

The role of men participation in the promotion of prenatal care: A review article

Seideh Hanieh Alamolhoda¹, Parvaneh Mirabi^{1,*}

¹ Midwifery and Reproductive Health Research Center, Department of Midwifery and Reproductive Health, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

² Infertility and Reproductive Health Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran

Received: 11 Oct 2023 Accepted: 20 Dec 2023

Abstract

Background: The male involvement in the prenatal care to reduce maternal and neonatal mortality rate. The aim of the present review study was to instigate the role of male involvement in the promotion of the prenatal care.

Methods: In this review study, all articles published during the years 2008-2018 had full text were searched using men participation, men involvement, men role, prenatal care, and prenatal care promotion keywords in Scopus, Cochrane, PubMed, Google scholar, and science direct databases. A total of 31 articles included in the study after a primary investigation and a search based on the list of references.

Results: Investigations show that the male engagement in the prenatal care had a positive effect on the promotion of such care. Studies showed that shrinking and smaller family size and increased women's expectations are among reasons showing the necessity of male involvement in the prenatal care.

Conclusion: Considering the dominant role of men in different aspects of women's life and positive effects of such involvement on the women's health status.

Keywords: Female, Male, Prenatal care, Pregnancy, Health promotion

Introduction

Male involvement is one the most important factors in promoting women's health and their fertility and sexual health (1). Unfortunately, little attention has been paid to the men's role in the fertility health and prenatal care programs though (2-4). International Conference on Population and Development (ICPD) regards male involvement as an important component and states that health programs should adopt a couple-focused approach and persuade men to fulfill their responsibilities (4-7). Because men can be the influential individuals in the promotion of fertility health programs and play a role in promoting the maternal and neonatal health status (8, 9).

Clinical findings demonstrate successful implementation of repetitive GnRH-a administrations for secure and efficient luteal support, resulting in

elevated Luteinizing hormone (LH) and progesterone levels throughout the stimulation period. Furthermore, recent reports showcase improvements in clinical pregnancy rates and reduced occurrences of severe complications such as ovarian hyperstimulation syndrome (OHSS) through GnRH-a utilization (8).

According to ICPD, the male involvement concept means to accompany spouses while receiving prenatal care, engagement in household chores, and provision of health recommendation to the pregnant women (1, 6). In fact, men's participation involves their responsibility in promoting their spouses' reproductive health and supporting them in the face of prenatal difficulties and paving the way for them, assuming responsibility towards sexual health, childbearing,

*Correspondence author: Parvaneh Mirabi, Infertility and reproductive health research center. Health Research Institute. Babol University of

children's nutrition and upbringing, the use of contraceptive methods, and other supports (9).

Many WHO member states regard promotion of male involvement as a priority in their reproductive health programs in order to promote the women's health, reduce mortality rate among women and children, and reduce inequalities (8-10). The male involvement in pregnancy and childbirth has increased during the prenatal period in western countries (11).

The United Nations Population Fund (UNFPA) declared in 2009 that considering significant evidence regarding benefits of male involvement, such involvement in pregnancy and childbirth has not been effectively increased at the global level (3). So far, studies on the male involvement at the global level, focused on issues such as family planning, sexually transmitted diseases, acquired immunodeficiency syndrome (AIDS), and other aspects of women's health, including pregnancy and childbirth were set to the margins (12, 13).

Therefore, it seems essential to obtain more comprehensive and accurate information in this regard (13-15). There are still many challenges regarding the male role in the family, particularly during the pregnancy (9). The presumption of policies set forth by international institutions regarding the male involvement during the pregnancy is based on the effectiveness of such involvement in the promotion of women's health and well-being. In this period, considering the need to obtain information about men's involvement in the prenatal care and their attitude towards such role, the researcher carried out the present review study to determine the role of men in promoting the prenatal care.

