

Male Participation in Reproductive Health Interventions in Sub-Saharan Africa: A Scoping Review

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CONTEXT: *Despite improvements in reproductive health indicators among women living in Sub-Saharan Africa, the persistence of poor outcomes underscores the need to examine recent interventions to inform future research, programming and policy. Because men in this context have an outsize role in reproductive decision making, assessing their involvement in reproductive health programs is an important step in meeting men's needs, supporting women's health and improving family health.*

METHODS: *A scoping review was conducted to identify relevant literature and assess evidence of the impact of male involvement in reproductive health interventions. Seven databases were searched using terms related to male involvement and reproductive health; searches were limited to research conducted in Sub-Saharan Africa and published in English between 2007 and 2018. Remaining studies were assessed by participant characteristics, settings, research design, theoretical frameworks, outcome measures and findings.*

RESULTS: *Searches identified 18 studies conducted in eight countries. Interventions engaged participants by using such strategies as community health workers, written invitation, peers, community or religious leaders and media campaigns. Results show that men are willing to participate in reproductive health programs and that their involvement is associated with increased uptake of family planning services, and HIV counseling and testing; reduction in risk behaviors; and improved maternal health and spousal communication.*

CONCLUSIONS: *Given the findings that male involvement is positively associated with improved reproductive health outcomes in Sub-Saharan Africa, health providers and program planners should consider including men in reproductive health interventions, when feasible.*

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Globally, sexual and reproductive health problems represent one-third of the total burden of disease for women aged 15–44.¹ Regional disparities are particularly pronounced, as women in developing countries fare worse than women in developed countries in every aspect of reproductive health.² For example, women in most African countries are more likely than those in other regions to die from maternal and perinatal conditions, as well as from communicable diseases, including HIV.³ Maternal mortality rates in Sub-Saharan Africa are among the highest in the world, accounting for nearly half of the world's estimated 830 maternal deaths per day,⁴ and an estimated 12 million of the world's nearly 19 million women aged 15 and older living with HIV in 2018 were in eastern and southern Africa.⁵ The global adolescent birth rate is highest in Sub-Saharan African countries, with an estimated 104 per 1,000 among women aged 15–19.⁶

Socioeconomic, cultural, religious and ethnic disparities continue to inhibit progress in women's health around the globe, affecting women's ability to make decisions regarding their own health and that of their dependents.^{7–10} Persistent gender inequality is also a factor, especially in Sub-Saharan Africa, where men tend to be the decision makers and gatekeepers for families.^{11,12} Men often control

the allocation of money, transportation and time women need to access health services,^{11,12} and may sometimes hold power—in the form of granting permission—or influence over decisions regarding women's access to contraceptives and choices for STI prevention.^{12,13} A study of the prevalence of reproductive health decision making and the factors that determine women's decision making on reproductive health issues in 27 Sub-Saharan African countries found that about one-third of women reported not being involved in decision making regarding their reproductive health, roughly half could not request that their partners use a condom and two-fifths could not refuse their partner's request for sexual intercourse.¹³

The limited progress in improving reproductive health indicators in developing countries, particularly in Sub-Saharan Africa, necessitates new approaches to reproductive health interventions.¹⁴ Given men's role in decision making, the importance of involving them in reproductive health programs has gained recognition since the mid-1990s, and men's participation in reproductive and sexual health has increasingly been acknowledged as an important step in meeting men's needs, supporting women's health and improving family health. The 1994 International Conference on Population and Development

and the 1995 Fourth World Conference on Women formally recognized three venues for men's active inclusion and shared responsibility in women's health: the promotion of men's use of contraceptives through increased education and distribution, the involvement of men in roles supportive of women's sexual and reproductive decisions, and the encouragement of men to adopt responsible sexual and reproductive practices to prevent STIs.^{15,16}

Research conducted in various developing countries has shown that men's involvement in reproductive health services can be beneficial in improving maternal outcomes. A randomized controlled trial that delivered lifestyle education on postpartum anxiety and depression to Iranian women and their husbands showed a reduction in women's postpartum depression and anxiety in the dyad group, compared with the women-only group.¹⁷ In Nepal, a study of the impact of husbands' participation in antenatal health education services on maternal health knowledge found that the knowledge level of women educated alongside their husbands increased to nearly twice that of women educated alone.¹⁸ Similar results were observed in a study in rural Vietnam, in which fathers who received breast-feeding education and counseling had higher levels of breast-feeding knowledge, more-positive attitudes toward early initiation of breast-feeding and a higher likelihood of actively supporting exclusive breast-feeding during antenatal and postpartum periods, compared with fathers who did not.¹⁹

In Sub-Saharan Africa, between 2006 and 2017, various studies used a wide range of research designs and methods to explore men's involvement in women's decision making and use of reproductive health services. An assessment of the relationship between gender and decision making in southern Nigeria showed that more than half of women believed that it is the man's right to make decisions in the home—including reproductive decisions.²⁰ Similarly, a qualitative evaluation of the effect of intrafamilial decision making on women's access to and use of maternal health care services in Ghana suggested that decisions are strongly influenced by the values and opinions of husbands, more than those of individual reproductive-aged women; only 3% of sampled women were the final decision makers in their use of maternal health care services.²¹ A gender-transformative study to promote male engagement in reproductive and maternal health in Rwanda found that approximately 43% of men had the final say on the number and birthspacing of children in their household.²² Relatedly, lack of spousal support was identified as one of the reasons women did not undergo screening for cervical cancer in Burkina Faso²³ and Nigeria.²⁴ These findings highlight how attempts to improve reproductive health can be undermined by women's lack of decision-making autonomy, determined through complex processes of social power and gender inequality.²¹

Recognizing the sociocultural factors exposing women to a higher risk of contracting STIs, the Joint United Nations Programme on HIV/AIDS in 2010 called for the

development and implementation of innovative strategies to further educate men about women's health.²⁵ To promote this and related initiatives, it is imperative to examine the impact of male involvement in interventions regarding broad aspects of reproductive health, including family planning, sexual risk behaviors, antenatal care, birth preparedness and maternal health. The few previously published reviews on male participation in reproductive health issues in Sub-Saharan Africa focus on articles that solely explored prevention of mother-to-child transmission of HIV, HIV counseling and testing, or HIV reduction barriers and facilitators, rather than interventions on reproductive health indicators.^{26–28} We opted to employ a scoping review to examine evidence published between 2007 and 2018 regarding reproductive health interventions that involved men in efforts to improve reproductive health in Sub-Saharan Africa, with the ultimate aim of highlighting gaps that could inform future research.

