

MALE INVOLVEMENT IN MATERNAL NUTRITION/HEALTHCARE AS A DETERMINANT OF UTILIZING SKILLED BIRTH ATTENDANT IN RURAL IMO STATE

AFAM-ANENE, OLIVIA CHINYERE

Department of Nutrition and Dietetics, Faculty of Health Sciences, Imo State University, Owerri, Imo State, Nigeria,

AJAEGBU, ODINAKA OKECHUKWU

Department of Sociology, Faculty of Social Sciences, Imo State University, Owerri, Imo State, Nigeria
Email: ajaegbuodina@gmail.com

&

OSITA-NJOKU, AGNES

Department of Sociology, Faculty of Social Sciences, Imo State University, Owerri, Imo State, Nigeria.

Abstract

Male engagement in maternal nutrition and healthcare has been linked to a number of benefits, including more hospital births, better use of antenatal and postnatal care services, adherence to recommended maternal nutritional needs, and a higher chance of using skilled birth attendants during delivery. However, in most regions of Nigeria, the use of a competent birth attendant throughout pregnancy and delivery is undermined by several detrimental cultural practices, such as the restricted male engagement in maternal nutrition and healthcare. It is within this context that this study examined the role of male involvement in maternal nutrition/ healthcare as a determinant of utilizing skilled birth attendant in rural Imo State. The study design was mixed method; utilizing questionnaire and in-depth interview as data collection instruments. The data was analysed using descriptive and inferential statistics, while content analysis method was used for the qualitative data. It was found that while majority of men (51%) discuss the use of skilled birth attendant with their spouse, the level of involvement of men in activities that promote the utilization of skilled birth attendant is average. However, more of the respondents that revealed that men participate in maternal nutrition/healthcare utilized skilled birth attendant during pregnancy and delivery. Therefore to improve utilization of skilled birth attendants during pregnancy and delivery, there is need to enlighten more men on the importance of being actively involved in maternal nutrition/healthcare; since the more they are involved, the likelihood of increase in the utilization of skilled birth attendant during pregnancy and delivery.

Key word: Male Involvement, Maternal Nutrition, Maternal Healthcare, Skilled Birth Attendant, Rural Dweller

Introduction

Every day, over 800 maternal deaths occur worldwide; the majority of these deaths occur in low-to-middle-income countries (LMICs), with sub-Saharan Africa alone responsible for nearly 70% of all maternal deaths globally (WHO, UNICEF, UNFPA, World Bank Group, and UNDESA/Population Division, 2023). The lack of access to maternal healthcare services was a key contributing factor to Nigeria's anticipated 1047 maternal deaths per 100,000 live births in 2020, which was higher than the regional average (Tsawe and Susuman, 2014; WHO, 2023). Maternal health refers to the health of women throughout pregnancy, childbirth, and the postpartum phase; maternal morbidity and mortality are linked to delayed and inadequate access to these treatments (Tsawe and Susuman, 2014; WHO 2023).

A number of obstacles keep women from accessing maternal healthcare services in the majority of developing nations. The lack of women's decision-making, patriarchy, the distance to medical facilities, the incapacity to pay for services, transportation, and the lack of male participation in maternal nutrition and healthcare are some of the obstacles (Dahab and Sakellariou, 2020). When a male partner helps a female

partner by providing emotional and physical support as well as by taking part in joint decision-making regarding the mother's health and nutritional requirements, this is known as male involvement in maternal nutrition and healthcare. It also means being present when the woman is receiving healthcare services and nutrition (Galle et al., 2021).

Male participation in maternal nutrition and healthcare has been linked to a number of benefits, according to studies (Yargawa and Leonardi-Bee, 2015; Srivastava et al., 2015; Tokhi et al., 2018). These include a reduction in postpartum depression (Yargawa and Leonardi-Bee, 2015), more hospital deliveries, better use of ANC and PNC services, adherence to recommended maternal nutritional needs, and a higher likelihood of using skilled birth attendance during pregnancy and at the time of delivery (Tokhi et al., 2018). According to Srivastava et al. (2015), women who have a male partner present and supportive during labor report shorter labor durations, fewer painkiller needs, and more positive birthing experiences. The active participation of men during pregnancy, delivery, and the postpartum period was recommended by the World Health Organization in 2015 as a significant way to improve the health outcomes of mothers and their newborns, taking into account these advantages. However, the WHO emphasized that men's involvement should ensure that women's decision-making autonomy is upheld (WHO, 2015).