Materials & Methods

In the present review study, Cochrane PubMed, Google scholar, Scopus, Science direct databases were searched using keywords of men participation, men involvement, men's role, prenatal care, and prenatal care promotion based on advanced search strategies and operators proportional to each database between 2008 and 2018. Inclusion criteria include all full-text any language articles that had been carried using analytical and qualitative approaches and had investigated the male involvement during the pregnancy of their wives. Initially, a total of 4,186 articles were extracted and finally 31 articles included

and reviewed in the present study after excluding the unrelated studies, clinical trials, article abstracts, posters, letters to editors, and studies published in languages other than English as well as exclusion of duplicate articles.

Results

Out of 31 studies reviewed, 12 studies were carried out based on an analytical approach and 19 studies using a qualitative approach. Findings are expressed as follows:

The role of men in prenatal care: Results showed that men's involvement in the prenatal care is not common in many countries (10) or they are indirectly involved in this regard. There are two viewpoints regarding men's role in pregnancy-related events; according to the first viewpoint, men regard pregnancy and childbirth as an exclusively women's experience thus regard their role as weak and themselves as the second individuals who play no significant role during pregnancy and childbirth. However, based on the second viewpoint, men regard pregnancy as a critical time period for couple's interaction and talk and believe that men play a vital role in making pregnancy an enjoyable period in promoting women's health status (16).

Previous studies on men's role played in prenatal care showed that men regard pregnancy and prenatal care as women's responsibilities (17-20). In a study also showed that although men understood the importance of prenatal care, they had no active participation in providing such care (12).

Iliyasu et al. stated in a study that 17% of men didn't attend the hospital when their wives were admitted to the hospital and 25% of them also showed little cooperation and weak role in prenatal care. Moreover, lack of participation in household chores was reported in 33% of cases, which indicated a relatively low rate (6). Ganle and Dery showed in a study that less than one fourth of men participated in prenatal care (21). However, majority of women stated that their husbands play an active role in this period, especially when they are at home (4). Barona and et al. stated in a study that the male involvement in prenatal care and childbirth was 59% and 43%, respectively (22). However, Mc Mahan and et al. reported that 67% of men participated in pregnancy and childbirth only in the case of emergency situations and 58% of them

participated in childbirth preparation classes (23). Kakaire and et al. showed in his review that 17% of men avoid their wives of hard tasks during pregnancy and 60% of women stated that men were main decision-makers for receipt of prenatal care. Moreover, 7% of women were waiting for their husbands even under emergency situations and 8% of men also believed that women should wait for their husbands to carry out interventions under any circumstances (16).

Women's viewpoint regarding the role of male involvement in prenatal care: Investigations showed that there are different views among women regarding male involvement concept in various societies so that majority of women, in Simbar et al.' study's referred to mental support as the main concept of participation in prenatal care. However, women regarded participation in house chores as the most common role played by men in prenatal care (4).

From the view of women, men's role was reported to be financing, showing affection and love, transporting of wives to hospital, and ensuring maternal health; however, in total, financial support was regarded as the most important form of participation (16). Singh's survey showed that women have different descriptions of men's role and participation and regard it as their responsibility and commitment towards their wives. Moreover, they believed that participation means support for women during pregnancy and childbirth in a way that they are available at all times under any circumstances and be next to their wives timely and understand their wives' conditions (17).

Companing wife to the clinic and be awaiting is a kind of participation from the view point of majority of women. They also believed that information provided by health service providers must be designed for couple so that they can make decision about pregnancy and related issues (18). From the women's perspective, male participation was expressed as assistance with house chores, allowing the pregnant mother to rest, financial support, and showing affection (19).

Reasons for necessity of male participation in prenatal care: According to findings of previous studies, reasons for necessity of male participation are summarized as the following:

-The need to become a father: Becoming a father is a gradual process and begins before pregnancy with childbearing decisions and relevant practical measures. Similar to women, men need psychological and mental support in this period and psychological and mental problems are also seen in men in this period (12, 18). Participating men in prenatal care can reduce these tension and psychological and mental problems to a large extent and help men in assuming their parental

responsibility and accepting their paternal role (9, 24-26).