METHODS

Data Collection

One author from our research team conducted multiple extensive electronic searches for all types of scholarly studies and grey literature. The author extracted potential records using the Google Scholar and PubMed search engines; the ScienceDirect search interface; and the MEDLINE, Global Health, PsycINFO and Cumulative Index to Nursing and Allied Health Literature databases. Search terms were related to male involvement (e.g. *male, men, spouse, couple, involvement, participation, engagement*), reproductive health issues (e.g., *family planning, condom use, sexual risk behaviors, antenatal care, birth preparedness, maternal health, reproductive health, sexual health*) and location (using the term *Sub-Saharan Africa* and the names of countries within that region). The author examined each retrieved article's reference list to identify any additional studies that had been missed in the initial searches. After excluding duplicates, the author screened the titles and abstracts of the subsequent articles to determine which warranted further review. Both authors then assessed the full texts of the screened records; eligible articles were published in English between January 2007 and March 2018, evaluated an intervention designed to involve men in reproductive health and featured research conducted in Sub-Saharan Africa; reviews and other articles that did not meet inclusion criteria were excluded. Our initial findings showed no published intervention-based studies in this region prior to 2007, other than those that involved excluded research topics, such as prevention of mother-to-child transmission of HIV, and HIV reduction barriers and facilitators. For this reason, and because most funded reproductive health projects in Africa started in the 2000s, we chose the 2007–2018 time frame.

Both authors independently examined the full texts of the remaining articles to verify eligibility for data extraction; after discussing any disagreements, we mutually confirmed that this final sample met all inclusion criteria

and were appropriate for analysis. We did not appraise the quality of included studies because we identified a small number of articles involving men in reproductive health interventions, which highlighted the need for research to fill this gap; our aim for the review was to identify any such gaps and inform guidelines for improving reproductive health in Sub-Saharan Africa.

Analysis

We extracted the following information from each study and organized it in a Microsoft Excel database: title, authors, publication date, study location, study design, sample characteristics, assessment, theoretical framework, type of reproductive or maternal health program, data collection methods, intervention characteristics (i.e., number and types of intervention strategies, components, individual or couple-based approaches) and outcome measures. We also extracted findings on men's participation, their adoption of intervention content and the level of influence their adoption had on their wives or partners. A priori in the review protocol, we specified a number of subgroup analyses to explore reasons for heterogeneity between studies, with the influence of contextual factors on male involvement in reproductive health as a primary research focus. We performed a subgroup analysis focused on intervention strategies to show their effectiveness, or lack thereof, on reproductive health outcomes.

RESULTS

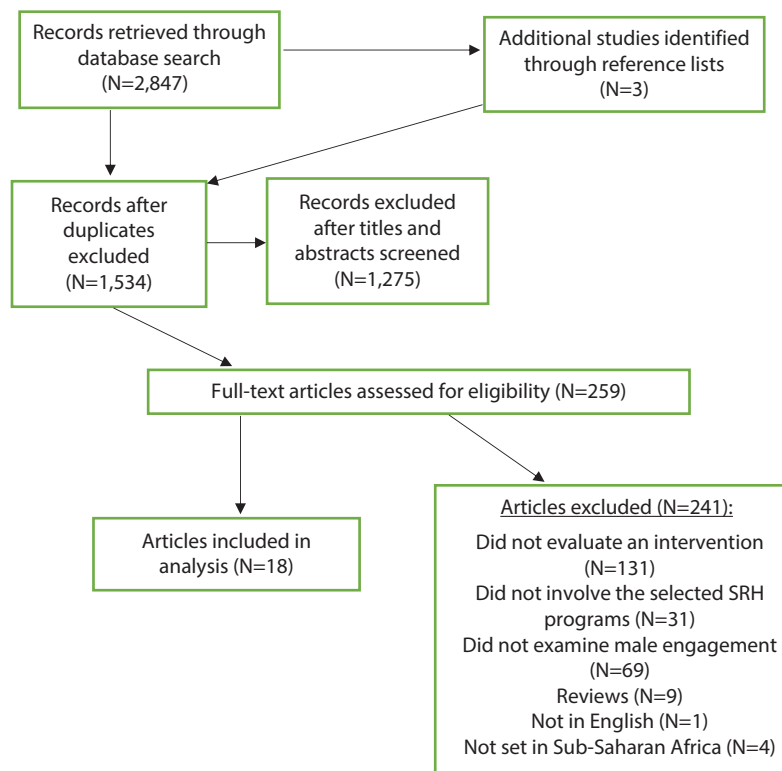
The bibliographic searches retrieved 2,847 potential articles (Figure 1); after reviewing these articles' reference lists, the search author added three studies to the initial sample for consideration. A total of 1,316 duplicates were excluded, and a subsequent screen of the titles and abstracts of the remaining 1,534 articles yielded a collection of 259 needing full-text assessment. We excluded 241 articles that failed to meet inclusion criteria and deemed the remaining 18 eligible for data extraction.

Overview of Included Studies

Twenty research projects took place in eight Sub-Saharan nations: six in Nigeria; five in Malawi; three in Tanzania; two in Uganda; and one each in Ethiopia, Senegal, Kenya and Mozambique (Table 1). Nine were conducted in urban settings, eight in rural settings and one in both. The number of participants per study ranged from 44 to 5,971. Almost all studies involved men in marriages or who cohabited with partners; 10 targeted couples, seven targeted only men without the presence of partners or spouses, and one targeted only women, who were encouraged to deliver information intended for men to their partners. The majority of participants were 18 or older, although six studies included participants as young as 14–15.

