Modified critical appraisal | Malaysia  | Need to develop a physical, psychological, and social of care packages      |                                                                                  |
| 40  | Jarrett, Patricia M                     | 2016 | Thematic analysis     | England     | Pregnant women’s experience of depression care                              | Counseling and psychosocial support                                             |
| 41  | Szulik, Dalia                           | 2015 | Qualitative           | Argentina   | “I was like a ticking bomb”: Experiences of severe maternal morbidity in the| Management and care needs of health system                                      |
|     |                                        |      |                       |             | Metropolitan Area of Buenos Aires                                           |                                                                                  |
| 42  | Hannah Moorea                           | 2018 | Qualitative           | United Kingdom | Life-threatening complications in childbirth: A discursive analysis of fathers’| Counseling and psychosocial support                                             |
|     |                                        |      |                       |             | accounts                                                                    |                                                                                  |
| 43  | Rakime Elmir                            | 2010 | Qualitative           | Australia   | Between life and death: Women’s experiences of coming close to death, and    | Counseling and psychosocial support                                             |
|     |                                        |      |                       |             | surviving a severe postpartum haemorrhage and emergency hysterectomy        |                                                                                  |
| 44  | Lisa Hinton                             | 2014 | Qualitative           | United Kingdom | Partner experiences of “near-miss” events in pregnancy and childbirth in the | Counseling and psychosocial support                                             |
|     |                                        |      |                       |             | UK: A qualitative study                                                     |                                                                                  |
| 45  | Scovia N Mbalinda                       | 2015 | Qualitative           | Uganda      | Male partners’ perceptions of maternal near miss obstetric morbidity         | Social support                                                                 |
|     |                                        |      |                       |             | experienced by their spouses                                               | Counseling & psychosocial support                                              |
| 46  | Dan K Kaye                              | 2014 | Qualitative           | Uganda      | Lived experiences of women who developed uterine rupture following severe    | Counseling and psychosocial support                                             |
|     |                                        |      |                       |             | obstructed labor in Mulago hospital, Uganda                                 |                                                                                  |
| 47  | Fiona Cram                              | 2018 | Qualitative           | New Zealand | A qualitative inquiry into women’s experiences of severe maternal morbidity | Social support                                                                 |
| 48  | Tabassum Firoz                          | 2018 | Review                | MMWG**      | A framework for healthcare interventions to address maternal morbidity       | Management and care needs of health system                                      |
| 49  | Stacie E. Geller                        | 2018 | Review                | United States | A global view of severe maternal morbidity: Moving beyond maternal mortality | Management and care needs of health system                                      |
| 50  | José P. Guida                           | 2018 | Retrospective cohort  | United Kingdom | The impact of hypertension, hemorrhage, and other maternal morbidities on      | Counseling and psychosocial support                                             |
|     |                                        |      |                       |             | functioning in the postpartum period as assessed by the WHODAS 2.0 36-item   |                                                                                  |

Contd...
| Row | Authors | Year | Design study | Country | Study title | Type of needs |
|-----|---------|------|--------------|---------|-------------|---------------|
| 51  | OT Oladapo | 2015 | Cross-sectional | Nationwide | When getting there is not enough: A nationwide cross-sectional study of 998 maternal deaths and 1451 near-misses in public tertiary hospitals in a low-income country | Management and care needs of health system |
| 52  | Joao P. Souza | 2009 | Qualitative | Brazil | An emerging “maternal near-miss syndrome”: Narratives of women who almost died during pregnancy and childbirth | Management and care needs of health system |
| 53  | A° sa Engstro’m | 2011 | Qualitative | Sweden | Mothers’ experiences of a stay in an ICU after a complicated childbirth | Counseling and psychological support |
| 54  | Mary Furniss | 2018 | Qualitative | New Zealand | Information, support, and follow-up offered to women who experienced severe maternal morbidity | Counseling and psychological support |
| 55  | Marie Furuta | 2013 | Synthesis of qualitative | United Kingdom | Women’s perceptions and experiences of severe maternal morbidity - A synthesis of qualitative studies using a meta-ethnographic approach | Information needs |
| 56  | Lisa Hinton | 2014 | Qualitative | United Kingdom | Maternal critical care: what can we learn from patient experience? A qualitative study | Counseling and psychological support |
| 57  | Lisa Hinton | 2015 | Qualitative | United Kingdom | Support for mothers and their families after life-threatening illness in pregnancy and childbirth: A qualitative study in primary care | Information needs |
| 58  | Rakime Elmir | 2010 | Qualitative | Australia | Between life and death: Women’s experiences of coming close to death, and surviving a severe postpartum haemorrhage and emergency hysterectomy | Counseling and psychosocial support |
| 59  | Claire Snowdon | 2011 | Qualitative | United Kingdom | Information-hungry and disempowered: A qualitative study of women and their partners’ experiences of severe postpartum haemorrhage | Educational needs of health system |
| 60  | Soheila Mohammadi | 2017 | Qualitative | Iran | Experiences of inequitable care among Afghan mothers surviving near-miss morbidity in Tehran, Iran: A qualitative interview study | Counseling and psychosocial support |

