Interventions for male involvement in pregnancy and labour: A systematic review

By Elizabeth Ayebare, Enid Mwebaza, Joseph Mwizerwa, Elizabeth Namutebi, Alison Annet Kinengyere and Rebecca Smyth

Abstract

Male involvement in pregnancy and labour care has been shown to improve maternal and newborn outcomes. Nevertheless, it continues to be low, especially in low income countries. Several interventions have been suggested for supporting male involvement in reproductive health and maternity care, but no assessment has been made in terms of their effectiveness. The objective of this review was to summarise and evaluate the current evidence related to male partner involvement in maternal health. Three databases were searched electronically. This review included two randomised controlled trials and two observational studies. Two interventions emerged from the review: facility-based couple health education and workplace-based health education. These interventions showed positive outcomes regarding the presence of partners during antenatal visits, postpartum visits, childbirth, and the initiation of breastfeeding within one hour of birth among others. More rigorous research is needed into strategies for, and the effect of, including men in maternal and newborn health.

Keywords: **Male partner, involvement, Pregnancy, Labour, Childbirth, interventions**

In Uganda, as in most other African countries, family planning, pregnancy and childbirth have long been regarded as exclusively women's concerns. Men generally do not accompany their partners to family planning, antenatal or postnatal care services and are not expected to attend the labour or birth of their baby. Yet in patriarchal societies, men as heads of families have a big influence on women's health care experiences. In Uganda for example, only 23% of women made independent decisions about their health care (Uganda Bureau of Statistics (UBOS) and ICF International Inc, 2012). Making informed decisions about maternal health requires men to understand the importance of antenatal care, skilled birth attendance and birth preparation, and the risks associated with pregnancy (Holmes et al, 2013). In such communities, involving men in women's health care, especially in labour, is necessary to realise an improvement in maternal and newborn outcomes.

Studies in many countries have shown that involving men in reproductive health interventions can help improve outcomes. In Kenya, men's attendance at antenatal clinics increased their partner's chances of giving birth supported by a skilled birth attendant (Mangeni et al, 2013). Participation of male partners in labour and birth has also been associated with positive labour experiences, continuing support, increased bonding and support in subsequent pregnancies (Singh and Ram, 2009; Porrett et al, 2013). A study in Australia showed that men who perceived their participation in the labour and childbirth of their spouses as positive also perceived that their presence had been beneficial to the birthing mothers, regardless of whether the birth was vaginal or caesarean (Porrett et al, 2013). However, male involvement in labour and birth is still inadequate especially in low income countries. Some of the barriers to male involvement in reproductive health services include:

- Seeing this area as a woman's domain
- Female service providers
- Calling the services maternal and child health services
- Opening hours
- Lack of space for men
- Poor understanding of men's own needs for sexual and reproductive health.

In Busia, Kenya, male partners had negative views towards involvement in issues related to pregnancy and childbirth because they considered it a woman's affair and a natural phenomenon (Nanjala and Wamalwa, 2012). In a Malawian study, men described some of the procedures during labour as shameful, and found that observing their partner in pain while being unable to help as negative (Kululanga et al, 2012).

In order to improve birth outcomes and contribute to a reduction in maternal mortality in low income settings, a deeper understanding of male involvement is required.

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Therefore, this review aims to identify interventions to improve male partner involvement in pregnancy and labour care, and their effectiveness.

Methods

Search strategy

This systematic review was performed using established methodology (Higgins and Green, 2011). The English language medical literature published between January 1995 and August 2014 was searched using the Psychinfo, MEDLINE and CINAHL databases. The following search terms were used: male partner, men, husband, spouse, fathers, involvement or involving, participation, including, labour, childbirth, pregnancy, antenatal, maternity, and education, randomised trials.

Study selection

Studies meeting the following criteria were included:

- Observational study design or randomised controlled trials
- Interventions aimed at supporting male involvement in pregnancy, labour and birth
- The study reported either maternal or infant outcomes.

Studies on male involvement in prevention of mother-to-child transmission (PMTCT) only were excluded.

Data extraction and risk of bias assessment

The study selection and data extraction were performed independently by three of the authors (EA, JM and EN). Information extracted included:

- Setting
- Population
- Study design
- Intervention
- Results.

Quality assessment was also independently performed by two reviewers (EA and JM) using the assessment of risk of bias from the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins and Green, 2011). The following items were assessed:

- Sequence generation
- Allocation concealment
- Blinding
- Incomplete outcome data
- Selective outcome reporting
- Other methodological issues.

The risk of bias for each item was classified as low risk, high risk or unclear risk of bias.

Data synthesis

A narrative description of synthesised findings has been presented due to heterogeneity in study setting, levels of analysis and outcome variables in the included studies.