Articles comprised 10 quantitative, three qualitative and five mixed-methods studies. In terms of study design, four used randomized controlled trials,^{29–32} three employed a quasi-experimental design,^{33–35} one used multistage

FIGURE 1. Flow diagram showing articles identified, excluded and included in final scoping review



sampling,³⁶ seven employed a pretest/posttest design,^{37–43} one used a posttest design⁴⁴ and two employed a cross-sectional design.^{45,46} Five studies used a theoretical framework to guide their research. To explore maternal health services usage, Adeleye and Okonkwo,³⁷ and Adeleye, Aldoori and Parakoyi,⁴⁴ employed gender theory, which posits that gender constitutes the social, economic and political contexts that guide particular beliefs, norms and behaviors. In their research, conducted in Malawi, Shattuck et al.²⁹ and Hartmann et al.³⁰ employed the Information-Motivation-Behavioral Skills Model, which postulates that health-related information, motivation and behavioral skills are important determinants of whether a family planning behavior is performed. Exner et al. adapted an HIV and STI prevention program that was developed by the Association for Reproductive and Family Health, in Nigeria, and grounded in the Stages of Change Model to promote protection against HIV and other STIs among heterosexually active men.³³

Participation

Men's willingness to participate in and complete the reproductive health programs was assessed in studies conducted in Nigeria, Ethiopia and Uganda. The reports indicated high participation and retention among participants. A study to improve men's involvement in maternal health in Nigeria found that approximately 90% of participants attended group health talks conducted nine times over a four-week period and lasting, on average, two hours.⁴⁴ In

TABLE 1. Selected characteristics of the 18 articles, published between 2007 and 2018, included in the scoping review assessing men's involvement in reproductive health interventions in Sub-Saharan Africa

Article and country	Study design and sample characteristics	Assessment	Theoretical framework	Participation	Intervention engagement strategy and content delivery	Outcome measures	Findings
Adeleye, Aldoory and Parakoyi, 2011, Nigeria ⁴⁴	Posttest; 190 male community and youth leaders (mean ages, 60 and 30, respectively)	Postintervention, focus group discussion	Gender theory	90% response rate for 2-hour group talks delivered 9 times over a 4-week period	Community/religious leaders; group discussions, fliers	Male engagement in maternal health	Male leaders were motivated to act as change agents, encouraged other men to assist with maternal health in their community, supported the preservation of healthful practices, such as breast-feeding, and negotiated their traditional beliefs regarding gender roles.
Adeleye and Okonkwo, 2016, Nigeria ³⁷	Pretest and posttest; 141 married men (aged 18–75)	Pre- and postintervention questionnaire, follow-up at 3 months	Gender theory	94% response rate for group session and 87% for postintervention survey	Media; group discussions, handbill, posters	Men's willingness to participate Men's knowledge and attitudes regarding maternal death	Increases in the proportions of men with knowledge of family planning and of key warning signs of maternal death (51 and 17 percentage points, respectively), who agreed that the couple should share decision making on family size (28 percentage points) and who believed that family planning methods are meant to be used by both men and women (14 percentage points). 100% increases in identifying a health facility as the best place for ANC and delivery.
Audet et al., 2016, Mozambique ⁴²	Pretest and posttest; 5,971 pregnant women (median age, 25) and 2,928 of their male partners	Preintervention questionnaires, focus group discussion, ANC clinical registry	na	na	Community health workers; home visits, male-friendly clinic settings	ANC service use HIV testing and treatment	Increased maternal attendance at ≥ 3 ANC appointments (33% vs. 40%) and male accompaniment at first ANC appointment (5% vs. 34%) or any ANC appointment (10% vs. 37%). Partner accompaniment to ANC positively associated with higher odds of health facility delivery (OR, 19.4 [11.8–31.7]). 91% of the men participated in CVCT. Increased HIV testing among pregnant woman (81% vs. 92%) and male testing during ANC (9% vs. 34%).
August et al., 2016, Tanzania ⁴⁴	Quasi-experimental; 1,378 pregnant women (aged 21–35) and their husbands/adult male relatives	Pre- and postintervention survey, follow-up at 2 years	na	na	Community health workers; home visits	Male involvement in maternal health, making birth arrangements, recognizing life-threatening signs and joint decision making	Men more frequently accompanied their spouses to antenatal visits (NIE, 16%) and delivery (33%), and increased their involvement in maternal care (42%) and in shared decision making about place of delivery (40%). Twofold increase in the proportion of men who took ≥ 3 birth preparedness and complication-readiness actions. Men and women visited by workers had increased knowledge of ≥ 3 danger signs of pregnancy, childbirth and postpartum stages.

Article and country	Study design and sample characteristics	Assessment	Theoretical framework	Participation	Intervention engagement strategy and content delivery	Outcome measures	Findings
Becker et al., 2014, Malawi ³⁹	Pretest and posttest; 167 cohabiting couples (aged 15–49)	Pre- and postintervention questionnaire, follow-up at 1 week	na	na	Community health workers; home visits	Contraceptive/condom use HIV testing and discussion with partner/spouse about HIV test results	75% of couples reported using a contraceptive postintervention. Condom use at last sex increased from 6% to 25% among couples receiving any intervention. 75% of untested men and women received their first HIV test postintervention; 61% of tested couples who received only HIV counseling, and 65% of those who received HIV and family planning counseling, reported discussing their HIV test as a couple.
Bright et al., 2015, Nigeria ⁴⁰	Pretest and posttest; 150 men (aged 22–45) and 50 couples	Pre- and postintervention questionnaire, follow-up every 3 months for 1 year	na	na	Written invitation	Family planning knowledge and spousal communication about family planning	Men's knowledge of contraceptive methods increased from 20% to 90%, and the proportion intending to use a method increased from 18% to 60%. All couples reported improved spousal communication about family planning.
Byamugisha et al., 2011, Uganda ³¹	Randomized controlled trial; 600 antenatal women (aged ≥15) and 161 of their male partners (aged ≥19)	Pre- and postintervention questionnaire, follow-up at 4 weeks	na	na	Written invitation; leaflet	ANC service use and partner attendance HIV testing at the antenatal visit	Couple antenatal clinic attendance increased from 5% to 16% with invitation letter and to 14% with leaflet. 95% of male partners in the intervention group and 91% in the nonintervention group who attended the antenatal clinic with their spouses accepted HIV testing.
Exner et al., 2009, Nigeria ³³	Quasi-experimental; 381 men (aged 18–73)	Pre- and postintervention interviews, follow-up at 3 months	Stages of Change Model	91% response rate for two 5-hour sessions, and 75% for both monthly 2-hour postintervention check-in sessions	Written invitation; flyers, workshops, didactic and interactive teaching, small-group discussion, scripting behavior	HIV/STI testing experiences and stigma Identify barriers to condom use, provide skills to enact safer sex with a partner	Men in the intervention had increased odds of identifying venues for HIV testing (OR, 7.7 [1.6–36.5]), and their partners had increased odds of ever undergoing testing (15.2 [2.6–90.9]) than those in the comparison group. They also had less stigmatized beliefs about HIV-infected people than men in the comparison group. Compared with men in the comparison group, men in the intervention group had lower expectations that condoms would be associated with a negative reaction by their partner, higher safer-sex self-efficacy, lower odds of engaging in any unprotected sex in the prior 3 months (OR, 0.4 [0.5–2.1]) and greater odds of reporting condom use at last vaginal intercourse with their main partner (3.8 [1.9–7.7]).

