GENDER EQUALITY TOOLBOX

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# GENDER AND MNCH: A REVIEW OF THE EVIDENCE

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BILL & MELINDA GATES *foundation*

# CONTENTS

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# ABBREVIATIONS

| | |
|---|---|
| **ANC** | Antenatal care |
| **BCC** | Behavior change and communication |
| **BMGF** | Bill and Melinda Gates Foundation |
| **CHW** | Community health worker |
| **CPMD** | Common perinatal mental disorders |
| **EmONC** | Emergency obstetric and newborn care |
| **FBD** | Facility-based delivery |
| **FGM** | Female genital mutilation |
| **HCP** | Health care providers |
| **HIV** | Human immunodeficiency virus |
| **ICT** | Information and communication technologies |
| **IPV** | Intimate partner violence |
| **LAM** | Lactational amenorrhea method |
| **LBW** | Low birth weight |
| **LMICs** | Low- and middle-income countries |
| **MNCH** | Maternal, newborn, and child health |
| **MNH** | Maternal and newborn health |
| **PNC** | Postnatal care |
| **PPD** | Postpartum depression |
| **PPFP** | Postpartum family planning |
| **RCT** | Randomized controlled trial |
| **SBA** | Skilled birth attendant |
| **SRH** | Sexual and reproductive health |
| **TBA** | Traditional birth attendant |
| **VAWG** | Violence against women and girls |

# DEFINITIONS

Definitions in red font are from the Bill and Melinda Gates Foundation (BMGF) Gender Equality Lexicon, whereas definitions in black are specific to this review.

## Gender Equity

**Fairness in treatment of all people regardless of sex or gender identity and/or expression.**

The concept of gender equity recognizes that individuals have different needs and power based on their sex or gender identity and/or expression, and that these differences should be identified and addressed in a manner that rectifies inequities. To ensure fairness, affirmative action is often used to remedy gaps and compensate for historical and social disadvantages that prevent individuals from otherwise operating as equals. Gender equity is a strategy that can lead to gender equality using targeted, time-bound policies.

## Gender Equality

**The state of being equal in status, rights and opportunities, and of being valued equally, regardless of sex or gender identity and/or expression.**

In a state of gender equality, people are free to develop their personal abilities and make choices without the limitations set by stereotypes, gender norms, or prejudices. Gender equality is widely recognized as a fundamental human rights concern and a precondition for advancing development, reducing poverty, and promoting sustainable development. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration and that achievement of development outcomes does not depend on an individual's sex or gender identity and/or expression.

## Gender Norms

**The collectively held expectations and beliefs about how people should behave and interact in specific social settings and during different stages of their lives based on their sex or gender identity.**

These rules seek to govern people's behavior and represent beliefs and values about what it means to be male or female in a particular society, culture or community. The reward for adhering to these norms can be acceptance and social inclusion, while the consequences for not conforming can range from subtle social exclusion to exclusion from school, employment, or health care, and to threats or acts of violence, and in extreme cases, death. Such norms set socially-held standards for a range of decisions individuals make throughout their lifespan, including about: health seeking behaviors, age of marriage, family size, (non)use of contraception, career selection, risk behaviors, showing emotion, perpetration of violence, and household chores.

## Gender Integration

Gender integration is the adoption of a gender lens across bodies of work and in specific investments to accelerate progress toward sectoral goals and to advance gender equality. The Bill and Melinda Gates foundation uses a three category continuum to assess the level of gender integration in a specific investment. The categories are as follows:

**Gender unintentional** refers to programmes that do not recognize the impact of gender on the problem. Nor do they integrate a gender lens in the proposed approach; nor target gender gaps.

**Gender intentional** interventions are those that are designed to reduce gender gaps in access to resources. Activities address how people experience the problem differently because of their gender.

**Gender transformative** programs go beyond gender-intentional interventions to change gender power relations and/or reduce gender gaps in agency over resources. They can actively work to change discriminatory gender norms and/or power imbalances as a means to reaching both health and gender equality objectives.

## Gender-based risk factors

Gender-based risk factors are the gender relational aspects of being a woman or girl that place them at greater risk of adverse maternal and newborn health (MNH) outcomes. These risk factors include the following:

- **Low autonomy and decision-making power:** Women and girls often lack agency - the ability to make decisions regarding their health, mobility, how they spend their time, etc. They also face challenges in making decisions on behalf of their children and families.
- **Lack of control over resources:** One manifestation of patriarchy and women and girls' low status is that they have limited access to resources – whether financial resources, household economic assets, or control over their own time – and are unable to decide or control how these resources are allocated by others in the household.
- **Low mobility:** Women and girls are often restricted in their mobility by family and community, and unable to make decisions regarding their movement outside the household, including whether to seek healthcare or medicines. Their limited mobility may also be due to unsafe conditions or inadequate transportation.
- **Low education:** In many contexts, women and girls have lower educational attainment compared to men and boys, limiting their knowledge of health, including maternal health, making it harder for them to navigate health systems, and often constraining their power within the household.
- **Low MNH knowledge:** Women and girls often lack information regarding reproductive anatomy, pregnancy, labor and delivery, postpartum recovery, and infant care as well as knowledge of health services.
- **Poverty:** Although poverty affects all individuals in a poor family, it may disproportionately affect women and girls because of the way that household resources may be allocated towards men and boys. Additionally, men and boys may be better able to capitalize on economic opportunities that alleviate poverty.
- **Young age/adolescence:** Girls and adolescents more commonly experience adverse outcomes than older women, as a consequence of their lack of power in relation to their sexual partners. Younger age of sexual debut, marriage, and childbearing lead to poorer MNH outcomes for adolescents and young women.
- **High parity, shorter birth intervals, and unintended pregnancy:** Having more children in a shorter span of time is associated with poorer MNH outcomes, particularly when the pregnancy is unplanned. These risk factors are influenced by other gender-based risk factors such as girls' younger age of sexual debut, marriage and childbearing, violence against women and girls, lack of agency, etc.
- **Low social support:** Women and girls, particularly those who lack mobility, may be isolated within their households and have fewer social connections with peers and others. Their smaller social networks may not provide adequate social support in general.
- **Violence against women and girls:** As a consequence of their subordinate social position and lack of access to resources, women and girls are vulnerable to violence from their intimate partners (i.e., spouses and sexual partners) and other family members.
- **Power dynamics within extended family:** As females and as children, adolescent girls are often at the bottom of the social hierarchy within the family. Married women, particularly those who live in joint families, often assume subordinate roles relative to their husbands, other male family members, and older women.
- **Inequitable spousal relationships:** Gender inequality and the subordinate relationship of wives to husbands establish unequal relationships between spouses, leaving women and girls who are married with limited decision-making power.
- **Inequitably shared workload within the household:** Women and girls are viewed as responsible for most household duties even during pregnancy and after childbirth. Gendered norms make men and boys reluctant to take up domestic roles even when it would protect the health of women and girls.
- **Gender-based stigma and discrimination:** Women and girls may experience stigma and discrimination related to their use of contraception and ill-timed or out-of-wedlock pregnancies. Poor women are often treated with disrespect by the health system. Regardless of how they contracted HIV, women who test positive may be stigmatized by their families and by the health system.
- **Female genital mutilation:** FGM consists of all procedures that involve partial or total removal of the external female genitalia or other injury to the female genital organs whether for cultural or other non-therapeutic reasons. FGM is associated with elevated risk of caesarian section, hemorrhage, extended maternal hospital stay, infant resuscitation and inpatient perinatal death.
- **Preference for male children:** When boys are preferred over girls, women who give birth to daughters are under pressure to have more children, baby girls may be neglected, and the mothers of daughters may themselves not be well treated. In places where sex-selective abortion is common, women may undergo multiple terminations in the hope of giving birth to a son.


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# EXECUTIVE SUMMARY

In spite of recent declines, maternal and neonatal mortality and morbidity continue to be high. Although there have been many approaches to tackling these challenges, there has not been enough effort to understand whether and how gender equality and maternal empowerment may influence maternal and infant health behaviors and outcomes. Understanding gender inequality and underlying gender norms that place pregnant and newly parenting women and girls and their newborns at increased risk of mortality and morbidity can help donors and other stakeholders ensure the efficiency, effectiveness and sustainability of their investments.

This report is the result of an evidence and landscape review commissioned by the Bill and Melinda Gates Foundation to better understand how gender inequalities influence a wide variety of maternal and newborn health (MNH) behaviors and outcomes across low and middle-income countries. Based on a systematic analysis of peer-reviewed academic literature, program reports, evaluations and case studies, as well as interviews with key stakeholders in the MNH health sector, it provides evidence on how gender inequality contributes to the vulnerability of pregnant and newly parenting women and girls and their newborns. It also highlights lessons learned from interventions that have addressed gender norms, including programs targeting maternal empowerment and men's role in MNH to improve health outcomes. The review demonstrates that increased attention to gender in MNH programming by the BMGF would be a very welcome and much needed contribution to the field.

One key finding of the review is that there is greater focus on certain approaches (e.g. male involvement and participatory learning and action with women's groups) compared to others, and a lack of attention to: particular populations, such as pregnant adolescents; addressing particular gender-based risk factors, such as violence against women and girls (VAWG); and improving certain MNH outcomes, including common perinatal mental disorders (CPMD). There is also opportunity for these interventions to adopt transformative approaches in pursuit of more profound shifts in gender norms. By altering restrictive norms that inform and reinforce gender inequalities, gender transformative interventions have greater potential to catalyze sustainable shifts in behaviors and attitudes. Gender inequality and restrictive gender norms and gender inequality also have profound implications for relationships between providers and clients, as well as between providers of different cadres.


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The review concludes with a set of recommendations for future learning and investment:

- *Invest in longer-term gender-transformative interventions*, which have higher potential for sustainable and longer-term gains in MNH outcomes;
- *Include gender-based outcome measures and process indicators, as well as empowerment indicators, in program evaluations, and use measures that assess more than individual behavior change (i.e. norms and attitudes)* to reveal whether programs have gender-related impacts;
- *Shift focus from only mortality to mortality and morbidity (both acute and chronic)* because morbidity has lasting consequences across the life-course and generations for both mothers, newborns, and their families;
- *Adopt a life-course approach and link investments across programs* not only to avert maternal and neonatal morbidity but also to consider the impacts of poor health on women's economic empowerment (and of women's economic empowerment on health outcomes) as well as the experiences of pregnant adolescents;
- *Address both supply and demand through MNH programming* because gender and gender norms are often at the core of both supply- and demand-side challenges;
- *Invest in gender-intentional and transformative information and communication* technology interventions to ensure that these types of interventions consider the gendered realities in which they are being implemented (e.g. who has access to and ownership of mobile phones);
- *Replicate and scale up participatory learning and action approaches* that have been applied and evaluated rigorously in many settings but remain untested on a larger scale or in different contexts;
- *Invest in VAWG and CPMD interventions* because despite substantial observational evidence in these areas, there are few MNH interventions that target VAWG or seek to avert CPMD;
- *Invest in gender-intentional (and ideally gender-transformative) supply-side interventions* to explicitly address the norms, values, and power dynamics among health care providers, and their treatment of either female patients or fellow female providers in pursuit of improving quality of care; and
- *Focus more intentionally on postnatal care, particularly on gender-intentional post-partum family planning interventions*, to balance out the focus on antenatal and intrapartum care and also to address postpartum morbidities and future pregnancy-related outcomes.

These findings and recommendations are intended to inform the "downstream" elements of the Gates Foundation's new maternal, newborn, and child health strategy, with particular relevance to the steps in the *Theory of Action*, and contributing toward the improved *Adoption, Effective Coverage and Equity* in results.

# INTRODUCTION

Across the developing world, mothers continue to die at alarming rates due to preventable complications during pregnancy and childbirth. In 2015, the lifetime risk of maternal death in a low-income country was approximately 1 in 41 women as compared to 1 in 3,300 women in a high-income country (1). Just as devastating, nearly three million children died in their first month of life in 2016, due in large part to conditions and diseases associated with a lack of quality care and treatment at birth or immediately after (2). Compounding the issue, there is a substantial burden of maternal and neonatal morbidity that is not only more difficult to alleviate but also challenging to measure (3,4). While there have been many approaches to tackling these challenges, there has been little effort to understand whether and how gender equality and maternal empowerment may influence maternal and newborn health (MNH) behaviors and outcomes.

In a commentary to *The Lancet's* 2016 Maternal Health series, the editors argued that the only way to achieve sustained improvements in global maternal health, a central aim of the United Nations' Sustainable Development Agenda, is to focus on the important relationships between maternal health and other sectors, including education, gender equity, and poverty reduction (5). *The Lancet* called for higher priority attention to the needs of adolescent girls and young women, to addressing the needs of pregnant women beyond the safe delivery of healthy newborns, and to more holistic and integrated programming linking (MNH) to other interventions, such as effective parenting.

Despite these calls, and in spite of the evidence suggesting that gender inequality can negatively influence MNH outcomes, the MNH sector has not consistently applied a gender lens to program and policy design, implementation or evaluation. This report, along with the introduction of a refreshed maternal, newborn, and child health (MNCH) strategy at the Bill & Melinda Gates Foundation (BMGF), provides an opportunity for change.

Understanding gender inequality and underlying gender norms that place pregnant and newly parenting women and girls and their newborns at increased risk of mortality and morbidity can help donors and other stakeholders ensure the efficiency, effectiveness and sustainability of their investments. Addressing context-specific gender inequalities at the individual, household, community, and institutional levels can more effectively ensure improved MNH health outcomes. Incorporating gender analyses in MNH policies and programming would shed light on the linkages between gender inequality and health outcomes; in addition, information gleaned through gender analyses would inform more equitable and sustainable policies and programs.

This report is the result of an evidence and landscape review commissioned by BMGF to better understand how gender inequalities influence a wide variety of MNH behaviors and outcomes across low and middle-income countries (LMICs). It provides evidence on how gender inequality contributes to the vulnerability of pregnant and newly parenting women and girls and their newborns, and highlights lessons learned from interventions that have addressed gender norms, including programs targeting maternal empowerment and men's role in MNH to improve MNH outcomes. The review demonstrates that increased attention to gender in MNH programming by the BMGF would be a very welcome and much needed contribution to the field.

This report is based on a systematic analysis of peer-reviewed academic literature, program reports, evaluations and case studies, as well as interviews with key stakeholders in the MNH health sector. The review is guided by one overarching question: What is the evidence to date on the relationships between gender equality, mothers' empowerment, and MNH outcomes during the antenatal, intrapartum, and postpartum periods? Three sub-questions that further structure the review:

- What is the evidence from observational and programmatic literature?
- Which gender-intentional interventions targeted at pregnant women or mothers and their partners have affected MNH outcomes?
- How do gender norms and inequalities and women's empowerment affect the experiences of MNH providers as well as their behavior and performance with implications for MNH outcomes?

The findings from this review can help to inform the "downstream" elements of the Gates Foundation's new MNCH Strategy, with particular relevance to the steps in the *Theory of Action*, and contributing toward the improved *Adoption, Effective Coverage and Equity* in results.

# METHODOLOGY

The review involved three components: (i) a systematic review of the peer-reviewed literature; (ii) a comprehensive review of the grey literature; and (iii) interviews with key informants. The research was carried out between March – August 2018.

## Systematic review of the peer-reviewed literature

We used a pre-defined set of search terms to search four public health and social science databases. After eliminating duplicates, we applied a set of inclusion criteria to conduct a title and abstract screening and identify relevant articles with full-texts available. We categorized these articles into observational studies, interventions, review papers, and study protocols. We further employed a "snow-balling" approach to identify additional relevant articles by consulting the references of review papers, papers cited in the background sections of articles sourced through the systematic review, and articles recommended by key informants, BMGF staff, or Iris Group team members. We conducted targeted searches in particular areas of interest to the Foundation: post-partum family planning, gender norms in the health care system, respectful maternity care, overall quality of MNH care, and digital tools for MNH. We also reviewed evaluations of gender-intentional and transformative interventions published in the peer-reviewed literature and archived on the Maternal Health Task Force website to supplement our search. **Appendix A** contains details on the search terms and strategy, inclusion criteria, search results, and extraction forms for the systematic components of the search. It is important to note that the study deliberately sought to identify evidence on gender-intentional and transformative approaches, and thus utilized gender-specific terms as part of its search strategy. As a result, it is inherently biased toward literature and programming that may be more gender-inclusive, such as social work and violence prevention and response.

## Comprehensive search of the grey literature

In addition to the systematic review, we identified a set of key search terms, loosely derived from the systematic review, which were used to identify programmatic reports, briefs, presentations, and other materials from non-governmental and governmental organizations, think tanks and donor organizations. We also used a "snow-balling" approach to identify further information. The observational literature did not differ too greatly from that found in the systematic review of the peer-reviewed literature; therefore, we focused our data extraction efforts on the articles related to gender-intentional and transformative interventions.

## Landscaping

In coordination with BMGF staff, we identified key informants from academic institutions, non-governmental organizations, foundations, and bilateral and multilateral institutions who could speak to gender and MNH evidence and programming globally, and in South Asia and sub-Saharan Africa specifically. We conducted a total of 22 semi-structured interviews with 25 representatives of academic, non-governmental, foundation, bilateral and multilateral institutions, using the guide found in **Appendix B1**. We used grounded theory to synthesize key findings, the summaries of which have been woven into this report and included as **Appendix B2**, as well as to inform the strategic recommendations we will provide to the Foundation.

Based on the findings from these three work streams, we developed a conceptual framework and mapped the various gender norms and gender-related risk factors that influence: 1) Care-seeking and use of MNH services; 2) Care-seeking behaviors; and, 3) MNH outcomes.

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# FINDINGS

## Evidence linking gender equality, maternal empowerment, and maternal and newborn health outcomes

Across low and middle-income countries, the health and wellbeing of women and girls is affected by gender inequalities that underpin their daily lives. Structural biases and social norms that drive child marriage, school dropout, early pregnancy, intimate partner violence, limited land and inheritance rights, migration, and restricted economic opportunities, among other outcomes – can influence women's autonomy and freedom, household decision-making and control of financial resources, which can, in turn, affect maternal and newborn health outcomes. Joined with a complacency in some societies around the inevitability of maternal morbidity and mortality as a logical conclusion of pregnancy (as in the five-hundred-year-old quote below), it is not a leap to hypothesize that gender inequality and the disempowerment of women and girls can contribute to poor MNH outcomes.

Indeed, the evidence base suggests that inequitable gender norms exacerbate a number of risk factors that can contribute to pregnant women's and girls' vulnerability and poor nutrition, as well as to delays in seeking care, reaching facilities, and receiving adequate care. From over 500 observational studies reviewed as part of the systematic review, there was substantial evidence linking gender-related risk factors to MNH services, outcomes, and health-promoting behaviors and care practices.[1] Several studies focused on the relationships between gender-related risk factors and MNH services and behaviors or care practices. Very few studies traced pathways by which gender-related risk factors affect both MNH service use and outcomes, instead focusing on one or the other. However, there was evidence linking previous experience with health services – either during a previous pregnancy or earlier during the pregnancy (e.g. for antenatal care [ANC]) with later use of services (e.g. facility-based delivery [FBD]). We mapped findings from the observational studies into an overall conceptual framework **(Figure 1)**.