Unsafe abortion, high blood pressure during pregnancy (pre-eclampsia and eclampsia), infection, severe hemorrhage, and complications during childbirth are among the preventable direct obstetric causes of the vast majority of complications, which account for approximately 75% of maternal deaths (WHO, 2023). During antenatal care (ANC) and the postpartum period, these causes can be identified and treated early with established medical interventions. Delays in choosing to use a qualified health professional, however, have been found to be one of the preventable contributing factors to maternal morbidity and mortality (Nahar, Banu & Nasreen, 2011). Therefore, one of the most important factors influencing the health of mothers and newborns is having access to skilled health services during pregnancy, childbirth, and the postnatal period for obstetric care (Rahman, Perkins, Islam, Siddique, Anwar, & Mazumder, 2018). In the majority of African nations, particularly those in rural areas, men make this decision. According to Kakaire, Kaye, and Osinde (2011), men are typically regarded as the ones who decide where their spouse should give birth. Thus, a key component of guaranteeing women's access to qualified medical personnel during childbirth is male participation in maternal health care services.

The 2018 Nigeria Demographic and Health Survey (NDHS) reported that 67% of women attended antenatal care once with a SBA, and 43% were assisted during childbirth by a skilled birth attendant. This leaves more of the babies and their mothers without access to crucial medical care during childbirth. Lack of maternal health services has been considered a major factor that resulted in the slow utilization of skilled birth attendants especially in rural areas where the facilities and skilled birth attendants are limited. However, in some cases where the services exist, husbands are reported to forbid their wives from utilizing the service (WHO, 2018). Some of the reasons responsible for low utilization of skilled birth attendants include harmful traditional practices, low social status of women, limited female involvement in decision making, family members influence in decision making and limited male involvement in maternal nutrition and healthcare (Millennium & Goals 2015; Tamirat, Tilahun & Abdulahi 2015). It is within this context that this study examined the role of male involvement in maternal nutrition/ healthcare as a determinant of utilizing skilled birth attendant in rural Imo State.

Materials and methods

This research was conducted using a mixed design. The design was chosen because it allows for the examination of a large population in a comparatively short amount of time and allows the researcher to gather a big amount of data for the study using both quantitative and qualitative methodologies.

Imo State is where the study was carried out. Nigeria's southeast geopolitical zone includes Imo State, which is bounded to the north by Anambra State, to the west and south by Rivers State, and to the east by Abia State. The state is situated between latitudes 4°45'N and 7°15'N and longitudes 6°50'E and 7°25'E, covering an area of around 5,100 sq km. The capital of the state, Owerri, is referred to as the Eastern Heartland. With an estimated population of around 5,167,722 million as of 2019, Imo is the fourteenth most populous of Nigeria's 36 states (NBS, 2020). In terms of land area, Imo is the third-smallest state. A majority of 98% of the population of Imo State is Igbo, making it primarily an Igbo-speaking state in addition to English. Although patriarchy is a prevalent cultural norm in the region, Christianity is the most common religion.

Along with their capital, other notable towns are Orlu, Obowo, Oguta, Awo-Omamma, Mgbidi, Mbaize, Okigwe, and Ohaji/Egbema in addition.

The study population includes all married men and women in Imo State that have experienced at least a pregnancy in their relationship. This is because it is this category of people that will be able to give informed answers about male involvement and utilization of skilled birth attendant. For the study sample size, six hundred (600) married men and women, 300 of each that met the study criteria, were purposively selected from Imo State's population to serve as the study's sample size. This is because of the lack of data on number of married men and women that have experience at least a pregnancy in their relationship in Imo State. Nevertheless, 591 questionnaire copies were retrieved. This (591) currently serves as the study's sample size. For the qualitative data of this study, 18 (9 each) married men and women were interviewed.

