Effect of male partners' behaviours and beliefs on reproductive, maternal and child health and wellbeing in East Africa: A scoping review

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Abstract

Background: East African countries have high rates of maternal and child mortality and morbidity. Studies have shown that involvement of male partners in reproductive health can benefit maternal and child health. This scoping review aims to provide an overview of the evidence across East Africa that describes male partner involvement and its effect on maternal and child wellbeing in reproductive, maternal or child health.

Methods: Ten databases were searched to identify quantitative data on male's involvement in East African countries. Studies reporting qualitative data, non-East-African samples, 'intention to use' data or only reporting on male partner's education or economic status were excluded. Studies were organised into five a priori categories: antenatal care (ANC), human immunodeficiency virus (HIV), breastfeeding, family planning, and intimate partner violence (IPV) with further categories developed based on studies included.

Results: A total of 2787 records were identified, 644 full-texts were reviewed and 96 studies were included in this review. Data were reported on 118,967 mothers/pregnant women and 15,361 male partners (typically reported by their female partners or coparents). Most of the studies (n=83) were reported from four countries Ethiopia (n=49), Kenya (n=14), Tanzania (n=12) and Uganda (n=10). The evidence indicates that male partner involvement and support is associated with improved reproductive, maternal and child health across a wide range of outcomes. However, the studies were heterogenous, using diverse exposure and outcome measures and reporting varying effect sizes, levels of men's involvement and types of support. As well, male partners' lack of practical and emotional support, and engagement in violent behaviours towards partners, were associated with profound negative impacts on maternal and child health and wellbeing.

Conclusions: The body of evidence, although heterogenous, provides compelling support for male involvement in reproductive health programs designed to support maternal and child health. To advance research in this field, agreement is needed on a measure of male partner 'involvement'. To optimise benefits of male partner's involvement, developing core outcome sets and regional coordination across health conditions are recommended.

Introduction

In 2017, sub-Saharan African countries alone accounted for two-thirds of the estimated global maternal deaths (1) and a child born in a sub-Saharan African country is 10 times more likely to die in their first month of life, compared to a child born in a high-income country (2). High rates of health-related problems and unmet healthcare needs in these countries frequently result in elevated rates of maternal morbidities such as haemorrhage, infection, hypertensive disorders, and uterine ruptures (3). High human immunodeficiency virus (HIV) infection rates and mother-to-child-transmissions (MTCT) (4), inadequate nutrition/breastfeeding (5) and intimate partner violence (IPV) (6) affect both mother and child health (7, 8). The Sustainable Development Goal (SDG) to "Ensure healthy lives and promote wellbeing for all at all ages" aims to end preventable deaths of newborns and children under 5 years of age and reduce the global maternal mortality ratio to less than 70 per 100,000 live births (9). Although maternal mortality in sub-Saharan countries has decreased over recent decades rates remain at over 500 deaths per 100,000 live births (10).

To date, maternal and newborn health (MNH) has typically been considered within a women's health framework, across health systems in East Africa and globally (11). As well, various cultural traditions limit women's involvement in decision-making, and position male partners as decision makers for all aspects of family life while removing them from knowledge of and involvement with maternal and newborn care (11). Involving male partners in reproductive health can have significant benefits for MNH, particularly in low- and middle-income country settings (11). The World Health Organisation (WHO) has recommended involving fathers, stating that next to improving health care, "The inclusion of fathers is important as they can play a role as caregivers to the newborn and as a source of support for the mother" (12).

Over the last decades, studies from numerous African regions have confirmed that male partner involvement has the potential to influence health outcomes directly, and can also indirectly improve MNH by increasing couple communication and joint decision making (13). A partner providing significant emotional (14), practical (15) and financial (16) support has been found to reduce barriers for women to access health services and can normalise women's care-seeking behaviours (17). For example, women are more likely to use antenatal (ANC) and postnatal care (PNC) facilities, accept medical tests and counselling and seek skilled birth attendants (SBA) when their partners are supportive (17–19). Other areas in which male partner emotional and material support have been shown to be beneficial are family planning, HIV care, breastfeeding practices and child nutrition and maternal health (19–21).

Systematic reviews examining male partner involvement in reproductive health care include numerous studies reporting a positive association between men's active engagement in the pregnancy, birth and postnatal period in LMIC settings (22–24). However, there are three features of this body of evidence that limit its usefulness for designing interventions and policies to address maternal and infant health in East African countries: the body of evidence is fragmented in geography, focused on particular health conditions or behaviours, and male partner involvement is poorly defined.

LMIC studies in reproductive health are typically conducted on nationally defined populations. While standard socioeconomic data are collected, such as education level and income, few studies attempt to map cultural peculiarities that may apply to a particular region, instead referring to general understanding of cultural values, for example "the husband generally makes all important decisions for the family, including reproductive ones" (25). Studies also investigate specific health conditions, for instance breastfeeding (26–29) or HIV status (30–34) or a health behaviour such as engaging with a SBA (18, 35–37). The outcomes found in these studies may occur across perinatal period from conception to toddlerhood. Male partners in each study are considered in isolation, as if the couples involved at each time point were entirely unconnected to the couples at other stages of pregnancy birth and parenthood. The reality that is being ignored is that it may well be the same man who is involved in contraceptive discussions, antenatal service attendance, birthing support, and infant feeding. Treating each population of couples separately misses the opportunity to increase the effectiveness of interventions or policy changes by linking efforts to involve male partners across the perinatal period.

An additional major limitation is the range of behaviours and attitudes that may be included as markers of 'male partner involvement'. Outcome measures for mothers and children can often be clearly specified, for example, HIV status, breastfeeding, or having a SBA. By contrast, male partner involvement measurement has ranged from counts of single events, such as accompanying the woman to an antenatal class, to assessment scales of factors including supportive attitudes, knowledge of the mother's health care and emotional support (38, 39). The assessment of couple dynamics is particularly relevant to evaluating the impact of male partner involvement. Interventions involving male partners to improve women's health, according to the WHO should be supported "provided that they are implemented in a way that respects, promotes and facilitates women's choices and their autonomy in decision-making and supports women in taking care of themselves and their newborns"(40).

This scoping review aims to support a more integrated approach to increasing partner support for mothers and infants in East African countries by identifying the geographic spread, health outcome, and male partner involvement measures among studies demonstrating a link between male partner involvement and maternal or infant health.

Methods

This systematic scoping review was informed by the Joanna Briggs Institute Reviewers' Manual 2015 (41). A scoping review aims to identify literature relating to a broad research topic, and map the findings to inform key concepts, theories, sources of evidence and research gaps (42, 43). The protocol of the study was not registered due to scoping review registration restrictions.

Eligibility criteria

We included all research articles, including pilot-studies, randomized and non-randomized controlled trials and pre- and post-test designs. Literature reviews, qualitative studies, case studies, study protocols, dissertations, studies with participants (as parents) younger than 12 years or with data restricted to male partners' level of education, income or their absence from home and conference abstracts were ineligible. Only studies reporting at least one outcome measure related to maternal and/or infant outcomes from conception to infant age two years were included, however 'intention to use' outcomes were excluded. Studies involving 'ever-pregnant' women were included. Included studies needed to report on male partners' beliefs, knowledge, attitudes or behaviours in relation to their partner's and/or infant's health. The United Nations '*Standard Country or Area Codes for Statistical Use*' (44) was used to determine countries or territories considered 'East African' for this review: British Indian Ocean Territory, Burundi, Comoros, Djibouti, Eritrea, Ethiopia, French Southern Territory, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Reunion, Rwanda, Seychelles, Somalia, South Sudan, Uganda, Tanzania, Zambia and Zimbabwe. There was no restriction on publication date, but only studies written in English were included. Additionally, systematic reviews were retrieved from the search and screened for eligible studies. Those studies reporting male partner involvement and mother, or infant outcomes were identified and full texts were screened by two reviewers using the eligibility criteria.

Search strategy

Ten databases were used to search for literature (Medline, Scopus, EMBASE, Emcare, POPLINE, EBSCO, PsychINFO, Maternity & Infant Care, CINAHL and African Index Medicus) by multiple authors on 24th September 2018 and updated on 15th July 2020. The following is an example of the search terms used for Scopus: (TITLE-ABS-KEY((pregnan* OR maternal OR antenatal OR prenatal OR newborn OR infant OR breastfeed* OR "breast feed*" OR "family health" OR "womens health" OR perinatal OR infant* OR child* OR baby* OR babies* OR mother*)) AND TITLE-ABS-KEY (((dad OR dads OR paternal OR father* OR husband* OR "male partner*" Or spouse*) AND (belief* OR attitude* OR knowledge OR behaviour* OR behaviour* OR engag* OR involve*))) AND TITLE-ABS-KEY (("east* africa*" OR "british Indian ocean" OR "french southern territor* OR "south sudan" OR Burundi* OR comoros* OR djibout* OR Eritrea* OR Ethiopia* OR Kenya* OR madagasca* OR Malawi* OR mauriti* OR mayotte* OR mozambiqu* OR reunion* OR Rwanda* OR seychell* OR Somalia* OR Uganda* OR Tanzania* OR Zambia* OR Zimbabwe*))). We imported all references retrieved from the searches into Covidence, an online software for managing systematic reviews (45).

Study selection process

In Covidence, all records were screened for relevance by two authors using the eligibility criteria. All listed authors independently screened the abstracts, with conflicts resolved by a third reviewer. Two reviewers (RF, BS, RL, CR or NV) independently screened the full-text of studies with conflicts resolved by a third reviewer. The details for full-text exclusions are listed in Figure 1.

Guidelines for maternal and infant health outcomes

Several of the perinatal outcomes and conclusions reported in this scoping review are framed by recommendations or guidelines specifying treatment regimens or behaviours set by authoritative national or international bodies. Table 1 outlines the outcome standards identified for each topic to contextualize the reported outcomes.

Table 1. Guidelines for maternal and infant health outcomes

Outcomes	Guidelines
ANC	The WHO recommends a minimum of eight ANC contacts for women throughout their pregnancy (46), some countries have adopted the 4-visit model (47).
Childbirth	A skilled birth attendant (SBA) is a skilled health professional present during labour and birth (48).
HIV	Outcomes related to the HIV include a husband's attitude towards a mother's positive HIV status, the likelihood of the father and/or mother being tested, mothers using and adhering to HIV medication and mother-to-child transmission (MTCT) of HIV. The WHO has recommended 'Option B+' for the prevention of MTCT and sexual transmissions since 2012, which is a program offering medication to women from first identification as HIV positive and continuing the rest of their lives (49).
Breastfeeding	Exclusive breastfeeding (EBF) is globally recommended for an infant's first six months of life (50) and also for HIV positive mothers. The WHO states that mothers living with HIV should breastfeed at least six months while being treated with antiretroviral medication (51). While there are risks of HIV transmission through breastfeeding, inappropriate or inadequate foods and drinks risk malnutrition, diarrhoea and pneumonia (52).
Family planning	Preventing unplanned pregnancies is a vital component of the WHO's strategy in preventing MTCT (53). Modern contraceptive methods are recommended to avoid short birth-spacing (i.e. under 18 months) which is associated with higher risks of maternal and infant mortality and complications (54).
Child health	A child's health is commonly measured using height and weight for age (i.e. Weight for Height in children (WHZ) and Height for Age in children (HAZ)). Additionally, a diverse diet that includes all food groups is considered a good indication of a child's nutritional status and health (55). 'Child mortality' refers to mortality of children under the age of five (56).
Maternal health	Outcomes in maternal health include mortality (10), morbidities (57), smoking and alcohol consumption (58), low birthweight, preterm birth and stillbirth (59-61).
IPV	Many incidents of violence against women involve their male intimate partners, or ex-partners (62). Intimate partner violence (IPV) includes physical abuse, and/or sexual abuse and/or emotional/psychological abuse.

Data extraction and synthesis of results

The data were extracted into an Excel spreadsheet by RF, BS, CR and NV. Recorded data included author, year of publication, country, participant information, study aim, design and data collection, outcomes and results. Several topics were expected and proposed before commencing and others emerged following discussion during data extractions. The final list of topics is as follows: 1) ANC, 2) Childbirth, 3) HIV care, 4) Breastfeeding, 5) Child health, 6) Family planning 7) Maternal health and 8) IPV. Data for each topic was collated and evidence tables were developed to present each topic separately.

Results

A database search in September 2018 identified 2323 articles; a further database search in July 2020 identified another 347. Forty-four systematic reviews identified 171 articles. After exclusion of duplicates and screening on title and abstract, full text screening was undertaken on 644 papers (see Figure 1). Thirteen papers identified in the searches were excluded as they were unable to be accessed for screening. Continued screening during extraction resulted in 96 papers identified as eligible for inclusion. A full list of included studies, by primary topic and country, is provided in Table 2.

Many of the studies originated from Ethiopia (n=49), Kenya (n=14), Tanzania (n=12) and Uganda (n=10). The remaining studies were from Malawi (n=4), Zambia (n=2), Mozambique (n=2), Rwanda (n=3), Zimbabwe (n=1), and Somaliland (n=1) although one study (118) included data from Burundi, Rwanda, Tanzania, Uganda and Kenya.

The majority of the studies (n=93/96) used surveys administered by an interviewer to collect quantitative data. Mothers were the primary participants of the included studies and in total, data were collected from a total of 118,967 mothers/pregnant women and 15,361 fathers/male partners (Table 2). Data on fathers and male partners were typically collected by the mothers/female partners reporting on the father's/male partner's involvements. More detailed information regarding the studies and their outcomes is described below for each topic separately.