-Positive effective on promoting the women's health: One-third of annual mortality rates occurring among women is due to lack of sufficient care during pregnancy (6-8). Prenatal care is an appropriate time to pay attention to mothers (1). Men can play a major role in maintaining and promoting the women's health during the prenatal and postnatal periods by attending the childbirth preparation classes and prenatal and postnatal periods as well as playing the role of a responsible father in the family (4).

-Couple's views on men's role and participation in prenatal care: It can be said that majority of men and women hold a positive view about male participation in prenatal care (6, 22). Tweheyo and Weldearegar reported that couple held a positive view about male participation in the prenatal care in 86% and 91% of cases, respectively (24, 25). Previous studies have shown that accompanying pregnant women in the labor room by men is accepted by majority of women and half of men as a type of male participation (26). Sapkota reported in a study that 89% of men were aware of their wives' problems that is indicative of their interest in the reproductive health of their wives (27). In this regard, health service providers also witness the eager and interest of men in pregnancy-related issues, especially hearing the heartbeat of the fetus (28). Auvinen et al. stated that although men didn't know their reason and participation in the prenatal care, majority of agreed over their participation and stated that if they are asked for their participation, they would certainly do it. They even expected to be notified in certain cases (18).

- Lifestyle changes, nuclear, and small households: One of the other reasons that necessitate male participation in the prenatal care includes lifestyle changes and nuclear households (14, 19, and 11). Today, considering growing migration rates and increasing couples who are away from their family, women are alone in the pregnancy and childbirth periods as well as child upbringing, which in turn increases women's their husbands' support and participation in these periods and obliges men to participate in this process (11,17).

-The need to provide support and show affection to women: The is need to sometimes show love directly and explicitly and is sometimes expressed as a need to more attention and affection specially shown to the wife and not the child by the husband; so that from the women's views men should reduce their expectations in these periods and accompany then in all stages because women regard it as sign of love and support (19). Previous studies have shown that 87% of women regard men's participation as a factor satisfying their emotional needs and 91% of them regard their husband's presence as a factor reducing their stress (20). Today, women expect their husband to participate

in all stages of pregnancy and childbirth and support her (27, 29,30). They view their husband's presence in the prenatal care, especially hours before the childbirth and first few hours after delivery as essential and as a sign of affection and appreciation (22, 31). Most of health service providers regard them men's participation and presence in the prenatal care as a factor facilitating caring, doing sonographies, and tests by pregnant women (28).

Barriers to male participation in prenatal care: These barriers include individual, family, economic, cultural factors, and those related to the health system that is referred to below:

-Individual barriers: These factors may arise due to men's lack of awareness about the events occurring during pregnancy and childbirth because although majority of men know about mothers' need to mental support and accompany in all stages of pregnancy and childbirth, majority of them lack sufficient awareness about pregnancy, child upbringing, and their responsibility in this area (4, 17, 32), which lead to disbelief of pregnancy problems and consequently avoid supporting wives (33, 34). On the other hand, the negative view hold by women about male participation is considered as a barrier to their participation (14, 35). Due to having certain thoughts in some societies and fearing of some customs, women prevent men's participation in prenatal care (35). Other female factors include issues such as shyness and discomfort at time of their husbands' presence. Majority of women express shyness and discomfort when their husbands see the childbirth stages (14).

-Family barriers: Support for women on the part of their mothers is one of the barriers to male participation in these cares so that young women believe that it is essential to receive support and sufficient information from their mothers during pregnancy; which in turn cause pregnant women to rely on their mother and deny the responsibility from their husbands (11, 14). According to men's statement, their wives receive sufficient support from their mothers, which in turn cause women to less frequently feel the need to their husbands, and the men also feel that there is no need to them any longer (6, 17). Another family barrier to male participation includes inappropriate spousal relationship (17). Type of family upbringing is also another important barrier to male participation (14). According to women's view, if the men have observed participatory behaviors from their fathers,

they would have learnt how to treat their wives (2), easily accept their role; otherwise, men would not accept helping accompanying women (14, 16).