Data were collected using a structured questionnaire and a semi-structured in-depth interview guide. The study used a multiple-stage sampling procedure. First, Imo State's three senatorial zones (Owerri, Orlu, and Okigwe) were chosen for the study using the quota sampling approach. This was done to reflect the features of each senatorial zone in the research sample size. Second, one LGA was chosen at random from each of the three senatorial zones. As a result, this study focused on three LGAs: Okigwe, Ideato South, and Ahiazu Mbaize. This is to ensure that all LGAs have an equal opportunity to be selected for the research. Third, a purposive sample approach was utilised to choose one community from each of the three LGAs (Umulolo, Umuaghube, and Amuzi Communities). Furthermore, a selective sample strategy was employed to choose exclusively married men and women from the chosen communities. Finally, the questionnaire was administered using a convenience sample approach to respondents from the three selected localities. This allowed the researchers to include responders who were willing and ready to participate in the investigation. For the study's qualitative data, a convenience sample procedure was utilised to pick six (6) married men and women from each of the three communities for the in-depth interview segment, totalling 18 interviewees. The quantitative data for this study was processed using the Statistical Package for Social Sciences (SPSS). The data were initially reviewed for any inaccuracies committed by the respondents when they completed the questionnaire. The data was analysed using descriptive and inferential statistics. The qualitative data analysis started by continuously reading and listening to the tape used to capture the data to guarantee correct transcription. A coding manual for the interviews was subsequently developed, and the data was analysed using a content analysis technique. Some information from the interviews was reported verbatim in order to acquire valuable insight into the discussions.

Results

Table 1: Respondents’ demographic characteristics and male involvement in maternal nutrition/healthcare

Questions	Male involvement in maternal nutrition and healthcare		Total	P values
	Yes	No		
Age				
20-30 years	112 (19%)	61 (10%)	173 (29%)	0.012
41-50 years	166 (28%)	158 (27%)	324 (55%)	
Above 60 years	29 (5%)	65 (11%)	94 (16%)	
Total	307 (52%)	284 (48%)	591 (100%)	
Educational level				
None	11 (2%)	18 (3%)	29 (5%)	0.001
Primary	74 (12%)	77 (14%)	151 (26%)	
Secondary	101 (17%)	95 (16%)	196 (33%)	
Tertiary	72 (12%)	52 (9%)	124 (21%)	
Postgraduate	49 (9%)	42 (6)	91 (15%)	
Total	307 (52%)	284 (48%)	591 (100%)	
Occupation				
Unemployed	25 (4%)	13 (2%)	38 (6%)	0.022
Civil/public servant	57 (10%)	36 (6%)	93 (16%)	
Artisans	56 (9%)	67 (12%)	123 (21%)	
Traders	71 (12%)	78 (13%)	149 (25%)	
Farmers	98 (17%)	90 (15%)	188 (32%)	
Total	307 (52%)	284 (48%)	591 (100%)	
Monthly income				
Below N50,000	65 (11%)	78 (13%)	143 (24%)	0.048
N50,000-100,000	135 (23%)	117 (20%)	252 (43%)	
N100,001-200,000	71 (12%)	47 (8%)	118 (20%)	
N200,001 and above	36 (6%)	42 (7%)	78 (13%)	
Total	307 (52%)	284 (48%)	591 (100%)	

Table 1 presents findings on respondents’ demographic data and male involvement in maternal nutrition and healthcare. In terms of age, among 52% of the respondents that noted that men are involved in maternal nutrition and healthcare, 28% of them which represent more of the study respondents are between the age of 41 years and 50 years; while a few of the respondents (10%) who are between the age of 20 years and 30 years revealed that men are not involved in maternal nutrition and healthcare. In terms of educational level, among 52% of the study respondents that revealed that men are involved in maternal nutrition and healthcare, 17% of them which represents more of the respondents have secondary education. Also Table 1 reveal that 17% of the study respondents who are among those that said that men are involved in maternal nutrition and healthcare are farmers; while only a few of the study respondents (2%) who are also among those that revealed that men do not participate in maternal nutrition and healthcare are unemployed. Table 1 show that more of the study respondents (23%) who are also among those that revealed that men are involved in maternal nutrition and healthcare earn between N50000 to N100000 monthly. Finally, data in Table 1 show that all the demographic variables tested, Age, Educational level, Occupation and Monthly income showed a statistical significant relationship with Male involvement in maternal nutrition and healthcare at significant level of 0.012, 0.001, 0.022 and 0.048 respectively.