Table 2. Number of studies per topic, participant status and countries

Six categories were identified by grouping specific factors of male partner behaviours, knowledge or attitudes within the outcome categories across the 96 studies included in the scoping review: presence; attitudes; partner communication (i.e. joint decision making or discussion); health behaviours and knowledge; sexual and reproductive intentions; and IPV (Table 3). Below we describe findings for each topic, mapped against these categories of male partner behaviours, knowledge, and attitudes. Table 4 details the country, participants, design, aim, results, and conclusion for each study.

i. Impact of male partner involvement on ANC care

Male partner involvement was measured as financial support, attitudes (or acceptance/approval) toward ANC, presence (including accompaniment to ANC

Topic	Number of studies	Participants		Countries
		Mothers/Pregnant Women	Fathers/Male Partner	
Antenatal Care	16	19812	8264	Ethiopia, Kenya, Mozambique, Tanzania,
Childbirth	17	17008	1556	Ethiopia, Kenya, Malawi, Tanzania, Uganda, Zambia
Human Immunodeficiency Virus	14	23816	-	Ethiopia, Kenya, Malawi, Tanzania, Uganda, Zimbabwe
Breastfeeding	7	2856	-	Ethiopia, Somaliland, Uganda
Child Health	12	9260	3936	Ethiopia, Kenya, Rwanda
Family Planning	10	9316	1000	Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda
Maternal Health	16	4161	-	Ethiopia, Uganda
Intimate Partner Violence	14	32738	605	Burundi, Ethiopia, Kenya, Rwanda, Tanzania, Uganda, Zambia
Total	96	118967	15361	

visits and involvement in hard labour tasks, and joint decision making). Such factors had an impact on ANC utilisation, facility-based delivery, SBA uptake, maternal HIV testing, exclusive breastfeeding, infant immunization, women's knowledge of neonatal danger signs, antiretroviral drug uptake, antenatal drug uptake, and workload during pregnancy.

Financial support

Women receiving financial support from their male partner were more likely to use ANC than those who did not (AOR=23.3; 95%CI 11.0, 49.5) (63). Conversely, women who did not receive financial support were more likely to experience delayed commencement of ANC (OR=0.27; 95%CI 0.02, 0.52) [26] (AOR=0.28; 95%CI 0.02, 0.58) (64).

Attitudes

Women whose male partners expressed positive attitudes or acceptance/approval towards ANC were 3.5 to 9 times more likely to utilize ANC (65-67) and more likely to complete four ANC visits (AOR=2.56; 95%CI 1.25, 5.24) (68) and (AOR=2.28; 95% CI 1.03, 5.06) (69) compared to women whose partners perceived ANC negatively, whilst women who reported unsupportive male partners were more likely to delay commencement of ANC (OR=0.60; 95%CI 0.10, 1.10) (38).

Presence

Male partner accompaniment of women to ANC visits was associated with higher odds of: maternal HIV testing at first ANC visit (AOR*=5.98; 95%CI 4.50, 7.94) (70); uptake of ANC visits (AOR=1.26; 95%CI 1.10, 1.45) (70) and (AOR=1.67; 95%CI 1.36, 2.05) (71); facility-based delivery (AOR=1.26; 95%CI 1.08, 1.47) (70); skilled delivery (AOR=2.00; 95%CI 1.51, 2.64) (71), exclusive breastfeeding (AOR=1.70; 95%CI 1.00, 2.91) (71), infant BCG immunization (AOR=3.59; 95%CI 1.00, 12.88) (71); women's knowledge of at least one neonatal danger sign (OR=3.34; 95%CI 1.35, 8.27) (72); and among HIV-infected women, antiretroviral drugs (AOR=6.16; 95%CI 1.26, 30.41) (71). Conversely, women who attended ANC without their male partner were nearly seven times more likely to delay commencement of ANC (AOR=6.99; 95%CI 2.82, 17.31) (73), and less likely to be counselled regarding potential obstetric complications (AOR=0.64; 95%CI 0.48, 0.86) (38). Lastly,

women with husband/partner who helped them with hard labour tasks were more likely to meet the guideline for antenatal visits (OR=1.23; 95%CI 1.04, 1.45), acquire antenatal tablets (OR=1.55; 95%CI 1.32, 1.83), and work less during pregnancy (OR=2.19; 95%CI 1.91, 2.51) (74).

Partner Communication

Communication with the partner about ANC was a significant predictor for increased knowledge of danger signs for both men (p=0.01) and women (p=0.03) (75). Women were more likely to utilise ANC services if they decided together with their husband on ANC services (OR=3.51; 95%CI 1.83, 6.69) or on household purchases (OR=5.99; 95%CI 3.39, 10.56) (76).

Increased male partner involvement assessed across multiple supportive behaviours related to maternal health services was associated with greater likelihood of timely initiation of ANC (AOR=1.19; 95%CI 1.03, 1.39), maternal HIV testing (AOR=1.52; 95%CI 1.18, 1.96), being attended by SBA at birth (AOR=1.44; 95%CI 1.13, 1.84), and utilisation of a facility-based delivery (AOR=1.22; 95%CI 1.01, 1.48) (77).

ii. Impact of male partner involvement on childbirth

Sixteen studies explored how male partner involvement can influence SBA presence at childbirth and/or childbirth at a health facility. Male partner involvement was measured as accompaniment to ANC visits, attitudes toward childbirth health care, and involvement in decision making and discussion. These factors had an impact on SBA utilisation, facility-based childbirth, postnatal care uptake, birth preparedness and complication readiness (BPCR) practice and motorcycle ambulance utilisation.

Presence

Women who were accompanied by their partners to ANC visits were more likely to have skilled birth attendance (COR*=6.33; 95%CI 4.5, 8.9) (18) (OR=2.82; 95%CI 1.49, 5.36) (35); deliver at a health facility (OR=1.53; 95%CI 1.15, 2.04) (78); and attend a postnatal visit (OR=1.58; 95%CI 1.20, 2.10) (78) compared to women who were not accompanied by their partner.

Attitude

Women whose male partner preferred home childbirth were more likely to deliver at home (AOR*=5.84; 95%CI 2.36, 14.42) (79), and women whose male partner expressed positive attitudes towards ANC were more likely to give birth in health facilities (AOR=10.2; 95%CI 4.0, 25.9) (80), compared to those with a male partner who did not prefer home childbirth, and who expressed negative attitudes toward ANC, respectively. Additionally, women with husbands who both perceived skills of doctors to be higher than skills of Traditional Birth Attendants (TBAs) were more likely to deliver at a health facility compared to women with husbands who both reported skills of doctors to be the same or lower than skills of TBAs (OR=2.22; 95%CI 1.38, 3.58) (81). Conversely, women whose husbands had a negative attitude towards institutional/facility childbirth (OR=0.19; 95%CI 0.04, 0.80) (82) or who perceived it as not important (OR=0.61; 95%CI 0.38, 0.99) (81) were less likely to give birth at a health facility.

Partner Communication

Women with a male partner who was involved in decision making regarding childbirth place were 1.9 to 6.8 times more likely to deliver at a health facility (36, 83-86) compared to women making decisions on their own. Further, joint decision making increased the likelihood of SBA attendance (OR=2.37; 95%CI 1.75, 3.22) (37) and practice BPCR (AOR=1.92; 95%CI 1.07, 3.44) (87); and decreased the likelihood of at-home childbirth (AOR=0.7; 95%CI 0.2, 2.1) (88).

However, women whose husbands made the final decision regarding the place of childbirth were more likely to give birth at home compared to women who make a husband–wife joint decision (AOR=7.2; 95%CI 2.1, 24.5) (89). Lastly, husbands who participated in the decision to use a motorcycle ambulance were more likely to use a motorcycle ambulance than those who did not (OR=3.78; 95%CI 2.46, 5.81) (90).

iii. Impact of male partner involvement on HIV care

Male partner impact on HIV care included presence/involvement (attendance in couple HIV testing, counselling and prevention of mother-to-child transmission (PMTCT) activities), attitudes (or acceptance/approval) toward family planning and IPV, communication (joint decision making and spousal discussion), and health behaviours (alcohol consumption). Such factors were found to impact nevirapine uptake, antiretroviral therapy (ART) adherence, PMTCT continuum adherence, condom use, facility-based childbirth, receive HIV test results, HIV self-testing, postpartum HIV status, infant HIV acquisition through MTCT, MTCT knowledge and uptake of family planning.

Presence

Male partner attendance in couple HIV testing, counselling, and PMTCT activities was associated with positive maternal and infant outcomes. Women with partners who were involved in HIV testing, counselling or other PMTCT activities were more likely to: return for follow-up to receive nevirapine (OR=3.1; 95%CI 1.2, 8.4) (91); take maternal or infant dose of nevirapine (OR=3.4; 95%CI 1.3, 9.0) (91); adhere to Option B plus ART (AOR=2.91, 95%CI 1.64, 5.16) (92); successfully complete all steps in the PMTCT continuum (ARR=1.10; 95%CI 1.02, 1.18) (93); and, show improved retention in HIV care (aRR=1.33; 95%CI 1.12, 1.59) (94). Additionally, male partner involvement was associated with condom use (AOR=5.6; 95%CI 2.3, 13.5), hospital childbirth (AOR=25.9; 95%CI 10.6, 63.6), and completion of follow-up in the HIV program (AOR=16.8; 95%CI 8.5, 33.4) (16). Conversely, women were less likely to return for HIV test results if their partners did not come for testing (AOR= 12.6; 95%CI 3.1, 51.4) (95).

Infants with fathers who accompanied mothers to the facility were 40%-45% less likely to acquire HIV through MTCT (AOR=0.60; 95%CI 0.50, 0.90) (31) (aHR*=0.56, 95%CI 0.33, 0.98; P=0.042) (31) (aHR=0.55; 95%CI 0.35, 0.88; P=0.012) (30) compared to those with fathers who did not attend. Conversely, mothers who had low partner involvement level were more likely to transmit HIV to their children (AOR=6.9; 95%CI 1.4, 13.4) (32).

Attitudes

Postpartum women with a partner who ever refused use of a family planning method were more likely to have a positive HIV status (AOR=1.88; 95%CI 1.20, 2.90) compared to women with a partner who never refused (33).

Partner Communication

Women who discussed HIV/AIDS/MTCT with their spouse were more likely to have better knowledge on MTCT (AOR=2.40, 95%CI 1.52, 3.80) (96) and use family planning (97). Conversely, those who did not engage in spousal discussion about HIV testing or reproductive health were more likely to refuse HIV testing (AOR=8.7; 95%CI 3.06, 24.70) (98) and less likely to return for HIV test results (AOR=1.7; 95%CI 1.1, 2.7) (95).

Health behaviour

Women whose male partner consumed alcohol daily had an increased risk of HIV (AOR=1.68; 95%CI 1.06, 2.67) (34), and were less likely to return for HIV test results (AOR=1.8; 95%CI 1.3, 2.7)(95).

iv. Impact of male partner involvement on breastfeeding

Male partner involvement in breastfeeding was primarily reported as support toward breastfeeding, which was associated with exclusive breastfeeding (EBF) and timely initiation of complementary feeding. None of the studies defined a 'father's support' in this context. However, all studies used 'father's support' as a measure implying that the father allows, encourages or insists on EBF or replacement feeding.

Mothers with husbands who were supportive toward breastfeeding were 2.3 to 4.9 more likely to exclusively breastfeed compared those who did not get father's support (26, 27, 99, 100). Mothers with husband support during child feeding were more likely to initiate complementary feeding at an appropriate time compared to those without husband support (AHR=4.99; 95%CI 2.02, 12.34) (101). Conversely, women who did not get support from their husbands to exclusively breastfeed were 68% to 74% less likely to have good practice in exclusive breastfeeding (28, 29).

v. Impact of male partner involvement on child health

Male partner involvement in the child's health demonstrated by his: presence (including childcare activities, infant feeding, and ANC attendance); positive attitudes and support; communication (joint decision making); and health knowledge was shown to impact child's dietary diversity and complementary feeding, development, HIV infection, and vaccination status.

Presence

Children of fathers with good practice in routine childcare activities were 1.7 to 3.4 times more likely to meet the minimum dietary diversity (102) and 60% more likely to consume a higher number of food groups (AOR=1.62; 95%CI 1.17, 2.24) (103) compared to children of fathers with poor practice. Children whose fathers engaged in four or more learning activities with them in the past three days were more likely to be on-track for problem solving milestones (n=26; 74.3%) than to have a potential delay (n=9; 25.7%) compared to children with fathers who were not engaged (on-track n=105, 55.6%; potential delay n=84, 44.4%) (p=0.042) (104). Fathers' direct involvement/good practice in infant and young child feeding (IYCF) increased the likelihood of child's dietary diversity compared to those with poor practice (102, 105, 106).

Infants born to women with poor partner ANC attendance had an increased risk of death or infection due to HIV compared to those born to women with partner attendance (107). Further, partner ANC attendance reduced the likelihood of prelacteal feeding practice by 80% (AOR=0.20; 95%CI 0.05, 0.75) (108).

Attitudes

Mother's with husbands who had a positive attitude to vaccination were less likely to keep their child unvaccinated (AOR*=0.20; 95%CI 0.11, 0.40) (109), and mothers with husband support were more likely to initiate timely complementary feeding (OR=2.8; 95%CI 1.1, 1.8) (110) compared to mothers without positive support.