-Economic and occupational barriers: Both men and women regard busy work schedule as another barriers to participation (24, 33). May et al. referred to busy work schedule as a barrier to participation and majority of samples agreed with the fact that men take off during pregnancy (9). According to findings of Upadhyay et al.'s study, the participation level was directly related with a low economy situation. According to Iliyasu et al.'s study, 67% of men referred to busy work schedule as one reason for lack of participation (6). However, Abuhay et al. found no difference between the busy work schedule rate of men who attended healthcare centers and those who were absent (36).

-Sociocultural barriers: Majority of women and men acknowledged that sociocultural issues in some strata and families are still a barrier to male participation (4). Customs are among important factors that prevent men from participating and accompanying in prenatal and intra partum care and put this responsibility on the shoulders of other family members (11, 37). Traditionally, men have learnt that these affairs are totally women's affairs, in which they should involve and participate; which in turn have frightened men from being present in prenatal care (17). In some and societies and cultures, men aren't allowed to see their wife and child until 10 days postpartum (9). Patriarchy in developing countries, have caused men to think that prenatal and childbirth periods are uniquely a women's affair and men's participation in these periods is beyond their dignity and personality (37). Some men believe that participation in these affairs is a social stigma and create the ground for being mocked and blamed by others (9, 38). They also regard this issue as a tool used by woman to dominate her husband (23, 38, 39). According to men's statement, social issues are more effective in their participation as compared to economic issues (9).

-Barriers related to health service systems: Findings showed that this factor may be due to environment and facilities of health centers or behaviors and attitude of health service providers. Negligence of men in health service systems and lack of parent training programs for fathers are among barriers to the promotion of male participation in prenatal care (40, 41). Men are usually kept at the margin of care provided to mothers and

have no access to information helps them make informed decisions, protect, and promote their health and that of their spouse (19, 41, 42). His feminine environment of the centers and absence of trained male staffs are among other reasons. Lack of admitting men on the part of health centers and installing no men allowed sign is a barrier to male participation (16, 17). From the view of health service providers, shortage of space, especially in the labor, is a serious barrier to lack of cooperation with men (27, 28). On the other hand, inappropriate treatment and the negative attitude of health service providers are considered among the important barriers to male participation (18, 33, 43). From the view of health service providers, shortage of human sources in Iranian centers is itself considered as a major barrier (33).

Facilitators of male participation: One of facilitators of male participation in prenatal care is interaction and relationship between couples and men who had a strong and bilateral relationship had a higher and more active participation in prenatal care and usually participates as a companion in pregnancy classes (26). Studies have shown that men's age and level of education affect their attitude and performance (17, 22, and 43). Level of education and economic status of women are other cases that attract more support from men (45, 41). However, the role of religion and customs must not be neglected (4). For men to have paternal claims in some areas, they must but their child's umbilical cord and be next to their wife during childbirth (11).

Investigations have shown that level of education, job, level of income, access to media, number of living children, duration of marriage, motivation, having an appropriate environment in health centers, and positive attitudes of health service providers are among facilitators of male participation (15, 28). Another facilitator is wanted pregnancy (46).

Davis et al. referred to increasing age of men, positive attitude of women, frequency of pregnancies, level of training and information of men, and desire and enthusiasm as facilitators of male participation (6). Mackert et al. showed in their study that majority of men use internet applications and mobile software to receive information pregnancy and this issue has not been related with their health literacy (41). Hartmann et al. referred to the role of health service providers in proving necessary information to men, especially those

that are actively involved in these affairs as an important factor (47).