continued

TABLE 1 (continued)

Article and country	Study design and sample characteristics	Assessment	Theoretical framework	Participation	Intervention engagement strategy and content delivery	Outcome measures	Findings
Ghanotakis et al., 2016, Uganda ³⁸	Pretest and posttest; 1,251 men (aged 18–64)	Pre- and postintervention questionnaires	na	65% of participants attended all 10 sessions	Peer-led education	Men's attitudes and behaviors related to gender norms Knowledge and behaviors related to uptake of family planning and HIV services, and health- and care-seeking behaviors	Improvements in attitudes toward IPV. Improvements in men's health-seeking behaviors, including seeking clinic services for themselves, accompanying a partner in the past 5 months, condom use with main partner in the past 3 months, ever having been tested for HIV and communicating with main partner on using a method to avoid pregnancy.
Hartmann et al., 2012, Malawi ³⁰	Randomized controlled trial; 14 men (aged ≥18) and 30 of their female partners (aged <25)	Pre- and postintervention interview, follow-up at 1 year	Information-Motivation-Behavioral Skills Model	na	Community health workers	Family planning method choice and use, decision-making patterns, and ease and frequency of communication	Increases in family planning acceptance, contraceptive use, family planning knowledge, attitudes, self-efficacy, and equitable gender norms scales. Both men and women reported improved spousal communication on family planning, general communication overall and communication frequency. Although a quarter of the women saw a direct link between the study and increased communication, and men largely made the final decisions, women were increasingly thought of as partners in decision making.
Ibrahim et al., 2014, Nigeria ³⁵	Quasi-experimental; 388 married men (aged ≥20 years)	Pre- and postintervention questionnaires, focus group discussion and interview, follow-up at 6 months	na	na	Media; interactive behavioral workshop, film, discussion, almanacs	Male involvement in birth preparedness	Men encouraged their wives to attend an antenatal clinic, accompanied them to the clinic, reduced women's household chores, took care of their basic needs, permitted them to seek health care when ill, took them to the health facility when ill and provided traditional medicines for them to take regularly.
Jefferys et al., 2015, Tanzania ⁴³	Pretest and posttest; 318 women (aged 14–44) and 170 of their male partners (aged 19–55)	Pre- and postintervention questionnaire and interviews, multiple follow-ups varying by participant	na	na	Written invitation; antenatal session	Male involvement in ANC Male involvement in CVCT	Male partner attendance rate was 54%. 71% of couples reported positive outcomes resulting from the joint ANC session: improved relationship between the partner or the couple and the health services provider (40%) and improved communication and support between the couple (28%). 95% of women who attended the joint session reported improved joint decision making regarding ANC, family planning, and sexual and reproductive health. 81% of couples received CVCT.

Article and country	Study design and sample characteristics	Assessment	Theoretical framework	Participation	Intervention engagement strategy and content delivery	Outcome measures	Findings
Lemani et al., 2017, Malawi ³²	Randomized controlled trial; 808 married/cohabiting couples (aged 14–30)	Family planning registers, follow-up at 3 and 6 months	na	na	Community health workers	Uptake and use of modern contraceptives among women after couples counseling	98% of women initiated a contraceptive method at the first visit. Nearly all (>97%) had continued method use at 3- and 6-month follow-ups.
Mushi, Mpembeni and Jahn, 2010, Tanzania ⁴¹	Pretest and posttest; 153 women and 69 of their husbands (aged 19–53)	Pre- and postintervention questionnaires	na	na	Community health workers; home visits, community meetings, video	ANC attendance and delivery using skilled attendants Knowledge and perception of safe motherhood issues	94% of women attended ≥ 1 ANC visit during pregnancy. The proportion of primigravida women who had an ANC visit early in the pregnancy increased from 19% to 57%, and the proportion who had ≥ 4 ANC visits increased from 42% to 51%. Deliveries with a skilled attendant increased from 34% to 51%. 53% of respondents could mention ≥ 3 pregnancy risk factors, and the proportion who could cite ≥ 3 practices that contribute to delay in seeking obstetric care increased from 46% to 56%.
Okigbo et al., 2015, Kenya, Nigeria and Senegal ⁴⁶	Cross-sectional; 4,620 men (aged 15–59)	Postintervention questionnaires	na	na	Community/religious leaders, media; mass media (TV, radio programs), print media (newspapers, magazines, comic books, posters, leaflets, brochures), interpersonal communication, community events	Use of modern contraceptive methods	In Senegal, 27% of men reported method use, which was positively associated with exposure to TV programs (OR, 1.4 [1.0–1.9]) and hearing a religious leader speak in favor of family planning (1.7 [1.3–2.4]). 58% reported method use in Kenya and 43% in Nigeria; use was associated with exposure to TV programs in Kenya and to English-language slogans in Nigeria (1.4 [1.0–2.0]), although associations were only marginally significant. Intensity of program exposure was positively associated with modern method use in all 3 countries.
Shattuck et al., 2011, Malawi ²⁹	Randomized controlled trial; 397 married/cohabiting men (aged ≥ 18 and married to or living with a female sexual partner aged <25)	Pre- and postintervention questionnaires, 5 peer visits	Information-Motivation-Behavioral Skills Model	na	Peer-led information sharing and communication skills-building	Family planning uptake, knowledge and attitudes; equitable gender norms, self-efficacy and communication	78% of men in the intervention group reported using family planning methods with their wives, compared with 59% of men in the comparison group, postintervention. $\geq 77\%$ of all participants intended to continue method use for 2 years. Positive changes were found for family planning knowledge, attitudes and self-efficacy; gender norms; and general communication and communication frequency measures.