Partner Communication

Children whose parents made household decisions together were less likely to remain unvaccinated (AOR*=0.34; 95%CI 0.14, 0.85) compared to children whose mother or father made household decision alone (109). Further, children whose father made final decisions were more likely to be exposed to inappropriate complementary feeding compared to those with maternal decision making (AOR=4.65; 95%CI 1.69, 12.81) (111). Lastly, when both parents agreed, mothers were more likely to be accepting of infant male circumcision (AOR=4.38; 95%CI 2.63, 7.32) and fathers were more likely to be accepting of infant male circumcision (AOR=11.0; 95%CI 4.78, 25.2), compared to when the parents did not agree (112).

Health knowledge

One study that assessed urban and rural families separately found that among both types, children whose father had good knowledge of the important things to keep the child healthy, the important food groups, and childcare were more 2.9 to 8.4 times more likely to meet the minimum dietary diversity compared to those with poor knowledge (102).

vi. Impact of male partner involvement on family planning

Male partner involvement in family planning included ANC attendance, approval or support toward contraceptive use, spousal discussion and joint decision making, and reproductive intentions. Such factors were found to have an impact on contraceptive use, family planning service uptake, and maternal intention for more children.

Presence

Women whose partner attended ANC were more likely to effectively use contraception (APR=1.17; 95%CI 1.02, 1.34) (113) and more likely to receive tetanus (AOR=2.81; 95%CI 1.53, 5.15) (114) compared to women whose partner did not attend ANC.

Attitudes

Women with partners who approved or supported contraceptive use were more likely to use postpartum intrauterine contraceptive devices (AOR=2.58; 95%CI 1.49, 4.49) (115), and contraceptives (AOR*=2.1; 95%CI 1.16, 3.82) (116), and less likely to discontinue contraceptive use (AOR=0.59; 95%CI 0.33, 1.05) (117) compared to women who did not get approval or support. Also, one study showed a significant association ($\chi 2 = 32.95$; df=2; P=0.000) (118) between husband's approval of the family planning method and current utilization of postpartum family planning (PPFP) services.

Partner Communication

Women with partners involved in a discussion about contraceptive use were more likely to initiate postpartum contraceptive utilization on time (AOR=1.63; 95%CI 1.09, 2.41) (119), utilise family planning services (AOR=1.80; 95%CI 1.36, 2.37) (120), use contraceptive since childbirth (AOR=1.81; 95%CI 1.34, 2.44) (120), and were less likely to discontinue contraceptive use (AOR=0.55; 95%CI 0.32, 0.96) (117) compared to those who have never discussed contraception with their partners. Further, women whose partners engaged in joint decision-making regarding family planning and healthcare were more likely to use contraception (AOR=1.52; 95%CI 1.12, 2.05) (114), utilise a health facility for herself (AOR=1.41; 95%CI 1.14, 1.73) (114), and utilise PPFP (AOR=1.06; 95%CI 0.66, 1.72) (121), compared to those who made decisions alone.

Sexual and reproductive intentions

HIV positive women with a partner who desired more children were also more likely to intend to have more children (AOR=31.36; 95%CI 15.17, 64.86) (122).

vii. Impact of male partner involvement on maternal health

Male partner involvement in maternal health was measured as involvement and support during pregnancy, which was found to have an impact on birth preparedness and antenatal depression.

Presence

Regarding involvement and support during pregnancy, women with husbands who accompanied them to the place of childbirth were more likely to report birth preparedness (OR=1.47; 95%CI 1.15, 1.89) (123) compared to women with husbands who did not accompany them. Also, women whose partners were unsupportive and uninvolved during pregnancy were more likely to demonstrate clinically significant symptoms of antenatal depression (OR=3.21; 95%CI 1.93, 6.71) (124) (AOR=1.89; 95%CI 1.06, 3.36) (125) and increased odds of maternal death (OR=2.19; 95%CI 1.14, 4.18) (126) compared to women with involved and supportive partners during pregnancy.

viii. Impact of intimate partner violence on maternal and infant outcomes

IPV was found to be associated with several maternal and infant outcomes including depression, exclusive breastfeeding, health facility utilisation (including ANC), HIV testing, maternal alcohol consumption, pregnancy loss and infant mortality.

Women who had experienced a range of IPV (e.g. physical, sexual, and psychological) were 3.4 to 17.6 times more likely to report depression (127-130) compared to those who had not experienced IPV. Women exposed to IPV during pregnancy were more likely to stop early with exclusive breastfeeding (OR=2.87; 95%CI 1.27, 6.46) (131), and HIV+ women who had experienced IPV were more likely to initiate early mixed feeding (AOR=2.86; 95%CI 1.68, 4.87) (132) compared to those who hadn't experienced IPV. Mothers who felt pressure from their husband to resume sexual intercourse were more likely to resume sexual intercourse during the early postpartum period (AOR=9.89; 95%CI 4.99, 19.58) (133).

Women who were physically abused by their partner were less likely to: 1) deliver in a health facility (AOR=0.35; 95%CI 0.14, 0.88); 2) get HIV testing (AOR=0.26; 95%CI 0.09, 0.79); 3) use a skilled delivery attendant (AOR=0.31; 95%CI 0.12, 0.98); and 4) attend four or more ANC visits (AOR=0.48; 95%CI 0.21, 0.71) (134). In addition, women experiencing severe physical IPV were half as likely to have an SBA present at childbirth than women not experiencing physical IPV (OR=0.51; 95%CI 0.29, 0.96) (135). Further, women who had experienced IPV during pregnancy were more likely to be discouraged or stopped from seeking ANC in their last pregnancy (OR=2.23; 95%CI 1.05, 5.18) and to drink alcohol during their last pregnancy (AOR=5.63; 95%CI 2.97, 10.9) (136), whereas another study found women who had experienced IPV after pregnancy were more likely to seek treatment for child's diarrhoea episode (AOR=1.83;

95%CI 1.16, 2.89), and acute respiratory infection episode (AOR=1.56; 95%CI 1.11, 2.19) (137) . Couples with male partners reporting medium acceptance (OR=2.36; 95%CI 0.99, 5.63) or low acceptance (OR=2.50; 95%CI 1.20, 5.21) of IPV were more likely to use HIV self-testing compared to male partners reporting high acceptance of IPV (138).

Lastly, women who had experienced IPV had increased odds of their last pregnancy as being unplanned (AOR=1.55; 95%CI 1.03, 2.34) (139), repeat induced abortion (AOR=2.68; 95%CI 1.45, 4.94) (140), pregnancy loss (OR=1.6; 95%CI 1.06, 1.60) (141) and infant mortality (AOR 1.3 to 1.9) (6)

Table 3. Association between male partner behaviour, knowledge and attitudes and maternal/infant outcomes in East African countries, 2021

Male Partner Involvement Category	Outcome			
	Antenatal	Birthing	Postnatal	Infant
Presence:				
Attends ANC* (18, 30, 35, 38, 70-73, 78, 107, 108, 113, 114)	↑HIV* testing at first ANC visit (70) ↑Utilisation of ANC (70, 71) ↑Commencement of ANC earlier (73) ↑Blood or urine screening tests during ANC (38) ↑Counselled about potential pregnancy complications (38) ↑Contraceptive use (113) ↑Receive tetanus (114)	↑Facility-based childbirth (70, 78) ↑SBA* (18, 35, 71)	↑Return for postnatal care (78) ↑Exclusive breastfeeding (71) ↓Prelacteal feeding practice [108] ↑Antiretroviral drugs (71) ↑Knowledge of at least one neonatal danger sign (72)	↓Infant mortality and HIV infection (30, 107) ↑Infant Bacille Calmette Guerin immunization (71)
Attends couple HIV testing, counselling, PMTCT* activities (16, 31, 32, 91-95)	↑Retained in ART* (94) ↑Women return for HIV test results (95) ↑Adherence to Option B plus ART* treatment (92) ↑Condom use (16)	↑Facility-based childbirth (16)	↑return for follow-up to receive nevirapine (91) ↑taking maternal dose of nevirapine (91) ↑Complete all steps in the PMTCT continuum (93) ↑Complete HIV program (16) ↑Adherence to Option B plus ART (92)	↓Infant HIV acquisition through MTCT* (31) ↑taking infant dose of nevirapine (91) ↓PMTCT of HIV (32)
Attends birth (123)		↑Prepared for birth (123)		
Involved in infant feeding (39, 101, 102, 105, 106, 110)			↑Appropriate timing of complementary feeding initiation (101, 110)	↑Dietary diversity (39, 102, 105, 106)
Involved in birth preparedness/support during pregnancy (64, 124-126)	↑Commencement of ANC earlier (64) ↓Maternal depression (124, 125)		↓Maternal death (126)	
Involved in childcare activities (102-104)				↑Dietary diversity (102, 103) ↓Delayed development for problem solving milestones (104)
Helped with hard labor tasks (74)	↑Meeting guideline for antenatal visits (74) ↑Acquiring antenatal tablets (74) ↑Working less during pregnancy (74)			
Positive attitude toward:				
ANC (65-69, 80)	↑Utilisation of ANC (65-69)	↑Facility-based childbirth (80)		

Table 3. Association between male partner behaviour, knowledge and attitudes and maternal/infant outcomes in East African countries, 2021

Male Partner Involvement Category	Outcome			
	Antenatal	Birthing	Postnatal	Infant
Family planning methods or contraceptives	↑Access PPFP* services [118] ↑Contraceptive use [117]		↑Contraceptive use [115, 116] ↓HIV +ve* [90]	
Facility based childbirth (79, 81, 82)		↑Facility-based childbirth (79, 81, 82)		
Vaccination (109)				↑Infant vaccinated (109)
Exclusive breastfeeding (26-29, 99, 100)			↑Exclusive breastfeeding (26-29, 99) ↑Replacement feeding (100)	
Agrees with mother about infant male circumcision (112)				↑Infant male circumcision (112)
Partner communication about:				
Maternal health care (ANC, childbirth) (36, 37, 75, 76, 83-90, 121)	↑Utilisation of ANC (76) ↑Knowledge of danger signs for both men & women (75) ↑Practice of birth preparedness and complication readiness (87)	↑Facility-based childbirth (36, 83, 85, 86, 88, 89) ↑SBA (36, 37) ↑Use motorcycle ambulance (90) ↑Facility-based childbirth (84)	↑ PPFP uptake (121)	
FP methods or contraceptives (95, 97, 114, 117, 119, 120)	↑Access PMTCT services (97) ↑Contraceptive use (114) ↑Access health facility (114) ↑Return for HIV test results (95) ↑Contraceptive use (117) ↑FP service uptake (120)		↑Initiate postpartum contraceptive utilization on time (119, 120)	
HIV (96, 98)	↑Accept HIV testing (98) ↑Knowledge on MTCT (96)			
Household purchases (76, 109)	↑Utilisation of ANC (76)			↑Infant vaccinated (109)
Vaccination (109)				↑Infant vaccinated (109)
Paternal decision making (111)				↑Inappropriate complementary feeding (111)

Health behaviours and knowledge:

Table 3. Association between male partner behaviour, knowledge and attitudes and maternal/infant outcomes in East African countries, 2021

Male Partner Involvement Category	Outcome			
	Antenatal	Birthing	Postnatal	Infant
Male partner drinks alcohol (34, 95, 128, 130)	↑HIV +ve (34) ↓Return for HIV test results (95) ↑Maternal depression (130) ↑Exposure to IPV (130)		↑Postpartum depression (128)	
Knowledge of food groups (102)				↑Dietary diversity (102)
Sexual and reproductive intentions:				
Desire to have more children (122)	↑Women stopped family planning (122)			
IPV:				
IPV* (6, 127-132, 134-137, 139-141)	↑Maternal depression (127, 129, 130) ↑Repeat induced abortion (140) ↓Attend four or more ANC visits (134) ↓Get HIV testing (134) ↑Recent pregnancy as being unplanned (139) ↑Pregnancy loss (141) ↓Utilisation of ANC (136) ↑Drink alcohol during last pregnancy (136)	↓SBA (134, 135) ↓Facility-based childbirth (134)	↑Terminate early exclusive breastfeeding (131) ↑Initiate early mixed feeding (132) ↑Postpartum depression (128)	↑Seek treatment for child diarrhea and acute respiratory infection episode (137) ↑Infant mortality (6)
Acceptance of IPV (138)	↓HIV self-test (138)			
Pressure to resume sexual intercourse (133)			↑Resume sexual intercourse early (133)	
Other:				
Financial support (63, 64)	↑Commencement of ANC earlier (64) ↑Utilisation of ANC (63)			
Frequent travel (34)	↑HIV +ve (34)			
General male partner involvement (77)	↑Commencement of ANC earlier (77) ↑HIV testing (77)	↑Facility-based childbirth (77) ↑SBA (77)		

*↑=increase; ↓=decrease; ANC=Antenatal care; HIV=human immunodeficiency virus; SBA=Skilled Birth Attendants; PMTCT=Prevention of Mother-to-Child Transmission; MTCT= Mother-to-Child Transmission; PPFP=postpartum family planning; +ve=positive; IPV=Intimate Partner Violence; Spousal Communication=joint decision making and discussion