**"Even though they grow weary and wear themselves out with child-bearing, that is of no consequence; let them go on bearing children till they die, that is what they are there for."**

Martin Luther, The Estate of Marriage (1522)

1. Descriptive characteristics of the observational studies are presented in Appendix C.

## Figure 1. Conceptual Framework

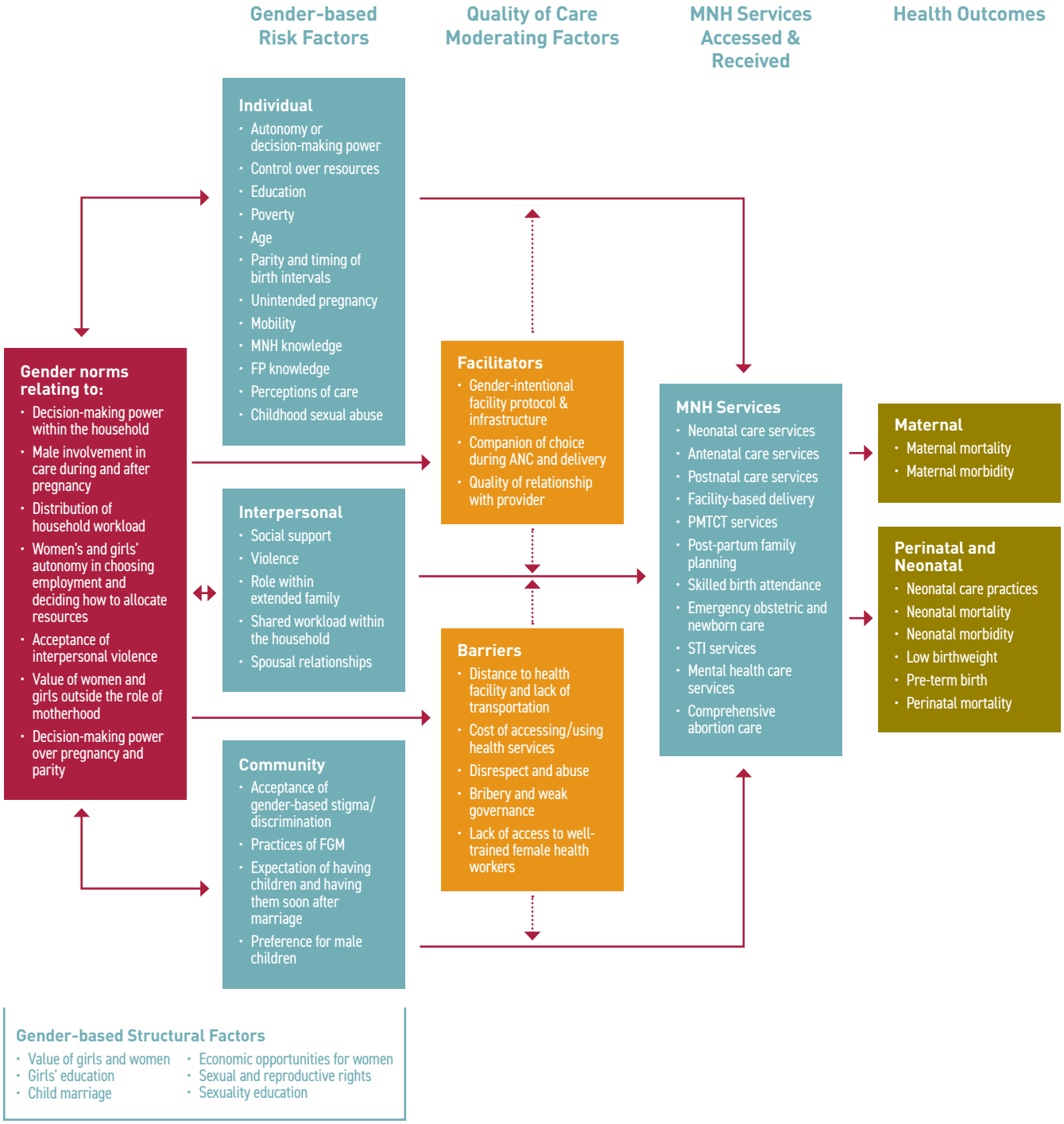


**Figure 1** includes the risk factors, services, outcomes, and behaviors identified in the review, and notes some of the many gender-based structural factors that influence both risk factors and moderators of quality care. The figure also presents modifying facilitators and barriers that pregnant women and adolescent girls face that strengthen or weaken, respectively, their agency and access to high-quality care. **Table 1** over the page summarizes selected findings from the observational studies to illustrate some of the key pathways from gender-based risk factors to MNH services, behaviors, and outcomes:

**Table 1. Selected associations between gender-based risk factors and maternal and newborn health services, outcomes, and behaviors**

| Gender-based Risk Factor | Country in which it was studied | MNH services, outcomes, or behaviors | Citations |
|---|---|---|---|
| Poor access to information | Ghana, Indonesia, Kenya, Pakistan | Higher access to information was associated with higher odds of FBD. ANC and PNC services may not be sufficient to address gaps in knowledge. | (6) (7) (8) (9) |
| Childhood sexual abuse | Colombia, Ecuador, South Africa | Three studies showed childhood sexual abuse to be associated with adolescent pregnancy, antenatal depression, and PTSD. | (10) (11) (12) |
| Disrespect and abuse | Brazil, China, Ghana, Jordan, Kenya, Malawi, Nigeria, Pakistan, Tanzania, | Across contexts, there was consistent evidence of significant D&A throughout MNH services. Younger women, single mothers, and women without a companion at delivery were more likely to experience D&A. | (13)(14)(15)(16)(17)(18)(19)(20)(21)(22)(23)(24)(25) |
| Low educational attainment | Ethiopia, Nepal, Nigeria, Senegal | Higher educational attainment was consistently associated with higher likelihood of SBA use and FBD. | (26) (27) (28) (29) (30) |
| Disempowerment | Bangladesh, China, Congo, Egypt, Ethiopia, Ghana, India, Liberia, Mali, Nepal, Nigeria, Pakistan, Republic of Congo, Tanzania, Uganda, Zambia, | Most studies used proxy measures of empowerment. Autonomy or decision-making power was usually but not always associated with greater access and use of both ANC and PNC, and likelihood FBD. No studies directly linked empowerment to MNH outcomes. | (31) (32) (33) (34) (35) (36) (37) (38) (7) (39) (27) (28) (29) (30) (40) (41) (42) (43) (44) |
| Fear of male health workers | Peru | Women in Peru feared having male health workers, which led to lower likelihood of seeking services. | (45) |
| FGM | Burkina Faso, Ghana, Kenya, Nigeria, Senegal, Sudan, | In Nigeria, Senegal, Sudan, Burkina Faso, Ghana, and Kenya, women with FGM II and III were more likely to have a caesarean section, PP blood loss of 500 mL or more, and an extended hospital stay. They were also more likely to experience PP hemorrhage, episiotomy, extended maternal hospital stay, resuscitation of the infant, and inpatient perinatal death. Women were not always told that fistulas are linked to FGM. | (46) (47) |
| Gender inequalities | Bangladesh, China, Ethiopia, India, 8 African Countries | Several studies suggested that community-level disapproval of violence was associated with higher likelihood of adequate ANC, FBD, and PNC, as well as infant immunization. Inequitable gender norms were associated with delays in seeking care, lower likelihood of ANC, FBD, and PNC. Globally, lower scores on the Gender Development Index were associated with early childbearing. | (48) (31) (32) (33) (39) (49) |

| Gender-based Risk Factor | Country in which it was studied | MNH services, outcomes, or behaviors | Citations |
|---|---|---|---|
| Gender-based stigma and discrimination | Brazil, Kenya | One study showed that fear of social stigma leads to lower likelihood that women will disclose positive HIV status and higher likelihood of home birth. One study noted stigma for HIV positive women as a driving factor in women's desire to have an abortion. | (50) (51) |
| Inadequate male involvement | Bangladesh, El Salvador, Ghana, India, Malawi, Mexico, Myanmar, Nepal, South Africa, Tanzania | There was consistent evidence that men's values and opinions influence women's desire and ability to seek care. Male involvement was shown to enhance uptake and compliance with PMTCT. Few studies linked inadequate male involvement to service or health outcomes, instead focusing on explaining lack of male involvement in MNH. Reasons included lack of knowledge, work obligations, and the belief that men have no role in MNH. | (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) |
| Inequitable spousal relationships | Bangladesh, Brazil, China, India, Nigeria, South Africa, Tanzania, | Inequitable spousal relationships were consistently associated with lower likelihood of ANC and FBD, as well as antenatal depression and CPMD. Some evidence suggests it is associated with lower modern contraceptive use. | (41) (40) (67) (68) (69) (70) (71) (72) (73) (74) (75) |
| Violence against women and girls | Bangladesh, Brazil, Cameroon, China, Ethiopia, Ghana, India, Kenya, Mexico, Nepal, Nigeria, Pakistan, South Africa, Tanzania, Timor-Leste, Turkey, Vietnam, | Experience of IPV was consistently associated with lower access to and use of services, including FP, any or adequate ANC, SBA, and FBD, and PNC. Violence was consistently associated with a range of maternal health outcomes, including preterm labor, PPD, suicidal ideation miscarriage, and fistula. A lower number of studies showed IPV to be associated with pre-term birth, birth asphyxia, inadequate vaccination, inadequate infant care practices, and perinatal and neonatal mortality. | (36) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) (101) (102) (103) (71) (104) (69) (105) (106) (72) (107) (108) (109) (110) (111) (112) (113) (114) (115) (116) (117) (118) (119) (120) (121) (122) (123) (124) (125) |
| Lack of control over resources | Bangladesh, Nigeria | Evidence on the role of economic empowerment were mixed, with one study in Nigeria suggesting that higher control over resources is associated with SBA and FBD, but another in Bangladesh showing higher association with home delivery. | (36) (37) |
| Low decision-making lower/lack of autonomy | Albania, Bangladesh, Burkina Faso, China, Ethiopia, Gambia, India, Nigeria, Pakistan, 2 Global Comparisons, | Increases in decision-making power and/or autonomy are associated with increased use of ANC, SBA, PNC and decreased risk of LBW. In two global studies examining LMICs, both the Gender Equity Index and Social Institutions Gender Index were correlated with MMR. | (43) (126) (127) (128) (41) (40) (129) (130) (131) (31) (132) (48) (133) (134) |
| Low quality of care | Brazil, India, Pakistan, Tanzania | Perceptions of low quality of care led to delays in seeking care, and negative experiences in ANC were shown to potentially lead to lower likelihood of FBD. | (135) (136) (137) (62) (32) |

| Gender-based Risk Factor | Country in which it was studied | MNH services, outcomes, or behaviors | Citations |
|---|---|---|---|
| Low social support | Ethiopia | Women in communities with higher SBA endorsement have greater odds of FBD. However one study suggested that women who receive close attention from their family were more likely to deliver at home. | (38) (42) |
| Preference for male child | China, India, Nigeria, Mexico, Bangladesh, Vietnam, Turkey | Birth of a female child or undesired sex of child is usually but not always associated with antenatal and postnatal depression, and in some cases with IPV. | (70) (138) (106) (139) (140) (141) (71) (142) (143) (20) (144) (145) |
| Previous experience with and lack of trust in HCPs | Brazil, Burundi, Guatemala, Indonesia, Malawi, Pakistan, Peru, Tanzania, Uganda, | Women who fear judgment from or have negative experiences with providers in ANC are less likely to seek SBAs or FBD and also less likely to disclose HIV status to a partner. Similarly, previous negative experience with FBD is associated with less likelihood of FBD in subsequent pregnancy. | (135) (136) (62) (146) (147) (148) (8) (149) (45) (150) |
| Quality of relationship with provider | Brazil, Ghana, Guatemala, Indonesia, Uganda | Women who fear neglect or ill treatment by health workers are less likely to use SBA. Some studies suggest a preference for TBAs because of perceived treatment from SBA. | (148) (8) (149) (151) (152) |
| Requests for bribes and/or improper payments | Kenya | In Kenya, requests for bribes are more likely for women delivering with a companion and for women of higher parity. | (13) |
| Subordinate roles within extended families | Bangladesh, China, Nigeria | Problematic relationships with in-laws is associated with PPD. | (138) (139) (71) (74) |
| Traditional beliefs | Bangladesh, Ghana, India, Iran | Some studies showed traditional birth attendants are preferred over SBAs, particularly in South Asia. Culturally rooted beliefs surrounding pregnancy sometimes lead to delays in seeking care or preference for home delivery, particularly if women do not feel their beliefs and values will be respected by providers. | (153) (154) (155) (32) (156) (157)(158) |
| Unintended pregnancy | Bangladesh, Colombia, Ethiopia, Mexico, Pakistan, South Africa, Uganda | Having a primary partner is shown in multiple contexts to be a risk factor for adolescent and unintended pregnancy. Unintended pregnancies are consistently associated with higher likelihood of CPMD. Some evidence shows women with intended pregnancies are more likely to use MNH services. | (159) (160) (11) (161) (162) (101) (105) (71) (163) (107) (164) (165) |
| Young age/ adolescence | India, Uganda | Adolescents in India have very low rates of ANC and only 50% utilized safe delivery services. Young age at pregnancy is associated with fistula in Uganda. | (66) (166) |

ANC: Antenatal care; D&A: Disrespect and abuse; CPMD: Common perinatal mental disorders; FBD: Facility-based delivery; FGM: Female genital mutilation; Family planning; HCP: Health care provider; HIV: Human immunodeficiency virus; PNC: Postnatal care; PPD: Postpartum depression; PTSD: post-traumatic stress disorder; LMICs: Low and middle income countries; MNH: Maternal and newborn health; SBA: Skilled birth attendance.

**Table 1** provides compelling evidence regarding the links between particular risk factors and MNH outcomes, services, and behaviors. It also shows that there are certain risk factors for which there is substantial evidence e.g. violence against women and girls (VAWG). A heat map of risk factors and outcomes in **Figure 2** offers more information regarding emergent trends that start to appear in **Table 1**.[2]

## Figure 2. Mapping gender-based risk factors with MNH outcomes and use of services

| Gender-based Risk Factors | Use of MNH services | Maternal health outcomes | Neonatal health outcomes |
|---|---|---|---|
| Violence against women and girls and intimate partner violence | 27 | 40 | 18 |
| Inequitable spousal relationships | 15 | 9 | 0 |
| Low decision-making power/lack of autonomy | 17 | 4 | 2 |
| Young age/adolescence | 5 | 10 | 7 |
| Previous experience with and lack of trust in HCPs | 20 | 1 | |
| Gender-based stigma and discrimination | 13 | | |
| Low education attainment | 10 | 1 | 1 |
| Inadequate male involvement | 12 | | |
| Preference for male child | | 11 | 1 |
| Unintended pregnancy | 1 | 9 | |
| Poor access to information | 8 | 1 | |
| Gender inequalities | 5 | 3 | 1 |
| Poverty | 5 | 3 | |
| Disrespect and abuse | 6 | 1 | |
| Subordinate roles within extended families | 3 | 4 | |
| Female genital mutilation | | 4 | 1 |
| Childhood sexual abuse | | 4 | |
| Lack of control over resources | 3 | | |
| Disempowerment | 2 | | |
| Fear of male health workers | 2 | | |
| High parity and short birth intervals | 2 | | |
| Low social support | 1 | 1 | |
| Lack of mobility | 1 | | |
| Low quality care | 1 | | |
| Requests for bribes and/or improper payments | 1 | | |
| Traditional beliefs | 1 | | |
| GRAND TOTAL | 164 | 106 | 31 |

**Figure 2** presents a cross-tabulation of risk factors and outcomes, highlighting which risk factors and outcomes appear frequently in the reviewed observational studies. In terms of risk factors, VAWG/IPV is the most frequently cited risk factor, followed by inequitable spousal relationships, low decision-making power and lack of autonomy, young age and adolescence, and previous experiences with health care workers or systems.

Regarding outcomes, use of MNH service is most often cited, followed by maternal health outcomes. Neonatal health outcomes are cited about 10% of the time. Looking at outcomes in a more granular sense, the review finds common perinatal mental health disorders (CPMD)[3] to be the most commonly cited maternal health outcome, followed by outcomes relating to MNH services, such as FBD, ANC, general use of MNH services, and SBA. There was little mention of postnatal outcomes or PNC among the observational studies.

2. More detailed mapping of the observational studies with accompanying citations is provided in an accompanying worksheet.
3. CPMD is defined as mental disorders occurring among women during pregnancy or postpartum.

The frequency of certain risk factors and outcomes appears to suggest that there is greater evidence in certain areas, i.e. VAWG and maternal health outcomes, than in other areas. The dominance of certain risk factors and outcomes may be driven by the salience of these health issues, such as the fact that violence experienced during a woman's lifetime and particularly during pregnancy has severe implications for her health, as well as the health of her child (167,168). However, it may also be driven by greater interest or funding in this area, or by a lack of attention to gender in more traditional MNH programming and research as compared to in other areas (i.e., violence prevention or family planning). Surprisingly, the high level of attention to VAWG and CPMD in the observational studies was not matched in the interviews with key informants. Very few mentions were made of CPMD, and only a few interviewees mentioned the impacts of violence on MNH, with those noting it as a given in the field:

> *"Of course we know that GBV has been linked to reduced maternal care-seeking..."*

> *"There's plenty of evidence on GBV experience being higher for women during pregnancy, including evidence that, in some countries, pregnancy-related GBV is documented as a leading cause of death..."*

The weight of the evidence related to VAWG and CPMD was also not reflected in the programmatic literature. There was only one intervention that explicitly focused on VAWG during pregnancy (169) and two others that reduced VAWG in the context of a multi-dimensional intervention (170,171). There were equally few interventions that addressed CPMD.

It is important to note that maternal and neonatal mortality were not frequently cited as outcomes in the observational studies, perhaps because mortality is such a rare event epidemiologically speaking. Fewer than five percent of the observational studies looked at mortality outcomes. Instead, studies far more frequently included use of services as outcomes, particularly during the antenatal and intrapartum periods. At the same time, however, many of the key informants interviewed expressed a need for research that looks at the impact of gender-intentional and ideally transformative programming that went beyond the use of services as indicators of MNH outcomes. They called for more nuanced and more longitudinal studies that allow for measurement of such interventions on morbidity and mortality. In parallel, they emphasized a need to move beyond mortality as the sole outcome of interest, and toward understanding and addressing the multiple morbidities experienced by women from one pregnancy to another, as well as by newborns in early life and across their life-course (3). Another aspect of adopting a life-course approach is shifting focus from provision of antenatal and intrapartum care – a predominant focus of the observational studies – to postnatal care and beyond. To enable future health behaviors, key informants also highlight the importance of starting even earlier in life, by preventing early pregnancies and ensuring that the first experience of pregnancy and childbirth is a healthy one.

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That said, the experiences of adolescents, notably pregnant adolescent girls, are not well-captured in the literature and require further exploration. Only 24 of the 534 observational studies focused specifically on adolescents, primarily focusing on girls with some studies looking at girls in the context of relationships. Most of these studies looked at factors leading to adolescent pregnancy, such as VAWG (67,159,172–174) and adolescent girls' perception of being in a stable monogamous relationship (11,159,160). In South Africa, adolescent girls and boys rarely used condoms in their primary partnerships because they trusted their partners and had aspirations of marriage whereas condom usage was more common in secondary relationships (160). In Uganda, discussions around family planning were limited by the threat of violence and inequitable spousal relationships in which males were primary decision-makers regarding family planning (172). Although males held greater decision-making power, they were excluded from family planning services – another identified barrier to care for adolescents in Uganda and more generally for both women and girls in LMICs (175).