continued

TABLE 1 (continued)

Article and country	Study design and sample characteristics	Assessment	Theoretical framework	Participation	Intervention engagement strategy and content delivery	Outcome measures	Findings
Tilahun et al., 2015, Ethiopia ³⁶	Multistage sampling; 854 married men and their wives (aged 15–49)	Pre- and postintervention questionnaire and interview, follow-up at 6 months	na	92% attended the discussions and 97% responded to the postintervention survey	Community health workers; couples discussion sessions, monthly community gatherings	Couple's contraceptive use, and spousal discussions about and male involvement in family planning	Increased levels of spousal discussion on family planning issues in 4 out of 5 couples (>78%), and increased levels of men accompanying spouses to facilities offering family planning services (77%), paying for these services and actively participating in family planning (89%) postintervention.
Zamawe, Banda and Dube, 2015, Malawi ⁴⁵	Cross-sectional; 3,825 women (aged 15–49)	Postintervention questionnaires	na	na	Media; radio program	Men's involvement in ANC, childbirth care and postnatal care	81% of men whose wives listened to radio programming participated in ANC, 76% were involved in childbirth and 60% were engaged in postnatal care. Listening to radio programming was positively associated with men's participating in ANC (OR, 1.5 [1.3–1.8]), childbirth (1.7 [1.5–2.0]) and postnatal care (1.9 [1.7–2.2]).

Notes: Odds ratios listed with 95% confidence intervals. ANC=antenatal care. OR=odds ratio. NIE=net intervention effect. IPV=intimate partner violence. CVCT=couple voluntary counseling and testing. na=not applicable.

a similar study in Nigeria, 94% of respondents attended a two-hour educational session on maternal death.³⁷ Exner and colleagues observed that 91% of men who participated in a program to increase dual protection against HIV and other STIs attended two five-hour sessions, scheduled one week apart, and 75% attended both monthly, two-hour postintervention check-in sessions.³³ Among couples who participated in a family planning intervention aimed at encouraging spousal communication in Ethiopia, 92% of the overall sample attended face-to-face discussions.³⁶ Ghanotakis and colleagues reported that 65% of male participants attended all 10 sessions focused on transforming gender norms and encouraging uptake of family planning and HIV services in Uganda.³⁸

Intervention Engagement Strategies and Content

In different contexts and populations, reproductive health program planners and researchers have employed various intervention methods to engage men in an effort to increase the use—by men and women—of reproductive health services. We identified several themes among the engagement strategies employed by each study: interventions involving community health workers, formal written invitation, peers, community or religious leaders, and the media (described, along with findings, in detail below). The focus of these interventions was either family planning uptake (through contraceptive choice and use, decision making and communication)³⁰ or maternal health services utilization (i.e., obstetric care, antenatal care, skilled birth attendance)—alone or with HIV counseling and testing,

and gender norm transformation.^{31,34,40–43} Content of the 10 couples-based interventions focused on family planning, HIV counseling and testing, and use of maternal health services;^{30–32,34,36,39–43} that of the seven intervention programs delivered exclusively to men included family planning, birth preparedness, protection against HIV and STIs, and maternal health improvement;^{29,33,35,37,38,44,46} and that of the single study targeting women assessed the impact of a maternal health mass-media campaign on their husbands.⁴⁵

•**Community health workers.** Use of community-based intervention approaches may mitigate the challenges of standard investigative approaches, strengthen the rigor and utility of research for community applicability, enhance the ability to transpose findings to local communities, and demonstrate both individual and community benefits.⁴⁷ In seven studies, interventions were provided by trained community health workers—also referred to as promoters, traditional birth attendants, male champions, community health counselors, community agents, lay providers and peer support specialists, among other terms.^{30,32,34,36,39,41,42} These individuals were not health professionals, but instead members of the local community trained to provide culturally sensitive, context-specific advocacy and to engage in the reciprocal exchange of information within familial social contexts. Health workers serve as a vital link between their neighbors and the health care system.⁴⁸ They have familiarity with local issues and existing rapport with community members, and are available when other human health resources are scarce.

Audet and colleagues conducted a community participatory action program in Mozambique that deployed community health workers to engage men in antenatal care services, and increase HIV testing and treatment uptake among the participants.⁴² The workers established a male-friendly clinical environment and provided counseling sessions for couples. The intervention showed postintervention increases in male accompaniment at initial antenatal care (from 5% to 34%) or any antenatal care appointment (from 10% to 37%); HIV testing among pregnant woman (from 81% to 92%); and male partner HIV testing during antenatal care visits (from 9% to 34%). Additionally, partner accompaniment to antenatal care appointments was associated with much greater odds of health facility delivery (odds ratio, 19.4).

Becker and colleagues reported on the use of a pair of community health workers to provide couples in Malawi with HIV counseling and testing and family planning services in one home visit.³⁹ They found that couples' condom use at last sex increased from 6% to 25% at the one-week follow-up visit, and that more than 75% of women and men visited by workers subsequently underwent their first HIV test; 61% of tested couples who received only HIV counseling, and 65% of those who also received family planning services, reported discussing their HIV test with one another. In a similar study in Malawi, health workers stratified by sex and catchment area visited women in their homes to counsel them on family planning;³² each strata had been randomized to receive or not receive extra training in couples counseling on topics including gender norms, communication and contraceptive options that emphasized using condoms with another method. Workers who had received the extra training asked women if they wanted couples counseling with their male partner present. Workers then provided the woman's preferred short-term contraceptive or referred her to the nearest health care facility for her preferred long-acting reversible method. Forty-five percent of women whose partner was present during the consultation requested male condoms, compared with 35% of those counseled alone. No difference was found between groups in terms of receipt of dual methods.