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Table 1: Contd...

| Row | Authors                        | Year | Design study | Country          | Study title                                                                 | Type of needs                                                                 |
|-----|--------------------------------|------|--------------|------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 61  | Cara Z. de la Cruz             | 2013 | Qualitative  | United States    | Women’s experiences, emotional responses, and perceptions of care after emergency peripartum hysterecmy: A qualitative survey of women from 6 months to 3 years postpartum | Follow-up and continuity of care at the primary care level                     |
| 62  | Jessica Pâfs                   | 2016 | Qualitative  | Sweden           | Beyond the numbers of maternal near-miss in Rwanda - A qualitative study on women’s perspectives on access and experiences of care in early and late stage of pregnancy | Need to develop a physical, psychological, and social of care packages          |
| 63  | L Hinton                       | 2014 | Qualitative  | United Kingdom   | Experiences of the quality of care of women with near-miss maternal morbidities in the UK | Counseling and psychosocial support                                           |
| 64  | David, Ernestina               | 2014 | Cross-sectional | Mozambique    | Maternal near miss and maternal deaths in Mozambique: A cross-sectional, region-wide study of 635 consecutive cases assisted in health facilities of Maputo province | Follow-up and continuity of care at the primary care level                    |
| 65  | Chersich, Matthew F            | 2009 | Cross-sectional survey | Kenya     | Maternal morbidity in the first year after childbirth in Mombasa Kenya; a needs assessment | Need to develop a physical, psychological, and social of care packages          |
| 66  | Poel, Yvonne H. M              | 2009 | Cross-sectional | The Netherlands | Psychological treatment of women with psychological complaints after pre-eclampsia | Counseling and psychosocial support                                           |
| 67  | Vandenberghe G                 | 2017 | Prospective active collection of cases | Belgium     | The Belgian Obstetric Surveillance System to monitor severe maternal morbidity | Need to develop a physical, psychological, and social of care packages          |
| 68  | Kasahun Aw                     | 2018 | Case-control  | Ethiopia         | Predictors of maternal near miss among women admitted in Gurage zone hospitals, South Ethiopia, 2017: A case control study | Follow-up and continuity of care at the primary care level                    |
| 69  | Liyew EF                       | 2018 | Nested case-control | Ethiopia  | Distant and proximate factors associated with maternal near-miss: A nested case-control study in selected public hospitals of Addis Ababa, Ethiopia | Management and care needs of health system                                      |
| 70  | Mbachu II                      | 2017 | Cross-sectional | Nigeria    | A cross sectional study of maternal near miss and mortality at a rural tertiary centre in southern Nigeria | Management and care needs of health system                                     |
| 71  | Parmar NT                      | 2016 | Cross-sectional | India        | Incidence of maternal “near-miss” events in a tertiary care hospital of Central Gujarat, India | Management and care needs of health system                                     |
| 72  | Abha S                         | 2016 | Prospective observational study | India        | Maternal near miss: A valuable contribution in maternal care | Management and care needs of health system                                     |
| 73  | Bashour H                      | 2015 | Cross-sectional study | Egypt, Lebanon, Palestine, and Syria | A cross sectional study of maternal “near-miss” cases in major public hospitals in Egypt, Lebanon, Palestine and Syria. | Management and care needs of health system                                     |
| 74  | Souza JP                       | 2013 | Cross-sectional | Africa, Asia, Latin America, and the Middle East | Moving beyond essential interventions for reduction of maternal mortality (the WHO Multicountry Survey on Maternal and Newborn Health): A cross-sectional study | Management and care needs of health system                                     |
| 75  | Almerie Y                      | 2010 | Retrospective facility-based review | Syria        | Obstetric near-miss and maternal mortality in maternity university hospital, Damascus, Syria: A retrospective study | Management and care needs of health system                                     |

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were categorized into six classes of (1) management and care needs of health system, (2) educational needs of health system, (3) follow-up and continuity of care at the primary care level, (4) need to develop a physical, psychological, and social of care packages, (5) social support, and (6) psychosocial support and counseling. A summary of the results is shown in Table 1.