Very few studies examined the use of MNH services, outcomes, or behaviors among adolescent girls. Of these, and consistent with global evidence (176), two studies found that teenage mothers in India are at higher risk for development of anemia, eclampsia, preterm labor, and low birth weight (LBW) (177,178). There was also evidence of lower use of MNH services among pregnant adolescents (166), with embarrassment or fear being the most commonly reported reasons as to why they did not seek care (179). Unmarried, pregnant adolescents in Uganda reported experiencing gender-based stigma and discrimination as reasons for not seeking care; their fear was founded on negative experiences with health care providers (HCPs) (173). HCPs were disrespectful to pregnant adolescents, unsympathetic to their condition, and did not maintain confidentiality of patient information (173). Poor quality of care experienced by pregnant, unmarried adolescents was founded on gender norms regarding sexuality, notably sexual relations in adolescence and outside of marriage.

Based on this evidence, one would expect greater attention to pregnant adolescents and their unique needs and concerns. Reaching pregnant adolescents and young mothers with care were critical priorities identified by key informants as well.

# Gender-intentional interventions and maternal and newborn health

## Overview

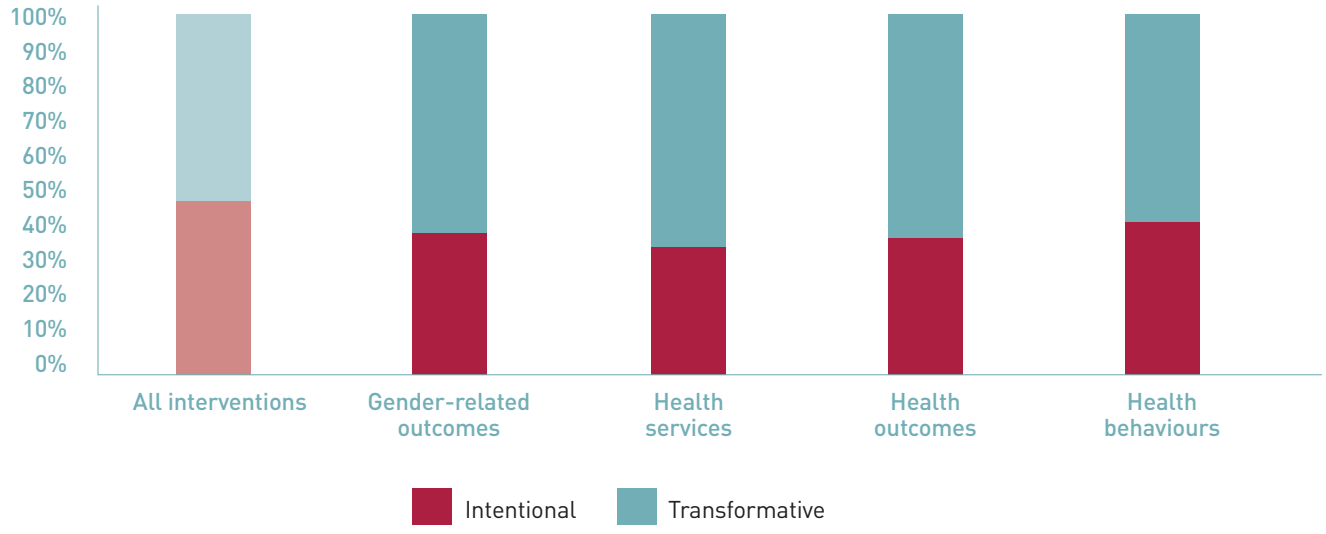
From our review of interventions published in the peer-reviewed literature and programs described in the grey literature, supplemented by recommendations from the key informants, we identified 49 MNH interventions and programs (henceforth called interventions) that employed a gender-intentional approach. The interventions occurred mainly in sub-Saharan Africa and South Asia, with a few in East Asia and Latin America and the Caribbean.[4] Only two of the interventions – *Reaching the Poor* program in Nepal (180) and the *Health Plus* approach in India and Nepal (181) – focused exclusively on adolescents. Other interventions targeted couples, health care workers, and groups of pregnant women and/or included other community members, leaders, and elders.

The interventions addressed different gender-related risk factors.[5] At minimum, they provided health information and knowledge to women lacking access to information: 80% of interventions provided some form of information. Over half of interventions also addressed the lack of social support experienced by women. Nearly 40% of the interventions addressed inadequate male involvement, such as in accessing health services or assisting with household work and childcare responsibilities, as well as women's low decision-making power and lack of autonomy. Many interventions addressed more than one gender-related risk factor, acknowledging the interrelated and reinforcing nature of these determinants.

The interventions had differing effects on MNH services, health outcomes, and behaviors, and on gender-related outcomes. ANC services and FBD were the most frequently reported services affected; neonatal mortality, CPMD, and maternal mortality were the most common health outcomes reported to have been improved; and birth preparedness and complication readiness (BPCR), breastfeeding, and neonatal care practices were the top three behaviors promoted. In terms of gender-related outcomes, increased male involvement was cited as an outcome in 22% of studies, and increased maternal knowledge in 24% of studies.

Over 50% of interventions used a gender-transformative approach, wherein they deliberately strived to change gendered power dynamics, norms, and inequalities. There were more gender-transformative interventions than gender-intentional ones (26 vs. 23). Gender-transformative interventions reported greater improvements in gender-related outcomes – there were 28 improved gender-related outcomes reported by gender-transformative interventions compared to 18 from gender-intentional ones (Figure 3).

**Figure 3. Effects of gender-transformative and gender-intentional interventions**




4. Descriptive information on the interventions is in Appendix D.
5. See Table D1 in Appendix D for more information.

Gender-transformative interventions increased men's involvement in MNH and women's perceptions of support from their partners, peers, or community members; promoted more equitable spousal relationships; reduced women's workload during pregnancy; and increased women's sense of empowerment and self-efficacy. Gender-intentional approaches had similar, albeit diminished, effects on gender-related outcomes. Gender-transformative approaches may be more effective in improving gendered outcomes; however, it is also likely that transformative interventions measure and report on gender-related outcomes more often than intentional ones.

The greater effect of gender-transformative interventions on MNH services and outcomes (and not just on gender-related outcomes) is notable. Transformative approaches had a markedly greater influence on increasing ANC attendance compared to intentional approaches, and were also more likely to report decreases in maternal and neonatal mortality. These findings have important implications for future programming.

The remainder of this section looks at lessons learned from specific strategies used by gender-intentional interventions and interventions targeting particular populations (e.g. adolescents) or targeting particular outcomes (PPFP and mental health). Interventions described in one section may use multiple approaches that are more fully described in **Appendix D**.

## Male involvement approaches

Eighteen interventions incorporated some form of male involvement strategy into their approach. Home-visiting and other community-based programs included both pregnant women and their male partners in information dissemination sessions (182–189). *The Centering Pregnancy* model adapted to the sub-Saharan context involved men in group ANC care (190,191). Other programs created separate groups for men to discuss gender- and health-related issues (192) or targeted men separately through using other men as champions or promoters. These programs sought to give rise to new gender norms related to men's involvement in their partners' pregnancies (193) and to encourage men to accompany their partners to health services (194). Interventions that focused on information dissemination to both women and men used an intentional approach, whereas those which engaged men in a more profound manner to change norms and transform gender relations employed a transformative approach. An exemplary, gender-transformative intervention is the Bandebereho couples' intervention in Rwanda (170). The Bandebereho intervention, described in greater detail in **Box 1**, engaged couples in critical reflection and dialogue to promote male engagement in maternal and child health.

### Box 1. The Bandebereho intervention

The Bandebereho couples intervention was implemented as a randomized controlled trial in four districts in Rwanda in early 2015. It was implemented as part of the MenCare+ program and used the Program P curriculum to transform norms regarding masculinity by providing positive role models of fatherhood and engaging men in maternal and child health. Men and their partners participated in small group sessions that addressed gender and power, fatherhood, couple communication and decision-making, IPV, caregiving, child development, and male engagement in reproductive and maternal health. The intervention greatly improved both health and gender-related outcomes: it lowered reported intimate partner violence and male dominance in decision-making, and increased male accompaniment at ANC, modern contraceptive use, and male participation in childcare and household work.

More transformative approaches such as the Bandebereho intervention, the *Male Champions* program in Mozambique (193), and the *Women and Their Children's Health (WATCH)* and *Wazazi na Mwana* programs in Bangladesh, Tanzania, and Zimbabwe (195) are needed to change social structures reinforcing gender inequality and the social context which shapes behaviors (196,197). Compared to gender-intentional approaches, many of which focus only on changing individual behaviors and actions, transformative approaches have the potential of catalyzing more sustainable change at the societal level. Furthermore, by renegotiating social expectations of how women and men should behave, transformative interventions avoid a common pitfall of intentional interventions, which is running the risk of letting men "take over" a space typically belonging to women. For example, a gender-intentional program may encourage men to accompany their wife or partner to ANC visits so that she feels supported and he feels involved in a healthy pregnancy, but in some societies, health care providers may give men priority in decision-making, so her needs do not get met (198). In contrast, transformative interventions that target the norms that lead to inadequate male involvement, inequitable spousal relationships, and power asymmetries within relationships are more likely to not only increase male attendance at MNH services, but also promote better couple communication and joint decision-making. A gender-transformative approach may not always mean increased male involvement, but would empower a pregnant woman to decide that her *companion of choice* for ANC visits is her sister or mother-in-law, rather than her husband.

The review indicates that there is scope to better measure and interpret changes in couple communication, decision-making, and relationships as a result of male involvement interventions. Male involvement studies recruit men that are in relationships, but they do not necessarily focus on those relationships (196). There is an implicit notion that by engaging men, there will be resulting change in how men and women communicate or make decisions jointly; yet these outcomes tend to be measured poorly (198). There is also an assumption that studies that measured changes in male partner support, couple communication, or joint decision-making are able to draw conclusions about the egalitarianism within relationships; yet they do not fully capture power dynamics within relationships (198). More nuanced measures are needed to capture the effects of male involvement as a single strategy on couples' relationships, with the intent of understanding how more equitable relationships lead to lasting improvements in MNH.

Greater evidence on the effects of male involvement strategies on maternal and neonatal morbidity and mortality is needed. Although there is sufficient support for positive associations with service usage (i.e., ANC, skilled birth attendance [SBA], FBD, postnatal care [PNC]) and gendered outcomes (better couple communication, greater support for women, joint decision-making), there is little direct evidence of effects on MNH outcomes (198). Only three of the 18 interventions using male involvement strategies explicitly measure maternal or neonatal mortality as outcomes. Additionally, more research is needed on how to engage men in MNH services through male-friendly policies. Aside from one intervention working with health workers to increase support for couples' voluntary counselling and testing in Thailand (199), there were no interventions in our review that targeted health systems or workers to promote men's engagement.

### Participatory learning and action and community groups

Approximately one-third of interventions created and/or supported community groups, some of which used participatory learning and action models. Four interventions in Bangladesh, India, Malawi, and Nepal applied a community-based participatory learning and action model through women's groups modeled on the *Warmi* intervention in Bolivia (200–206). The interventions, implemented as randomized controlled trials (RCTs), aimed to ascertain the effect of women's groups on neonatal, perinatal, infant and maternal mortality, stillbirth, and other health outcomes and MNH behaviors. All four interventions engaged and trained local women as facilitators and invited women of reproductive age, pregnant women, and/or new mothers to participate in women's groups. In Bangladesh, mothers-in-law were also invited (205); and in Malawi, men were included (206). These groups used participatory techniques, such as stories, games, etc., to help participants learn about pregnancy and motherhood and to discuss home-based prevention and care-seeking, including ANC and FBD. These groups also developed action plans that addressed and helped overcome the particular challenges and barriers women faced to accessing care.

All interventions had positive health effects; however, the one in Bangladesh did not reduce either neonatal or maternal mortality. Decreases in neonatal mortality in both intervention and control clusters and lower statistical power due to a smaller number of clusters may have influenced the results (205). However, process evaluation data from Bangladesh showed greater improvements in neonatal care practices (use of the safe delivery kit, exclusive breastfeeding for the first 6 weeks, and avoidance of early bathing) in the intervention group.

Despite using gender-transformative approaches in empowering women to act as agents of change to address MNH problems and addressing multiple gender-related risk factors, none of the quantitative evaluations of the interventions demonstrated any improvements in gender-related outcomes; however, qualitative evaluations of the interventions showed improved gender-related outcomes, specifically increased knowledge, confidence, and capacity in addressing MNH issues and greater social support and solidarity among women participating in these groups (207–209). Further, interventions in India and Nepal have continued to meet and have lasting impacts on neonatal mortality (210).

Several other interventions have replicated the participatory learning and action model with slight modifications. In Vietnam, using a cluster-randomized design, an intervention also trained women as facilitators for groups comprised of MNH stakeholders (community health workers [CHWs], HCPs, and women's union members). The groups used a similar participatory strategy to identify and prioritize MNH issues and solutions in their communities (211). This intervention increased ANC attendance and lowered neonatal mortality. The *MaiKhanda* program in Malawi used women's groups and a supply-side audit and process improvement approaches at health facilities to improve the delivery of care; it reduced perinatal and neonatal mortality (212).

Another multi-country intervention in Argentina, Guatemala, India, Kenya, Pakistan, and Zambia also combined approaches, integrating the participatory learning and action model with capacity building in home-based, life-savings skills for CHWs and emergency obstetric and newborn care (EmONC) for HCPs (213). This intervention had no effect on target outcomes (perinatal mortality, stillbirth, neonatal mortality, rates of transport to hospital of mothers and newborns, FBD) – a null finding that the authors suggest may be due to the lack of supporting maternal and neonatal care infrastructure (213). (This is but one of many examples of the need for attention to both the supply and demand side of the equation discussed below.)

Interventions using the participatory learning and action approach and designed as RCTs have generated important information about the effects of empowering women to improve MNH; however there is more work needed to ascertain whether these interventions can work in alternate contexts. In their review of participatory learning and action approaches with women's groups, Prost et al. (2013) ask whether these types of interventions are sufficient to improve health outcomes, particularly if replicated in urban areas that have higher MNH service usage and better outcomes (214). Integrating intervention approaches may be one strategy to have greater effects. In the *MaiKhanda* intervention, there were greater reductions in mortality in the intervention arm that integrated women's groups and quality improvement approaches compared to intervention arms that implemented only one of the interventions (210). How these interventions may be sustained is another question. In Pakistan, a women's group and home-visiting program was integrated within the health care system (214). It may be easier to scale up this intervention because it has already been merged into the permanent institution of the healthcare system, though it will be important to track fidelity to the original intervention and/or other variations and their impacts on outcomes. These are among the important considerations required for applying lessons learned from participatory learning and action approaches and women's group to future and expanded interventions.

### Linking home visiting with community mobilization

Three interventions primarily delivered information and care through home-based visits coupled with a broader community engagement strategy. These interventions used gender-intentional approaches to address poor access to information, lack of mobility, poverty and other gender-based risk factors experienced by many women and girls in LMICs. A pilot study in Pakistan used lady health workers and Dais (CHWs) to deliver newborn care and to facilitate community meetings and group education sessions for women of reproductive age, adolescents, and older women with the aid of community volunteers (215). The intervention led to improved services use (SBA and FBD) and improved neonatal care (exclusive breastfeeding, delayed bathing, and cord care), as well as reduced stillbirth and neonatal mortality. Many of the intervention communities also set up emergency transport and treatment funds. This intervention was subsequently replicated as a randomized controlled trial in other communities in Pakistan with similar effects on neonatal health outcomes (216). Another intervention used a similar approach in India, combining both household visits with community meetings to target multiple stakeholders, including mothers and other family members within the household, as well as community leaders, elders, and formal and traditional health care providers (217). There was no information on whether these interventions improved gender-related outcomes.

### Digital tools

We reviewed five interventions, three of which disseminated information about pregnancy and neonatal and infant care through the use of digital technology (218–220) and two that worked with midwives and CHWs (221–222). An intervention in Vietnam transmitted health information through text messages and sent appointment reminders and reminders to HCPs and CHWs about providing appropriate care and coordinating actions (219). All interventions increased maternal health knowledge but did not assess changes in gender-related outcomes. The two interventions that worked with midwives and CHWs increased capability and confidence to deal with birth complications, and created support systems between peers and greater rapport between community- and facility-based providers (221–222). The program in Indonesia also involved participants in program design, empowering them to "own" the technology through this participatory approach (221). Evaluation of a similar intervention with CHWs in India revealed that the program faced several challenges, specifically a lack of affordability, family opposition to CHWs using their own money on

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phones, and discord and lack of trust between CHWs and other HCPs (222). Only one intervention in Burkina Faso led to increased use of ANC, PNC, and SBA (218). This intervention– the *MOSIDN* project in Burkina Faso – was the only gender-transformative program (218). It not only sent text and voice messages regarding pre- and post-natal care, assisted delivery, vaccination against polio and tetanus, malaria prevention, and patient follow-up, but it also recruited "godmothers" and equipped them with mobile phones and bicycles to act as health promotion agents who encouraged health-seeking behavior among fellow women (218). This intervention also encouraged men to let their wives use their phones – an important program component, given that current patterns of phone ownership indicate women are less likely to own a phone.

Mobile phone interventions have the potential to increase couples' communication regarding health issues, to improve women's social status and access to information, and to increase male participation in women's health issues, so long as they consider unintended consequences

Photo: © Bill & Melinda Gates Foundation/ Dominique Catton (left), Prashant Panjiar (right)

such as exacerbating gender divides and power imbalances (e.g. greater reliance on men for financial support for phone payments, monitoring/stalking, and domestic disputes) (223). For health workers, particularly female CHWs working in isolated areas, mobile phones also offer a mode of communication to peers and family members and may also provide an added sense of security (222). The literature suggests that gendered inequities in phone ownership and access to mobile devices may compromise program outcomes (47–50). In Nigeria, women with limited mobile phone access had lower maternal health knowledge and less likelihood of using health services than those with greater access (228). Women may be further handicapped by limited mobility to travel from rural to urban areas, where information and communication technology [ICT] facilities are located, less financial autonomy to buy or own their own technological assets, and lower literacy and English proficiency (229).

In order for ICT interventions to be more gender-intentional and ideally gender-transformative and thus more successful, they must conduct formative research on phone ownership and use (as well as sharing or co-ownership in certain contexts), train CHWs, and link with HCPs through sensitization campaigns to address gendered power dynamics and use gender-specific messaging (230). Other non-gendered recommendations for improving the efficacy and scale-up of ICT interventions can be found in other reviews (231,232).

## Adolescents

Among the 47 interventions reviewed, only two directly targeted adolescents. Implemented in Nepal, the *Reaching the Poor* program used a community-based, client-centered approach to improve sexual and reproductive health (SRH) of adolescent boys and girls (180). It created community committees to allow adults and youth to increase decision-making power and linked youth programs with other health programs. The program increased ANC use and FBD for pregnant adolescent girls, as well as HIV knowledge. In both India and Nepal, the *Health Plus* program working with married adolescent girls and their husbands as well as other family members and the broader community used community mobilization and sensitization to improve SRH outcomes, and trained government HCPs to improve the quality and accessibility of health services (181). Adolescents participating in the program had greater knowledge of pregnancy and were more likely to use PNC services. None of these programs measured gender-related outcomes.