*all reported associations are significant at p<0.05

Table 4. Studies included in scoping review

4.1 Antenatal						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Abosse et al (2010) **(65)**	Ethiopia	Mothers who had given birth within the previous 5 years (n=691)	Quantitative, cross-sectional interviewer administered survey	Investigation of factors influencing ANC* service utilisation.	Women whose husbands have a positive attitude towards ANC more likely to utilize ANC than women whose husbands had negative attitude (OR*=3.5; 95%CI* 1.46, 8.34).	Male partner's attitude was a major predictor of mother's utilisation of ANC.
Audet et al (2016) **(70)**	Mozambique	Pregnant women and their male cohabitating partners (n couples=5971)	Intervention study: quantitative data was collected from ANC service utilisation	Evaluation of intervention intended to promote male partner accompaniment of partner to ANC in order to drive couple's HIV* testing and counselling for HIV.	Male partner accompaniment associated with higher odds of maternal HIV testing at first ANC visit (AOR*=5.98; 95%CI 4.50, 7.94); higher odds of uptake of 3 ANC visits (AOR=1.26; 95%CI 1.10, 1.45), and higher odds of facility-based childbirth (AOR=1.26; 95%CI 1.08, 1.47).	Male partner attendance at ANC visits was associated with maternal HIV testing, ANC uptake and facility-based delivery.
Birmeta et al (2013) **(66)**	Ethiopia	Women of child-bearing age who had given birth in the past three years (n=419)	Cross-sectional study that employed both quantitative (structured questionnaire) and qualitative data collection methods.	Assess factors that determine utilisation of maternal healthcare ANC and delivery care services	Utilization of ANC was almost nine times more likely for women who reported their husbands approve ANC than women whose husbands did not approve ANC service (OR=8.99; 95%CI 3.71, 21.86)	Husband approval of ANC predicted women's ANC utilisation.
Ftwi et al (2020) **(68)**	Ethiopia	Mothers who gave birth 6 months preceding the study (n=466)	Community-based cross-sectional study using interviewer-administered pretested structured questionnaire	Assess the prevalence and factors related to the completion of four ANC visits among mothers who gave birth 6 months preceding the study	Mothers who were supported by their husbands were over two and a half times more likely to complete four ANC visits based on the recommended time schedule in multivariable analysis (AOR=2.56; 95%CI 1.25, 5.24).	Husband support during ANC was associated with the completion of four ANC visits.
Forbes et al (2018) **(38)**	Ethiopia	Couples with a child ≤ 2 years of age. (n couples=1204)	Quantitative, cross-sectional: Secondary analysis of 2011 Ethiopian Demographic and Health Survey (DHS) data (interviewer administered structured surveys)	Exploration of effect of male partner accompaniment of partner to ANC and observance of ANC guidelines.	Women whose male partner did not accompany them to at least one ANC session less likely to: complete blood (AOR=0.73; 95%CI 0.55, 0.97) or urine screening tests during ANC (AOR=0.70; 95%CI 0.53, 0.93) and be counselled about potential pregnancy complications (AOR=0.64; 95%CI 0.48, 0.86) than women attending ANC with partner.	Male partner accompaniment to ANC visits was associated with women experiencing more comprehensive ANC.
Galle et al (2020) **(75)**	Mozambique	Women (n=428) and men (n=347) in a relationship between 15 and 49 years old	Cross-sectional household survey administered electronically by trained interviewers	Assess decision making regarding maternal health care issues, financial support for ANC and childbirth, and the knowledge of danger signs of both men and women of reproductive age at community level.	Communication with the partner about ANC was a significant predictor for increased knowledge of danger signs for both men (p=0.01) and women (p=0.03) as shown in binomial regression models.	Male involvement in ANC such as couple communication is associated with increased knowledge of danger signs during pregnancy.
Gross et al (2012) **(64)**	Tanzania	Pregnant adult and adolescent women. (n=405)	Quantitative, cross-sectional interviewer administered survey	Exploration of factors influencing the timing of pregnant women commencing ANC.	Commencement of ANC was delayed for women reporting that they were not socially (AOR=0.69; 95%CI 0.05, 1.33) or financially (AOR=0.28; 95%CI 0.02, 0.58) supported by their male partner.	Women's perception of a lack of financial and social support from their male partner led to the delayed initiation of ANC.

4.1 Antenatal						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Mohammed et al (2019) **(77)**	Ethiopia	Couples with an infant ≤ 6 months of age. (n couples= 210)	Quantitative, cross-sectional interviewer administered survey	Exploration of the role of male partner in utilization of maternal health care services.	Increased male partner involvement in maternal health services was associated with greater likelihood of timely initiation of ANC (AOR=1.19; 95%CI 1.03, 1.39), maternal HIV testing (AOR=1.52; 95%CI 1.18, 1.96), being attended by SBA* at childbirth (AOR=1.44; 95%CI 1.13, 1.84), and utilisation of a facility-based childbirth (AOR=1.22; 95%CI 1.01, 1.48).	Increased male partner involvement in ANC was found to be associated with increased utilization of various maternal health care services.
Nebeb et al (2015) **(76)**	Ethiopia	Women who had given birth in the previous 12 months (n=317)	Community based cross-sectional study using a pretested structured questionnaire	Explore ANC utilization and associated factors	Women who decide ANC services utilization together with their husband were over three times more likely to utilize ANC services than those who did not deicide at all on ANC services utilization (OR=3.51; 95%CI 1.83, 6.69). Similarly, women who decided on household purchase together with their husband were six times more likely to utilize ANC services than those who did not decide on household purchase (OR=5.99; 95%CI 3.39, 10.56).	Women whose husbands partake in joint decision making were more likely to utilise ANC services than women whose husbands did not engage in joint decision making.
Niedfeldt et al (2021) **(74)**	Tanzania	Adult primary caregivers of children aged 0 to 23 months (n=5000)	Utilized data from a baseline cross-sectional household survey administered by trained interviewers.	Examine the association between primary female caregiver perceptions of the roles of men during pregnancy and their ANC-seeking behaviours, specifically ANC visits, antenatal tablet consumption, and workload during pregnancy.	Primary caregivers who reported that their husband/partner helped them with hard labor tasks so that they could rest were more likely to also report meeting the guideline for ANC visits (OR=1.23; 95%CI 1.04, 1.45), acquiring antenatal tablets (OR=1.55; 95%CI 1.32, 1.83), and working less during pregnancy (OR=2.19; 95%CI 1.91, 2.51).	Women who indicated that their husbands frequently helped them during pregnancy were more likely to practice optimal ANC behaviours, including attending ANC visits, acquiring antenatal tablets, and working less during pregnancy.
Odeny et al (2019) **(71)**	Kenya	Mother-infant pairs (n=2521) attending week-6 or month-9 infant immunizations at 120 high-volume maternal child health (MCH) clinics throughout Kenya	Facility-based, cross-sectional study using interviewer administer structured questionnaires	Evaluate the prevalence and correlates of male ANC attendance and its association with maternal uptake of ANC and PMTCT services among married, postpartum women.	Male ANC attendance was associated with higher uptake of ANC visits (AOR=1.67; 95%CI 1.36, 2.05), skilled delivery (AOR=2.00; 95%CI 1.51, 2.64), EB* (AOR=1.70; 95%CI 1.00, 2.91), infant Bacille Calmette Guerin (BCG) immunization (AOR=3.59; 95%CI 1.00, 12.88), and among HIV-infected women, antiretroviral drugs (AOR=6.16; 95%CI 1.26, 30.41).	Male ANC attendance was associated with uptake of multiple health services including maternal adherence to 4 or more ANC visits, facility-based childbirth, and infant BCG immunization.
Roney et al (2021) **(72)**	Kenya	Women who had recently given birth (n=348) and men whose wives had recently given birth (n=82)	Descriptive cross-sectional study using interviewer-administered questionnaires	Analyse factors that determine men's and women's knowledge and practices in postnatal and neonatal care-seeking, in order to inform design of future intervention	Women who had a male partner accompany them to ANC were more likely to have knowledge of at least one neonatal danger sign (OR=3.34; 95%CI 1.35, 8.27).	Male partner involvement in ANC was associated with women's knowledge of danger signs.
Tizazu et al (2020) **(69)**	Ethiopia	Women who gave birth in the previous 6 months (n=390)	Community-based cross-sectional study using interviewer administered pretested tool	Identify the level of a minimum of 4 ANC usage and associated factors	The odds of utilization of a minimum of 4 ANC visits were two times higher for those who had husband support than their counterparts (AOR=2.28; 95% CI 1.03, 5.06)	Husband support/partner involvement was identified as a predictor of utilization of minimum 4 ANC visits.

4.1 Antenatal						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Tewodros et al (2009) **(67)**	Ethiopia	Women who gave birth 12 months prior to the survey (N=627)	Community based cross-sectional study using an interviewer administered pre-tested questionnaire	Assess ANC utilisation and factors that affect it	Women with husband approval were eight times more likely to visit ANC than women with no husband approval (AOR=8.01; 95%CI 4.57, 14.06).	Husband approval was an independent predictor of ANC utilisation.
Umer et al (2020) **(63)**	Ethiopia	Women who had at least one child up to the age of three years or who were pregnant at the time of the study and their male partners (n=450)	Community-based cross-sectional study using interviewer administer pre-tested structured questionnaires	Assess maternal health care service utilisation and associated factors in Somali pastoral communities of eastern Ethiopia.	Women who had financial support from their male partner were 23 times more likely to use ANC than those who did not receive financial support (AOR=23.3; 95%CI 11.0, 49.5).	Financial support provided by male partners was an independent predictor of ANC utilisation
Weldemariam et al (2018) **(73)**	Ethiopia	Pregnant women. (n=365)	Quantitative, cross-sectional interviewer administered survey.	Exploration of factors influencing delayed initiation of ANC.	Women not accompanied by their husband to health care facilities were nearly 7 times more likely to commence ANC visits late (AOR=6.99; 95%CI 2.82, 17.31).	Women who attend ANC unaccompanied by their male partner are more likely to experience delayed commencement of ANC.

4.2 Childbirth

Author (year)	Country	Participants	Study design	Study aim	Results	Conclusions
Assefa et al (2018) **(83)**	Ethiopia	Women who gave birth <1 year ago (n=423)	Quantitative, cross-sectional interviewer administered surveys	Identifying factors influencing women to choose for institutional childbirth	Women whose husbands were involved in decision regarding childbirth place were almost twice as likely to deliver at a health facility (AOR=1.9; 95%CI 1.49, 5.07).	Husbands involved in decisions regarding place of childbirth was associate with health facility utilisati
Atnafu et al (2016) **(86)**	Ethiopia	Women post-partum in prior year (n=4442)	Quantitative, cross-sectional interviewer administered surveys	Evaluation of intervention intended to promote facility based birthing and lower still-birth rates	Women whose husbands were involved in decisions about where to deliver and prior experience of the maternal services at a health facility were more likely to use health facilities for childbirth (OR=6.8; 95%CI 4.9, 9.2)	Husband involvement in decisions was associated with childbirth in a health facility.
Berhe & Nigusie (2020) **(88)**	Ethiopia	Women aged 15-49 that gave birth at least once in the previous 2 years and lived in the district for at least 6 months (n=451)	Community based cross sectional study using interviewer-administered questionnaire	Assess the magnitude of home childbirth and associated factors among women of child-bearing age	Mothers who decided with their spouse about the place of childbirth were about 30% less likely to deliver at home compared to those who decided by their own (AOR=0.7; 95%CI 0.2, 2.1).	Joint decision-making between the mother and he husband regarding the pla of childbirth reduced the likelihood of home childbir
Dadi et al (2019) **(80)**	Ethiopia	Women who had given birth within the previous year (n=789)	Mixed methods cross-sectional design. Interviewer administered surveys and in-depth interviews.	To assess maternal and newborn health services utilization and factors affecting mothers' health service utilization.	Women with husbands who had a supportive attitude toward health facility childbirth were over 10 times more likely to give birth in health facilities compared to those with husbands who were not supportive (AOR=10.2; 95%CI 4.0, 25.9).	Husband attitude toward health facility childbirth wa associated with institution childbirth among mothers.
Danforth et al (2009) **(81)**	Tanzania	Mothers who gave birth <5 years ago and their partners (n couples= 826)	Quantitative, cross-sectional interviewer administered surveys	Exploring household decision making as to where mother will deliver baby	Women with a husband who perceived facility childbirth as less than very important were less likely to deliver in a facility compared to couples who agree it is very important (OR=0.61; 95%CI 0.38, 0.99). Additionally, women with husbands who both perceive skills of doctors to be higher than skills of TBAs* were over twice as likely to deliver at a health facility compared to women with husbands who both report skills of doctors to be the same or lower than skills of TBAs (OR=2.22; 95%CI 1.38, 3.58)	Partner agreement on the importance of facility childbirth, and perception of partners abo the skills of doctors to be higher than skills of TBAs were associated with facility childbirth.
Debelie et al (2021) **(87)**	Ethiopia	Pregnant women who are permanently residing (at least for the last 6 months) in the selected urban and rural Kebeles of North Gondar Zone (n baseline=1620; n follow-up=1523)	Community-based cross-sectional study using interviewer-administered pretested and semi-structured questionnaires	Determine the prevalence of BPCR practice and associated factors among pregnant women	Women who involve their husbands on maternal health care utilization decision making were 1.9 times more likely to practice BPCR than women who decided by themselves (AOR=1.92; 95%CI 1.07, 3.44).	Husband involvement in decision making was associated with BPCR practice.