**Management and care needs of the health system**

This category of needs includes the responsiveness of the health system to the delay in the treatment of mothers, especially in emergency situations. Providing quality care is one of the most important pillars of these needs. The philosophy proposed in Beyond the Numbers (BTN) and its methodologies for case reviews can be the first step in this process. The results of case reviews pinpoint what, if any, avoidable or remediable clinical, health system factors were present in the care provided to the mothers enabling healthcare providers to learn from the errors of the past. Use of audit of near-miss case can enhance the quality of service, especially in areas where the maternal mortality is low. In this situation, there is a need to shift focus to maternal near-miss cases, which is a beneficial adjunct to maternal death issues. Auditing makes causes evidence-based practice and wide information of these efforts to result in reduced preventable maternal morbidity and mortality where serial reviews would aid in resolution of the delays. There should be better communication between levels of care and should be emphasized to allow early identification and referral of mothers for quick management. Another issue that is important in the management and quality of care is to preserve and protect human dignity, and to consider human rights and equity, especially in non-native and migrant mothers. The experiences of mothers suggested that the need to provide fair treatment with respect and improved communication are the challenge for the health system and staff. On the other hand, maternal morbidity is an inequality and discrimination in woman’s human right: the right to life and survival; there is a dire need to prevent these unpleasant morbidities by improving the quality of care such as providing safe abortion services. In addition, to provide quality services, the maternal morbidity-avoidable factors in hospitals should be identified and understood better, which can be cited for emergency obstetric causes such as preeclampsia, eclampsia, hemorrhage, sepsis, and thromboembolism.

**Educational needs of the health system**

Health system should develop educational programs and draft targeted protocols at both the national and international levels. For example, midwives who are capable in obstetric emergency care are well-placed to provide quality care to sick mother within an intensive care unit. In addition, mothers should be educated and encourage the public to opt for prompt pregnancy and childbirth care. Nevertheless, they did not always provide holistic education to all mothers prior to discharge from the hospital. There is a need for midwives to provide important messages about potential warning signs to reduce the severity of the complications. Intervention to improve knowledge of maternal morbidity is required, specifically for socially low-level people or those living in rural areas.

**Follow-up and continuity of care at the primary care level**

Reproductive health services should be prioritized to prevent adverse consequence. Hence, when a mother suffers from MNM, midwives should be aware of the hospital’s discharge time. Primary care providers should be made routinely aware if a mother has had a near-miss event, so that they can suggest the support such a mother needs and be aware that these new mothers may have interrupted their relationship with social networks. Follow-up appointments with midwifery staff are helpful for mothers with severe maternal morbidities. Meanwhile, mothers reported that they felt they needed these supports at various times after the event; flexibility beyond the standard timing of 6 weeks postpartum would be beneficial. They require continuity of care at the primary care level beyond the customary 6 weeks postpartum.
programs should deal with both averting the loss of life and with ameliorating care of severe maternal morbidities at all levels including primary care.\[32\]

**Need to develop a physical, psychological, and social of care packages**

The study by Norhayati et al. suggested that the mental and physical prognosis of mothers who experienced severe maternal morbidity is poor and there is a need to identify the persistence of these outcomes over a longer postpartum period; these findings may help provide guidance for staff for preventive care.\[33\] For example, for some complications of pregnancy and childbirth, such as hysterecmy, formulating a plan of care for mothers identifiably at risk of postpartum hemorrhage and ensuring appropriate follow-up counselling are important, as they are key to reducing the psychological symptoms experienced by such mothers.\[34\] In addition, many mothers who had experienced near-miss did not receive accurate information about their illness prior to discharge from hospital, which is necessary to pay attention to the quality of service to all aspects that reduce the burden of long-term mental problems.\[35\] So different information and support needs for mothers should be considered whatever policies are implemented such as follow-up of new mothers in the critical care unit who are separated from their baby or breastfeeding.\[36\]

**Social support**

Social support includes the care and attention of the mother who has maternal morbidity, including family, friends, acquaintances, and especially the husband. The role of men can be complex where social and cultural traditions may disagree with health recommendations. Sometimes, social protection is essential for MNM’s partners who are often found witnessing the emergency shocking and distressing. Support from health providers is very important, and clear communication from medical staff is highly valued.\[37\] So MNM obstetric events deeply affect them.\[38\] Getting social support from others who have similar experiences may enhance the positive experiences of mothers, which in turn can improve the wellbeing of mothers, strengthen the mother–child relationship, and increase the dynamics of families.\[39\] An example is mothers who have social needs to establish breastfeeding.\[40\] There is critical need to provide support to survivors to enable them cope with social, physical, psychological, and economic consequences.\[41\] The implementation of integrated care which involves psychological, spiritual, physical, and social supports of women’s health may help diminish the burden that maternal morbidity impose on women around the world.\[42\]