A review of factors influencing the use of maternal health services by adolescent girls found a paucity of research in this area (233). This finding is consistent with the results of our review, which identified only the two interventions cited above and equally few observational studies looking explicitly at adolescents. We found no interventions targeting adolescent fathers-to-be and how to engage with them during the antenatal, delivery, and post-natal period. The landscaping interviews confirm that pregnant adolescent girls are often grouped together with other pregnant women, so their unique needs and vulnerabilities remain under-studied and under-attended to by the health care system. At the same time, as one key informant noted, reaching young mothers during their first pregnancy and "getting it right" the first time is important, as it can influence future pregnancies and birth outcomes.

Greater research is needed on adolescent maternal health, both inside and outside the context of marriage, and on the distinct barriers to care experienced by pregnant and newly parenting adolescents. To date, there is slightly more research on the MNH needs of married adolescent girls, who may be less vulnerable to some poor health behaviors and outcomes than unmarried ones, especially when they become pregnant (233). However, married adolescent girls may be vulnerable for different reasons: for example, they are often less educated and less mobile than their unmarried counterparts, and they may experience lower decision-making power and autonomy (234). In certain contexts, they may also be more vulnerable to HIV/AIDS. Additionally, it is important to "meet adolescents where they are" and consider the use of different tools, such as social media or visits by mentors, to ensure they have access to the information they need and to improve outcomes (233). Offering a broader and more integrated set

of health services, such as immunizations, contraception, ANC and PNC, may also reduce some of the barriers to care experienced by adolescents (and other women) and improve uptake. Increased attention to engaging male partners – adolescent or adult – as partners and clients is another strategy for improving MNH and gender-related outcomes. The SRH field may offer lessons in providing gender-transformative programming to impact MNH behaviors, services, and outcomes among adolescents.

### Post-partum family planning

Similar to a lack of evidence on adolescents, there were also very few interventions in our review that sought to improve postpartum family planning (PPFP), and only a few that measured PPFP use as an outcome. Only three programs – the *Healthy Fertility Study in Bangladesh* (235), an intervention in India (236), and the *Applying Science to Strengthen and Improve Systems (ASSIST) Project* in Niger (237) – used gender-intentional approaches to increase PPFP uptake. The *Healthy Fertility Study* was a behavior change communication (BCC) program that aimed to increase PPFP by integrating it with MNH services. The intervention held community-based meetings in which women who successfully practiced the lactational amenorrhea method (LAM) served as ambassadors and promoters for other women. The program led to increased LAM use as well as reductions in early pregnancy and longer birth intervals. Another BCC program in India increased knowledge of LAM and postpartum contraception and improved couple communication regarding birth spacing by involving pregnant women and older female family members (e.g. mothers-in-law) and coordinating a separate campaign for men and husbands regarding their roles in ANC, PNC, and PPFP. In Niger, the ASSIST project was a policy-level intervention that updated national PPFP standards and protocols with specific gender components such as provider training and separate spaces for counseling, integrating FP services into PNC, encouraging male involvement, and working with community leaders and CHWs. It increased PPFP counseling coverage and modern FP method uptake among post-partum women. None of these interventions evaluated changes in gender-related outcomes.

### Mental health

Another area requiring greater attention is reducing the prevalence of CPMDs using gender-intentional approaches. In our review, there were only three interventions that explicitly addressed maternal mental health. In South Africa, CHWs provided support and guidance on sensitive and responsive parenting to women in late pregnancy to improve neonatal and infant care and improve mental health outcomes among women (238). Two programs in China also addressed CPMD by providing group therapy to women (239–240). These programs sought to address women's lack of social support and reduce post-partum depression (PPD). One of these interventions improved women's sense of self-efficacy and perceived social support (239) while the other did not assess gender-related outcomes (240).

Photo: © Bill & Melinda Gates Foundation/ Ryan Lobo

In their review of CPMD interventions, Rahman et al. (2013) offer guidance for future programming. One recommendation is to integrate men and extended families into CPMD programs to increase household-based social support and diminish the subordinate role assumed by women within their families. An example of this approach is the *Thinking Healthy Programme* in Pakistan, which included men and led to improved knowledge of infant care among both mothers and fathers (241). The authors underscore the potential of interventions that combine infant development with mental health components, and note that interventions targeting maternal mental health improve infant health and development (241). These interventions have spillovers: interventions that teach mothers about infant development, engagement, and stimulation may improve maternal mood, in addition to strengthening the mother-infant relationship and improving infant health outcomes (such as the South African intervention noted previously). Finally, CPMD-focused interventions must be culturally appropriate in their design and implementation, as well as in their assessment of poor mental health (241).

## Gender norms and health care providers

With an increasing focus in the global MNH community on quality of care, and particularly Respectful Maternity Care, it is important to understand whether and how gender norms influence the behavior and performance of health care providers. The observational studies cited in a previous section found that disrespect and abuse were highly prevalent, with greater vulnerability among younger women, single mothers, and women without companions during delivery. However, there was no evidence from these studies on the impact on MNH outcomes. Instead, this section focuses on the relationships between gender norms and HCPs and also addresses the particular challenges that female providers face within health systems. In doing so, it sheds light on how gender norms affect relationships between providers and provider performance behavior and sets the stage for critically needed work on how these dynamics influence health outcomes.

## Gender norms, respectful maternity care, and the maternal health workforce

In the introductory section above, we discussed some of the structural inequalities that make pregnant women uniquely vulnerable to poor health outcomes. The RMC movement has recognized and sought to address some of these vulnerabilities, in part through tackling the disrespect and abuse that pregnant women around the world face in both the formal and informal health care systems. While this movement has gained steam, it has not consistently addressed the gendered drivers of poor treatment and care that have been normalized in many parts of the world, nor has it adequately incorporated gender-transformative solutions.

Applying a gender lens can help create a more complete and nuanced understanding of respectful maternity care, showing that "quality of care" means more than just the improvement of facilities and infrastructure. Quality of care (QoC) interventions may result, for example, in improved infection prevention practices, better and more consistent stock of supplies, drug procurement procedures, etc., but typically do not address the norms, values, relationships and power of providers, nor the way in which they treat pregnant women.

It may be challenging to prove statistically that improved MNH outcomes will result, but transforming facilities and the ways in which health care providers engage with pregnant women so that they better respect women and their needs are important elements of ensuring access to quality care. Shifting away from a traditional clinical view and toward a broader framing of quality that takes gender and power into account may lead to improved supply of *and* demand for quality services. Further, training and sensitizing health care providers to provide more respectful care to pregnant or newly parenting women by taking into account women's desires and needs; training more female providers, including midwives and nurses; and sensitizing health care systems to accept these female providers and meet their needs can go a long way toward improving quality of care. It is also important to note that, while a dearth of female providers is a challenge, female providers can be just as discriminatory toward women as male providers, so *all* providers must be trained in respectful and gender-sensitive care.

Indeed, as described below, there is also compelling evidence that providers of maternal health care themselves experience gender-based discrimination, violence, abuse and harassment in the workplace (242–248). Poor workplace conditions generated and sustained by systemic gender inequality contribute to disrespectful care, indicating that addressing gender norms, roles, and responsibilities among maternal health workers is essential to improving the QoC (249).

## Occupational segregation and wages

Approximately 75% of the global health workforce is made up of women, yet just a small number serve in management or policy positions. A 2008 WHO Gender and Health Workforce report found that both vertical and horizontal segregation are widespread. Women health workers are particularly concentrated in specific cadres (especially nurses and midwives) and women in all cadres tend to earn "significantly less" than male counterparts (242). A 2016 report on midwifery by the International Confederation of Midwives, World Health Organization, and the White Ribbon Alliance, which captures the perspectives of close to 2,500 midwives from all over the world, found that midwives report salaries that are much lower than wages earned by those in similar professions (243). The impact of occupational segregation in the health workforce includes lost wages and lack of voice in decision-making. The midwifery report notes that even midwives at senior levels lack leadership opportunities and often become subordinate to other health cadres (243).

Photo: © Bill & Melinda Gates Foundation/ Hilina Abebe

## Gender inequalities and discrimination

Maternal health workers face a gendered work environment daily, one shaped by biological differences as well as society's differing expectations of men and women. Health workers report that pregnancy, childbirth and family caregiving often interfere with the progress of their careers, whether due to their own time away from the job or because managers penalize an assumed lack of interest in promotion (244). Lack of family-friendly policies in the health sector exacerbate the challenges that women health workers face in operating at full capacity in the work environment (245).

Women health workers, particularly those working at the community "frontline" level, report that they often confront lack of respect from colleagues and members of the communities they serve. Over a third of midwives report that they aren't respected by senior medical staff, and over half of African midwives say they would value "being listened to." Between 20 and 30% of midwives attribute their poor treatment to discrimination and gender inequality (245).

Safety is also an ongoing concern that can interfere with the retention of trained staff. As illuminated by one study, 39% of Rwandan health workers had experienced workplace violence. Gender inequalities were found to contribute significantly to this violence, as the same negative stereotypes that contributed to female health workers' experiences of pregnancy discrimination and a "glass ceiling, " also contributed to "a context of violence" in the workplace (246). A study in India that found that auxiliary nurse midwives – who were required to live in the village health centers – felt endangered by poor housing, lighting, and transportation facilities, which led to high turnover (247). In the 2016 midwife survey, 37% of respondents reported that they had experienced harassment in the workplace (243). One survey conducted in a hospital in Turkey revealed that 75% of the nurses reported having been sexually harassed at work, resulting in guilt, shame, anxiety, depression, and other health consequences (248).

### Influence on quality of care and disrespect and abuse

Evidence reflects that poor conditions in the workplace, including gender inequality within the workforce, contribute to poor treatment of clients. A 2015 systematic review of maternal health providers' attitudes and behaviors toward clients found that workplace deficiencies in Asia, Africa, Latin America and the Middle East accounted for negative attitudes and behaviors. The workplace issues cited as problematic included a lack of supportive supervision, negative relationships with co-workers, low pay, and overwork. Significantly, the review found that these factors crossed geographies and cadres, except that African nurses and midwives reported "excessive workload" more than doctors in any region. Impacts of these poor conditions included "stress, fatigue, frustration and poor job satisfaction for maternal HCPs leading to poor communication and uncaring attitudes towards patients" (249).

### Gender-based respectful maternity care interventions

In Kenya, the Heshima intervention to reduce disrespect and abuse in childbirth conducted workshops for managers and providers, which included content on client and provider rights and responsibilities [250]. An evaluation of the intervention found that "[w]ork environments played a significant role in shaping provider's abilities to promote respectful maternity care in their work," affecting emotional health, perceptions of fairness on the job, and supervisor-provider communication and team work. Although the intervention did not specifically incorporate an examination of gender-related roles, responsibilities, and discrimination, the focus on supportive supervision in the context of provider rights improved providers' perceptions about manager-provider communication. The evaluation concludes, "The need for a more supportive work environment and prevailing policy context is central to provider performance generally and specifically for promoting respectful maternity care" (250).

Photo: © Bill & Melinda Gates Foundation/ Frederic Courbet

Midwives in the midwifery report argued for increasing the supervisory roles of midwives themselves, with midwife managers and supervisors able to improve decision-making and provide support to junior midwives. Midwife-led units and practices were seen as promising new developments. They also advocated for gender as part of pre-service education. "Participants described the need for the inclusion of rights, gender, ethics and equality into pre-service training across the health system, and a system of peer support" (243).

## Recommendations for future learning and investment

Throughout the report, we have noted where there is strong evidence, as well as where there are gaps in the evidence base. This section presents both the highlights and shortcomings of the evidence to date and provides recommendations for ways in which to both fill gaps and to "double down" on priority areas. In other words, it synthesizes what is currently known and not known, what would be most useful to know in order to advance the gender-intentional MNH evidence base, and what should be prioritized for future investment and focus, based on either the strength of the evidence or the recognized importance of the issue.

### Invest in longer-term gender-transformative interventions

Gender-transformative interventions, such as Bandebereho program in Rwanda [170] and the participatory learning and action interventions evaluated in several settings have higher potential for sustainable change and longer-term gains in MNH outcomes than interventions that are not intentionally designed to shift gender norms. But there is much more that we can learn from this type of programming. For example:

- What are the best ways to assess *long-term* effects of gender-transformative programs on both MNH and gender equality and/or women's empowerment outcomes?

- Are successful programs like the Bandebereho [170] and participatory learning and action interventions also effective when scaled up and/or replicated in different contexts, such as urban areas?
- How can women's empowerment and agency related to MNH be increased most effectively through gender-transformative programs, and what are the best ways to measure these changes?
- How can we most effectively assess social norms related to pregnancy, motherhood and femininity/masculinity in different contexts? Relatedly, what are the best ways to measure changes in such norms resulting from gender-transformative programs?

To both help expand the evidence base and invest in programs and policies that have a strong potential for effectiveness, we recommend:

- Supporting more sophisticated research that documents the processes and pathways between interventions and outcomes (related to both health and gender equality) over a longer time-period;
- Investing in transformative male engagement interventions so that men do not dominate spaces that are traditionally considered women's; and
- Integrating proven strategies with national policies and programs, with careful consideration to intervention fidelity.

### Include gender-based outcome measures and process indicators, as well as empowerment indicators, in program evaluations, and use measures that assess more than individual behavior change (i.e. gender norms and attitudes)

The evidence indicates that including gender-based metrics into the monitoring and evaluation of programs is essential to revealing whether programs have impacted gendered outcomes. Further, tracking changes in gender-based indicators, particularly process indicators, can shed light on the potential mediating effects of gender-based factors. At the same time, however, many observational studies and some interventions included in this study assess only impacts on intermediate indicators, such as the number of ANC visits, accompaniment to ANC visits, or facility-based deliveries. While some of these indicators may measure gendered processes, they do not always map directly with actual changes in maternal or newborn morbidity or mortality. Further, very few interventions measure gender equality outcomes in addition to MNH outcomes.

Most gender-based measures focus on individual behaviors that may indirectly reflect gendered norms and attitudes; however these measures do not directly assess norms, which may signal change at a larger scale. For example, studies may assess only couple communication or joint decision-making, failing to measure the relational aspects of a husband-wife dyad or community norms relating to masculinity and femininity. It is important to measure behaviors and norms because they are interrelated and reinforcing. Assessing changes in both will generate a better understanding of the extent of the change effected by the program.

To fill gaps in the existing evidence base, donors and researchers may want to consider:

- How can gender-based M&E instruments and tools used in other fields, e.g. sexual and reproductive health, be applied and/or adapted to better understand programmatic impacts regarding MNH?
- Which tools are most effective in understanding the key social norms that influence MNH outcomes in diverse settings, and which are most effective in measuring changes in such norms?

Donors, researchers and program implementers can also undertake certain activities that would help to generate new evidence and potentially improve the effectiveness of programs, from both a gender and MNH perspective:

- Collecting and reporting sex-disaggregated data and indicators related to MNH and gender, including during program implementation and in relation to outcomes.
- Applying/testing gender-based and empowerment measures that have been previously used in MNH.
- Supporting the use of new techniques to assess empowerment. The J-PAL Practical Guide to Measuring Women's and Girls' Empowerment in Impact Evaluations (251) is one potentially useful example.

Having a globally recognized set of standardized indicators, metrics, and definitions for both gender-intentional and/or transformative programming and gender-equitable MNH results would be useful, so an effort to advance this understanding would benefit the field as well.

### Shift focus from only mortality to morbidity (both acute and chronic)

While some 300,000 women continue to die in pregnancy and childbirth each year, maternal morbidity affects the reproductive and productive lives of many more women. Assessing and addressing morbidity is important not only because mortality is a rarer outcome, but also because morbidity has lasting consequences across the life-course (it can, for example, impact women's economic empowerment) and through generations. Despite substantial evidence linking gender-based risk factors to maternal and neonatal morbidity, however, few interventions target short- or long-term morbidity-related outcomes. The studies and interventions included here focus disproportionately on impacts on MNH service use and care-seeking behaviors, rather than morbidity- or mortality-related outcomes.

Photos: © Bill & Melinda Gates Foundation/ Toni Greaves (left), Michael Hanson (right)

As donors and governments increasingly focus on RMC and broader QoC interventions, incorporating attention to morbidity can create highly-leveraged opportunities to both improve maternal health and gender-transformative outcomes. Some of the questions they may want to address are:

- How do chronic maternal morbidities and disabilities, such as uterine prolapse, incontinence, hypertension, perineal tears, urinary tract infections, anemia, fistula, and CPMD, for example, impact the health, wellbeing and productivity of women over the long-term?
- What are effective and cost-effective ways to understand the psychological, social and economic impacts of these morbidities on women and other family members?
- What are the impacts of maternal and perinatal death on women and men at the household level?

In order to effect change in the short-term, they can:

- Support grantees to include and assess measures of key morbidities for mothers and newborns; and
- Advance more comprehensive definitions of and programming for Respectful Maternity Care (RMC) and Quality of Care (QoC) to include greater attention to gender and to morbidity.

### Adopt a life-course approach and link investments across programs

Addressing morbidity is also one way to incorporate more of a life-course approach to women's maternal health, which was strongly recommended by the key informants. A life course approach means understanding women's needs before, during, and after their reproductive lives - not just during their pregnancy and post-partum periods. This type of approach could, for example, shed light on the impact of women's economic empowerment (WEE) on MNH outcomes, or, conversely, on the effects of maternal morbidities on WEE across the life course. It could also help the global health and development communities better understand how maternal morbidities affect women and their families more broadly.

The evidence indicates that interventions that start early in life and that work across sectors, including family planning, maternal health, nutrition, education and economic empowerment, have synergistic and positive effects on program outcomes. These types of investments may be more successful in addressing some of the antecedents of higher-risk pregnancy (i.e. early sexual debut and child marriage), as well as the resulting sequelae, such as fistula, low birth weight and postnatal depression). However, despite the fact that one in five girls in the world (and one in three in the lowest income countries) has given birth by the age of 18, the review found a dearth of evidence regarding the unique needs of adolescent mothers, either during pregnancy and through the post-partum period. Further, the evidence review did not surface data on approaches that target geriatric pregnancies, despite the higher risk of such pregnancies on poor MNH outcomes. The search did not include interventions that may address the needs of women outside the pregnancy and post-partum period, so we are not able to assess the evidence base in this arena.

To contribute toward a more complete evidence base in this area, it would be useful to address the following questions:

- What are the unique needs of pregnant and newly parenting adolescents and what are the most effective and cost-effective ways to meet these needs?
- Can investments in WEE improve MNH outcomes, and how does improved MNH affect WEE?

Given the strength of the existing evidence base, it would be worth investing in:

- Promoting and assessing youth-friendly, gender-intentional MNH programming; and
- Investing in multi-sectoral, integrated, and gender-transformative investments for adolescents, including addressing the gender norms around them. These may include, for example, programs that aim to prevent early pregnancy and child marriage, or to promote girls' education and economic empowerment, alongside adolescent-specific MNH programming, while assessing a range of outcomes.

### Address both supply and demand through maternal and newborn health programming

The evidence suggests that interventions will not be successful if the demand for quality MNH services increases, but the facilities and services remain poor and gender-insensitive, or, alternatively, when the quality of care is addressed, but the demand to utilize these services has not increased. However, it appears that few interventions work with the health system to address supply issues while also working with potential beneficiaries and their communities.

In order to ameliorate the multiple drivers of poor MNH outcomes, supply-side interventions, such as those that improve the quality of service provision or that improve physical facilities, for example, must be more closely linked with demand-side interventions, such as those that help women and couples overcome gendered barriers to accessing facility-based care. As gender and gender norms are often at the core of both supply- and demand-side challenges, these issues must be addressed overtly.