4.2 Childbirth

Author (year)	Country	Participants	Study design	Study aim	Results	Conclusions
Habte & Demissie (2015) **(82)**	Ethiopia	Women who gave birth <2 year ago (n=975)	Quantitative, cross-sectional interviewer administered surveys	Identifying factors influencing utilisation of facility-based delivery care	Women having a husband with negative attitude towards institutional childbirth were less likely to give birth at a health facility than women having a husband with positive attitude (OR=0.19; 95%CI 0.04, 0.80)	Husband's negative attitud towards institutional childbirth redu the likelihood of facility-based childbirth care utilisation by women.
Kabakyenga et al (2012) **(36)**	Uganda	Women who had given birth in the previous year. (n=759)	Quantitative, cross-sectional interviewer administered survey	Exploration of the factors influencing birth preparedness, decision to deliver at home and use of SBAs	Utilising facility-based childbirth or SBA was 5.5 times more likely when women made these decisions with their male partner compared to women making decisions on their own (OR=5.5, 95%CI 3.7, 8.4).	Male partner involvement i childbirth setting decisions associated with greater likelihood of women being attended by SBA's during childbirth.
Kashitala et al (2015) **(78)**	Zambia	Pregnant women accessing ANC (n=2007)	Secondary data analysis from national database	Determine the association between male involvement in ANC and health facility-level childbirth by skilled attendants and women's attendance of postnatal visits at health facilities.	Women who were accompanied by their partners to ANC visits were more likely to deliver at a health facility (OR=1.53; 95%CI 1.15, 2.04) and attend a postnatal visit (OR=1.58; 95%CI 1.20, 2.10) compared to women who were not accompanied by their partner	Male involvement in ANC v associated with childbirth a health facility and postnat visits among all women.
Mangeni et al (2012) **(35)**	Kenya	Couples who reported having a child within the last 3 years (n couples=730)	Data from the nationwide Kenya Demographic Health Surveys (KDHS) was used	Investigation of male partner accompaniment to at least one ANC visit and use of SBA/ facility for childbirth	Odds of utilising a SBA were 2.8 times higher for women accompanied by their husbands to at least one ANC visit than for women who were not accompanied (OR=2.82; 95%CI 1.49, 5.36).	Women who are accompar to ANC visits are more likel use a SBA.
Mekonnen et al (2015) **(79)**	Ethiopia	Women who gave birth <2 years ago (n=497)	Quantitative, cross-sectional interviewer administered surveys	Investigation of factors influencing childbirth location for women who have attended ≥ 1 ANC visit	Women whose male partner preferred home childbirth were nearly 6 times more likely to deliver at home (AOR=5.84; 95%CI 2.36, 14.42).	Male partner preference of home childbirth was a predictor of home childbirt
Mpembeni et al (2007) **(37)**	Tanzania	Women who had given birth within previous year. (n=974)	Quantitative, cross-sectional interviewer administered survey	Exploration of patterns of use of ANC services and factors influencing utilisation of SBA's during childbirth.	Male partner involvement in decision on childbirth setting associated with increased likelihood of female partner being attended by a SBA (OR=2.37; 95%CI 1.75, 3.22).	Females whose partner wa involved in the decision-making regarding childbirth setting were more likely to use a skilled delivery attendant.
Rao et al (2016) **(85)**	Malawi	Women who have been pregnant once (n=860)	Quantitative, cross-sectional interviewer administered surveys	Exploration of the impact of joint partner decision making on obstetric choices and outcomes	Women reporting joint decision making were more likely to undergo childbirth at a health care facility than women who reported making the decision independently (AOR=4.9; 95%CI 3.3, 7.2)	Partner involvement in obstetric decision making v associated with improved obstetric choices.
Ssebunya & Matovu (2016) **(90)**	Uganda	Women who delivered at one of the ANCs with ambulance service (n=391)	Both qualitative data and quantitative data was collected using (semi-) structured interviews	Factors associated with utilisation of motorcycle ambulances by pregnant women	Husbands who participated in the decision to use a motorcycle ambulance were nearly four times more likely to use a motorcycle ambulance than those who didn't (OR=3.78; 95%CI 2.46, 5.81)	Women were more likely to use the motorcycle ambulance to travel to the health facility when their husband is involved in the decision making.

4.2 Childbirth

Author (year)	Country	Participants	Study design	Study aim	Results	Conclusions
Teklesilasie & Deressa (2018) **(18)**	Ethiopia	Pregnant women (24-36 weeks gestation) (n=709)	Quantitative, cross-sectional interviewer administered surveys	Exploring associations between husbands' involvement in ANC and women's use of skilled birth attendants	Husbands' involvement during ANC visits was significantly associated with women's use of SBAs during births (COR*=6.33; 95%CI 4.5, 8.9)	Husbands' involvement in their wives' ANC visits was predictor associated with women's use of SBAs durir birth.
Wayessa & Dukale (2021) **(84)**	Ethiopia	Childbearing mothers who had given birth in the previous two years (n=360)	Community-based quantitative cross-sectional study	Examine the prevalence of institutional childbirth and factors determining the place of childbirth.	Spouses who communicated about the place of childbirth were four times more likely to give birth at a health facility compared with those who did not communicate about the place of childbirth (AOR=4.27; 95%CI 1.82, 10.00)	Spousal communication regarding place of childbirth increased the likelihood of institutional childbirth.
Wondimu et al (2020) **(89)**	Ethiopia	Mothers who gave birth at home (n cases=99) and mothers who gave birth at health facility (n controls=193)	Community-based case–control study using interviewer administered structured questionnaires	Assess determinants of home childbirth	Women whose husbands made the final decision regarding the place of childbirth were roughly seven times more likely to give birth at home compared to women who make a husband–wife joint decision (AOR=7.2; 95%CI 2.1, 24.5)	Joint decision making was protective against childbirt home.

4.3 HIV Care						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Aluisio et al (2011) **(30)**	Kenya	HIV-* infected pregnant women with their infant (up to 12 months) (n=456)	Prospective cohort study; data collected using questionnaires	To investigate the relationship between male involvement in prevention of mother-to-child HIV transmission services and infant HIV acquisition and mortality	Adjusting for maternal viral load, PMTCT risk lower among women with partner attendance compared to those without (aHR*=0.56, 95%CI 0.33, 0.98; *P*=0.042). The combined risk of HIV acquisition or infant mortality lower with male attendance (aHR=0.55; 95%CI 0.35, 0.88; *P*=0.012) when adjusting for maternal viral load and breastfeeding	Male partner attendance was associated with lower PMTCT risk and lower HIV acquisition or infant mortality risk.
Beyene et al (2018) **(32)**	Ethiopia	Mothers on PMTCT* program with HIV+ or HIV- (control) child <24 months (n total=220; 44 cases, 176 controls)	Unmatched case-control; data collected via trained interviewer administered survey	The aim of this study was to identify factors affecting mother-to-child HIV transmission.	Mothers who had low partner involvement level were nearly seven times more likely to transmit HIV to their children compared to those who had high partner involvement level (AOR=6.9; 95%CI 1.4, 13.4).	Male partner involvement in PMTCT of HIV was associated with MTCT of HIV
Fanta & Worku (2012) **(98)**	Ethiopia	Pregnant women attending mother and child health care (MCH) unit, for the first ANC follow up who had pre-test counselling irrespective of their testing. (n=332)	Quantitative, cross-sectional interviewer administered survey.	Assessing determinants for refusal of HIV testing service utilisation among ANC attendees	Odds of refusing HIV testing among those who did not discuss with their husband about HIV testing more than eight times those who had discussed with their husband (AOR=8.7; 95%CI 3.06, 24.70)	Lack of discussion with husband before HIV testing were found to be positively associated with refusal of HIV testing.
Farquhar et al (2004) **(91)**	Kenya	Pregnant women attending an ANC clinic (n=2836)	Prospective cohort study where baseline questionaries were administered by a trained interviewer	Assess the impact of partner involvement, specifically being counselled as a couple, on perinatal intervention uptake and condom use	Women whose partners came to clinic for voluntary HIV-1 counseling and testing (VCT) were approximately 3 times more likely to return for follow-up to receive nevirapine (OR=3.1; 95%CI 1.2, 8.4; P=0.02) and to report taking the maternal or infant dose of nevirapine (OR=3.4; 95%CI 1.3, 9.0; P = 0.009).	Partner participation in VCT increased acceptance and utilization of preventive strategies.
Gebretsadik et al (2021) **(92)**	Ethiopia	HIV positive mothers (both pregnant and lactating) who had follow-up for Option B plus ART* in the selected governmental health facilities (health centres and hospitals) (n=350)	Cross-sectional study design using interviewer administer pre-tested structured questionnaires	Assess the status of adherence and factors related to Option B plus ART	Women with good male partner involvement were almost three times more likely to adhere to Option B plus ART (AOR=2.91, 95%CI 1.64, 5.16)	Male partner support was associated with women's adherence on Option B plus ART.
Hampanda et al (2021) **(93)**	Kenya	Kenyan women with HIV taking ART at least 12 month postpartum (enrolled in a parent trial) (n=200)	Cross-sectional study, using interviewer-administered questionnaire (i.e. follow-up survey of cluster randomized parent study)	Examine the relationship between male partner involvement (MPI) in PMTCT activities and successful completion of the PMTCT continuum of care	For each additional activity involving male partners, women had an increased likelihood of 10% of successfully completing all steps in the PMTCT continuum (aRR*=1.10; 95%CI 1.02, 1.18).	Greater male partner involvement in PMTCT activities was associated with women's successful completion of all necessary steps across the PMTCT continuum.
Kalembo et al (2013) **(16)**	Malawi	HIV+ women with infant enrolled in a PMTCT program (n=476)	A retro-spective cohort study; data taken from PMTCT antenatal registry	To examine the association between male partner involvement and the uptake of PMTCT interventions.	Male partner involvement significantly associated with condom use (AOR=5.6; 95%CI 2.3, 13.5), hospital childbirth (AOR=25.9; 95%CI 10.6, 63.6), and completion of follow-up in the program (AOR=16.8; 95%CI 8.5, 33.4).	Male partner involvement increased the uptake of some PMTCT interventions by HIV+ women

4.3 HIV Care						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Liyeh et al (2020) **(96)**	Ethiopia	Married reproductive age group women who lived at least for 6 months in Mecha district (Amhara regional state, North-West Ethiopia) (n=510)	Community based cross sectional study using interviewer-administered questionnaire	To assess knowledge of married women on MTCT of HIV and associated factors	Women who had discussions with their spouse about HIV/AIDS/ MTCT were 2.4 times (AOR=2.40, 95%CI 1.52, 3.80) more likely to have better knowledge on MTCT than those who had not.	Spousal discussion about HIV/AIDS/MTCT was associated with better knowledge of such.
Mbonye et al (2010) **(97)**	Uganda	HIV+ pregnant women (n=10,706)	Quantitative, cross-sectional interviewer administered survey	Assess care-seeking practices and barriers to preventing PMTCT.	The use of family planning was higher when both men and women make joint decisions across wealth quintile (Pearson $X^2(8)=22$; p=0.004), age group (Pearson $X^2(4)=20$; p=0.001) and education level (Pearson $X^2(4)=12$; p=0.016)	Joint decision making was associated with increased access to PMTCT services.
Msuya et al (2006) **(34)**	Tanzania	Pregnant women (n=2654)	Quantitative, cross-sectional interviewer administered survey	Determine social, behavioural and biological risk factors of HIV infection among pregnant women	The risk for HIV greater among women whose male partner; travelled frequently (AOR=1.79; 95%CI 1.22, 2.65) or consumed alcohol daily (AOR=1.68; 95%CI 1.06, 2.67).	Male partner frequent travel and daily alcohol intake increased women's HIV risk. .
Msuya et al (2006) **(95)**	Tanzania	Pregnant women (n=2654)	Quantitative, cross-sectional interviewer administered survey	Determine the predictors of failure to return for HIV post test results among pregnant women	Women less likely to return for test results if their partners did not come for testing (AOR= 12.6; 95%CI 3.1, 51.4), if their partners consumed alcohol (AOR=1.8; 95%CI 1.3, 2.7), and if they had never discussed reproductive health matters with their partners (AOR=1.7; 95%CI 1.1, 2.7).	Male partner testing attendance, alcohol consumption and experience of reproductive health discussion were associated with women's HIV post test result attendance
Nyandat et al (2020) **(31)**	Kenya	Mother-baby pairs (n cases=36; n controls=144)	Retrospective matched case-control study	Strengthen the evidence base advocating for the prioritization of male partner involvement as a key social determinant for elimination of MTCT	Infants with fathers who accompanied mothers to the facility were 40% less likely to acquire HIV through MTCT (AOR=0.60; 95%CI 0.50, 0.90) compared to those with fathers who did not attend.	Male partner accompaniment of mothers living with HIV receiving care to the facilities was associated with infant HIV acquisition through MTCT
Rwafa et al (2019) **(33)**	Zimbabwe	Women aged 15–49 years (n=2042) attending postnatal-care at six public primary health care clinics in low-income urban communities of Harare	Facility-based, cross-sectional study using interviewer-administered questionnaire	Determine the relationship between gender power and HIV sero-status among postpartum women.	Postpartum women with a partner who ever refused use of a family planning method were almost twice as likely to have a positive HIV status (AOR=1.88; 95%CI 1.20, 2.90) compared to women with a partner who never refused.	Male partner refusal of family planning methods was associated with HIV status among postpartum women.

4.3 HIV Care						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Wesevich et al (2017) **(94)**	Malawi	HIV+ pregnant women (n=200)	RCT, interview	To assess three modifiable partner behaviours for their relationships with two key indicators: retention in care and ART adherence: - uptake of cHTC* - early disclosure of HIV status - partner ART reminders	Women with partners who were involved in couple counselling showed improved retention in HIV care (aRR=1.33; 95%CI 1.12, 1.59)	Couple counselling was associated with improved retention in HIV care.