Consequences of male participation: Reviewing previous studies shows that male participation in prenatal care has useful effects such consolidation of marital relationships, achieving a better understanding of problems related to pregnancy and childbirth, reduction of pregnancy complications and labor pain, an increase in men's level of responsibility, positive effects on child's health status, and frequent healthy behaviors on the part of women. Both couples had agreed with the effect of father's presence on the consolidation of marital relationships (25, 38, and 42).

Reviewing previous studies shows that male participation in prenatal care has useful effects such consolidation of marital relationships, achieving a better understanding of problems related to pregnancy and childbirth, reduction of pregnancy complications and labor pain, an increase in men's level of responsibility, positive effects on child's health status, and frequent healthy behaviors on the part of women. Both couples had agreed with the effect of father's presence on the consolidation of marital relationships (25, 38, and 42).

Those men who participate in prenatal care, provide mental and psychological supports to their spouse and pave the way for reducing anxiety, pain, and fatigue during pregnancy and childbirth (48). Abuhay et al. stated that those women that had benefited from male participation during pregnancy had higher satisfaction with their husbands' participation in child care and preparation of an appropriate diet to support breastfeeding, as compared to those women whose husbands didn't participate in these care (35). The male participation in cares related to mother and child provide health service providers with new opportunities to help future fathers with their own health and that of their wives by training them (48).

Studies are also indicative of the fact that the male participation leads to an improvement in their healthy behaviors such as reduction in cigarette and alcohol consumption (17, 46), and better and faster acceptance of their paternal responsibilities (49). Williams et al. showed in their study that women who benefit from men's participation in prenatal care used such care and quitted cigarette consumption 4.9% and 40% respectively, then those women whose husbands didn't participate (50). Other benefits of male participation in

in the care of pregnant mothers include reduction of infants with low birth weight, and reduction in maternal and neonatal mortality rate (29), and establishment of stronger father-child relationship, an increase in language learning skills, academic achievement of children, and improvement in breastfeeding rate (46).

Strategies for increasing and promoting male participation in prenatal care: Results indicate that majority of women and men regard training of men's participation in prenatal care as necessary (42, 29) and referred to face to face training as the best training type, healthcare centers as the best place, and evenings and holidays as the best time. Pre-marriage classes have also been the best time to start such training (47). Majority of couples regard cultural measures, especially those taken via media, and playing educational videos as useful and some emphasize the need to hold training classes at school and in universities (31). Four main strategies in three domains of health service providers, family level, and society level were extracted in Ditekemena et al.'s study. The domain of health service providers is divided in two subgroups; the first one is initiatives of health service providers such as faster caring of women who referred with their husband to receive care; the second subgroup was notification of the sexual partner, especially in the case of a certain case.

At the family level, couples' initiative is the most appropriate method. At the society level, men's support is attracted through the use of peering training and experiences of other men, increasing the people sensitivity by making the society leaders aware about problems related to women's health (33). Legislation of rules on the part of governments can be an important strategy to provide support to women during pregnancy (50) so that "family-friendly and "couple-friendly "terms are used instead of "mother- child friendly " services in some countries (30, 34).

Discussion

Pregnancy is one of important and critical periods in the women's life and women's physical, mental, and psychological health in this period significantly affect the fetal health and success of normal delivery and breastfeeding. Moreover, the supporting women during the pregnancy by their husband's and their participation during the childbirth processes can be helpful in this

regard. However, although there is abundant evidence on its benefits, it is not promoted well yet (6). To facilitate the male participation, men should be provided with necessary information and training on the pregnancy and childbirth periods so that they can take informed steps towards participation (12).