Results

Study characteristics

Table 1 summarises the results of the literature searches. From a total of 1053 titles, 12 were screened at full paper stage, and four considered eligible for the review.

Studies were conducted in South Africa (Kunene et al, 2004), India (Varkey et al, 2004), Nepal (Mullany et al, 2007) and Turkey (Sahip and Molzan Turan, 2007). Several study designs were employed including observational design (Varkey et al, 2004; Sahip and Molzan Turan, 2007), cluster randomised controlled trial (Kunene et al, 2004) and single randomised controlled trial (Mullany et al, 2007). All four studies looked at couples although the contact point was women during antenatal clinics, with the exception of one study which targeted men at their workplace. The studies comprised a total of 2544 men all together and 1996 women.

Facility-based couple health education/counselling interventions versus routine antenatal care

Three studies looked at facility-based health education/counselling for couples (Kunene et al, 2004; Varkey, et al, 2004; Mullany et al, 2007). In South Africa, male partners who had received couple counselling were more likely to offer assistance during labour than the control group (38% versus 33%). Male partner assistance in this case included taking the woman to hospital, arranging someone to take her, arranging transport to hospital and comforting the woman during labour. There was no difference in the percentage of men who comforted their partner in the intervention group (8%) and in the control group (8%) (Kunene et al, 2004). However, these findings were not checked for statistical significance. In India, 80.4% of men in the intervention as opposed to 66.1% in the control group reported being present nearby during labour and delivery (Z=3.42). This difference was statistically significant ($P<0.05$) (Varkey et al, 2004).

Maternal outcomes

Some of the outcomes considered as measures of intervention success were assistance of partners during antenatal, labour, and delivery; birth preparation and mutual decision making, especially for family planning. According to the Nepal study, women who received couple education were nearly twice as likely to make more than three child birth preparations than those who had no health education (OR=1.99 (1.10-3.59)). In Nepal, no significant difference existed between women in the intervention and those in the control regarding attendance of more than three antenatal care check-ups, delivering in a health institution or having a skilled provider at birth. The only difference was observed for the postpartum visit with a higher percentage in the intervention compared to the control (61 vs 47%, RR=1.29, 95% CI= 1.04, 1.60) (Mullany et al, 2007). In the Indian study, men in the intervention group were more involved during maternity events including antenatal counselling, examination, labour and delivery and family planning consultations (Varkey et al, 2004). Kunene and colleagues also reported higher partner assistance during emergencies (43% in the intervention group compared to 30% in the control group) (Kunene et al, 2004). However, the intervention group's use of family planning (88.5%) was lower than the control group's (89.1%) in South Africa. Whereas, Varkey and colleagues (2004) found out that more partners in the intervention group attended family planning counselling than those in the control group (33.6% versus 22.5%).

Table 1. Characteristics of included studies

Author and country	Objective(s) of the study	Study design	Intervention	Summary of results and risk of bias
Kunene et al (2004) South Africa	Men's willingness to accompany their partners to a couple-oriented programme during their antenatal and postpartum care Assessing whether the intervention was effective in increasing certain reproductive health parameters at 6 months postpartum Will the intervention be cost-effective, acceptable, and feasible in the public health service?	Cluster randomised controlled trial involving 12 clinics (six intervention and six control groups)	Two broad strategies: Improving antenatal care services by strengthening the existing antenatal package and service monitoring and supervision Introducing couple counselling, inviting partners of antenatal women to attend counselling twice during pregnancy and once post-delivery, and providing information to couples.	Outcomes: Higher percentage of partner assistance in intervention groups during: labour, emergencies and breastfeeding and immediate initiation of breastfeeding. The intervention groups showed slightly higher percentages for breastfeeding within 1 hour, currently breastfeeding at 6 months, mixed feeding by 6 months, baby alive at 6 months, miscarriage or abortion compared to control groups. Lower percentages were seen in the use of family planning, the number of still births and baby deaths within 6 months. Note: Comparative statistics were not computed. Risk of bias: Sequence generation: Unclear risk Allocation concealment: Unclear risk Blinding: Low risk Incomplete outcome reporting: Low Selective outcome reporting: Low risk
Mullany et al (2006) Urban Nepal health facilities	To evaluate the impact of including husbands in antenatal health education sessions on birth preparedness and maternal health care service use in urban Nepal	Randomised controlled trial with three arms. Group A husband and wife received health education together, Group B wife only received education Group C wife received no education (control)	Intervention consisted of two 35-minute sessions administered in the hospital with pregnant women and their husbands when applicable. A detailed health education flier for each session was given to people in the intervention group.	Maternal outcomes only: The couples intervention group were more likely to make >3 birth preparations (RR=1.99 (1.10, 3.59)), and attended post-partum visit (RR=1.29 (1.04, 1.60)) compared to the control group. There were no significant differences regarding making more than three antenatal clinic visits, delivering in health institution and attendance by skilled provider at birth among all the three groups. Another significant finding was the increased likelihood of attending the postpartum visit among couples compared to the women only intervention group (RR=1.25 (1.01, 1.54)) *P*=0.05 level of significance Risk of bias: Sequence generation: Low risk Allocation concealment: Unclear risk Blinding: High risk Incomplete outcome reporting: Low risk Selective outcome reporting: Unclear risk