4.4 Breastfeeding						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Jama et al (2020) (28)	Somaliland	Mothers (n=464) with children 6-24 months of age	Community-based cross-sectional study using interviewer administered pretested structured questionnaires	Assess EB for the first 6 months of life and its associated factors among children 6–24 months of age	Mothers who did not get support from their husbands were 68% less likely to exclusively breastfeed their children than those who received support from their husband (AOR=0.32; 95%CI 0.19, 0.53)	Support from a husband was associated with EB practice.
Matovu et al (2008) (99)	Uganda	HIV+* mothers with children 6-12 months (n total=278; EBF n= 139, non-EBF n=139)	Quantitative, cross-sectional interviewer administered survey	Describing the factors that influence adherence to EB	HIV positive mothers who got support from the father to exclusively breastfeed were more than twice as likely to do so compared to mothers who did not get the father's support (AOR=2.34; 95%CI 1.43, 3.85)	Getting support from the father to exclusively breastfeed was a predictor for HIV positive mothers to choose EB
Mazengia et al (2020) (29)	Ethiopia	Employed mothers with children aged 6–23 months and who were living in Mecha district (n=429)	Institutional-based cross-sectional study using a self-administered structured questionnaire	Assess the knowledge and practice of employed mothers towards EB and its associated factors	Women who did not get support from their husbands to use exclusive breast milk were less likely to have good practice in EB as compared to those employed mothers who got support from their husbands (AOR=0.26; 95%CI 0.14, 0.47)	Husbands' support was associated with mothers' advance in breastfeeding performances.
Odongkara et al (2013) (100)	Uganda	HIV+ mothers with infants 0-12 months (n=200)	Quantitative, cross-sectional interviewer administered survey	Identify factors influencing replacement feeding practices among HIV+ mothers	Women with spouse support towards feeding practice were almost five times more likely to practice replacement feeding compared to women without spousal support (OR=4.9; 95%CI 1.62, 14.83)	Positive spouse support was associated with practice replacement feeding
Reda et al (2019) (101)	Ethiopia	Mothers (n=639) who had children aged 6–24 months.	Retrospective follow-up study using pre-tested and interviewer administered questionnaire.	Determine the time to initiate complementary feeding and associated factors among mothers with children aged 6–24 months	Mothers with husband support during child feeding were more likely to initiate complementary feeding at an appropriate time compared to those without husband support (aHR=4.99; 95%CI 2.02, 12.34)	Husband support during child feeding was found a factor that affected the time to initiate complementary feeding.
Tewabe et al (2016) (26)	Ethiopia	Mothers with infants <6months (n=423)	Quantitative, cross-sectional interviewer administered survey	Identify factors associated with practising EBF	Mothers with husbands' support for breastfeeding more than twice as likely to practice EBF than mothers who were not supported (AOR 2.69; 95%CI 1.04-6.95)	Mothers who were supported by their husbands practiced EBF better than those without
Tewabe et al (2018) (27)	Ethiopia	Mothers (n=423) with infant less than six months of age	Community-based cross-sectional study using interviewer administered structured questionnaires	Assess prelacteal feeding and associated factors among mothers who have infants less than six months of age	Mothers who got husband support of breastfeeding were almost 3 times more likely not feed prelacteal feeding to the newborn than mothers who were not supported by their husband (AOR=2.69; 95%CI 1.04, 6.95)	Husband support was associated with prelacteal feeding practice.

4.5 Child Health						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Abate & Belachew (2017) **(39)**	Ethiopia	Mothers/caregivers with child <24 months (n=749)	Quantitative, cross-sectional interviewer administered survey	Investigate men's involvement in childcare and feeding as predictors of infant and young child health	Children with a father involved in childcare and feeding had higher HAZ* scores (β 0.42; 95%CI .05-.79).	Paternal engagement in childcare and feeding was found as one of the determinant factors for HAZ scores.
Aluisio et al (2016) **(107)**	Kenya	HIV+ women, >30weeks gestation or <6 weeks postpartum (n=830 women + 519 with male involvement consent)	Quantitative, cross-sectional interviewer administered survey	Find relationship between male partner involvement in ANC attendance and infant mortality and probability of HIV infection	HIV-free survival was significantly greater among infants born to women with partner attendance (97.7%) than those without (91.3%) (*P*= 0.01). Infants lacking male ANC engagement had an approximately 4-fold higher risk of death or infection compared with those born to women with partner attendance (HR*=3.95; 95%CI 1.21, 12.89)	Male partner ANC attendance was associated with infant mortality and HIV-free survival
Bayih et al (2020) **(108)**	Ethiopia	Mother-neonate pairs (n=321) sick neonate admitted to NICU, including those home delivered and born at health facility)	Hospital-based cross-sectional study using interviewer-administered questionnaire	Assess the prevalence and associated factors of prelacteal feeding among neonatal admissions in the study setting.	Spousal accompaniment to ANC follow up reduced the likelihood of prelacteal feeding practice by 80% (AOR=0.20; 95%CI 0.05, 0.75)	Mothers who were accompanied by their spouses to ANC were significantly less likely to practice prelacteal feeding as compared to those who came alone.
Berhanu et al (2019) **(111)**	Ethiopia	Cases (n=186) and controls (n=186) were young children (6–23 months) with inappropriate, and appropriate complementary feeding practices, respectively (total n=372)	Community based unmatched case-control study design utilising structured interviewer administer questionnaires.	Determine predictors and community level factors associated with inappropriate complementary feeding practice among children aged 6 to 23 months	Children from household with paternal decision-making regarding feeding were 4.7 times exposed to inappropriate complementary feeding compared to those from household with maternal decision making (AOR=4.65; 95%CI 1.69, 12.81).	Paternal decision-making was associated with child exposure to inappropriate complementary feeding.
Beyene et al (2013) **(109)**	Ethiopia	Mothers with children 12-23 months (n=740)	Quantitative, cross-sectional interviewer administered survey	Identify factors associated with vaccination uptake	Children were less likely to remain unvaccinated when the husband had a positive attitude (AOR=0.20; 95%CI 0.11, 0.40) and when household decisions are made by both parents (AOR=0.34; 95%CI 0.14, 0.85)	Child vaccination status was associated with husband attitude towards vaccination and joint decision-making regarding child immunization.

4.5 Child Health						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Bilal et al (2016) **(102)**	Ethiopia	Urban and rural households (i.e. mother, father and child) with at least one child between 6 and 23 months (n couples=850)	Quantitative and qualitative cross-sectional data was collected using interview administered surveys	Investigate influence of father's child feeding knowledge and practices on children's dietary diversity	Among both urban and rural families, children were more likely to meet the minimum dietary diversity if their father had good knowledge of: the important things to keep the child healthy (Urban OR=3.34, 95%CI 2.19, 5.37; Rural OR=2.58, 95%CI 1.59, 4.19); the important food groups (Urban OR=5.28, 95%CI 3.32, 8.38; Rural OR=8.38, 95%CI 5.32, 13.2); and child care (Urban OR=4.62, 95%CI 2.86, 7.48; Rural OR=2.88, 95%CI 1.94, 4.29), compared to those with poor knowledge. Additionally, among both urban and rural families, children were more likely to meet the minimum dietary diversity if their father had good practice in routine childcare activities (Urban OR=2.32, 95%CI 1.49, 3.61; Rural OR=1.73, 95%CI 1.08, 2.77). Finally, among urban families only, children were more likely to meet the minimum dietary diversity if their father had good practice in child provision (OR=3.43, 95%CI 2.15, 5.46) and feeding (OR=3.42, 95%CI 2.12, 5.52) compared to those with poor practice.	Fathers' knowledge about important things to keep the child healthy, important food groups, and childcare, and fathers' practice in routine childcare activities were associated with meeting the minimum dietary diversity among both urban and rural families. Fathers practice in child provision and feeding were associated with meeting the minimum dietary diversity among urban families.
Dangura & Gebremedhin (2017) **(105)**	Ethiopia	Mothers with children 6-23 months (n=417)	Quantitative, cross-sectional interviewer administered survey	Identifying factors associated with dietary diversity for children	If a husband was involved in Infant and Young Child Feeding (yes/no), the child's dietary diversity increased by 0.23 (*P*=0.0018)	Husband's direct involvement in Infant and Young Child Feeding (IYCF) showed positive association with dietary diversity of children
Gebremedhin et al **(2017)** **(106)**	Ethiopia	Mothers with children 6-23 months (n=2080)	Quantitative, cross-sectional interviewer administered survey	Identifying factors associated with dietary diversity for children	Husbands' direct involvement in IYCF practice increased the dietary diversity by 14% (AOR=1.14; 95%CI 1.07, 1.20)	Direct involvement of men in infant and young child feeding was associated with better diversity of diet in children.
Kuche et al (2020) **(103)**	Ethiopia	Children aged 6–23 months and their respective caregivers (n couples=1848)	Utilized baseline data from Sustainable Undernutrition Reduction in Ethiopia (SURE) intervention, a quasi-experimental study.	Evaluate sociodemographic, agricultural diversity, and women's empowerment factors associated with child dietary diversity and length-for-age z-score (LAZ) in children 6–23 months	Children with fathers who supported childcare daily or weekly were 60% more likely to consume a higher number of food groups than those with fathers who never supported childcare (AOR=1.62; 95%CI 1.17, 2.24)	Paternal childcare support was associated with dietary diversity among children aged 6-23 months.

4.5 Child Health						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Oryono et al (2020) (104)	Rwanda	Children aged 24 to 47 months (n=226) born preterm, LBW and/or with HIE with fathers living at home.	Cross-sectional study using interviewer-administered questionnaire with primary caregiver of eligible child	Understand father's involvement in the care of children born preterm, low birth weight (LBW) and/or with hypoxic ischemic encephalopathy (HIE) in rural Rwanda and assess child and home environment factors associated with father involvement	Bivariate analysis revealed that children with fathers who were engaged in four or more learning activities with their child in the past three days were more likely to be on-track for problem solving milestones (n=26; 74.3%) than to have a potential delay (n=9; 25.7%) compared to children with fathers who were not engaged (on-track n=105, 55.6%; potential delay n=84, 44.4%) (p=0.042)	Father involvement was associated with being on-track in developmental for problem solving milestones
Semahegn et al (2014) (110)	Ethiopia	Mother-child pairs attending Hiwot Fana specialized hospital (n=200)	Institution based cross-sectional study design using semi-structured questionnaire	Assess complementary feeding practice and associated factors.	Binary logistic regression analysis of factors associated with complementary feeding practice revealed that mothers who had husband support were almost 3 times more likely to initiate complementary feeding timely than mothers who did not have husband support (OR 2.8,95% CI 1.1-1.8)	Husband support was associated with timely complementary feeding practice of mothers.
Young et al (2012) (112)	Kenya	Mothers and fathers with infants (n fathers= 493; n mothers= 627)	Cross-sectional interviewer administered survey	Assess the acceptability and uptake of infant male circumcision in East Africa among parents who were offered the procedure.	When both parents agreed, mothers were more likely to be accepting of infant male circumcision (AOR=4.38; 95%CI 2.63, 7.32) and fathers were more likely to be accepting of infant male circumcision (AOR=11.0; 95%CI 4.78, 25.2), compared to when the parents did not agree.	Parental agreement was associated with acceptance of infant male circumcision.

4.6 Family Planning						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Achwoka et al (2018) (113)	Kenya	Women 8-10 months postpartum attending 9-month infant immunization visits (n=955)	National, cross-sectional survey in maternal and child health clinics	Characterize uptake and correlates of effective contraceptive use postpartum	Correlates of effective contraceptive use included male partner ANC attendance (APR=1.17; 95%CI 1.02, 1.34).	Male partner ANC attendance was associated with effective contraceptive use.
Atukunda et al (2019) (122)	Uganda	Women with HIV admitted to postpartum ward. <5 days postpartum (n=320)	Quantitative, cross-sectional interviewer administered survey	Identifying factors influencing postpartum women living with HIV and intention to have more children	HIV positive women were significantly more likely to intend to have more children when their partner also desired to have more children (AOR=31.36; 95%CI 15.17, 64.86)	Male partners desire for more children was associated with pregnancy intention among HIV positive women.
Berta et al (2018) (116)	Ethiopia	Mothers with children <12 months (n=404)	Quantitative, cross-sectional interviewer administered survey	Utilization and associated factors of modern contraceptives during extended postpartum period	The probability of postpartum women using contraceptives was 2.1 times higher with husbands' approval of contraceptives usage (AOR=2.1; 95%CI 1.16, 3.82)	Husband approval of contraceptive use was associated with contraceptive use in the extended postpartum period.
Bwazi et al (2014) (118)	Malawi	Women who had given birth the past 6 to 12 months and were attending a clinic within the maternal and child health department at a district hospital (n=383)	Institutional-based descriptive study which utilised a structured questionnaire orally administered using in-depth face to face interview	Determine factors that promote/ inhibit utilization of PPFP services in Malawi.	There was a significant association ($\chi2 = 32.95$; df=2; P=0.000) between current utilization of PPFP services and husband's approval of the FP method. There was also a significant association ($\chi2 = 33.87$; df=2; P=0.000) between current utilization of PPFP services and husband's assistance to the postpartum women.	Husband approval of services was associated with service utilisation by women.
Dona et al (2018) (119)	Ethiopia	Women who were above 42 days of postpartum and lived at least for 6 months in the selected Kebeles (n=684)	Community based cross-sectional study using interviewer administered structured and pre-tested questionnaire	Assess the magnitude and associated factors of timely initiation of postpartum contraceptive utilization among women of childbearing age	Women who have discussed with their partners on contraceptive methods were 1.63 times (AOR=1.63; 95%CI 1.09, 2.41) more likely to initiate postpartum contraceptive utilization on time than those who have never discussed contraceptive methods with their partners	Husband involvement in discussions about contraceptive methods was associated with women's initiation of postpartum contraceptive utilisation timely manner after childbirth
Garrison-Desany et al (2021) (114)	Tanzania	Women (n=2528) and men (n=1000) aged 15-49	Community-based cross-sectional study using interviewer-administered questionnaire	Understand whether the various domains of gender dynamics are associated with women's health service coverage	Women with partners who were engaged in joint decision making regarding how many children were more likely to use contraception (AOR=1.52; 95%CI 1.12, 2.05) and more likely to go to the health facility for herself (AOR=1.41; 95%CI 1.14, 1.73). Women whose partner attended ANC were almost three times more likely to receive tetanus compared to women whose partner did not attend ANC (AOR=2.81; 95%CI 1.53, 5.15).	Joint decision making was associated with utilisation of contraception and health facility, and partner ANC attendance was associated with women's receipt of tetanus vaccine.
Kanakuze et al (2020) (115)	Rwanda	Women aged 15-49 who were in the immediate postpartum care within 48 h after delivery before discharge (n=383)	Mixed methods cross-sectional design. Interviewer-administered questionnaire and in-depth interviews.	Assess the prevalence and factors associated with the uptake of postpartum intrauterine contraceptive devices (PPIUCD) among postpartum women	Women with spouse approval were two and a half times more likely to use PPIUCD (AOR=2.58; 95%CI 1.49, 4.49) compared to women who did not get approval.	Spousal approval was associated with women's uptake of PPIUCD