Today, men have very little participation in prenatal care that is deeply rooted in their customs, traditions, and habits (37, 51). A change in policies for managing healthcare centers is the first step in providing couple-friendly services (45). Strategic planning is currently designed and implemented to promote male participation from adolescence at schools in many countries of the world (43). However, there is no doubt that pregnancy-specific issues should be discussed primarily in pre-marriage classes and in details in childbirth classes (28). It should be noted that the sole participation in prenatal care and receiving the training don't guarantee an increase spousal support and participation during pregnancy; rather changing men's views, attitudes, and behaviors requires more comprehensive investigations and providing training to health service providers on male participation should be taken into account as an essential task in the meantime (31). Male participation promotion programs should overcome common barriers such as lack of information about men's view, having a feeling about not having a position in the service system, absence of trained male staffs and family-friendly clinics, and appropriate hours (35).

Conclusion

Overall, it can be concluded that it is recommended to use evidence-based programs to ensure the success of interventional programs designed for the prenatal care. Moreover, care should be provided in a client-oriented, assessable, and affordable manner with effective communication strategies and skilled trained staffs. The male training programs should be matched with the men's need in the health and hospital service system and supported and advertised at the national level. Moreover, since male participation in the women's health, especially in our country is a new topic, there is a need to carry out researches on different aspects of male participation in the field of reproductive health and care during pregnancy and childbirth.

Competing interests

None declared.

References

- Thapa DK, Niehof A. Women's autonomy and husbands' involvement in maternal health care in Nepal. *Soc Sci Med* 2013; 93: 1-10.
- United Nations Staff. Millennium Development Goals Report 2009 (Includes the 2009 Progress Chart. United Nations Publications; 2009.
- Yargawa J, Leonardi-Bee J. Male involvement and maternal health outcomes: systematic review and meta-analysis. *J Epidemiol Community Health* 2015; 69(6):604-12.
- Simbar M, Nahidi F, Ramezani-Tehrani F, Akbarzadeh A. Educational needs assessment for men's participation in perinatal care. *East Mediterr Health J* 2011; 17(9):689-96.
- Upadhyay UD, Gipson JD, Withers M, et al. Women's empowerment and fertility: a review of the literature. *Soc Sci Med* 2014; 115: 111-20.
- Iliyasu Z, Abubakar IS, Galadanci HS, Aliyu MH. Birth preparedness, complication readiness and fathers' participation in maternity care in a northern Nigerian community. *Afr J Reprod Health* 2010; 14(1): 21-32.
- Rudrum S. Traditional Birth Attendants in Rural Northern Uganda: Policy, Practice, and Ethics. *Health Care Women Int* 2016; 37(2): 250-69.
- Kabagenyi A, Jennings L, Reid A, et al. Barriers to male involvement in contraceptive uptake and reproductive health services: a qualitative study of men and women's perceptions in two rural districts in Uganda. *Reprod Health* 2014; 11(1): 21.
- May C, Fletcher R. Preparing fathers for the transition to parenthood: recommendations for the content of antenatal education. *Midwifery* 2013; 29(5): 474-8.
- Sipsma H, Ofori-Atta A, Canavan M, Udry C, Bradley E. Empowerment and use of antenatal care among women in Ghana: a cross-sectional study. *BMC Pregnancy Childbirth* 2014; 14: 364.
- Froozanfar S, Majlessi F, RAHIMI FA, Pourreza A. Assesment of the relationship between empowerment and reproductive behavior. *Daneshvar Med* 2012; 18 (99).
- Jennings L, Na M, Cherewick M, et al. Women's empowerment and male involvement in antenatal care: analyses of Demographic and Health Surveys (DHS) in selected African countries. *BMC Pregnancy Childbirth* 2014; 14: 297.
- García-Moreno C, Hegarty K, d'Oliveira AF, et al. The health-systems response to violence against women. *Lancet* 2015; 385(9977): 1567-79
- Kululanga LI, Sundby J, Malata A, Chirwa E. Male involvement in maternity health care in Malawi. *Afr J Reprod Health* 2012; 16(1): 145-57.
- Kwambai TK, Dellicour S, Desai M, et al. Perspectives of men on antenatal and delivery care service utilisation in rural western Kenya: a qualitative study. *BMC Pregnancy Childbirth* 2013; 13: 134.
- Kakaire O, Kaye DK, Osinde MO. Male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. *Reprod Health* 2011; 8: 12.
- Singh D, Lample M, Earnest J. The involvement of men in maternal health care: cross-sectional, pilot case studies from Maligita and Kibibi, Uganda. *Reprod Health* 2014; 11: 68.
- Auvinen J, Kylmä J, Välimäki M, Bweupe M, Suominen T. Barriers and resources to PMTCT of HIV: Luba-Kasai men's perspective in Lusaka, Zambia. *J Assoc Nurses AIDS Care* 2013; 24(6): 554-568.
- Alio AP, Lewis CA, Scarborough K, Harris K, Fiscella K. A community perspective on the role of fathers during pregnancy: a qualitative study. *BMC Pregnancy Childbirth* 2013; 13: 60.
- Story WT, Burgard SA, Lori JR, Taleb F, Ali NA, Hoque DM. Husbands' involvement in delivery care utilization in rural Bangladesh: A qualitative study. *BMC Pregnancy Childbirth* 2012; 12: 28.
- Ganle JK, Dery I. 'What men don't know can hurt women's health': a qualitative study of the barriers to and opportunities for men's involvement in maternal healthcare in Ghana. *Reprod Health* 2015; 12: 93.
- Barona-Vilar C, Más-Pons R, Fullana-Montoro A, et al. Perceptions and experiences of parenthood and maternal health care among Latin American women living in Spain: a qualitative study. *Midwifery* 2013; 29(4): 332-7.
- McMahon SA, George AS, Chebet JJ, Mosha IH, Mpembeni RN, Winch PJ. Experiences of and