Similar results to the previous Malawi study were reported in studies in Malawi and in Ethiopia that focused on family planning service use and communication delivered by community health workers, and that examined the ensuing spousal communication and decision-making processes.^{30,36} The Malawi study involved a male community health worker visiting the husbands of young rural women five times during a six-month period to share information, motivation and behavioral skills.³⁰ The study found positive associations between visits and contraceptive use, the frequency and quality of spousal communication, and the ease and frequency of family planning discussion with partners; one-third of women and half of men described a joint

process for deciding to use family planning methods following the intervention.³⁰ The researchers added that all men highlighted the intermediary role of increased knowledge of family planning in contributing to the increased frequency of discussing family planning with a partner, which directly contributed to their likelihood of family planning use. Meanwhile, Tilahun and colleagues assessed the impact of a family planning education intervention on male involvement in family planning and contraceptive uptake among couples in Ethiopia.³⁶ They reported a positive association between the intervention and contraceptive use among those not using contraceptives at baseline (odds ratio, 1.9). Approximately 80% of spouses in the intervention group reported higher levels of spousal discussion on family planning issues after the six-month-long intervention, and about half of men indicated their intention to accompany their spouse to facilities offering family planning services and to cover the cost of services. These findings provide evidence that programs involving community health workers are more successful in community-based participatory models, in which community members and health care and other agencies have shared values, equity, planning and participation.⁴⁸

Other reported impacts of interventions that used community health workers include improved community perceptions, acceptability and use of obstetric care. In rural Tanzania, health workers delivered a safe motherhood intervention by providing education on maternal health issues, home visits and follow-up visits to pregnant women and their husbands.⁴¹ Researchers reported increases in the proportion of primigravida women making appointments at a health facility for antenatal care early in their pregnancy (from 19% at baseline to 57% postintervention), of pregnant women attending at least four antenatal visits (from 42% to 51%) and of pregnant women who delivered with skilled birth attendants (from 34% to 51%). In addition to a high proportion of women receiving antenatal care at least once during pregnancy, more than half of participants could cite at least three pregnancy risk factors and at least three practices that contribute to delay in seeking obstetric care. In another study set in Tanzania, health workers visited families at least four times during a woman's pregnancy and delivered home-based life-saving skills training to those women, their husbands and other family members.³⁴ Results showed that the intervention was associated with increased male involvement in maternal care (from 39% at baseline to 81% postintervention), shared decision making about place of delivery (from 47% to 87%), and men accompanying their spouse to antenatal appointments and delivery. Both men and women demonstrated increased levels of knowledge of at least three signs of danger during a pregnancy, a childbirth and the postpartum period.

• **Written invitation.** Four studies employed formal written invitations to encourage male participation in women's reproductive care,^{31,33,40,43} a tactic used in research in African

settings that can be an effective tool to increase partner involvement in sexual and reproductive health.^{49,50} In these studies, women were given a letter that contained general information about antenatal sessions and an invitation for their male partners to attend the next routine antenatal visit. Jefferys and colleagues used these invitations to motivate male partners to attend joint antenatal care and voluntary couples HIV counseling and testing in Tanzania.⁴³ Of the couples invited to attend a joint antenatal care session, 81% accepted counseling and testing; 71% of women who had had a partner in attendance reported positive outcomes, including an improved relationship with health services providers (40%), improved communication with and support from her partner (28%) and exposure to health education for the couple (23%). Notably, 95% of the women indicated an improvement in their role as decision maker regarding antenatal care, family planning, and sexual and reproductive health. In Uganda, Byamugisha and colleagues found that invitation letters were positively associated with couples' increased antenatal clinic attendance, from 5% to 16%, and that more than 90% of attendees accepted HIV counseling and testing.³¹ A study in Nigeria showed a remarkable 90% increase in knowledge of contraceptive methods among the male partners of antenatal clinic attendees who accepted an invitation to join a three-day training on female reproductive health and family planning.⁴⁰ In addition, a greater proportion of men who participated in the intervention expressed their intent to use family planning. At a one-year follow-up with 50 couples, all reported improved spousal communication on family planning.

To investigate ways to increase protection against HIV and other STIs, one study asked women attending local family planning clinics in Nigeria to give their partners an invitation to a reproductive health program for men.³³ Participants in the intervention group attended two five-hour workshops featuring an in-depth, customized dual-protection curriculum delivered through a combination of methodologies, followed by a monthly two-hour check-in session; the comparison group attended a half-day didactic workshop on male and female sexuality, reproduction, contraception and HIV/STI transmission, symptoms, treatment and prevention. The intervention group demonstrated notable outcomes: Participants were less likely than those in the comparison group to engage in unprotected sex in the prior three months (odds ratio, 0.4), and more likely to report condom use at last sex with their main partner (3.8) and to correctly identify venues for HIV testing (7.7). They had lower expectations that condom use would be viewed negatively by their primary partner and held less stigmatized beliefs about HIV-infected people. In addition, compared with the partners of women in the comparison group, the partners of women in the intervention group were substantially more likely to have ever been tested (15.2). Men who received the intervention had approximately one-third the odds of those in the comparison group of refusing condom use with a main partner

and more than twice the odds of intending to use condoms consistently in the next six months; they also reported fewer instances of unprotected vaginal intercourse.

•*Peers.* Research increasingly recognizes the influence of peer involvement in health promotion and illness prevention—particularly when used to engage men in reproductive health initiatives.⁵¹ The two peer-led interventions we reviewed resulted in positive changes in contraceptive and HIV services uptake. In a study conducted in Malawi, participants in the intervention group were visited by a married male outreach worker, aged 30 or older, five times during a six-month period, while participants in the comparison group were visited only by researchers for data collection before and after the intervention.²⁹ The findings demonstrated a considerable increase in contraceptive use within both groups—from 0% to 78%, in the intervention group, and from 0% to 59%, in the comparison group—and an increase in the intervention group compared with the comparison group. In addition, family planning uptake postintervention was positively associated with the frequency and ease with which men discussed family planning with their wife (odds ratios, 1.6 each), although the latter finding was only marginally significant; 78% of men in the intervention group and 77% of those in the comparison group noted their intention to continue using a family planning method for two years. In a study in Uganda, men perceived as role models in their communities delivered an intervention designed to transform local men's notions of gender norms and motivate them to engage in HIV and family planning services.³⁸ Researchers noted that, after the intervention, men showed improvements in using contraceptives with a partner and accompanying a partner to the clinic in the past five months, as well as increased HIV testing uptake, communication with a partner regarding using a contraceptive to avoid pregnancy and health-seeking behaviors, including seeking clinic services for themselves.