4.6 Family Planning						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Samak et al (2021) (117)	Uganda	Ugandan women aged 15–49 (n = 4,288 baseline; n = 2,755 one-year follow-up).	Longitudinal data from a nationally representative, multi-stage, cluster survey (PMA2020)	Understand the predictive effect of partner influence (defined as partner's fertility intentions and support for contraception), and discussions about avoiding pregnancy prior to contraceptive use, on contraceptive use dynamics (continuation, discontinuation, switching, adoption) over a one-year period.	Contraceptive users with partners who support future contraceptive use were less likely to discontinue contraceptive use compared to women with partners who did not support (AOR=0.59; 95%CI 0.33, 1.05). Further, contraceptive users who had a discussion with their partner about avoiding pregnancy were less likely to discontinue contraceptive use compared to those who had no partner discussion (AOR=0.55; 95%CI 0.32, 0.96).	Partner involvement in discussions regarding pregnancy avoidance, as well as partner support, were associated with decreased odds of contraceptive discontinuation among contraceptive users.
Sileo et al (2015) (120)	Uganda	Women attending an ANC clinic for their 7-month visit (n=258)	Institutional-based cross-sectional study using interviewer-administered questionnaire	Identify factors influencing family planning service up-take and contraceptive use among postpartum women	Partner communication about contraceptives was a predictor of family planning services uptake (AOR=1.80; 95%CI 1.36, 2.37) and of contraceptive use since childbirth (AOR=1.81; 95%CI 1.34, 2.44).	Partner communication about contraceptives was associated with uptake of family planning services and of contraceptive use since childbirth.
Williams et al (2021) (121)	Rwanda	Women aged 15 years and older during pregnancy or after childbirth (n=646)	Secondary analysis of data from a cluster RCT (questionnaires administer by trained interviewers)	Explore variables that may influence PPFP use for postpartum women in Rwanda including health facility type, respectful maternity care, locus of control, and mental health status	Women who reported joint healthcare decision making with their partner (husband) slightly increased the odds of PPFP uptake (AOR=1.06; 95%CI 0.66, 1.72)	Joint healthcare decision-making between the woman and her male partner was associated with PPFP uptake.

4.7 Maternal Health						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Biratu & Haile (2015) (125)	Ethiopia	Pregnant women attending ANC (n=393)	Quantitative data was collected using an interview administered Edinburgh Postnatal Depression Scale (EPDS) and structured questionnaire	Determine the prevalence of antenatal depression and associated factors among pregnant women	Pregnant women who experienced a lack of support from the baby's father were almost twice as likely to develop antenatal depression compared to women with support (AOR=1.89; 95%CI 1.06, 3.36)	Lack of support from the baby's father was associated with higher odds of developing antenatal depression
Dibaba et al (2013) (127)	Ethiopia	Pregnant women (n=622)	Quantitative, cross-sectional interviewer administered survey	Investigate depressive symptoms and social support with unwanted pregnancies	Women who experienced IPV during pregnancy were over three times more likely to experience depression during pregnancy (OR=3.41; 95%CI 1.18, 9.10)	IPV was associated with depressed mood in pregnancy
Duko et al (2019) (124)	Ethiopia	Pregnant women visiting ANC (n=317)	Interviewer-administered structured questionnaire and psychometric scales- Oslo 3-item Social Support Scale.	Investigation of factors influencing the development of antenatal depression	Women who reported being poorly supported by their male partner were over three times more likely to demonstrate clinically significant symptoms of antenatal depression (OR=3.21; 95%CI 1.93, 6.71)	Lack of husband support was associated with symptoms of antenatal depression among women
Godefay et al (2015) (126)	Ethiopia	Postpartum women <1 year (n=310)	Quantitative case-control study using survey of caregivers at the time of death of the mother and of controls	Identify factors associated with maternal death	Maternal death was twice as likely for women whose husbands or partners had low involvement during pregnancy (OR=2.19; 95%CI 1.14, 4.18)	Husband involvement in maternity was associated with risk of maternal death
Jambola et al (2020) (133)	Ethiopia	< 6 weeks post-partum women (509)	Quantitative, cross-sectional interviewer administered survey	Investigate prevalence of resumption of postpartum sex prior to 6 weeks postnatal	Mothers who felt pressure from their husband to resume sexual intercourse almost ten times more likely to resume sexual intercourse during the early postpartum period than who did not (AOR=9.89; 95%CI 4.99, 19.58)	Pressure from intimate partners was associated with resumption of sexual intercourse within 6 weeks post-partum.
Timsa et al (2015) (123)	Uganda	Postpartum women <1 year (n=2010)	Quantitative, cross-sectional interviewer administered survey	Investigate factors that influence birth preparedness	Husbands accompanying women to the place of childbirth increased the odds of birth preparedness (OR=1.47; 95%CI 1.15, 1.89)	Husband accompaniment to the place of birth was associated with birth preparedness

4.8 IPV						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Belay et al (2018) **(130)**	Ethiopia	Pregnant women; gestational age: 25-34 weeks; living with intimate partner (n=589)	Quantitative cross-sectional data was collected using interview administered surveys and EPDS*	Investigating relationship between prevalence of IPV and depression	Women had an increased risk of depression if they were exposed to IPV (AOR=17.60; 95%CI 6.18, 50.10) and if their husband drank alcohol (AOR=3.31; 95%CI 1.33, 8.24)	Husband IPV and alcohol consumption was associated with depression in pregnant women
Geda et al (2021) **(137)**	Ethiopia	Ever-married women aged 15-49 years who had given birth in the previous 3 years (n=10,641)	Cross-sectional survey (Ethiopian Demographic and Health Surveys (EDHS) data)	Assess disparities in mothers' healthcare-seeking behavior for common childhood morbidities (diarrhea and acute respiratory infection (ARI)) to aid health program planning and monitoring	Mothers who experienced at least one type of IPV were more likely to seek treatment for child's diarrhea episode (AOR=1.83; 95%CI 1.16, 2.89), and ARI episode (AOR=1.56; 95%CI 1.11, 2.19).	Experience of IPV was associated with mothers' treatment-seeking behaviour for child diarrhea and ARI episode
Goo & Harlow (2012) **(135)**	Kenya	Women who gave birth <1 year ago (n=975)	Secondary data analysis from a national master sample maintained by the Central Bureau of Statistics was used to select eligible data from The Women's Questionnaire	Investigating the relationship between experiencing IPV* and use of SBAs	Women experiencing severe physical IPV were half as likely to be attended by SBA at childbirth (OR=0.51; 95%CI 0.29, 0.96). Less severe physical IPV alone and in combination with severe physical IPV (any physical IPV) each decreased the odds by about 25% of skilled attendance (OR=0.73; 95%CI 0.56, 0.95). Women who reported lifetime emotional IPV were 40% less likely to have received skilled attendance than those who did not report emotional IPV experience (OR=0.60; 95%CI 0.43, 0.84)	Women experiencing emotional and physical (particularly severe physical) IPV were significantly less likely to be attended by a SBA at childbirth than women not reporting experience of IPV.
Hampanda (2016) **(132)**	Zambia	HIV+ mothers with infants 3-9 months (n=320)	Quantitative, cross-sectional interviewer administered survey	Investigating the infant feeding practices among HIV+ women experiencing IPV	HIV+ women who experienced any IPV were almost three times more likely to initiate early mixed feeding compared to women who did not experience IPV (AOR=2.86; 95%CI 1.68, 4.87)	Experience of IPV was associated with practicing undesirable early 'mixed infant feeding' among HIV+ women
Madsen et al (2019) **(131)**	Tanzania	Women 6 months pregnant with single baby (n=1128) participated during pregnancy and were followed up after birth and 2-3 years postpartum	A prospective cohort study design with a population-based sample using interviewer administered structured interviews	Examine whether exposure to IPV is associated with premature termination of EB	Women who were exposed to at least one type of IPV had more than 61% higher odds of terminating EB before the child was 6 months old compared to women who were not exposed (aOR=1.61; 95%CI 1.26, 2.05). Women exposed to all three types of IPV had twice the odds of early termination of EB (aOR=1.93; 95%CI 1.11, 3.34). Furthermore, the odds were tripled if exposure happened specifically during the index pregnancy (aOR=2.87; 95%CI 1.27, 6.46).	Exposure to IPV was associated with increased risk of premature termination of EB. The risk increased with multiple types of the IPV, especially when exposed during the index pregnancy.
Manongi et al (2020) **(129)**	Tanzania	Pregnant women aged 18 and above with gestation age below 24 weeks (n=1116)	Cross-sectional study nested in a cohort study (Project: The Impact of Violence on Reproductive Health in Tanzania)	Measure the association between IPV and signs of depression among pregnant women attending ANC	Women were more likely to report depression if: they were exposed to at least one type of violence (AOR=5.06; 95%CI 3.25, 7.86); they were exposed to physical violence (AOR=4.42; 95%CI 2.65, 7.37); their primary source of emotional support was individuals not related to their family (compared to those with support from their male partner/husband) (AOR=2.25; 95%CI 1.26, 4.02)	IPV and lack of male partner support were associated with increased signs of depression among pregnant women.

4.8 IPV						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Memiah et al (2020) **(6)**	Buruni, Kenya, Rwanda, Tanzania, Uganda	Women of reproductive age (n total= 11512 (n Burundi= 2021; n Kenya= 2432; n Rwanda= 1479; n Tanzania= 2001; n Uganda= 3579))	Secondary analysis of data drawn from Demographic and Health Survey (DHS), conducted in 90+ countries. DHS surveys collect household and individual data using standardized questionnaires and modules.	Investigation of neonatal, infant, and child mortality among women exposed to IPV in East Africa	Children more at risk of dying as newborns (AOR=1.3; 95%CI 1.4, 2.2), infants (AOR=1.9; 95%CI 1.6, 2.2) and prior to the age of five (AOR=1.5; 95%CI 1.01, 1.55) if their mothers experienced IPV	Children born to mothers who experienced IPV were more likely to die as newborns, infants, or before age five compared to children born to mothers not exposed to IPV
Mohammed et al (2017) **(134)**	Ethiopia	Mother and father couples with an infant <6 months (n=210 couples)	Quantitative, cross-sectional interviewer administered survey	Identifying associations between IPV and the use of maternal health care services	Women physically abused by their partner less likely to: 1) deliver in a health facility (AOR=0.35; 95%CI 0.14, 0.88); 2) get HIV testing (AOR=0.26; 95%CI 0.09, 0.79); 3) use a skilled delivery attendant (AOR=0.31; 95%CI 0.12, 0.98); and 4) attend four or more ANC visits (AOR=0.48; 95%CI 0.21, 0.71). Women were also less likely to attend four or more ANC visits if they experienced: 1) sexual abuse (AOR=0.91; 95%CI 0.84, 0.98); or 2) partner control (AOR=0.38; 95%CI 0.17, 0.85); in their relationship compared to those who did not.	Women who were exposed to physical IPV in their relationship were less likely to use ANC four or more times, test for HIV, deliver with SBAs, and deliver in a health facility.
Musa et al (2020) **(139)**	Ethiopia	Women who had given birth in public hospitals (n=648)	Hospital-based cross-sectional study using interviewer-administered questionnaire	Investigate the prevalence and associated factors of IPV during pregnancy of women who had given birth in public hospitals.	Women who were exposed to IPV were more likely to report their most recent pregnancy as being unplanned (AOR=1.55; 95%CI 1.03, 2.34).	IPV was associated with unplanned pregnancy.
Necho et al (2020) **(128)**	Ethiopia	Postnatal women accessing the maternal and child health clinic of Dessie health centres within 4 weeks of delivery (n=378)	Institutional-based cross-sectional study using an interviewer administered survey	Determine the magnitude of postpartum depression and its correlates	Psychological (AOR=6.5, 95% CI 1.98, 15.85) and sexual and physical IPV (AOR=3.46, 95%CI 2.34, 18.55), and current husbands alcoholism (AOR=2.2, 95% CI 1.48, 5.34) increased the odds of postpartum depression.	IPV and husband alcoholism were associated with postpartum depression
Stöckl et al (2012) **(141)**	Tanzania	Women having ever been pregnant (n=2492)	Quantitative, cross-sectional interviewer administered survey	Associations between IPV and pregnancy loss	Women who were exposed to IPV were 60% more likely to experience pregnancy loss (OR=1.6; 95%CI 1.06, 1.60)	IPV was associated with pregnancy loss
Stöckl et al (2010) **(136)**	Tanzania	Women having ever been pregnant (n=1710)	Quantitative, cross-sectional interviewer administered survey	Associations between IPV during pregnancy and maternal health behaviours	Women who were ever exposed to IPV during pregnancy were: 1) twice as likely to be discourage or stopped from seeking ANC in their last pregnancy (OR=2.23; 95%CI 1.05, 5.18); and 2) 5.6 times more likely to drink during their last pregnancy (AOR=5.63; 95%CI 2.97, 10.9), compared to women who were not exposed to IPV.	IPV was associated with ANC utilisation and women's alcohol intake during pregnancy.