Table 1. (Continued)

Author and country	Objective(s) of the study	Study design	Intervention	Summary of results and risk of bias
Varkey et al (2004) India	Assessing men's willingness to accompany their partners to a couple oriented programme during their antenatal and postnatal care. Evaluating the impact of men's participation on selected maternal and child health indicators.	Quasi-experimental design	Providers were trained to conduct brief counselling sessions. Women attending the antenatal clinic were asked if they would like their husband to be invited into the room during their consultation if yes, he would be invited. A poster reinforcing this message was displayed. Husbands not present were invited for the next visit by an invitation letter	Maternal outcomes Both men and women reported an increased likelihood of partners being present in the room during ANC (Women: 32.4% I Vs 15.6% C, Z= 4.21*; Men: 24.8% I Vs 33.8% C Z= 2.08*); Partner nearby during labour and delivery (Women: 30.7% I Vs 21.2% C, Z= 2.29*; Men: 80.4%I Vs 66.1% C, Z= 3.42*), Partner accompanied wife during postpartum visit (Women: 57.7% I Vs 47.2% C Z=2.1*; Men: 43.9% I Vs 59.2% C, Z= 3.16*) and use of family planning at 6 months (women: 58.5% I Vs 45% C, Z= 2.70*; Men: 64.5% I Vs 47.8% C, Z= 3.39*). Women in the intervention group also showed an increased likelihood of breastfeeding within one hour (63.1%I Vs 47.3% C Z= 3.28*) and mixed feeding at 6 months (75.5% I Vs 51.4% C, Z= 5.20*) There was no significant differences in partner accompanying the wife for either ANC or the child's index immunization. Note: Level of significance p<0.05 *—significant finding I—intervention group, C—control group. Only percentages and Z statistics were used Risk of bias Sequence generation: High risk Allocation concealment: Unclear risk Blinding: High risk Incomplete outcome reporting: Low risk Selective outcome reporting: Low risk
Sahip and Turan (2007) Urban area Turkey	The intervention aimed to measure the impact of the training programme on reproductive health behaviour, including the use of preventive health services for the mother and infant, exclusive breastfeeding, and contraception, as well as on men's supportive behaviour.	Longitudinal control study with qualitative data from focus groups with the partners of some of the participating men.	Six physicians were trained as educators for the expectant fathers' programme. They ran the programme at their own workplaces with the assistance of master trainers. The programme for expectant fathers consisted of six sessions, each session lasting 3–4 hours. At the end participants received a certificate of their status as a 'trained father'.	Outcomes: Interview with men at three months showed: Men in the intervention workplaces were more likely to; accompany their wives on more than 50% of antenatal visits (OR=3·0, 1·3–6·8), be supportive of good pregnancy nutrition (OR=9·0, 2·0–40·8), make preparations for the birth (OR=24·3, 10·6–55·6) and deciding together with their wife about infant feeding (OR=22·8, 6·4–75·9). The intervention group also were breastfeeding within 1 hour of birth (OR=2·4, 1·2–4·6) and still exclusively breastfeeding at 3 months (OR=3·4, 1·7–6·8). No significant differences between groups were found for feeling anxious before the birth, getting a vaginal or caesarean birth, wife attending postpartum check-up, use of a family planning method at 3 months and deciding together with wife about family planning Note: Level of significance at *P*<0.01 Risk of bias Sequence generation: High risk Allocation concealment: Unclear risk Blinding: High risk Incomplete outcome reporting: Low risk Selective outcome reporting: Low risk

Newborn outcomes

Mullany and colleagues (2007) did not look at neonatal outcomes. In South Africa, initiation of breastfeeding immediately and within the first one hour was higher in the intervention group than in the control group (66% and 17% versus 63% and 16%, respectively) (Kunene et al, 2007). On the contrary, mixed feeding at 6 weeks was higher in the intervention group (95%) than in the control group (94%). Varkey et al (2004) did not find any significant differences in breastfeeding practices between the intervention and control groups. More women in the control group (48.6%) than in the intervention group (24.5%) continued exclusive breastfeeding until 6 months. It was also noted that in both groups, the majority of husbands escorted their wives for the baby's index immunisation (Varkey et al, 2004).

Workplace-based male childbirth education versus no education for male involvement during pregnancy, labour and childbirth.

This intervention was used in one study conducted by Sahip and Turan (2007). However, the study did not look at the presence of the male partner with the woman during pregnancy and childbirth.