**Counseling and psychosocial support**

Maternal counseling and psychological support aim at reducing the problems such as depression, posttraumatic stress disorder, and wellbeing, coping, and emotional support such as disability, disempowerment, and self-isolation on the social networks. There is already some follow-up in service centers; currently after discharge, most mothers are visited by a midwife who usually carries out a postnatal depression screen, but these services do not cover all their needs. For this reason, recent studies have drawn attention to the potential for long-term psychological impact on mothers of maternal morbidities.\[34,36,43-45\] In addition to their physical recovery, mothers can experience depression, anxiety, and flashbacks in the aftermath; birth trauma can have lasting consequences affecting both the infant and family wellbeing.\[46\] Hinton et al. observed the profound long-term impact a near-miss in childbirth can have on new mothers. Although the mothers wished to take care of their baby, they could not do it, so other family members were also affected.\[7\] In this study, some mothers after discharge from the hospital were supported and contacted with midwives and visited regularly.\[7\] Mothers often face significant emotional and psychological health issues in the transition to motherhood.\[47\] The results of the study by Abdollahpour et al. suggested that traumatic childbirth events have the potentials to lead to psychological problems;\[48\] early interventions and counseling such as skin-to-skin contact between the mother and the baby can improve such mothers’ mental health\[16\] and reduce posttraumatic stress postpartum.\[49\] After discharge of a near-miss mother, implications include more formal support for mothering when they are in maternal critical care and counseling for partners following this event.\[49\] There should be a transparent pathway for access to counselling services for near-miss mothers.\[12\] These counseling services should be provided for successful breastfeeding,\[40\] sexual problems, and marital problems.\[50\] Investigation of long-term repercussions of MNM on women’s sexual life aspects has been scarcely performed, indicating that worse consequences for those experiencing morbidity are beyond depressive symptoms and postpone sexual activity.\[51\]

**Discussion**

This study determined the needs of mothers who have experienced MNM which has been described in six sections. The most important demands and needs of many mothers who survive near-miss complications include the support and attention of healthcare providers during and after hospitalization. Most mothers express emotional and psychological reactions to MNM including anxiety, sorrow, and anger,\[52\] constituting “maternal near-miss syndrome.”\[42\]

The consequences of these events include loss of life, loss of fertility, loss of body image, loss of quality of life, and dissatisfaction of marital relationships.\[43\] On the other hand, Hinton et al.’s study highlighted the importance of communication between primary and secondary care and showed that proper support from service providers completely changed the lives of these mothers.\[7\] Mothers who received support from healthcare providers had a
shorter physical and mental recovery, and the received support was very valuable to them.[12] Talking through events with midwives at follow-up visits can also be valuable in helping mothers understand what has happened to them.[12,15] In addition, health problems in partners after a near-miss experience may have a big impact financially, practically, and emotionally.[12,18] Consultation with spouses should be done, because fear of reoccurrence of events in the future pregnancy will reduce the desire for childbirth.[12] Counseling can make a real difference to how mothers and their partners cope with the emergency and recovery, because many mothers who develop MNM fail to access the required critical care due to failure to recognize danger signs.[41] Pregnancy and childbirth care packages require adaptation if they are to meet the identified health needs of mothers. Also, to defeat this persistent problem and to decrease the burden of MNM, we need to educate the general public to opt for immediate postnatal care.[25,31,42] One of the limitations of this study was that due to the large number of articles and the wide range of MNM needs, few electronic databases were selected.

Conclusion

According to the researcher review of literature, there has been no systematic review of the needs of near-miss mothers. The importance of this issue is that the lives of these mothers will be different from other mothers after pregnancy and childbirth. They need to receive special support given the difficult conditions they are undergoing. These mothers should not be the victims of problems that are contrary to the law of human rights as they are pregnant. Furthermore, to eliminate discrimination against them, we must strive to improve their wellbeing not only on the level with other mothers and bring them back to normal life. Therefore, it is necessary in the first step to reach the quality of care with the audit and to prevent avoidable morbidity. Then, in the next step, with the support of mothers, we reduce the burden of unavoidable complications to return them to normal life. Health providers should be conscious for problems caused by the impact that the near-miss experience can have on the whole family and be prepared to offer consultation about future childbirthing. To improve the quality of care, a flexible appointment should be made for near-miss mothers who are not ready for follow-up or auditing sessions. Therefore, for future implication, it is recommended that a supportive program be designed to follow-up MNM after the discharge to be run by the primary care team.

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Conflicts of interest

Nothing to declare.

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