4.8 IPV						
Author (year)	**Country**	**Participants**	**Study design**	**Study aim**	**Results**	**Conclusions**
Vrana-Diaz et al (2019) **(138)**	Kenya	Women aged 18 years old and pregnant, and attending an ANC clinic for the first time in this pregnancy (n=472), and their male partners (n=395).	Utilized interview data from baseline and 3-month follow-up from a HIV self-testing randomised intervention trial	Examine the associations between gender equality and couples' uptake of HIV self-testing among heterosexual couples expecting a child in central Kenya	Compared to male partners reporting high acceptance of IPV, couples with male partners reporting medium acceptance (OR=2.36; 95%CI 0.99, 5.63) or low acceptance (OR=2.50; 95%CI 1.20, 5.21) were more than twice as likely to use HIV self-testing.	Acceptance of IPV from the male partner of pregnant women was associated with HIV self-testing as a couple
Waktola et al (2020) **(140)**	Ethiopia	Women aged 15-49 who seek abortion care services at health institutions of Debre Markos town (n=547)	Institutional-based cross-sectional study using interviewer-administered questionnaire	Assess proportion and determinants of repeat induced abortion among women seeking abortion care services	Women with a history of IPV were 2.6 times more likely of having repeat induced abortion than those without IPV. (AOR=2.68; 95%CI 1.45, 4.94)	History of male partner physical violence was associated with repeat induced abortion.

* ANC=Antenatal Care; OR=Odds Ratio; CI=Confidence Interval; AOR=Adjusted Odds Ratio; HIV=human immunodeficiency virus; SBA= Skilled Birth Attendant; EB=Exclusive Breastfeeding; TBA=Traditional Birth Attendant; IPV=Intimate Partner Violence; COR=Combined Operating Ratio; HIV-=human immunodeficiency virus negative; aHR=Adjusted Hazard; PMTCT=Prevention of Mother to Child Transmission; ART=Antiretroviral therapy; aRR=Adjusted Risk Ratio; cHTC=couple HIV testing and counselling; HIV+=human immunodeficiency virus positive; HAZ=height for age in children; HR=hazard ratio; EPDS=Edinburgh Postnatal Depression

Discussion

The global effort to reduce maternal and infant mortality and morbidity has included a focus on interventions in the perinatal period. In East Africa, where these distressing health outcomes are disproportionately represented, it is well recognised that gender inequality is one of the key factors contributing to maternal and infant ill-health (142). Consequently, there has been increasing interest in the role of male partners in supporting maternal physical and mental health and improving infant wellbeing during and after pregnancy and birth.

This review has identified that across women's progression from conception through pregnancy and birth to infant feeding and care, her partner's attitudes, knowledge and behaviours are important for her wellbeing and that of her infant. Although mothers are often the focus of health services and public health interventions, a partner's involvement can enhance or impair her access and engagement which will, in turn, affect the health and wellbeing of their children. The partner's support can include his attitudes, to HIV testing for example, or his behaviours such as providing transport or accompanying the mother to the clinic. His engagement, in couple counselling or discussing family planning can reduce health risks while violence to the mother can directly impair her wellbeing as well as preventing her accessing health services.

A limitation in the evidence is that studies are typically confined to a particular aspect of maternal or infant health thereby hindering the development of family-based interventions which address the range of conditions and causal factors impinging on health outcomes. This scoping review is a critical first step in conceptualising an approach to maternal and infant health in the perinatal period that is inclusive of male partners across health conditions.

While it is accepted that the evidence presented in this review is variable in the design and method of data collection, the demonstrated link between male partner's involvement and improved reproductive, mothers and infants' outcomes supports efforts to include male partners to meet the SDG for maternal and infant health. Studies in each topic area demonstrate the potential for improved family health by engaging male partners.

Researchers authoring many of the studies included in this review add their voices to the call from international and national bodies for more effort to involve male partners in every aspect of reproductive health (12) (143). However, achieving significant change in this area has proved to be elusive. Several reviews have documented successful strategies for increasing male partner involvement, some reported decades ago (23) (16) (144) yet initiatives remain small scale and reliant on research or NGO funding. While assessing strategies for improving male partner involvement was not the purpose of this review, a number of points can be drawn from the data which may assist in developing more comprehensive and sustainable change.

Clearly, many counties within the East African region currently lack data on male partner involvement to guide their approach to improving maternal and infant health—despite abundance of such studies being conducted. In this review Ethiopia, Kenya, Tanzania and Uganda were the most frequently studied populations and while eleven countries were represented in the evidence base there were no studies from half of the 22 East African countries.

However, all countries in this region face similar serious situations where rates of maternal and infant mortality and morbidity are unacceptably high. As well as improving co-operation between stakeholders within countries (145), a regional approach to sharing research evidence and intervention planning would avoid the potentially long time-delay while studies from those countries without evidence replicate what is already well established in Ethiopian, Ugandan and Tanzanian studies. Such an approach would build on existing regional co-ordination mechanisms, such as the East Africa Community linking countries across the region undertaking joint action towards the prevention and control of communicable and non-communicable diseases (146), as well as previous initiatives trialling interventions to include male partners in reproductive health involving several East African countries (147).

There are also lessons to be drawn from this review for designing future research to support male partner involvement in the perinatal period. Developing interventions that take a continuum of care approach to supporting men's engagement may be key to moving forward. For example, investigations of male partner involvement in addressing health conditions such as HIV have targeted male partner behaviours and attitudes that might also impact on other important conditions. A male partner who encourages his partner to attend antenatal clinics, attends with her and willingly undertakes couple counselling and HIV testing is also likely to be supportive of early antenatal care and may be more receptive to information describing the possible benefits of breastfeeding or dietary diversity for their infant. Theoretical frameworks for broadening health promotion and service perspectives may offer a template for supporting inclusive approaches to male partner involvement (148, 149).

Developing more rigorous methods for assessing the impact of male partners' beliefs and behaviours may also improve future research and interventions. The outcome measures for maternal and child health across the wide range of conditions reported in this review were diverse and within topic areas data collection methods varied considerably. Male partners' positive engagement with pregnancy, birth and postnatal care was captured under the rubric of 'male partner involvement'. For some studies a male partner accompanying the mother to a clinic qualified as involvement. For others, a male partner needed to provide emotional and practical support and be willing to share decision making on key health choices such as birth location, contraception, HIV assessment and treatment to be judged as involved.

Developing an agreed upon tool for measuring male partner involvement may go some way to addressing this need. The 'male involvement index' (150) has shown to be useful for specifically assessing male involvement in HIV interventions, involving two factors, communication-based involvement and action-based involvement. More recently a global framework was developed by Galle et al. (151), consisting of five categories for assessing male involvement in a comprehensive way: involvement in communication, involvement in decision-making, practical involvement, physical involvement and emotional involvement. The latter instrument will need further refinement depending on the context but may well be useful for comparing studies and interventions across the maternal and infant health field.

Improving measurement of male partner behaviours, however, may not address the concerns of those who see increasing women's autonomy and share in decision-making as critical to improving maternal and infant health outcomes (152, 153). Reports linking male partner involvement in perinatal health services and reduced women's autonomy have prompted calls for interventions to explicitly seek to reduce inequalities between men and women and to examine men's and women's subjective experiences of partner relationships following male partner involvement interventions (154–157). In addition, the role of others, such as mothers-in-law, who may influence male partners' participation in caring roles, and the health system itself should be examined (158, 159). And for some conditions, such as birth complications, a husband's knowledge may be critical (160).

Limitations

This review presents an overview of the literature from East African countries in relation to male partner involvement and maternal and infant outcomes. However, we could not access the full text of a small number of articles, studies not in English were excluded and we did not include studies that reported qualitative data that may have been relevant to our findings. Furthermore, following scoping review methodology (42), quality assessment of the included studies was not included. Strengths of this study were that only studies reporting data on male partner involvement and at least one outcome measure related to maternal and/or infant outcomes from conception to infant age two years covering a wide range of health conditions were included and that at least two authors, including at least one author based in an East African country, were involved in reviewing each of the articles.

Conclusion

Finding avenues to lower the rates of mortality and morbidity of mothers and infants in East Africa is an international imperative. However, the evidence base for interventions must be grounded in research from the region. This scoping review presents an overview of health conditions where male partner involvement can make a significant improvement. The level of evidence, although uneven, provides a compelling case for male partner involvement interventions across a continuum of reproductive health care with attention to measurement of 'involvement' and the possibility of regional co-ordination to maximise impact.

Declarations

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Availability of data and materials

The datasets during and/or analysed during the current study available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

RF conceived the study. All authors participated in the screening of abstracts and critically reviewed the final manuscript. RF, NV, BS and CR drafted the manuscript. All authors read and approved the final manuscript.

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Figures

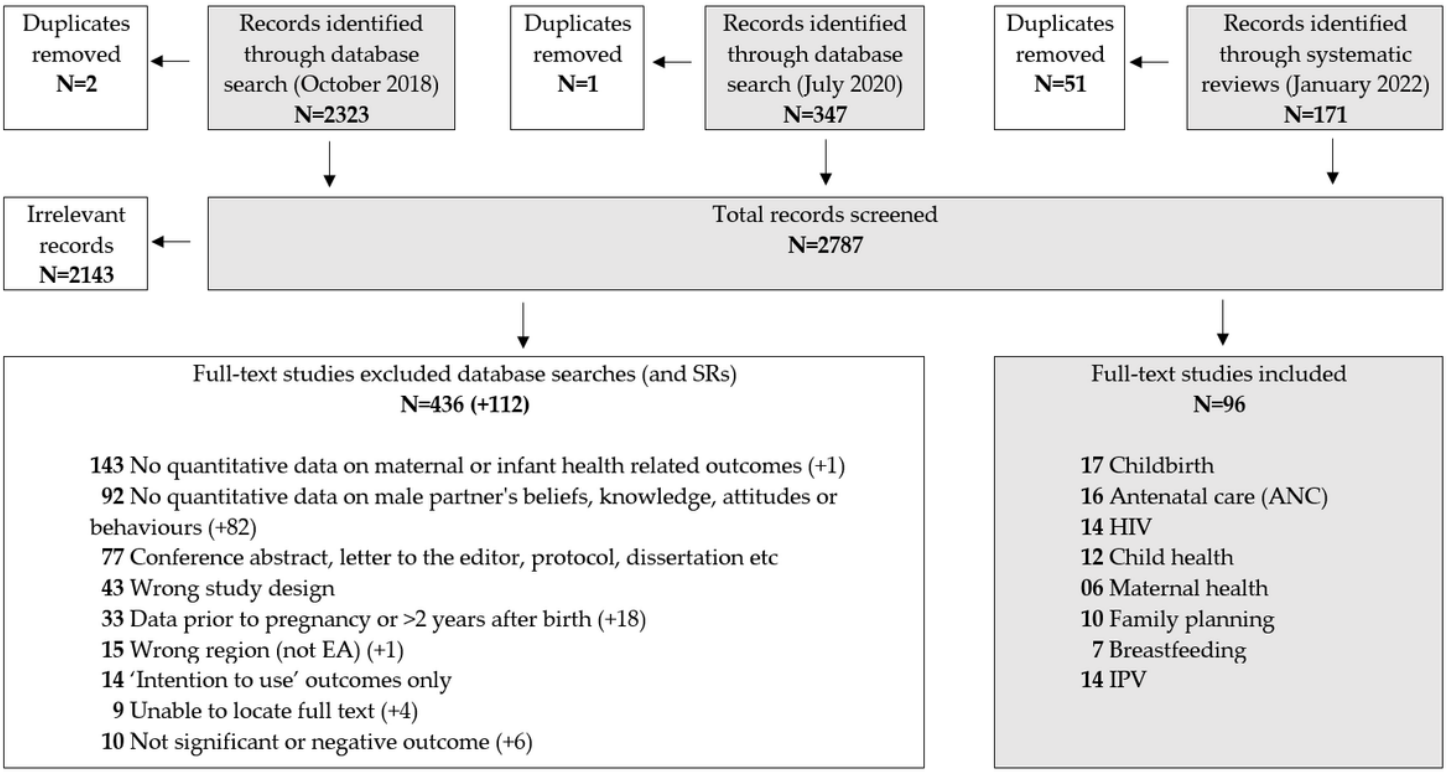

Figure 1

Flowchart of studies through review of male partner involvement and its impacts on maternal and child wellbeing