More implementation research could help elucidate questions like:

- How can interventions most effectively and cost-effectively improve both the supply of (i.e., health systems) and demand for (i.e., woman/couple/community) gender-transformative MNH services?

Meanwhile, immediate investments can confidently be made in:

- Connecting currently disparate investments in the same geographies that are working on either the supply side or the demand sides, so as to complement each other; and
- Investing in gender-transformative interventions that include both supply- and demand-side approaches designed in tandem.

### Make information and communication technologies investments more gender-intentional and/or transformative

While technology can offer many potential benefits for MNH, the evidence indicates that gender analyses are not always conducted appropriately so as to capture the gendered realities affecting the intended beneficiaries. For example, while the digitization of primary health care systems may be able to provide some gender-specific data to improve identification of and decision-making on high-risk pregnancies, health systems should not rely on such means exclusively. An understanding of the contextually-specific ways in which health workers engage with women and with community leaders can help identify other (non-digital) ways to identify and target high-risk pregnancies and the most vulnerable mothers. Further, ICT interventions can be most effective and empowering if they acknowledge existing socioeconomic realities and do not exacerbate inequalities. For example, increasingly popular m-Health interventions should carefully consider the social, economic and gendered realities that affect mobile phone ownership and access to technology.

To this end, it would be beneficial for donors, researchers, and program implementers to, for example:

- Ensuring that any ICT programs designed to improve MNH outcomes first undertake gender analyses, including to assess women's and girls' access to and agency over any technology that may be used in such programming; and
- Including MNH in edutainment programming aimed at shifting gender norms more broadly (and including MNH outcomes in the evaluations of such programs).

### Replicate and scale up participatory learning and action approaches

Participatory learning and action interventions provide some of the most robust evidence for reducing maternal and neonatal mortality and improving other MNH outcomes in several countries. There is some longitudinal data indicating program sustainability. However, these approaches could benefit from more of a community empowerment focus that engages various members of the community in reflective processes to support broader gender norm change.

Some questions that can be further researched are:

- Are participatory learning and action programs that incorporate an expanded community empowerment approach more effective in improving MNH and gender equality outcomes than programs that do not?
- What is the impact of participatory learning and action programs on MNH and gender equality outcomes over time?

Meanwhile, certain investments can be confidently made now, such as:

- Replicating and scaling up participatory learning and action in both similar and diverse contexts from where the current evidence indicates effectiveness.
- Supporting process evaluations as well as longitudinal or follow-up research to assess long-term effectiveness of participatory learning and action approaches.

### Invest in violence against women and girls interventions

There is robust evidence in the published literature of associations between VAWG and adverse MNH outcomes, particularly CPMD. However, only three interventions included in this study overtly addressed VAWG. It would thus be beneficial to generate new evidence on what types of interventions most effectively reduce VAWG during pregnancy and childbirth, as measured by reduced CPMD? Even as this evidence base is being created, MNH-oriented interventions can benefit from building the capacity of health workers (including community health workers) to screen for and address VAWG.

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## Invest in interventions focused on common perinatal mental disorders

The descriptive studies listed CPMD as a commonly cited maternal morbidity with implications for other MNH outcomes; however, like with VAWG, only three of the interventions reviewed addressed CPMD. More information about CPMD interventions would help to fill gaps in the existing evidence base. To this end, donors, researchers and program implementers should consider investments to better understand the most effective ways to develop and assess culturally appropriate and context-specific indicators of CPMD and interventions to prevent and respond to CPMD. Early learnings from the Healthy Minds for Adolescent Mothers Grand Challenge portfolio could be useful toward expanding this gap in the evidence.

At the same time, the evidence base is sufficient enough to invest in supporting and testing interventions that: use group therapy-type approaches to build social support among women; involve husbands and other family members in CPMD interventions delivered at home; and integrate CPMD and infant development interventions that have been shown to have synergistic effects.

## Invest in gender-intentional and gender-transformative supply-side improvements

Most interventions that seek to improve quality of care do not explicitly address the norms, values, relationships, and power of providers, nor their treatment of either female patients or fellow female providers. While the published evidence base is thinner in regard to the effectiveness of such interventions, the key informants interviewed for this study argued strongly that training health care providers in both the formal and informal systems to provide respectful care that accounts for context-specific gender factors, would be a beneficial area of investment. This includes ensuring that those working on RMC and QoC interventions undertake gender analyses and apply gender-intentionality in their programming. It also includes training more female providers, including midwives and nurses, and sensitizing health care systems to accept these female providers. The key informants noted that female providers can be just as discriminatory toward women as male providers, so all providers must be trained in respectful and gender-sensitive care.

## Focus more intentionally on postnatal care and increased investments in gender-intentional post-partum family planning interventions

Most interventions and studies included in the present research focused on the antenatal and intrapartum periods. Observational studies that looked at post-natal care found that individuals who use ANC services and experience good quality care during ANC visits are more likely to use health services in the intrapartum and post-partum periods. Thus, it is important to not only ensure that pregnant women use ANC services, but that they also have good experiences with health services. PNC is also critically important for detecting postpartum morbidities like CPMD, as well as for promoting voluntary PPFP access, demand, and use. There were, however, only three gender-intentional interventions identified that sought to improve PPFP, none of which targeted adolescent mothers.

It would be useful to better document and disseminate evidence pertaining to:

- How interventions can most effectively ensure that women and couples, including adolescents, have access to and utilize both PNC and PPFP information and services; and
- What we can learn from women and couples who have access to PNC and PPFP, but do not use it, so as to improve programming for them and others.

Reflecting on the earlier points about the importance of taking a broader life-course approach to MNH, it would be prudent to invest in integrated programs (particularly FP and MNH) that support the a wider continuum of care that women need and often desire.

## Additional neglected areas in the research

This report has already noted the paucity of evidence pertaining to gender-intentional and transformative programming for adolescents, PPFP, VAWG and CPMD. Although there was some evidence on gender norms and the health workforce, greater efforts are needed to fully understand and target inequitable gender norms affecting provider behavior and performance in pursuit of improved MNH outcomes.

In addition, we were not able to find any information about the gendered vulnerabilities related to the Zika virus and relating sequelae. There also were no articles relating to lesbian, gay, bisexual, transgender, and queer populations. Although there was evidence on undernutrition and MNH, the implications of being overweight and obese on pregnancy were not identified. Other areas that were also notably absent in our review, but which have been documented in the literature as affecting MNH outcomes include malaria, tuberculosis, and smoking.

# CONCLUSION

This report presents the evidence to date on the links between gender equality, maternal empowerment, and MNH outcomes. In doing so, it achieves three objectives. The first is to summarize the evidence from the observational and programmatic literature. Review of more than 500 documents finds substantial support for a relationship between gender-based risk factors and MNH outcomes, both in terms of health outcomes and in the use of MNH services and behaviors. Building on this foundational evidence, the review presents findings from gender-intentional and transformative interventions to identify promising practices.

In considering evaluations of nearly 50 interventions, the review finds that there is greater focus on certain gender-intentional approaches (e.g. male involvement and participatory learning and action with women's groups) compared to others, and a lack of attention to: particular populations, such as pregnant adolescents; addressing particular gender-based risk factors, such as VAWG; and improving certain MNH outcomes, including CPMD.

There is also scope for these interventions to adopt more transformative approaches in pursuit of more profound shifts in gender norms, power dynamics and increase in women's agency over resources. By altering inequitable norms that shape and reinforce gender inequalities, transformative interventions have greater potential to catalyze sustainable shifts in behaviors and attitudes. Indeed, follow-up evaluations of the gender-transformative participatory learning and action groups in Nepal and India found that women's groups continued to meet, and neonatal mortality continued to be lower among intervention villages, even after the conclusion of the interventions (210). Although long-term follow-up evaluations are rare for gender-intentional MNH interventions (and more generally, all interventions), evidence from gender-transformative interventions in other sectors suggests these interventions can have long-lasting effects on not only health, but gender equality outcomes as well (252).

The third objective of the review was to understand how gender norms may influence health provider behavior and performance, with implications for MNH outcomes. The evidence suggests that inequitable gender norms and gender inequality have profound implications for relationships between providers and clients, as well as among providers of different cadres. There is limited evidence, however, in terms of what the impacts are on MNH outcomes. Another gap is in the lack of gender-intentional programming in this area. To our knowledge, there are very few interventions that address gender norms and inequalities within the context of programming focused on the health workforce.

Findings from key informant interviews conducted to supplement the literature review and to identify key strategic directions for BMGF's MNCH program echoed the themes identified in the literature review. Key informants noted many of the same gaps in the evidence, such as the need for more evidence linking gender equality and maternal empowerment with MNH outcomes (and not just use of MNH services). They also recommended broadening the scope of approaches and outcomes to include more holistic, gender-transformative and longer-term programming, and to consider more than maternal and neonatal mortality as outcomes of interest.

These recommendations are in line with the priorities for maternal health identified in the 2014 Lancet series on newborn health and the 2016 Lancet series on maternal health. In an article setting priorities for future newborn health programming, the authors note the importance of increasing the ability of women, parents, and families to advocate for newborn health (253). Implicit in that recommendation is the need to increase gender equality to amplify women's voices. Another part of the 2014 series emphasizes the need to integrate newborn health within a continuum of care that includes reproductive health, noting the inimical effects of unintended pregnancies and short birth intervals on neonatal health (254). A substantial body of work in SRH links gender inequalities with poorer family planning and SRH outcomes. A commentary in the 2016 series on maternal health best summarizes the importance of gender equality: "But while strengthening health systems is central for progress in maternal health, sustainable results will only be delivered by paying attention to the linkages between the SDGs— for example, the connection between maternal health and education, maternal health and gender equity, and maternal health and poverty reduction (5)."

Addressing gender inequalities and the disempowerment experienced by pregnant women and mothers through gender-intentional (and ideally gender-transformative) MNH programming is critical for creating sustainable change in MNH.

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# APPENDIX A. LITERATURE SEARCH AND REVIEW

## A1. Search terms and strategy used for systematic review

### For PubMed

### Country Terms:

"Afghanistan"[Mesh] OR "Albania"[Mesh] OR "Algeria"[Mesh] OR "American Samoa"[Mesh] OR "Angola"[Mesh] OR "Argentina"[Mesh] OR "Armenia"[Mesh] OR "Azerbaijan"[Mesh] OR "Bangladesh"[Mesh] OR "Republic of Belarus"[Mesh] OR "Belize"[Mesh] OR "Benin"[Mesh] OR "Bhutan"[Mesh] OR "Bolivia"[Mesh] OR "Bosnia and Herzegovina"[Mesh] OR "Botswana"[Mesh] OR "Brazil"[Mesh] OR "Bulgaria"[Mesh] OR "Burkina Faso"[Mesh] OR "Burundi"[Mesh] OR "Cabo Verde"[Mesh] OR "Cambodia"[Mesh] OR "Cameroon"[Mesh] OR "Central African Republic"[Mesh] OR "Chad"[Mesh] OR "China"[Mesh] OR "Colombia"[Mesh] OR "Comoros"[Mesh] OR "Democratic Republic of the Congo"[Mesh] OR "Congo"[Mesh] OR "Costa Rica"[Mesh] OR "Cote d'Ivoire"[Mesh] OR "Croatia"[Mesh] OR "Cuba"[Mesh] OR "Djibouti"[Mesh] OR "Dominica"[Mesh] OR "Dominican Republic"[Mesh] OR "Ecuador"[Mesh] OR "Egypt"[Mesh] OR "El Salvador"[Mesh] OR "Equatorial Guinea"[Mesh] OR "Eritrea"[Mesh] OR "Ethiopia"[Mesh] OR "Fiji"[Mesh] OR "Gabon"[Mesh] OR "Gambia"[Mesh] OR "Georgia Republic)"[Mesh] OR "Ghana"[Mesh] OR "Grenada"[Mesh] OR "Guatemala"[Mesh] OR "Guinea"[Mesh] OR "Guinea-Bissau"[Mesh] OR "Guyana"[Mesh] OR "Haiti"[Mesh] OR "Honduras"[Mesh] OR "India"[Mesh] OR "Indonesia"[Mesh] OR "Iran"[Mesh] OR "Iraq"[Mesh] OR "Jamaica"[Mesh] OR "Jordan"[Mesh] OR "Kazakhstan"[Mesh] OR "Kenya"[Mesh] OR "Democratic People's Republic of Korea"[Mesh] OR "Kosovo"[Mesh] OR "Kyrgyzstan"[Mesh] OR "Laos"[Mesh] OR "Lebanon"[Mesh] OR "Lesotho"[Mesh] OR "Liberia"[Mesh] OR "Libya"[Mesh] OR "Macedonia Republic)"[Mesh] OR "Madagascar"[Mesh] OR "Malawi"[Mesh] OR "Malaysia"[Mesh] OR "Mali"[Mesh] OR "Mauritania"[Mesh] OR "Mauritius"[Mesh] OR "Mexico"[Mesh] OR "Micronesia"[Mesh] OR "Moldova"[Mesh] OR "Morocco"[Mesh] OR "Mozambique"[Mesh] OR "Myanmar"[Mesh] OR "Namibia"[Mesh] OR "Nepal"[Mesh] OR "Nicaragua"[Mesh] OR "Niger"[Mesh] OR "Nigeria"[Mesh] OR "Pakistan"[Mesh] OR "Panama"[Mesh] OR "Papua New Guinea"[Mesh] OR "Paraguay"[Mesh] OR "Peru"[Mesh] OR "Philippines"[Mesh] OR "Romania"[Mesh] OR "Russia"[Mesh] OR "Rwanda"[Mesh] OR "Samoa"[Mesh] OR "Sao Tome and Principe"[Mesh] OR "Senegal"[Mesh] OR "Serbia"[Mesh] OR "Sierra Leone"[Mesh] OR "Somalia"[Mesh] OR "South Africa"[Mesh] OR "South Sudan"[Mesh] OR "Sri Lanka"[Mesh] OR "Saint Lucia"[Mesh] OR "Saint Vincent and the Grenadines"[Mesh] OR "Sudan"[Mesh] OR "Suriname"[Mesh] OR "Swaziland"[Mesh] OR "Syria"[Mesh] OR "Tajikistan"[Mesh] OR "Tanzania"[Mesh] OR "Thailand"[Mesh] OR "Timor-Leste"[Mesh] OR "Togo"[Mesh] OR "Tonga"[Mesh] OR "Tunisia"[Mesh] OR "Turkey"[Mesh] OR "Turkmenistan"[Mesh] OR "Uganda"[Mesh] OR "Ukraine"[Mesh] OR "Uzbekistan"[Mesh] OR "Vanuatu"[Mesh] OR "Venezuela"[Mesh] OR "Vietnam"[Mesh] OR "Yemen"[Mesh] OR "Zambia"[Mesh] OR "Zimbabwe"[Mesh] OR "Developing Countries"[Mesh] OR "Belarus"[tiab] OR "Cabo Verde"[tiab] OR "Kiribati"[tiab] OR "Democratic people's republic of Korea"[tiab] OR "North Korea"[tiab] OR "Maldives"[tiab] OR "Marshall Islands"[tiab] OR "Montenegro"[tiab] OR "Nauru"[tiab] OR "Solomon Islands"[tiab] OR "South Sudan"[tiab] OR "Tuvalu"[tiab] OR "West Bank and Gaza"[tiab] OR "West Bank"[tiab] OR "Gaza"[tiab]

### Maternal/infant health terms

"Pregnancy"[Mesh] OR "Maternal Nutritional Physiological Phenomena"[Mesh] OR "Maternal Welfare"[Mesh] OR "Maternal Health"[Mesh] OR "Maternal Health Services"[Mesh] )) OR "Reproductive History"[Mesh] OR "Peripartum Period"[Mesh] OR "Pregnancy Trimesters"[Mesh] OR "Pregnancy Complications"[Mesh] OR "Prenatal Education"[Mesh] OR "Infectious Disease Transmission, Vertical"[Mesh] OR "Obstetric Surgical Procedures"[Mesh] OR "Maternal Exposure"[Mesh] OR "Paternal Exposure"[Mesh] OR "Maternal Mortality"[Mesh] OR "Congenital Abnormalities"[Mesh] OR "Obstetric Nursing"[Mesh] OR "Maternal-Child Nursing"[Mesh] OR "Midwifery"[Mesh] OR "Nurse Midwives"[Mesh] OR "Doulas"[Mesh] OR "Obstetrics"[Mesh] OR "Obstetrics and Gynecology Department, Hospital"[Mesh] OR "Perinatology"[Mesh] OR "Birthing Centers"[Mesh] OR "Delivery Rooms"[Mesh] OR "Hospitals, Maternity"[Mesh] OR "Postpartum Period"[Mesh] OR "Fetal Mortality"[Mesh] OR "Fetal Monitoring"[Mesh] OR "Fetal Weight"[Mesh] OR "Fetal Distress"[Mesh] OR "Fetal Therapies"[Mesh] OR "Infant, Newborn"[Mesh] OR "Infant, Newborn, Diseases"[Mesh] OR "Metabolism, Inborn Errors"[Mesh] OR "Infant Death"[Mesh] OR "Infant Mortality"[Mesh] OR "Infant Welfare"[Mesh] OR "Infant Health"[Mesh] OR "Infant Care"[Mesh] OR "Neonatal Screening"[Mesh] OR "Intensive Care, Neonatal"[Mesh] OR "Intensive Care Units, Neonatal"[Mesh] OR "Neonatal Nursing"[Mesh] OR "Nurses, Neonatal"[Mesh] OR "Neonatologists"[Mesh] OR "Neonatology"[Mesh] OR "Maternal-Child Health Centers"[Mesh] OR "Nurseries, Hospital"[Mesh] OR "Infant Nutritional Physiological Phenomena"[Mesh] OR "Breast Feeding"[Mesh] OR "Bottle Feeding"[Mesh] OR "prenatal education"[tiab] OR "expectant parent classes"[tiab] OR "expectant mother classes"[tiab] OR "expectant father classes"[tiab] OR "birth classes"[tiab] OR "childbirth classes"[tiab] OR "antenatal parenthood education"[tiab] OR "antenatal education"[tiab] OR "childbirth education"[tiab] OR "doula"[tiab] OR "doulas"[tiab]

## Gender terms

("Gender-Based Violence"[Mesh] OR "Domestic Violence"[Mesh] OR "Intimate Partner Violence"[Mesh] OR "Gender Identity"[Mesh] OR "Interpersonal Relations"[Mesh] OR "Sexual Partners"[Mesh] OR gender[tiab])

OR

(("Gender Identity"[Mesh] OR gender[tiab]) AND ("Social Environment"[Mesh] OR "Stereotyped Behavior"[Mesh] OR "Sociological Factors"[Mesh] OR "Socioeconomic Factors"[Mesh] OR "Social Behavior"[Mesh] OR "Social Values"[Mesh] OR "Social Determinants of Health"[Mesh] OR "Reinforcement, Social"[Mesh] OR "Social Participation"[Mesh] OR "Social Problems"[Mesh] OR "Social Control, Informal"[Mesh] OR "Community Integration"[Mesh] OR "Power (Psychology)"[Mesh] OR "social norms"[tiab] OR "social capital"[tiab] OR "social determinants of health"[tiab]))

## For ProQuest, Scopus, and Web of Science

Country terms:

"developing countries" OR "developing country" OR "developing nation" OR "developing nations" OR "emerging countries" OR "emerging country" OR "emerging nation" OR "emerging nations" OR "global south" OR "least developed countries" OR "least developed nations" OR "LEDCs" OR "less developed countries" OR "less developed nations" OR "less economically developed countries" OR "less economically developed nations" OR "LMICs" OR "low and middle income countries" OR "low and middle income nations" OR "low income countries" OR "low income country" OR "low income nation" OR "low income nations" OR "low-income countries" OR "low-income country" OR "low-income nation" OR "low-income nations" OR "low-middle income countries" OR "low-middle income country" OR "low-middle income nation" OR "low-middle income nations" OR "middle income countries" OR "middle income country" OR "middle income nation" OR "middle income nations" OR "middle-income countries" OR "middle-income country" OR "middle-income nation" OR "middle-income nations" OR "transition countries" OR "transition country" OR "transition nation" OR "transition nations" OR "transitional countries" OR "transitional country" OR "transitional nation" OR "transitional nations" OR "under developed countries" OR "under developed country" OR "under developed nation" OR "under developed nations" OR "underdeveloped countries" OR "underdeveloped country" OR "underdeveloped nation" OR "underdeveloped nations" OR "undeveloped countries" OR "undeveloped country" OR "undeveloped nation" OR "undeveloped nations"

OR

Afghanistan OR Albania OR Algeria OR Angola OR Argentina OR Armenia OR Azerbaijan OR Bangladesh OR Belarus OR Belize OR Benin OR Bhutan OR Bolivia OR Bosnia OR Herzegovina OR Botswana OR Brazil OR brasil OR Bulgaria OR "burkina faso" OR Burundi OR "Cabo Verde" OR "cape verde" OR Cambodia OR Cameroon OR "Central African Republic" OR Chad OR China OR Colombia OR Comoros OR "comoro islands" OR "Congo, Dem. Rep" OR "congo democratic republic" OR "Congo, Rep." OR "republic of the congo" OR "congo republic" OR "Costa Rica" OR "Cote d'Ivoire" OR "ivory coast" OR Croatia OR Cuba OR Djibouti OR Dominica OR "Dominican Republic" OR Ecuador OR Egypt OR "El Salvador" OR Eritrea OR Ethiopia OR Fiji OR Gabon OR Gambia OR Georgia OR Ghana OR Grenada OR Guatemala OR Guinea OR "Guinea-Bissau" OR Guyana OR Haiti OR Honduras OR India OR Indonesia OR Iran OR Iraq OR Jamaica OR Jordan OR Kazakhstan OR Kenya OR Kiribati OR "Korea, Dem. People's Rep." OR "north korea" OR "korea democratic people's republic" OR "democratic people's republic of korea" OR Kosovo OR "Kyrgyz Republic" OR kyrgyzstan OR "Lao PDR" OR "lao people's democratic republic" OR laos OR Lebanon OR Lesotho OR Liberia OR Libya OR Macedonia OR Madagascar OR Malawi OR Malaysia OR Maldives OR Mali OR "Marshall Islands" OR Mauritania OR Mauritius OR Mexico OR Micronesia OR Moldova OR Mongolia OR Montenegro OR Morocco OR Mozambique OR Myanmar OR Namibia OR Nauru OR Nepal OR Nicaragua OR Niger OR Nigeria OR Pakistan OR Panama OR Paraguay OR Peru OR Philippines OR Romania OR "Russian Federation" OR russia OR Rwanda OR Samoa OR "Sao Tome" OR Principe OR Senegal OR Serbia OR "Sierra Leone" OR "Solomon Islands" OR Somalia OR "South Africa" OR "South Sudan" OR "Sri Lanka" OR "St. Lucia" OR "saint lucia" OR "St. Vincent" OR Grenadines OR "saint vincent" OR Sudan OR Suriname OR Swaziland OR "Syrian Arab Republic" OR syria OR Tajikistan OR tadjikistan OR Tanzania OR Thailand OR "Timor-Leste" OR "timor leste" OR "east timor" OR Togo OR Tonga OR Tunisia OR Turkey OR Turkmenistan OR Tuvalu OR Uganda OR Ukraine OR Uzbekistan OR Vanuatu OR Venezuela OR Vietnam OR "viet nam" OR "West Bank" OR Gaza OR Yemen OR Zambia OR Zimbabwe

## Maternal health:

abortion OR abortions OR amniotic OR antenatal OR babies OR baby OR birth OR birthing OR births OR birthweight OR "bottle fed" OR "bottle feed" OR "bottle feeding" OR "bottle feeds" OR "breast fed" OR "breast feed" OR "breast feeding" OR "breast feeds" OR breastfed OR "breast-fed" OR breastfeed OR "breast-feed" OR breastfeeding OR "breast-feeding" OR breastfeeds OR "breast-feeds" OR "caesarean section" OR "caesarean sections" OR "cesarean section" OR "cesarean sections" OR childbirth OR childbirths OR congenital OR "c-section" OR "c-sections" OR "delivery room" OR "delivery rooms" OR "disease transmission vertical" OR "disease transmission vertically" OR doula OR doulas OR eclampsia OR episiotomies OR episiotomy OR "expectant father" OR "expectant fathers" OR "expectant mother" OR "expectant mothers"

OR "expectant parent" OR "expectant parents" OR fetal OR fetomaternal OR fetus OR fetuses OR foetal OR foetalmaternal OR foetus OR foetuses OR gestational OR "hellp syndrome" OR "hospital nurseries" OR "hospital nursery" OR "induced labor" OR "induced labour" OR infant OR infants OR intrapartum OR "intra-partum" OR "intrauterine growth restriction" OR "intra-uterine growth restriction" OR "intrauterine growth retardation" OR "intra-uterine growth retardation" OR inutero OR "in-utero" OR "labor and delivery" OR "labor coach" OR "labor coaches" OR "labour and delivery" OR "labour coach" OR "labour coaches" OR lactation OR livebirth OR livebirths OR maternal OR "maternal-child" OR "maternal-infant" OR "maternal-neonate" OR "maternal-newborn" OR maternity OR "meconium aspiration syndrome" OR midwife OR midwifery OR midwives OR miscarriage OR miscarriages OR miscarried OR "morning sickness" OR "mother to child transmission" OR "mother-child transmission" OR "mother-to-child transmission" OR neonatal OR neonate OR neonates OR neonatologist OR neonatologists OR neonatology OR newborn OR newborns OR obstetric OR obstetrical OR obstetrics OR parturition OR perinatal OR "peri-natal" OR perinatologist OR perinatologists OR perinatology OR peripartal OR peripartum OR "peri-partum" OR placenta OR placentae OR postbirth OR postnatal OR "post-birth" OR "post-natal" OR postpartal OR "post-partal" OR postpartum OR "post-partum" OR preeclampsia OR "pre-eclampsia" OR pregnancies OR pregnancy OR pregnant OR "premature labor" OR "premature labour" OR "premature rupture of membranes" OR "premature rupture of the membranes" OR prenatal OR "pre-natal" OR "preterm labor" OR "preterm labour" OR puerperal OR puerperium OR "safe motherhood" OR stillbirth OR stillbirths OR stillborn OR stillborns OR "vertical disease transmission"

### Gender:

"gender* role*" OR "gender* identit*" OR "gender* attitud*" OR "gender* belief" OR "gender* norm*" OR "gender* stereotyp*" OR "gender* bias*" OR "gender* perception*" OR "gender* based" OR "gender-based" OR "gendered-based" OR "gender* behavio*" OR "gender* obstacle*" OR "gender* barrier*" OR "gender* relation*" OR "gender* dynamic*" OR "gender* inequalit*" OR "gender* inequit*" OR "gender* issue*" OR "gender* environment*" OR "gender* influen*" OR "gender* value*" OR "gender* imbalance*" OR "gender* disparit*" OR "gender* gap" OR "gender* gaps" OR "gender* unequit*" OR "gender* unequal*" OR "gender* unjust*" OR "gender* discriminat*" OR "gender* disadvantage*" OR "gender* exclusion*" OR "gender* injustice*" OR "gender* oppress*" OR "gender* prejudic*" OR "gender* empower*" OR "gender* disempower*" OR "gender* disproportion*" OR "gender* marginali*" OR "gender* unfair*" OR "gender* challeng*" OR "gender constrain*" OR "gender* difficult*" OR "gender* hinder*" OR "gender* hindrance*" OR "gender* hurdle*" OR "gender* impedi*" OR "gender* impede*" OR "gender* limit*" OR "gender* obstruct*" OR "gender* opposition*" OR "gender* oppose*" OR "gender* opposing" OR "gender* problem*" OR "gender* roadblock*" OR "gender* road block*" OR "gender* stumbling block*" OR "gender* mores" OR "gender* integrat*" OR "gender* transform*" OR "gender* view*" OR "gender* perspective*" OR "gendered" OR "macho" OR machismo* OR marianismo* OR feminin* OR masculin* OR "sex role*"

OR

(gender* AND ("social environment*" OR "social influen*" OR "social value*" OR "socialization" OR "socialisation" OR "psychosexual development*" OR "stereotyp* behavio*" OR "social norm*" OR "social perception*" OR "social attitud*" OR "social belief*" OR "social bias*" OR "social behavio*" OR "social obstacle*" OR "social barrier*" OR "social inequalit*" OR "social* inequit*" OR "social* unequit*" OR "social* unequal*" OR "social* discriminat*" OR "social* disadvantage*" OR "social injustice*" OR "social* oppress*" OR "social* prejudi*" OR "social* empower*" OR "social* disempower*" OR "social* marginali*" OR "social* unfair*" OR "social* unjust*" OR "social* challeng*" OR "social* constrain*" OR "social* difficult*" OR "social* hinder*" OR "social hindrance*" OR "social hurdle*" OR "social* impedi*" OR "social* impede*" OR "social* limit*" OR "social* obstruct*" OR "social opposition*" OR "socially oppose*" OR "social road block*" OR "social roadblock*" OR "social stumbling block*" OR "social mores" OR "social view*") )

OR

(gender* AND ("cultural norm*" OR "cultural value*" OR "cultural* bias*" OR "cultural perception" OR "cultural influen*" OR "cultural environment*" OR "cultural attitud*" OR "cultural belief*" OR "cultural behavio*" OR "cultural obstacle*" OR "cultural barrier*" OR "cultural inequalit*" OR "cultural* inequit*" OR "cultural* unequit*" OR "cultural* unequal*" OR "cultural* discriminat*" OR "cultural* disadvantage*" OR "cultural injustice*" OR "cultural* unjust*" OR "cultural* oppress*" OR "cultural* prejudi*" OR "cultural* empower*" OR "cultural* disempower*" OR "cultural* marginali*" OR "cultural* unfair*" OR "cultural* perspective*" OR "cultural view*" OR "cultural* challeng*" OR "cultural* constrain*" OR "cultural* hinder*" OR "cultural hindrance*" OR "cultural hurdle*" OR "cultural* impedi*" OR "cultural* impede*" OR "cultural* limit*" OR "cultural* obstruct*" OR "cultural opposition*" OR "cultural* oppose*" OR "cultural road block*" OR "cultural roadblock*" OR "cultural stumbling block*" OR "cultural mores"))

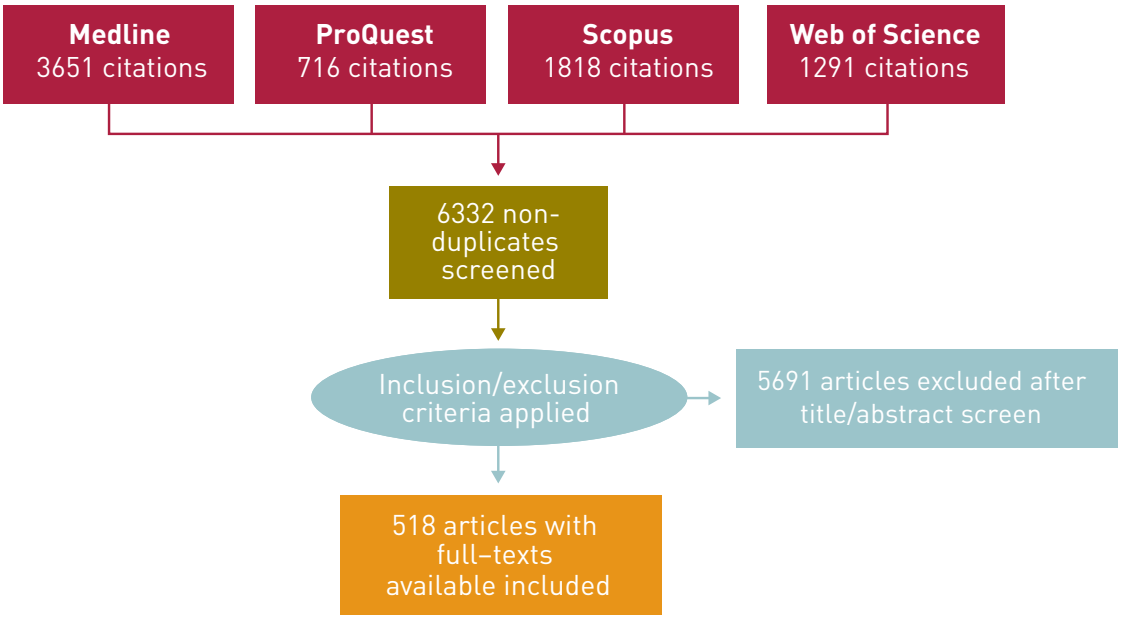
OR

(gender* AND ("power imbalance*" OR "power differ*" OR "power relation*" OR "power dynamic*" OR "power attitud*" OR "power belief*" OR "power stereotyp*" OR "power bias*" OR "power perception*" OR "power inequalit*" OR "power inequit*" OR "power disparit*" OR "power unequit*" OR "power unequal*" OR "power discriminat*" OR "power disadvantage*" OR "power injustice*" OR "power oppress*" OR "power prejudi*" OR "power marginali*" OR "power unfair*" OR "power unjust*" OR "power view*" OR "power perspective*" OR "power constrain*" OR "power hinder*" OR "power hindrance*" OR "power hurdle*" OR "power impedi*" OR "power impede*" OR "power limit*" OR "power obstruct*" OR "power opposition*" OR "power oppose*"))

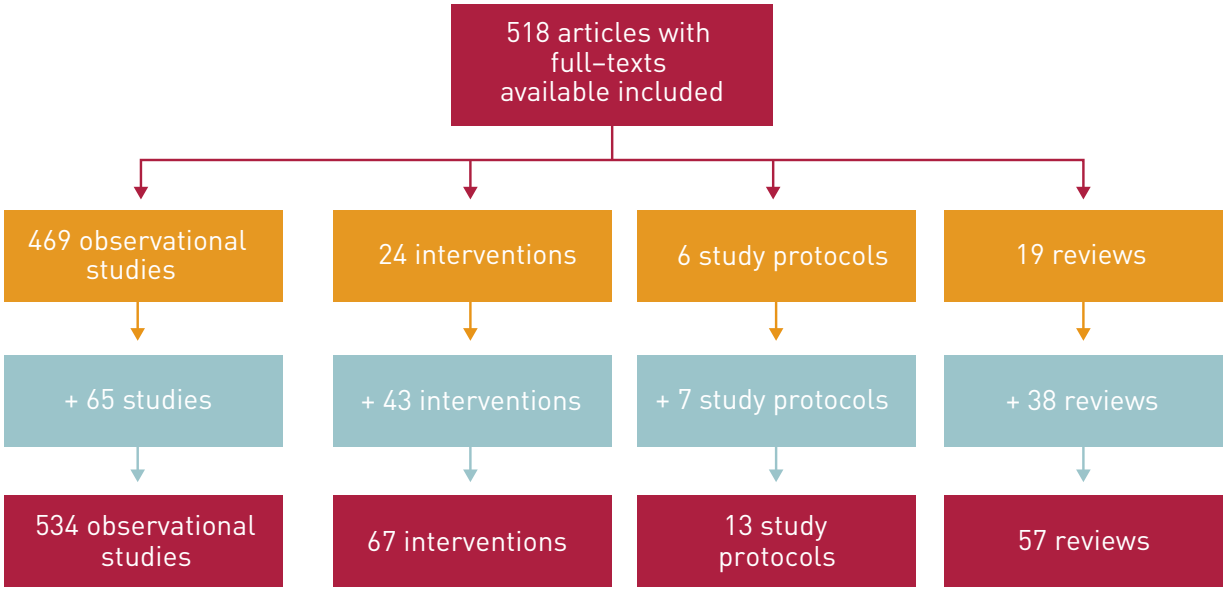
## A2. Inclusion criteria for title and abstract screening (systematic review)

| Exclusionary Questions | YES | NO | Unclear |
|---|---|---|---|
| **Initial Exclusionary Criteria (Title and Abstract in databases)** | | | |
| 1. Was the article published after 2005? | | | |
| IF NO, THEN EXCLUDE | | | |
| 2. Is the article in English, French, Spanish, or Portuguese? | | | |
| IF NO, THEN EXCLUDE | | | |
| 3. Is the study a peer-reviewed journal article? Is it a grey literature publication, such as a working paper, technical report, government document, or white paper? | | | |
| IF NO, THEN EXCLUDE | | | |
| 4. Is the study a review? (i.e. another systematic review or a meta-analysis) | | | |
| IF NO, THEN EXCLUDE | | | |
| 5. Is gender explicitly addressed in the article or is the intervention gender-intentional or gender-transformative (does the intervention acknowledge and address gender-related power imbalances, norms, and relations and their importance to health outcomes in project design, implementation, and evaluation)? Examples of gender equality and maternal empowerment levers include: access to information; community groups; control over income/assets/resources; decision-making power; education; equitable interpersonal relationships; mobility; paid labor; personal safety; or rights). See attached table for more info. | | | |
| IF NO, THEN EXCLUDE | | | |
| 6. Does the article measure maternal or neonatal health outcomes or outcomes relating to post-partum family planning or family planning with regards to MNH outcomes? For postpartum outcomes, consider only articles that measure outcomes in the first 42 days after birth for both mothers and infants. | | | |
| IF NO, THEN EXCLUDE | | | |

## A3. PRISMA diagram




Adding in snow-balling for other peer-reviewed articles:



## A4. Extraction forms

For Observational Studies:

| CODING FOR DATA EXTRACTION | | |
|---|---|---|
| **COMPONENT** | **QUESTIONS** | **CODES** |
| **A. IDENTIFYING CHARACTER-ISTICS** | A1. Article ID (number from Excel sheet) | |
| | A2. Topic area (from Excel sheet) | • Abortion<br>• Adolescent<br>• Depression<br>• FGM (Female genital mutilation)<br>• Fistula<br>• Health workforce<br>• HIV<br>• Intervention<br>• Male involvement<br>• Nutrition<br>• Policy<br>• Sex-selection<br>• Systematic Review<br>• Use of services<br>• Violence<br>• NB General (Newborn general)<br>• FP (Family planning)<br>• Decision-making<br>• M General (Maternal health general)<br>• Support |
| | A3. Secondary topic area (Add in any of the above in which the article may fall) | • Abortion<br>• Adolescent<br>• Depression<br>• FGM (Female genital mutilation)<br>• Fistula<br>• Health workforce<br>• HIV<br>• Intervention<br>• Male involvement<br>• Nutrition<br>• Policy<br>• Sex-selection<br>• Systematic Review<br>• Use of services<br>• Violence<br>• NB General (Newborn general)<br>• FP (Family planning)<br>• Decision-making<br>• M General (Maternal health general)<br>• Support |
| **B. PROGRAM TARGET POPULATION/ PARTICIPANTS** | B1. Age group of participants | • Adolescents (15-19)<br>• Adults (20+) |
| | B2. Biological sex of participants/target population | • Female<br>• Male<br>• Female + Male |