The respondents were further asked questions on male involvement in promoting the use of skilled birth attendants during pregnancy and delivery. The responses are presented in Table 2.

Table 2: Male involvement in maternal nutrition/healthcare and utilization of skilled birth attendant

Questions	Frequency	Percentages
Planned utilization of skilled birth attendant with your partner		
Yes	301	51%
No	290	49%
Accompanied the partner to the clinic that have skilled birth attendants		
Yes	219	37%
No	372	63%
Level of male involvement in promoting utilization of skilled birth attendants		
High	230	39%
Average	260	44%
Low	101	17%
Area of male involvement		
Accompanying partner to clinic	83	14%
Ensure that delivery is taken by a trained and skilled attendant	65	11%
Planning and preparation of spouse nutritional needs	154	26%
Provision of finance	266	45%
No support	23	4%

Table 2 shows that while more of the study respondents (301, 51%) revealed that they planned to utilize skilled birth attendants with their partner, almost half of the study respondents (290, 49%) indicated that they did not plan to utilize skilled birth attendant with their partner in the last pregnancy. Data on Table 2 further show that the respondents were asked whether they accompanied their partner to a clinic that has the service of skilled birth attendant during the last pregnancy. It was found that majority of the respondents (372, 63%) revealed that they were not accompanied to a clinic that has the serve of skilled birth attendant by their partner; while a few of the study respondents (219, 37%) noted that their partner accompanied them. Table 2 also show that almost half of the study respondents (260, 44%) indicated that the level of involvement of men in promoting the utilization of skilled birth attendants in rural Imo State is average, while only a few of the respondents (101, 17%) noted that the level of male support in promoting the utilization of skilled birth attendant is low. In terms of area of male support to partner during pregnancy, Table 2 shows that almost half (266, 45%) of the study respondents believe that male partner mainly support by making finance available. This is followed by planning and preparation of spouse nutritional needs (154, 26%) of their pregnant partner, while a few of the study respondents (23, 4%) indicated that men do not provide any support. The findings from Table 2 show that while more of the study respondents revealed that men are involved in planning of utilization of skilled birth attendant during pregnancy, majority of the men do not accompany their partner to clinics; but prefer to make finance available for nutritional needs of their wives and hospital expenses to seek the services of skilled birth attendants. This was corroborated in the study qualitative data. Majority of the interviewees believe that men support their nutritional needs and the idea of seeking for the services of skilled birth attendants. Men also make money available for these needs but do not physically accompanying their wives to the clinic. A female respondent who is 35 years noted:

My husband usually discusses my nutritional needs and the hospital I attend antenatal with me. He also provides for the expenses, but he does not go to the clinic for antenatal with me. I go alone and report to him in the evening when we come back home. [Female Trader, 35 Years Old]

A male interviewee who is 52 years explained further with a question:

If I always follow my wife to antenatal, how will I then get the money for the bills? In fact, there is no way you will expect me to follow her to the hospital and be in the mix of women. [Male Artisan, 52 Years Old]

To inquire whether men involvement in maternal nutrition/healthcare affect utilization of skilled birth attendants during pregnancy and delivery, a crosstabulation and chi-square test was conducted on respondents' views about utilization of skilled birth attendant in the last birth and male involvement in maternal nutrition and healthcare. The findings are presented in Table 3.