Maternal outcomes

In Turkey, men who attended childbirth education sessions were more likely to perform child birth preparations than those who did not (OR=24.3 (10.6-55.6)). Antenatal attendance of more than 50% was significantly increased in the childbirth education group (OR=3.0 (1.3-6.8)). The men in the intervention group were also supportive of good nutrition during pregnancy (OR=9.0 (2.0-40.8)). Another outcome that improved by childbirth education was mutual decision making concerning infant feeding.

However, certain outcomes were not affected by the intervention, such as: anxiety before birth, vaginal or caesarean section birth, postnatal check-up for the mother, mutual decision making and the use of a family planning method at 3 months.

Newborn outcomes

Babies whose fathers had attended the childbirth education were more likely to breastfeed within the first hour of birth (OR=2.4, (1.2-4.6)) and to be exclusively breastfed for the first 3 months.

Invitation letters as part of the facility-based health education intervention

Two of the included studies also used invitation letters to the husbands/partners (Kunene et al, 2004; Varkey et al, 2004); women were asked to invite their husbands using the invitation letters. In both studies however, the effect of using the invitation letters was not independently assessed.

Discussion

The studies included in the review, although not easy to compare due to differences in interventions employed and analysis, show some positive effects of male involvement. Interventions were seen to improve childbirth preparations, couples' mutual decision making, antenatal attendance, initiation of breastfeeding within 1 hour of birth, and presence of the male partner during antenatal visits, birth and postpartum visits. This has been seen in other studies where involvement of men by giving information either in a group or by peer educators increased men's positive involvement in sexual, reproductive, maternal and child health (Peacock and Levack, 2004; Kululanga et al, 2011). In the reviewed studies, participation in activities related to labour and childbirth such as the decision to use family planning, postpartum check-up and child immunisation were higher in the intervention group.

This review further highlights that some parameters such as continued exclusive breastfeeding, skilled birth attendance, and partner's encouragement of breastfeeding were not improved by the interventions for male involvement in the included studies. The articles reviewed in this study attribute this to cultural practices.

Male involvement in pregnancy and labour falls within a broad definition of involvement in sexual and reproductive health. Studies included in this review used several parameters to describe male involvement and therefore our main outcome of interest was not clearly specified in these studies. Although male involvement has been extensively studied (Byamugisha et al, 2011; Mukombi, 2012), lack of definition for male involvement in PMTCT is still a challenge. An unpublished qualitative study by Mukombi (2012) has attempted to describe this concept albeit using qualitative methods. A study to assess perceptions, practices and experiences of men whose partners developed complications showed that men believe that an ideal father should support their wife although they felt that they had no clear role during labour and childbirth (Kaye et al, 2014). More rigorous studies therefore are needed to clarify the concept. A definition specific for male involvement in pregnancy and childbirth in Uganda and other African countries where the context does not permit partner's presence with the wife during labour is yet to be coined.

This review did not manage to establish which of the interventions are effective for male partner involvement due to the differences in the studies' main outcomes and the levels of analysis.

Limitations

Several limitations of this review are worth noting here. First, many of the studies discussed here did not describe the male involvement strategies employed in great detail. It is therefore not possible to compare the effectiveness of different types of strategies. Second, many intervention programmes included multiple components and evaluated several outcomes not included in this review such as prevention of STIs, family planning, HIV prevention and others making it impossible to determine the relative effectiveness of specific outcomes of interest for this review. Third, many intervention programmes that engage men in services that can positively impact maternal and newborn health will not identify themselves as 'male involvement' interventions. Therefore, our search terms may have missed some studies that include men. Fourth, all of the studies

Key Points

- Two interventions emerged: facility-based couple health education and workplace-based health education
- Male involvement was seen to improve presence of partners during antenatal visits, postpartum visits, childbirth, and the initiation of breastfeeding within one hour of birth among others
- More research into interventions for male involvement and their effectiveness is needed

From left to right: Front row—Liz Ayebare, Joseph Mwizerwa, Elizabeth Namutebi
Back row—Rebecca Smyth, Enid Mwebaza

included were published in English and so our review excludes evidence published in other languages.

Conclusions

Engaging men in efforts to support the health of mothers and newborns can yield significant health benefits for mothers and newborns. Programme examples discussed here provide general principles for effectively engaging men in different settings. Finally, while more rigorous research is needed into strategies for, and the effects of including men in maternal and newborn health, this should not preclude action. Male involvement in pregnancy, labour and childbirth should therefore be encouraged until sufficient evidence to change practice is obtained. **AJM**

Conflict of interest: *The authors declare no conflict of interest.*

Acknowledgment*: We would like to thank the Department for International Development (DFID) for funding this project through the Tropical Health Education Trust.*

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