•*Community or religious leaders.* Community leaders—kings, village elders, town presidents—and religious leaders play vital roles in developing nations,⁵² especially those in which collectivism is customary. These figures act as gatekeepers who can deliver health information to people in their community;⁵³ stakeholders who can effect change through advocacy, mentorship and appeals to external entities for resources; and facilitators for developing and implementing health interventions and enhancing women's use of health services.^{54,55} Two studies used community or religious leaders to incentivize male participation in maternal health and family planning programming.^{44,46} Adeleye and colleagues engaged male community leaders (village elders) in a program to improve maternal health in a rural community in Nigeria.⁴⁴ They reported that the leaders were motivated to act as change agents and encouraged other men to assist with maternal health in their community; they also noted the preservation of healthful practices, such as

breast-feeding, and that leaders negotiated their traditional beliefs regarding gender roles. In addition, a study on a family planning program involving religious leaders that was implemented in Kenya, Nigeria and Senegal found that men in Senegal who heard a religious leader speak favorably about family planning were more likely than those who had not to use a modern contraceptive method (odds ratio, 1.7).⁴⁶

• **Media.** Mass media campaigns aim to spread information and raise awareness of health issues by exposing populations to messaging through print (e.g., posters, handbills, almanacs), newspapers, radio, television and other communications media. They have been used to influence various health behaviors and aim to encourage positive changes or reduce negative changes across large populations.⁵⁶ A study of a multistrategy program implemented in Kenya, Nigeria and Senegal to assess men's exposure to family planning messages via mass media, print media, interpersonal communication and community events found that exposure to different family planning messages was positively associated with modern method use in all three countries.⁴⁶ In Senegal, 27% of men reported contraceptive use, which was positively associated with exposure to television programming (odds ratio, 1.4). Fifty-eight percent of men in Kenya and 43% in Nigeria reported contraceptive use, which was positively associated with exposure to television programming, in Kenya, and to English language slogans, in Nigeria, although these findings were only marginally significant. Zamawe, Banda and Dube assessed the impact of a Malawian radio program aimed at women of childbearing age to promote men's involvement in maternal health.⁴⁵ Women were encouraged to share messages from the program with their husbands—especially those relating to men's engagement with maternal health practices. Researchers found a positive relationship between women's exposure to the program and their husband's involvement in maternal health, including participating in antenatal care, childbirth and postnatal care.

Two studies used print media to encourage men to participate in improving maternal health.^{35,37} An educational session attended by married men in Nigeria used handbills and posters, as well as group health talks, to share information about maternal deaths; after the intervention, the proportion of men demonstrating improved knowledge of nonsurgical family planning methods and of maternal death warning signs increased by 51 and 17 percentage points, respectively.³⁷ In addition, agreement that the number of desired children should be decided as a couple increased by 28 percentage points, and belief that family planning methods are meant to be used by both male and female partners increased by 14 percentage points. The proportions of men who identified a modern health facility as the best place for delivery and antenatal care also increased (by 9 and 10 percentage points, respectively). Although Ibrahim et al. reported that a behavioral intervention involving almanacs, a film

and interactive workshops was not associated with birth preparedness among married men in northern Nigeria, researchers did observe increased encouragement by men for their wives to attend an antenatal clinic—and men more often accompanying them.³⁵

DISCUSSION

The recent research on male involvement in reproductive health interventions in Sub-Saharan Africa shows that men are often willing participants and important partners who can support better health outcomes for women and families. When they are included in various reproductive health programs, they demonstrate improved retention of key messages and acquisition of behavioral skills, and they more frequently accompany women to clinic visits. Male involvement is therefore a feasible and effective strategy for increasing the use of family planning and maternal health services, enhancing spousal communication, changing harmful gender-based norms and reducing risky sexual behaviors. Increased male participation can promote and support women's health choices and encourage shared decision making. Considering the increasing emphasis on social determinants of health and extant gender inequality in developing countries, health care providers and program planners should be actively creating and sustaining initiatives to include men in the promotion of reproductive and women's health. In particular, our review found that involving men as intervention partners is important for reducing the spread of STIs. Men who participated in HIV and STI interventions had increased levels of safer sex self-efficacy and condom use, were more likely to be tested and had improved uptake of HIV counseling.^{33,38} These findings are especially pertinent in Sub-Saharan Africa, where evidence suggests that many women contract STIs, including HIV, within the context of their primary relationship.⁵⁷

The degree to which each of the reviewed interventions improved reproductive health depended on many factors, such as the number and types of interventions implemented, the implementation strategies, the quality of the implementation, the types of outcome indicators and the outcome measures. Our findings suggest that male involvement in reproductive health interventions can be achieved through home visitation by trained community health workers. This strategy expands health care coverage to people living in resource-constrained areas, which is especially important in Sub-Saharan Africa, where a large proportion of the population lives more than an hour away from a health facility.⁵⁸ The use of health workers, meanwhile, has demonstrated improved maternal health outcomes,^{59,60} especially in community-based participatory program models.⁴⁸

Peer-led education is widely recognized as a useful approach to communicating behavioral change—especially in addressing the HIV pandemic.⁶¹ In addition, local community and religious leaders are effective at promoting health strategies. Our research review shows that male leaders are willing to be advocates and change

agents, and to become involved in women's health issues. This finding is important especially in most Sub-Saharan nations, where social and cultural norms can mandate submissiveness from women and girls,^{62,63} resulting in gender-based power inequality that plays a role in sexual and reproductive health.⁶⁴ Therefore, involving men in reproductive health programs adapted to local community norms can reduce harmful gender norms, promote women's autonomy in terms of spousal communication and shared decision making, and enhance acceptance and use of reproductive health services.

Our review of the literature showed that mass-media campaigns were successfully used in interventions that involved and targeted men. One way to reach men using this strategy is to provide strong encouragement for women to share key health messages and information with their partners.

It is important to note that our findings suggest that men's involvement in interventions may not impact certain reproductive health indicators (e.g., birth preparedness) or widespread gender-based norms (i.e., equal decision-making power) in Sub-Saharan Africa. Interestingly, although several studies lacked significant findings regarding primary outcome measures,^{33,35} other measures—such as freedom to access care, increased spousal communication, and financial and emotional support—were found to have positive associations. Several confounding factors may not have been considered during the planning phase of these studies and may inhibit the outcome of similar, future interventions. These include men's relationship type (e.g., polygamous marriage), education, religion, and the wealth of individuals, families and the local community.