Table 3: Respondents views on utilization of skilled birth attendant during last birth and male involvement in maternal nutrition/healthcare

Questions	Male involvement in maternal nutrition/ healthcare		Total	P values
	Yes	No		
Yes	192 (33%)	158 (27%)	350 (60%)	0.023
No	115 (19%)	126 (21%)	241 (40%)	
Total	307 (52%)	284 (48%)	591 (100%)	

Data in Table 3 show that 60% of the study respondents utilized skilled birth attendant during their last birth. The data also reveal that among 52% of the study respondents that said men are involved in maternal nutrition and healthcare, 33% utilised skilled birth attendant in their last birth. Also the chi-square test on Table 3 reveals that there is a statistical significant relationship between utilization of skilled birth attendant and male involvement in maternal nutrition and healthcare. This means that utilisation of skilled birth attendants by women during pregnancy and birth has a relationship with their husbands’ participation in maternal nutrition and healthcare. This line of thought was corroborated by the findings of the study qualitative data. More of the interviewees revealed that they started to attend antenatal in a hospital that has skilled birth attendants because their husbands decided so. A female interviewee who is a trader revealed:

Yes I all my deliveries was in a hospital that have doctors and nurses and I could not have gone their without my husband. In fact, it was my husband that took me to the hospital on my first day of antenatal registration. Without the support of my husband, in terms of finance, emotional and even provision of our nutritional needs, pregnancy and delivery could not have been easy. [Female Trader, 42 Years Old]

To determine the effect of male involvement in maternal nutrition/healthcare on women utilization of skilled birth attendant during pregnancy, multinomial logistic regression was conducted on factors associated with male involvement in maternal nutrition/healthcare and respondents views of utilization of skilled birth attendant during pregnancy and delivery. The findings are presented in table 4.

Table 4: Multinomial Logistic Regression predicting the effect of Male Involvement in Maternal Nutrition/Healthcare on utilization of skilled birth attendant in Rural Imo State

Model Fitting Information				
Model	Model Fitting Criteria	Likelihood Ratio Tests		
	2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	582.314			
Final	528.724	263.261	13	.000
Likelihood Ratio Tests				
Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	Df	Sig.
Intercept	582.314 ^a	.000	0	.
Ensure that delivery is taken by a trained and skilled attendant	518.304	10.152	2	.021
Pay for delivery services and arrange transport to the health facility for delivery	539.281	11.240	2	.051
Avoiding delays in deciding and seeking health care	511.271	8.001	2	.046
Supporting and encouraging the spouse during labour	546.641	7.273	2	.002
Being with the spouse in the delivery room	513.212	7.024	2	.062
Plan for emergency situations	536.352	9.311	2	.026
Planning and preparation of spouse nutritional needs	547.153	12.872	2	.022

Table 4 depicts a multinomial logistic regression analysis of the effect of male involvement in maternal nutrition/healthcare on utilization of skilled birth attendant during pregnancy and delivery in rural Imo State. From the Model Fitting Information, the independent variables statistically significantly predict (or are likely to predict) the dependent variable (P value = .000). The table further indicates that out of the seven independent variables tested, only one, 'being with the spouse in the delivery room' (P value = .062), is not statistically significant. This implies that other variables investigated can or are likely to independently predict women utilization of skilled birth attendant during pregnancy and delivery in rural Imo State. This is consistent with the qualitative data utilised in this study, where respondents cited 'ensure that delivery is taken by a trained and skilled attendant, pay for delivery services and arrange transport to the health facility for delivery, planning and preparation of spouse nutritional needs and planning for emergency situations' among others as ways men influence the use of skilled birth attendant during pregnancy and delivery in rural Imo State. An interviewee who is a trader and farmer noted:

I make sure my wife deliver under the care of a skilled attendant. This is because it is safer than delivering where there is no doctor because if complication arises, everyone will blame the man. So not only that I make sure my wife go for antenatal and delivery in a hospital, I also make sure she feeds well and healthy so she will have strength and health to push when the time come. [Male Trader/farmer, 55 Years Old]

Discussion

This study examined the role of male involvement in maternal nutrition/ healthcare as a determinant of utilizing skilled birth attendant in rural Imo State. It was found that that all the demographic variables tested, Age, Educational level, Occupation and Monthly income showed a statistical significant relationship with Male involvement in maternal nutrition and healthcare at significant level of 0.012, 0.001, 0.022 and 0.048 respectively. This is in line with a study conducted by Kakaire, Kaye and Osinde (2011) on male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda. The authors revealed that men with higher education are more likely to be involved in maternal healthcare.