## CODING FOR DATA EXTRACTION

| COMPONENT | QUESTIONS | CODES |
|---|---|---|
| | B3. Who are outcomes measured among? (Check all that apply) | • Pregnant women/mothers<br>• Newborns (up to 42 days old)<br>• Men<br>• Families<br>• Other (write in) |
| | B4. When are outcomes measured? (Check all that apply) | • Antenatal<br>• Intrapartum<br>• Postpartum (up to 42 days)<br>• Other (write in) |
| **C. GEOGRAPHY & CONTEXT** | C1. Context (Check all that apply) | • Rural<br>• Urban<br>• Peri-urban<br>• Not specified |
| | C2. Country/ies | • Fill in blank |
| | C3. Region (Choose all that apply) | • East Asia and Pacific<br>• Europe and Central Asia<br>• Latin America and Caribbean<br>• Middle East and North Africa<br>• North America<br>• South Asia<br>• Sub-Saharan Africa<br>• Oceania |
| **D. EXPOSURES, OUTCOMES, FINDINGS** | What is/are the exposure/s included in the paper? (List all) | |
| | If the paper measures gender equality or women's empowerment, what measure does it use? (no drop down. Just free text entry) | |
| | What outcomes does the paper include? | |
| | (no drop down. Just free text entry) | |
| | What are the key findings of the paper? (Make sure to note effect sizes/point estimates with confidence intervals or SEs/SDs. See abstract for hints of key findings and also look at Results section). (no drop down. Just free text entry) | |

For interventions:

| | |
|---|---|
| **Article ID** | |
| **Intervention Name** | |
| **Funding/implementing organization** | |
| **Age of participants** | *Adolescents, Adults, Both* |
| **Biological sex of participants** | *Female, Male, Both* |
| **Who are outcomes measured among?** | *Pregnant women/mothers; newborns; men; families, other* |
| **When are outcomes measured?** | *Antenatal, intrapartum, postpartum, other* |
| **What periods does the intervention span?** | *Antenatal, intrapartum, postpartum, other* |
| **Context** | *Rural, Urban, Peri-urban, Not specified* |
| **Country** | |
| **Region** | |
| **Type of intervention** | |
| **Short description** | |
| **Intervention description** | |
| **Intervention location** | *Community ; School based (i.e. As part of school curriculum; School extra-curricular (i.e. after school); Health care setting; Participants' home; Religious setting; Workplace; Combination; Other* |
| **Intervention length (in weeks)** | |
| **Frequency of contact encounters** | *More than once a week;* |
| **Once a week;** | |
| **Less than once a week but more than once a month;** | |
| **Once a month;** | |
| **Irregularly or less frequently; Unspecified/Unclear** | |
| **# participants** | |
| **Outcomes** | |
| **Rigor of study** | |
| **Type of evaluation** | *Quantitative; Qualitative; Mixed Methods* |
| **Study design (quantitative only)** | *RCT, QE, Pre/Post test with control group; Pre/Post with no control; Post test only with a control group; Post test only with no control* |
| **Study design (qualitative only)** | *IDI, KII, FGD, PR, PV, Semi-structured interviews* |
| **Sample size** | |
| **Findings (copy and paste from abstract)** | |
| **From systematic review ?** | |
| **GEWE lever** | |
| **Notes** | |
| | |

# APPENDIX B. LANDSCAPING INTERVIEWS

## B1. Interview guide for key informant interviews

### Introduction

On behalf of the Bill & Melinda Gates Foundation, our team is undertaking a systematic review to understand what the evidence shows on the relationships between gender equality, mothers' empowerment, and both maternal and newborn health and post-partum family planning outcomes. We are specifically looking at these relationships during the antenatal, intrapartum and postpartum periods, and specifically in low and middle-income countries.

We aim to synthesize the evidence and develop recommendations for how the foundation can use this evidence to reduce maternal and newborn mortality and increase the voluntary use of family planning.

Beyond what we find in the peer-reviewed and gray literature, we also hope to gain a better understanding from a select group of key stakeholders of two things: 1) What programmatic experience indicates about the relationships between the factors we're studying, and 2) How they feel the Gates Foundation might research/develop/foster/use gender-intentional or gender-equitable programming to improve maternal, neonatal and PPFP outcomes.

You have been identified by the Foundation as a key stakeholder with unique knowledge and potential contributions to make. We have just a few questions for you and anticipate this call will take no more than 30-45 minutes.

### Attribution

The names and organizational affiliations of key informants will be included in a synthesis document intended only for internal use by the Foundation. In addition, for your information, the results of the systematic review component of the study may be published in a peer-reviewed journal.

*Is the scope of the review clear, or do you have any questions?*

### Questions

#### Gender Norms

1. Based on your knowledge of the field, how do you believe gender norms most significantly influence maternal and/or newborn health outcomes (including PPFP)? (If prompt needed, give "norms that influence provider performance or husband behavior, for example.")
    - Are there particular articles or literature we should look at regarding these relationships?
2. Are you aware of any interventions (past or present) that have addressed or influenced such norms – either positively or negatively?
    - Is there any program-related or intervention-related literature you would suggest we consider, or individuals we should consult regarding these interventions?

#### Gender-Intentional Interventions

3. Beyond influencing norms, are you aware of any gender-intentional or gender-transformative programs or interventions (past or present) - or those that explicitly seek to empower pregnant or newly parenting parents – that influence maternal or newborn health outcomes (including PPFP)? (Prompt: These can be interventions targeted at pregnant women and/or new mothers and/or their partners and/or others, i.e., in-laws).
    - Is there any program- or intervention-related literature you would suggest we consider, or individuals we should consult regarding these interventions?

#### Recommendations for the Gates Foundation

4. (As relevant): Does your institution support gender-intentional programming (or programming that empowers pregnant women and new mothers) as a means to improve MNH outcomes? If so, please describe (scope, scale, type of programs).
5. Do you know other donors that are supporting gender-intentional programming as a means to improve MNH outcomes? If so, please describe.
6. Is there a role for the Foundation in investing in and/or otherwise supporting gender-intentional programming (or programming that empowers pregnant women and new mothers) as a means to improve MNH outcomes?
    - What role would you recommend for them?
    - What are the gaps that BMGF is ideally suited to fill?
7. Do you have any other recommendations for the Foundation or our research team?

## B2. Summary points from interviews

*(More complete notes from the key informant interviews are available to BMGF staff upon request to the MNCH team)*

We conducted 22 interviews with 25 representatives of academic, non-governmental, foundation, bilateral and multilateral institutions. Most of these key informants were identified collaboratively with the research team and staff at the Gates Foundation, while others were recommended during the initial interviews. The interviewees were based in North America (11), Europe (9), South Asia (3) and sub-Saharan Africa (2).

The key informant, or "landscape" interviews were intended to supplement the evidence found in the published (peer-reviewed and gray) literature on the linkages between gender equality and mothers' empowerment on the one hand, and MNH outcomes on the other; to identify additional relevant programmatic interventions for the research team to review; and to obtain recommendations from global experts on how the Gates Foundation might consider gender-intentionality in its MNH programming. To the extent feasible, interviews with donors aimed to understand how their respective institutions approach gender in their MNH programming and policies, as well as how they believe that the Gates Foundation could best complement the roles of other donors.

The interviews were semi-structured, drawing on the guide found at Appendix B1, and beginning with an overarching, open-ended question. While most interviewees recognized the enormity of the topic (noting, for example, that "Gender norms affect everything!"), they were all able to bring their expertise and perspectives to the discussion. Some focused on structural challenges, such as those related to health care systems and provider behaviors, while others focused mainly on family and community influences. Some noted that the sexual and reproductive health and rights field has historically been more attentive to gender issues, and that the MNH field is just now starting to address them explicitly. Many noted that the MNH field's approach to gender comes with more of an instrumentalist or outcome-oriented approach (i.e., oriented toward reducing mortality) than a rights-based one, though this has the potential to shift over time.

The respondents' recommendations to the Foundation tended to stem from the challenges and opportunities they saw in their own work, but most recognized the outsized role the Foundation has in influencing not only funding decisions, but also policies and trends. The role of convener and thought leader was raised by several respondents, as was the important role BMGF could play in guiding the field toward the establishment and use of a standard set of metrics by which to understand and measure the pathways between gender-intentional programming, women's empowerment and MNH outcomes.

This summary highlights some of the more frequently mentioned recommendations throughout the interviews.

## Overarching themes and recommendations

### Quality of care requires a gender focus

- Quality of care is critical for women, but this means more than facility or infrastructure improvement. Providers must be trained and sensitized to provide more respectful care to pregnant or newly parenting women.
- Training more female providers, including midwives and nurses, and sensitizing health care systems to accept these female providers - can go a long way toward improving quality of care. A dearth of female providers is a major issue, however, female providers can be just as discriminatory toward women as male providers, so all providers must be trained in respectful and gender-sensitive care.
- Respectful maternity care is an important frame through which to highlight and address gender.

### Being gender-transformative means being patient and tackling deeper issues

- Structural drivers of inequality, such as age at marriage, violence against women, and educational and economic opportunities for women and girls, can all impact women's health outcomes and thus must be tackled as part of a broader and more holistic solution.
- There are no quick and easy solutions to changing the underlying attitudes and norms that place women and girls at risk of poor MNH and gender equality outcomes. It is important to look at a longer time horizon for results – and these results should be more than the traditional clinical ones.

### Applying a gender lens means maternal mortality may not be the sole outcome of interest

- Applying a gender lens may mean a shift away from a focus on maternal and neonatal deaths and toward maternal morbidity as a starting point. Maternal morbidity affects the reproductive and productive lives of many more women than maternal mortality, but has been neglected in the global health and development arena.
- Loosening the focus on maternal mortality can also help the Foundation focus on different positive outcomes that affect women and children's health, such as more gender-equitable relationships, more equal caretaking of children, women's economic empowerment, and on intergenerational effects.
- A gender lens would also mean moving away from a siloed approach to programming for women and girls and instead looking at the full reproductive lifecycle, connecting adolescent health, family planning, nutrition, and maternal and newborn health, as well as education and economic empowerment, for example.
- Addressing the broader structural risk factors and vulnerabilities that place pregnant women at risk of poor MNH outcomes requires an early start (i.e. well before pregnancy) and thinking beyond the individual and toward community-level, norm change interventions.

### More attention is needed to the unique needs of adolescents

- There is scant attention to pregnant adolescents. Family planning programs focus on preventing pregnancy, but once pregnant, these girls are lumped into the MNH system with adult women, despite their increased vulnerability and unique needs.
- Incorporating more of a life-course approach can help the Foundation identify gaps like this.
- Better research, as well as standard metrics, are needed
- More research is needed on the linkages between gender-intentional/transformative programming and actual MNH outcomes. Many programs look at intermediate indicators (i.e., # of ANC visits, accompaniment to ANC visits or delivery, facility-based delivery). While some of these indicators are useful and show how gender may play a role along the way, they don't connect directly to morbidity and mortality for mothers or newborns.
- Defining metrics and measures is important. The Foundation can play a role in convening donors, implementers, policymakers, etc. to agree on a standard set of measures by which to assess women's empowerment and progress toward gender-intentional or even gender-transformative programming to influence MNH outcomes.

### Supply and demand must both be addressed

- It is challenging to find integrated programming that addresses both the supply and demand side of MNH. However, interventions do not work when the demand for services increases, but the facilities and services remain poor, or, alternatively, when the quality of care increases, but there is no demand for them. Integration of the two is critical.

### Women's groups can be useful, but need more of an empowerment focus

- Participatory women's groups are a promising intervention, but most impact women's health knowledge, decision-making power, self-confidence, self-efficacy and feelings of support. They do not necessarily indicate (or measure) changes in gender norms more broadly, nor have they enough measured MNH outcomes adequately.
- Deliberately applying an empowerment focus and encouraging gender norm change at the community level can help make women's group interventions more effective and sustainable.

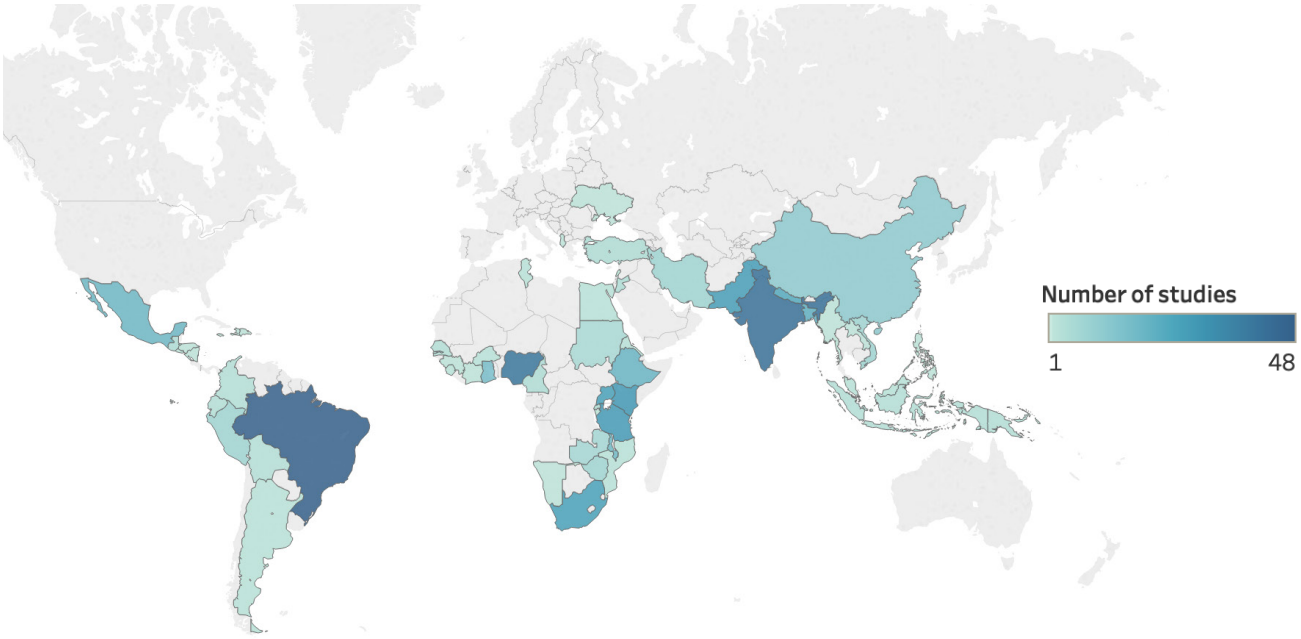
### Male engagement must be gender-transformative

- Engaging husband/partners can be an important strategy. Male-specific interventions show promise, but these must be done in a gender-transformative manner or they risk reinforcing gender stereotypes and behaviors that do not empower women.
- More rigorous evidence connecting male engagement to MNH outcomes is needed.

# APPENDIX C. DESCRIPTIVE STATISTICS OF OBSERVATIONAL STUDIES

We reviewed over 500 observational studies from low- and middle-income countries (LMICs). The countries with the most studies were: Brazil (48), India (41), Nigeria (40), Kenya (28), Tanzania (28), Pakistan (27), Uganda (26), South Africa (26), and Bangladesh (21) (Figure B1).

**Figure C1. Geographic distribution of observational studies (n=534)**




Within these countries, there was a nearly even geographically split with about one-third of studies occurring in rural, urban, or multiple areas (Figure B2):

The majority of studies looked at outcomes among women (Figure B3) and among both adolescents and adults:

**Figure C2. Context for studies with available information (n=435)**

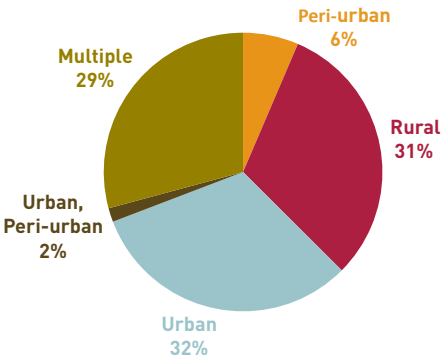
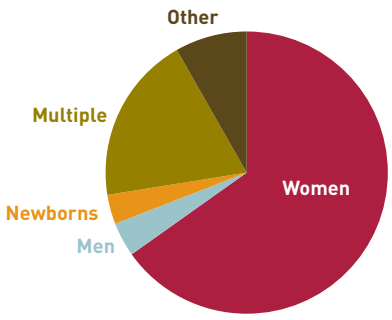
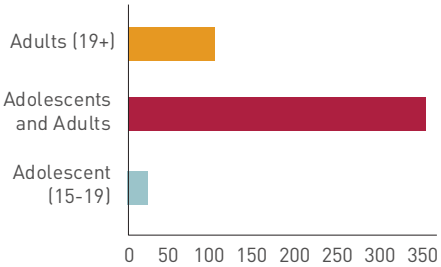



**Figure C3. Population among which outcomes are measured (n=534)**



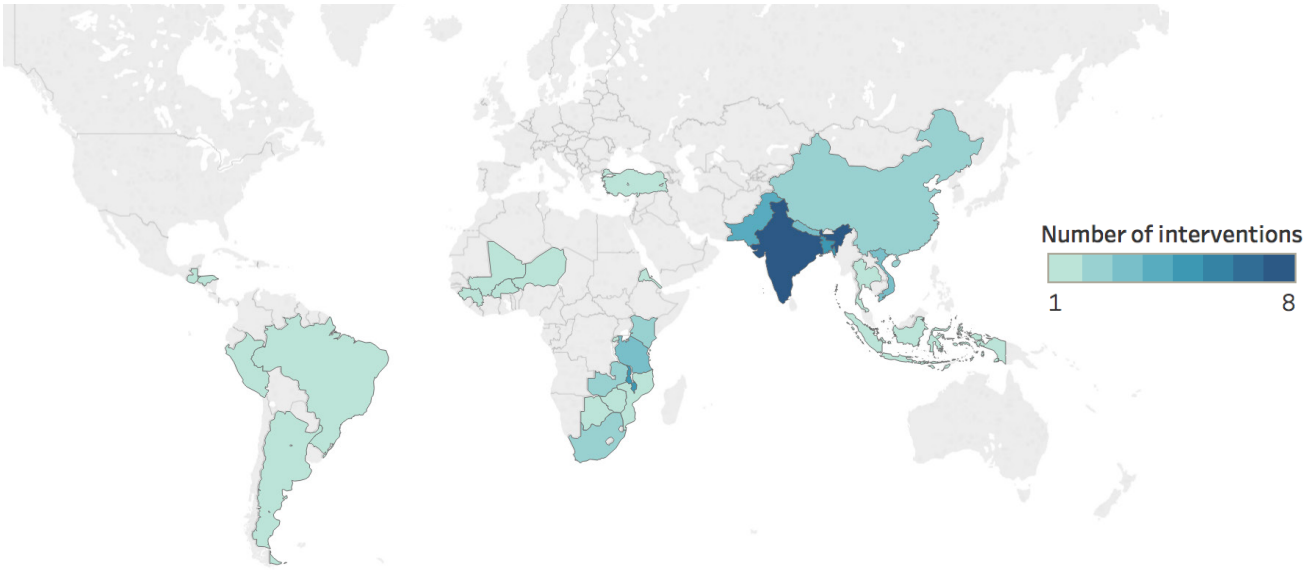

*Other includes: health workers, community members, policymakers, etc.