- responses to disrespectful maternity care and abuse during childbirth; a qualitative study with women and men in Morogoro Region, Tanzania. *BMC Pregnancy Childbirth* 2014; 14: 268.
24. Tweheyo R, Konde-Lule J, Tumwesigye NM, Sekandi JN. Male partner attendance of skilled antenatal care in peri-urban Gulu district, Northern Uganda. *BMC Pregnancy Childbirth* 2010; 10: 53.
 25. Weldearegay, H.G., 2015. Determinant factors of male involvement in birth preparedness and complication readiness at Mekelle town; a community based study. *Sci J Public Health* 2015; 3(2): 175-180.
 26. Rosliza, A.M. and Majdah, M., 2010. Male participation and sharing of responsibility in strengthening family planning activities in Malaysia. *Malaysia J Public Health Med* 2010; 10(1): 23-27.
 27. Sapkota S, Kobayashi T, Takase M. Husbands' experiences of supporting their wives during childbirth in Nepal. *Midwifery* 2012; 28(1): 45-51.
 28. Novick G. Women's experience of prenatal care: an integrative review. *J Midwifery Womens Health* 2009; 54(3): 226-37.
 29. Longworth HL, Kingdon CK. Fathers in the birth room: what are they expecting and experiencing? A phenomenological study. *Midwifery* 2011; 27(5): 588-94.
 30. Titaley CR, Dibley MJ, Roberts CL. Factors associated with underutilization of antenatal care services in Indonesia: results of Indonesia Demographic and Health Survey 2002/2003 and 2007. *BMC Public Health* 2010; 10:485.
 31. Acharya DR, Bell JS, Simkhada P, van Teijlingen ER, Regmi PR. Women's autonomy in household decision-making: a demographic study in Nepal. *Reprod Health* 2010; 7: 15.
 32. Bhatta DN. Involvement of males in antenatal care, birth preparedness, exclusive breast feeding and immunizations for children in Kathmandu, Nepal. *BMC Pregnancy Childbirth* 2013; 13: 14.
 33. Ditekemena J, Koole O, Engmann C, Matendo R, Tshefu A, Ryder R, Colebunders R. Determinants of male involvement in maternal and child health services in sub-Saharan Africa: a review. *Reprod Health* 2012; 9: 32
 34. Falnes EF, Moland KM, Tylleskär T, de Paoli MM, Msuya SE, Engebretsen IM. "It is her responsibility": partner involvement in prevention of mother to child transmission of HIV programmes, northern Tanzania. *J Int AIDS Soc* 2011; 14: 21.
 35. Abuhay, Y., Abebe, L. and Fentahun, N., 2014. Male involvement in prevention of mother to child transmission of HIV and associated factors among males in Addis Ababa, Ethiopia. *Am J Health Res* 2014; 2(6): 338-343.
 36. Johansson M, Fenwick J, Premberg A. A meta-synthesis of fathers' experiences of their partner's labour and the birth of their baby. *Midwifery* 2015 Jan; 31(1): 9-18.
 37. Li HT, Lin KC, Chang SC, Kao CH, Liu CY, Kuo SC. A birth education program for expectant fathers in Taiwan: effects on their anxiety. *Birth* 2009; 36(4): 289-96.
 38. Shattuck D, Kerner B, Gilles K, et al. Encouraging contraceptive uptake by motivating men to communicate about family planning: the Malawi Male Motivator project. *Am J Public Health* 2011; 101(6): 1089-95.
 39. Nathan LM, Shi Q, Plewniak K, et al. Decentralizing Maternity Services to Increase Skilled Attendance at Birth and Antenatal Care Utilization in Rural Rwanda: A Prospective Cohort Study. *Matern Child Health J* 2015; 19(9): 1949-55.
 40. Mackert M, Guadagno M, Lazard A, Donovan E, Rochlen A, Garcia A, Damásio MJ. Engaging Men in Prenatal Health Promotion: A Pilot Evaluation of Targeted e-Health Content. *Am J Mens Health*. 2017; 11(3): 719-725.
 41. Mkandawire, E., Hendriks, S.L. and Mkandawire-Vahlu, L. A gender assessment of Malawi's national nutrition policy and strategic plan 2007–2012. *Dev Policy Review* 2017; 36: O634-O656.
 42. Hailu M, Gebremariam A, Alemseged F, Deribe K. Birth preparedness and complication readiness among pregnant women in Southern Ethiopia. *PLoS One* 2011; 6(6): e21432.
 43. Ampt F, Mon MM, Than KK, et al. Correlates of male involvement in maternal and newborn health: a cross-sectional study of men in a peri-urban region of Myanmar. *BMC Pregnancy Childbirth* 2015; 15: 122.
 44. Kaye DK, Kakaire O, Nakimuli A, Osinde MO, Mbalinda SN, Kakande N. Male involvement