This review corroborates other calls for recognition of the importance of men's involvement in reproductive health, especially in developing nations,^{15,16,23–25} and reinforces reports that providing men with information on healthy maternal and reproductive health practices may encourage both men and women to adopt safer behaviors, increase use of services and support partners' choices.⁶⁵ Given the evidence that men's involvement in reproductive health programs contributes to positive health and social outcomes, health care providers, researchers and public health program planners concerned with reproductive health issues should consider creating and implementing intervention strategies aimed at enhancing the involvement of both men and women in such initiatives. Likewise, these findings should inform policy recommendations and programmatic planning to improve reproductive health in Sub-Saharan Africa and, potentially, in other low-resource regions.

Limitations

This study is subject to the inherent limitations of scoping review methodologies.⁶⁶ A widespread review of men's participation in reproductive health interventions in Sub-Saharan Africa is a difficult task because of the extensive background knowledge needed for collecting, studying

and classifying the numerous existing articles. Given our limited background, we chose to focus on a review of recent literature (i.e., published from 2007 to 2018). Despite our designing a comprehensive search strategy, a single author identified and retrieved papers for inclusion in the review; the search criteria excluded all studies published in languages other than English; and screening rejected those that did not evaluate an intervention for men—all of which may have resulted in our missing some relevant articles. Another potential limitation is our lack of a critical appraisal of the quality of included studies. Despite these limitations, to our knowledge, this is the first review to examine male participation in reproductive health interventions in Sub-Saharan Africa, and it therefore is an important contribution to the literature.

Conclusions

The findings of this review strongly support involving men in reproductive health interventions, programs and services in Sub-Saharan Africa, which may contribute to improved outcomes among women, men and families in the region. Reproductive health programs should consequently include comprehensive gender components and be context-specific to include men as allies and equal partners, rather than considering their presence a barrier to effective program delivery. Further research on male knowledge, attitudes, and involvement in reproductive health issues and interventions is warranted; assessments of specific mechanisms aimed at enhancing male participation in such initiatives would build evidence supporting their sustainability and expansion, and would contribute to the establishment of best practices. Future research would also support the promotion of sexual and reproductive health programs elsewhere in Africa and in developing nations—and, potentially, programs for related issues, such as cervical cancer prevention, poverty alleviation, and infant and child nutrition.

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RESUMEN

Contexto: A pesar de las mejoras observadas en los indicadores de salud reproductiva en las mujeres que viven en África subsahariana, la persistencia de malos resultados subraya la necesidad de examinar intervenciones recientes para sustentar futuras investigaciones, programas y políticas. Debido a que los hombres en este contexto tienen un papel enorme en la toma de decisiones reproductivas, evaluar su participación en los programas de salud reproductiva es un paso importante para responder a las necesidades de los hombres, apoyar la salud de las mujeres y mejorar la salud familiar.

Métodos: Se realizó una revisión de alcance para identificar bibliografía relevante y evaluar la evidencia del impacto

de la participación masculina en las intervenciones de salud reproductiva. Se realizaron búsquedas en siete bases de datos utilizando términos relacionados con la participación masculina y la salud reproductiva; las búsquedas se limitaron a investigaciones realizadas en África subsahariana y que fueron publicadas en inglés entre 2007 y 2018. Los estudios restantes se evaluaron según las características de los participantes, los entornos, el diseño de la investigación, los marcos teóricos, las medidas de resultado y los hallazgos.

Resultados: Las búsquedas identificaron 18 estudios conducidos en ocho países. Las intervenciones involucraron a los participantes mediante estrategias tales como la labor de trabajadores de salud comunitarios, invitaciones por escrito, interacción con pares, líderes comunitarios o religiosos y campañas en los medios. Los resultados muestran que los hombres están dispuestos a participar en programas de salud reproductiva y que su participación está asociada con una mayor aceptación de los servicios de planificación familiar, así como de consejería y pruebas de VIH, reducción de comportamientos de riesgo, y mejor salud materna y comunicación conyugal.

Conclusiones: Con base en los hallazgos que indican que la participación masculina se asocia positivamente con mejores resultados de salud reproductiva en el África subsahariana, los proveedores de servicios de salud y los planificadores de programas deberían considerar incluir a los hombres en las intervenciones de salud reproductiva cuando sea posible.

RÉSUMÉ

Contexte: Malgré l'amélioration des indicateurs de santé reproductive chez les femmes d'Afrique subsaharienne, la persistance de résultats défavorables souligne la nécessité d'examiner les interventions récentes en vue d'éclairer la recherche, la programmation et les politiques futures. Étant donné, dans ce contexte, l'immense rôle des hommes dans

les décisions ayant trait à la reproduction, l'évaluation de leur participation aux programmes de santé reproductive représente une étape importante en termes de réponse aux besoins des hommes, de soutien de la santé des femmes et d'amélioration de la santé des familles.

Méthodes: Un examen de portée a été effectué pour identifier la littérature pertinente et évaluer les signes de l'impact de la participation masculine aux interventions de santé reproductive. La recherche a été menée dans sept bases de données au moyen de termes associés à la participation masculine et à la santé reproductive; elle s'est limitée aux études effectuées en Afrique subsaharienne et publiées en anglais entre 2007 et 2018. Les études restantes ont été évaluées d'après les caractéristiques des participants, les contextes, le plan de recherche, les cadres théoriques, les mesures de résultat et les observations.

Résultats: La recherche a identifié 18 études menées dans huit pays. Les interventions engageaient les participants au moyen de stratégies recourant, notamment, aux agents de santé communautaire, aux invitations écrites, aux pairs, aux dirigeants communautaires ou religieux et aux campagnes médiatiques. Les résultats montrent que les hommes sont disposés à participer aux programmes de santé reproductive et que leur participation est associée à une adoption accrue des services de planification familiale et du conseil et dépistage du VIH, à la réduction des comportements à risques et à l'amélioration de la santé maternelle et de la communication au sein du couple.

Conclusions: Face au constat de l'association positive entre la participation masculine et l'amélioration des résultats de santé reproductive en Afrique subsaharienne, il convient que les prestataires de santé et les planificateurs de programmes incluent si possible les hommes dans les interventions de santé reproductive.

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