**Figure C4. Age of participants (n=474) for studies with available info**



# APPENDIX D. DESCRIPTIVE STATISTICS OF INTERVENTIONS AND PROGRAMS

### Figure D1. Geographic distribution of interventions




### Table D1. Descriptive characteristics of interventions

| Approach | Count | Percent |
|---|---|---|
| Intentional | 23 | 47% |
| Transformative | 26 | 53% |
| **Gender-based risk factor** | **Count** | **Percent** |
| Poor access to information | 39 | 80% |
| Lack of social support | 25 | 51% |
| Low decision-making power/lack of autonomy | 19 | 39% |
| Inadequate male involvement | 18 | 37% |
| Lack of mobility | 5 | 10% |
| Violence against women | 4 | 8% |
| Inequitable spousal relationships | 3 | 6% |
| Lack of control over income, assets and resources | 3 | 6% |
| Workload during pregnancy | 3 | 6% |
| Poverty | 2 | 4% |
| Subordinate role within extended family | 2 | 4% |

| | | |
|---|---|---|
| Young age/adolescence | 2 | 4% |
| Gender-based stigma and discrimination | 1 | 2% |
| Personal safety | 1 | 2% |
| **Health service** | **Count** | **Percent** |
| ANC | 17 | 35% |
| FBD | 9 | 18% |
| SBA | 6 | 12% |
| PNC | 3 | 6% |
| EmOC | 1 | 2% |
| PPFP | 1 | 2% |
| **Health outcome** | **Count** | **Percent** |
| Neonatal mortality | 8 | 16% |
| CPMD | 5 | 10% |
| Maternal mortality | 5 | 10% |
| Nutritional status | 3 | 6% |
| Perinatal mortality | 3 | 6% |
| Stillbirth | 2 | 4% |
| Hygienic delivery | 1 | 2% |
| **Health behaviour** | **Count** | **Percent** |
| BP/CR | 8 | 16% |
| Breastfeeding | 7 | 14% |
| Neonatal care | 4 | 8% |
| Contraceptive use | 3 | 6% |
| Better relationships with HCPs/Lower disrespect & abuse | 3 | 6% |
| Hygienic care | 1 | 2% |
| Longer birth intervals | 1 | 2% |
| Reduction in early pregnancy | 1 | 2% |
| **Gender-related outcome** | **Count** | **Percent** |
| Knowledge | 12 | 24% |
| Male involvement | 11 | 22% |
| Perceived support | 6 | 12% |
| Self-efficacy | 5 | 10% |
| Equitable spousal relationships | 3 | 6% |
| Workload during pregnancy | 3 | 6% |
| Empowerment | 2 | 4% |
| Disrespect & abuse | 2 | 4% |
| Decision-making power/autonomy | 1 | 2% |
| Violence against women and girls | 1 | 2% |

| Article ID/ Intervention name | Country | Short description | Effects | Gender-related risk factors | Approach |
|---|---|---|---|---|---|
| Banda (2010) | Malawi | Supportive companionship for women in childbirth | Companions provide psychological and physical support to women in labor and also assist HCWs. | Low social support | Intentional |
| Berti (2015) Networks for Community Health/ REDES | Honduras | Gender and health support groups for men; community training sessions on FP and gender and household visits; community pregnancy clubs for women | Increase ANC visits and FBD; decrease in male involvement | Inadequate male involvement | Intentional |
| Bhutta (2008) | Pakistan | Home-based newborn care delivered by lady health workers and Dais; community organization and mobilization and group education sessions (attended by women), set up emergency transport fund for women and newborns | Increased SBA and increased FBD, improved care behaviors (EBF, delayed bathing, cord care); Reduced stillbirth and NMR | Poor access to information, lack of mobility, lack of social support, poverty | Intentional |
| Bhutta (2011) | Pakistan | Home-based newborn care delivered by lady health workers and Dais; community organization and mobilization and group education sessions (attended by women), set up emergency transport fund for women and newborns | Lower neonatal mortality; lower stillbirth rate | Poor access to information, lack of mobility, lack of social support, poverty | Intentional |
| Chib (2010) | Indonesia | Midwife mobile phone program used to transmit patient health data to central database, contact coordinators and peers, and communicate with doctors and patients | Increased confidence among midwives to address problems and deal with birth complications, greater rapport between midwives and HCPs | Poor access to information | Intentional |
| Chib (2012) | India | Mobile phone program for CHWs | Increased efficiency in providing care, communication and information flow between CHWs and HCPs. Several challenges: lack of phone ownership, lack of willingness to give numbers to patients, low trust between CHWs and HCPs | Poor access to information | Intentional |
| Cooper (2009) | South Africa | Community health workers provided support and guidance on sensitive and responsive parenting to women in late pregnancy, particularly addressing depressive symptomology | Increased sensitivity and reduced intrusiveness of mothers; greater infant attachment at 18m; improved maternal depressed mood at 6m | Poor access to information, lack of social support | Intentional |
| International Development Research Centre (2018) mHealth | Vietnam | Text messages during pregnancy and one year postnatally that included health information (about vaccinations, nutrition, ultrasounds, breastfeeding, and when to start feeding solid foods to their babies) | Increased knowledge and self-efficacy relating to pregnancy and new motherhood, improved relationships with HCPs, greater communication with HCPs | Poor access to information, lack of social support | Intentional |

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| Jacobs (2018) Safe Motherhood Action Groups (SMAG) | Zambia | SMAGs – community-based action groups of women, men, and CHWs – to promote antenatal care, delivery in a health facility with a trained provider, postnatal home visits, and essential neonatal care. | Greater ANC attendance; Increased delivery of PNC from a skilled provider or SMAG attendance; BP from SMAG and ANC from skilled provider associated with SBA at birth and PNC | Poor access to information, low social support, low decision-making power/lack of autonomy | Intentional |
| Kujawski (2017) | Tanzania | Facility-based, quality-improvement process aimed to redefine norms and practices for respectful maternity care | Lower disrespect and abuse | Poor access to information | Intentional |
| Kumar (2008) | India | Community health workers delivered essential newborn care packages via collective meetings and household visitations. Intervention used a multi-level approach: at the household level, it targeted pregnant women and extended family members with greater decision-making power as well as their neighbors; at the community level, it engaged leaders and elders; at the individual level, it engaged both formal and traditional care providers. | Improvements in birth preparedness, hygienic delivery, thermal care (including skin-to-skin care), umbilical cord care, skin care, and breastfeeding were seen in intervention arm. Lower neonatal mortality | Poor access to information, lack of mobility, low decision-making power/ lack of autonomy, subordinate role within extended family | Intentional |
| Lolekha (2014) | Thailand | Training for HCWs in ANC settings for couples' HIV testing and counseling | Increase in male accompaniment for ANC services and greater acceptance of couples testing and counseling among HCWs | Inadequate male involvement | Intentional |
| Mao (2012) | China | Emotional selfmanagement training provided in a group context | Reduction in PPD | Lack of social support | Intentional |
| Midhet (2010) | Pakistan | Information dissemination on safe motherhood; engagement of male partners in safe motherhood and FP | Increase in ANC and iron supplementation; greater involvement of male partners; increase in FBD but not on SBA; lower perinatal mortality | Poor access to information, inadequate male involvement | Intentional |
| Mullany (2006) | Nepal | Information sessions for pregnant women and their husbands | Increased BP and PNC for women whose husbands attended info sessions | Poor access to information, inadequate male involvement | Intentional |
| Mushi (2010) Safe Motherhood Promoters | Tanzania | Home-based information dissemination on danger signs, risk factors, and birth preparedness plans, counseling among women, their husbands, and community stakeholders | Increased SBA; increased early ANC visits; groups were sustainable; increased male involvement | Poor access to information, lack of mobility, inadequate male involvement | Intentional |

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| Ndwiga (2017) | Kenya | Training HCWs on respectful maternity care, D&A, and strengthening linkages between the facility and community for accountability and governance | Decrease in D&A; lower patient and infant detainment | Poor access to information, inadequate male involvement | Intentional |
| O'Neil, J. et al. (2016) mMom | Vietnam | Dissemination of information and appointment remiders through text messages. Reminders to emergency HCPs and CHWs of appropriate actions and to coordinate actions | Increased access to information and care | Poor access to information, lack of mobility | Intentional |
| Sebastian (2012) | India | BCC intervention to increase knowledge and use of the lactational amenorrhea method and postpartum contraception. Targeted pregnant women and oldest female family member (e.g. mother in law). Also campaign for men/husbands regarding role in ANC, PNC, and PPFP | Increased knowledge of the lactational amenorrhea method and spacing methods and in use of spacing methods. More women discussed birth spacing with their husbands postpartum. | Poor access to information, subordinate role within extended family, inadequate male involvement | Intentional |
| Sercekus (2016) | Turkey | Information sessions for pregnant women and their husbands | Reduced fear of childbirth; increased maternal self-efficacy | Poor access to information, inadequate male involvement | Intentional |
| Susin (2008) | Brazil | Information session on breastfeeding that highlighted the importance of paternal participation | Paternal inclusion increased rates of EBF | Poor access to information, inadequate male involvement | Intentional |
| Turan (2011) | Eritrea | Participatory educational sessions on safe motherhood with women and men and training for HCWs on interpersonal communication | Increased BP/CR; increase in 4+ ANC visits; increased FBD | Poor access to information, inadequate male involvement | Intentional |
| UNICEF Malawi (2013) | Pakistan | Information dissemination on safe motherhood; engagement of male partners in safe motherhood and FP | Increase in ANC and iron supplementation; greater involvement of male partners; increase in FBD but not on SBA; lower perinatal mortality | Poor access to information, inadequate male involvement | Intentional |
| Male Championship | Malawi | | Increased BP and PNC for women whose husbands attended info sessions | Poor access to information, inadequate male involvement | Intentional |
| Ahmed (2015) Healthy Fertility Study | Bangladesh | BCC intervention to increase PPFP by integrating it with MNH services. Community-based meetings in which women who successfully practiced lactational amenorrhea served as ambassadors and promoters for other women. | Increase in contraceptive use; reduction in early pregnancy and short birth intervals | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |

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| Arnold (2014) Centering Pregnancy | Botswana | Group sessions with expectant mothers and their partners. | Increased involvement of men in prenatal sessions and greater engagement with their partners | Poor access to information, inadequate male involvement | Transformative |
| Asian Development Bank. (2015) Urban Primary Health Care Project | Bangladesh | The intervention's Gender Action Plan included preventative and promotional health services to women including addressing VAWG, information dissemination to encourage health service use, new livelihood opportunities for women as HCPs, addressing needs of women/ girls, addressing WASH needs, encouraging women's participation in PHC design | Lower maternal mortality, lower total fertility rate, lower STI, lower under-5 mortality and child malnutrition, | VAWG, poor access to information, lack of social support, lack of control over income, assets, and resources, low decision-making power/lack of autonomy | Transformative |
| Audet (2016) Male Champions | Mozambique | Partnership with TBAs and training of male-to-male community health agent, "Male Champions", who focused on counseling male partners to create new, male-friendly community norms around engagement in spousal/partner pregnancies. | Increased knowledge of the lactational amenorrhea method and spacing methods and in use of spacing methods. More women discussed birth spacing with their husbands postpartum. | Poor access to information, subordinate role within extended family, inadequate male involvement | Intentional |
| Azad (2010) | Bangladesh | Community-based participatory learning and action approach with women's groups | No effect on neonatal or maternal mortality. No significant diff erences were noted in most homecare practices or health-care-seeking behaviours between intervention and control clusters. Improvement in EBF and some neonatal care practices (delayed bathing and use of safe delivery kit). | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Boucar, M, et al (2016) Applying Science to Strengthen and Improve Systems (ASSIST) Project | Niger | Project updated national PPFP standards, aims and measurement protocols/indicators with specific gender components such as provider training and separate spaces for counseling, integrating FP services into PNC, encouraging male involvement, working with community leaders and CHWs | Increased PPFP counseling coverage, increased modern FP method uptake among postpartum women | Poor access to information, inadequate male involvement, low decision-making power/lack of autonomy | Transformative |
| Brazier (2015) Village safe motherhood committees | Guinea | Formation of village safe motherhood committees (VSMCs) to educate women about BP/CR, promote the use of ANC and skilled maternity care, and record vital statistics on MNH, and develop action plans to address MNH-related issues | Greater perceived support among women; no effects on ANC attendance; no effect on care-seeking for complications; exposure to community-level support persons was only associated with greater ANC use; counseling on place of delivery and BP associated with FBD and careseeking for complications | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |

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| Colbourn, T. et al, (2013) MaiKhanda | Malawi | Community-based participatory learning and action approach with women's groups | Lower perinatal mortality, neonatal mortality, and late neonatal mortality | Poor access to information, lack of social support, low decision-making power/lack of autonomy | Transformative |
| Comrie-Thomson, L, et al. (2015) Women and Their Children's Health (WATCH) and Wazazi na Mwana | Bangladesh, Tanzania, and Zimbabwe | BCC campaign, working with men's groups and community leaders. Information dissemination, community dialogue, and mobilization. Work with CHWs to include men in consultations with women and sensitization with HCPs on gender-related barriers for MNCH | Better nutritional status, increased FBD and SBA, lower maternal and neonatal mortality, reduced stillbirths, greater male accompaniment to health services and related increases in ANC and intrapartum care, greater male participation in BP, increased careseeking for childhood illnesses, increased HIV testing and PPTCT, improvements in couple communication with a reduction in domestic violence, increased emotional support for women from their husbands, increased male involvement in childcare and household chores | Poor access to information, lack of social support, low decision-making power/lack of autonomy, inadequate male involvement, workload during pregnancy, VAWG, gender-based stigma and discrimination | Transformative |
| Coulibaly, L (ND) Applying Science to Strengthen and Improve Systems (ASSIST) Project | Mali | Using village leaders to spread awareness of the importance of timely health care for pregnant women, using mothers and relais to check on whether women were taking iron and folic acid, establishing community gardens | Increased ANC, increased male involvement in promoting women's nutritional status | Lack of social support, inadequate male involvement | Transformative |
| Cripe (2010) | Peru | Empowerment intervention including an abuse assessment, referral card, and social worker case management. | Greater empowerment among women in the intervention group | Personal safety; low decision-making power/lack of autonomy | Transformative |
| Doyle (2018) Bandebereho Couples' Intervention | Rwanda | Engaged men and their partners in participatory, small group sessions of critical reflection and dialogue | Lower IPV; greater attendance and male accompaniment at ANC; greater modern contraceptive use; greater participation of men in childcare and household work; less dominance of men in decision-making | VAWG, inadequate male involvement, workload during pregnancy | Transformative |
| Gao (2012) | China | Promoted social support and maternal role competence and prevent postpartum depression in Chinese women | Better adjustment to motherhood, improve relationships with partner and infants, and increase perceived social support and maternal role competence | Poor access to information, inequitable spousal relationships | Transformative |

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|---|---|---|---|---|---|
| IDRC. (n.d.). MOS@N project | Burkina Faso | Mobile phone communication system with text/voice messaging system to spread information about pre- and post-natal care, assisted delivery, vaccination against polio and tetanus, malaria prevention, and patient follow-up. Inclusion of godmothers equipped with mobile phones and bicycles to encourage health-seeking behavior. Sensitization of men to allow wives to use their phones. | Increased ANC and PNC, increased SBA, increased equity and participation with health governance, improved access to information | Poor access to information, lack of social support, inequitable spousal relationships, lack of decision-making power/low autonomy | Transformative |
| Kamiya (2013) Safe Motherhood Promotion Project | Bangladesh | Community mobilization to increase awareness and demand for MH services through the development of a community support system. Formation of self-help groups for women to support low SES pregnant women. Secondary-level activities aimed at strengthening EmOC capacity. | Increased ANC use and postpartum EmoC; improved BP/CR; reduced socioeconomic inequalities in access to ANC; no increase in SBA | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Lewycka (2013). MaiMwana | Malawi | Community-based participatory learning and action approach with women's groups | Lower neonatal, perinatal, maternal, and infant mortality. Increased EBF. Increased ANC. Lower TBA. | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Malhotra, A., et al. (2005) Reaching the Poor Program | Nepal | Community-based, client-centered approach to improve SRH of adolescents; creation of community committees to allow adults and youth to increase authority/decision-making power; linkages between youth programs with other programs | Greater ANC, FBD, and knowledge of HIV/AIDS transmission, reduction of social inequalities | Poor access to information, lack of social support, low decision-making power/lack of autonomy, lack of control over income, assets and resources, young age/adolescence | Transformative |
| Manandhar (2004), Wade (2006) MIRA | Nepal | Community-based participatory learning and action approach with women's groups | Lower neonatal mortality but no difference in stillbirth rates; lower maternal mortality; higher ANC attendance, FBD, SBA, and hygienic care, lower likelihood of discarding colostrum | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Mathur, S., et al (2005) | India and Nepal | "Health plus" approach to address multiple risk factors and social determinants of health among married adolescents. Used community mobilization and sensitization regarding RH and improved quality/accessibility of health services through training government HCPs | Increased knowledge of pregnancy and PNC | Poor access to information, lack of social support, low decision-making power/lack of autonomy, lack of control over resources and assets, young age/adolescence | Transformative |

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|---|---|---|---|---|---|
| Mutisya (2018) | Kenya | Secondary prevention approach for early detection and reduction or elimination of GBV during pregnancy using empowerment model | Lower physical violence only; lower maternal depression | VAWG | Transformative |
| Pasha (2013) | India, Pakistan, Kenya, Zambia, Guatemala, and Argentina | Community mobilization to establish village groups and strengthen capacity to identify and address barriers to MNH care and action plan to address them. Secondary component of training CHWs | No difference in perinatal mortality, stillbirth, neonatal mortality, rates of transport to hospital of mothers and newborns, facility delivery | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Patil (2017) CenteringPregnancy | Malawi, Tanzania | Group prenatal sessions using CenteringPregnancy model | Greater pregnancy-related empowerment among women participating in group ANC | Poor access to information, lack of social support | Transformative |
| Persson (2013) | Vietnam | Community-based participatory learning and action approach with women's groups | Lower neonatal mortality; greater ANC attendance | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Population Council. (2005). Varkey, L., et al (2004). | India and South Africa | Joint counseling for women and men on pregnancy care, family planning, and infant care, and same-sex individual or group counseling on sexually transmitted infections (STIs), correct condom use. Antenatal testing and treatment for syphilis. Continuity of care through pregnancy and postpartum. | Better couple communication and joint FP decision-making, greater male involvement and knowledge of MNH issues, greater knowledge of condoms | Poor access to information, inadequate male involvement, inequitable spousal relationships, low decision-making power/lack of autonomy | Transformative |
| Roy (2013), Houweling (2013), Tripathy (2010) Ekjut | India | Community-based participatory learning and action approach with women's groups | Lower neonatal mortality through improvements in hygiene during delivery, thermal care of neonate, and EBF; reduction in moderate PPD. No increases in care-seeking behavior. | Poor access to information, low social support, low decision-making power/lack of autonomy | Transformative |
| Sinha, D. (2008) | India | Intervention to raise awareness of healthy pregnancy-related practices and support access to health services through community mobilization and activities | Increased use of government health facilities, greater FBD and ANC, greater BP/CR, lower workload during pregnancy, better nutritional status | Poor access to information, lack of social support, workload during pregnancy | Transformative |

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