- during pregnancy and childbirth: men's perceptions, practices and experiences during the care for women who developed childbirth complications in Mulago Hospital, Uganda. *BMC Pregnancy Childbirth* 2014; 14: 54.
45. Ayebare E, Mwebaza E, Mwizerwa J, et al. Interventions for male involvement in pregnancy and labour: a systematic review. *Afr J Midwifery Womens Health* 2015; 9(1): 23-28.
 46. Hartmann M, Gilles K, Shattuck D, Kerner B, Guest G. Changes in couples' communication as a result of a male-involvement family planning intervention. *J Health Commun* 2012; 17(7): 802-19.
 47. Ijadunola MY, Abiona TC, Ijadunola KT, et al. Male involvement in family planning decision making in Ile-Ife, Osun State, Nigeria. *Afr J Reprod Health*. 2010; 14(4): 43-50.
 48. Asplin N, Wessel H, Marions L, Ohman SG. Pregnant women's perspectives on decision-making when a fetal malformation is detected by ultrasound examination. *Sex Reprod Healthc* 2013; 4(2): 79-84.
 49. Williams L, Zapata LB, D'Angelo DV, Harrison L, Morrow B. Associations between preconception counseling and maternal behaviors before and during pregnancy. *Matern Child Health J* 2012; 16(9): 1854-61.