In terms of male involvement in maternal nutrition/healthcare and utilization of skilled birth attendant, it was found that while more of the men (51%) planned with their spouse to utilize skilled birth attendant, only few (37%) of the men accompanied their spouse to the clinic. This suggests that while men maybe interested for their spouse utilization of skilled birth attendant during pregnancy and delivery, only few physically participate. This maybe while more of the study respondents (44%) revealed that the level of male involvement in promoting utilization of skilled birth attendant by their pregnant spouse is average; and their (Men) major area of involvement is in the area of finance provision (45%). The finding is supported by the study qualitative data. Majority of the study interviewees revealed that while men may not accompany their pregnant spouse to clinic for antenatal, they support women health and promote the use of skilled birth attendant by provision of finance for transportation, medical expenses and maternal nutritional needs. This supports that finding of Tamirat, Tilahun and Abdulahi (2015) that men are involved in promoting the use of skilled birth attendant during pregnancy and delivery especially in the area of finance provision.

It was found that more of the respondents that revealed that men participate in maternal nutrition and healthcare utilized skilled birth attendant during pregnancy and delivery. To investigate whether there is a relationship between male involvements in maternal nutrition/healthcare with utilization of skilled birth attendant; it was found that there is a statistical significant relationship between utilization of skilled birth attendant and male involvement in maternal nutrition/ healthcare. This means that utilisation of skilled birth attendants by women during pregnancy and birth has a relationship with their husbands' participation in maternal nutrition and healthcare.

To determine the effect of male involvement in maternal nutrition/healthcare on women utilization of skilled birth attendant during pregnancy, multinomial logistic regression was conducted on factors associated with male involvement in maternal nutrition/healthcare and respondents views of utilization of skilled birth attendant during pregnancy and delivery. It was found that the independent variables statistically significantly predict (or are likely to predict) the dependent variable (P value = .000). The data also reveal that all the variables tested was statistically significant except one (being with the spouse in the delivery room (P value = .062). This means that other variables investigated (Ensure that delivery is taken by a trained

and skilled attendant, Pay for delivery services and arrange transport to the health facility for delivery, Avoiding delays in deciding and seeking health care, Supporting and encouraging the spouse during labour, Plan for emergency situations and Planning and preparation of spouse nutritional needs) promotes utilization of skilled birth attendants during pregnancy and birth. This was corroborated by the study qualitative data, where respondents cited 'ensure that delivery is taken by a trained and skilled attendant, pay for delivery services and arrange transport to the health facility for delivery, planning and preparation of spouse nutritional needs and planning for emergency situations' among others as ways men influence the use of skilled birth attendant during pregnancy and delivery in rural Imo State.

Conclusion

This study examined the role of male involvement in maternal nutrition/ healthcare as a determinant of utilizing skilled birth attendant in rural Imo State. It was found that while majority of men discuss the use of skilled birth attendant with their spouse, the level of involvement of men in activities that promote the utilization of skilled birth attendant during pregnancy and delivery is average. However, it was found that more of the respondents that revealed that men participate in maternal nutrition and healthcare utilized skilled birth attendant during pregnancy and delivery. Therefore to improve utilization of skilled birth attendants during pregnancy and delivery, there is need to enlighten more men on the importance of being actively involved in maternal nutrition/healthcare; since the more they are involved, the likelihood of increase in the utilization of skilled birth attendant during pregnancy and delivery.

Compliance with ethical standards

Competing interest: The authors declare that there are no significant competing interests that might have influenced the performance or presentation of the work described in this manuscript.

Funding: The research work contained in the manuscript was supported by the Imo State University IBR TETFUND research funding program.

References

- Dahab, R. & Sakellariou, D. (2020). Barriers to accessing maternal care in low income countries in Africa: a systematic review. *Int. J. Environ. Res. Public Health*, 17(12): 4292. <https://doi.org/10.3390/ijerph17124292>.
- Galle, A., Plaieser, G., Van Steenstraeten, T., Griffin, S., Osman, N.B., Roelens, K., et al. (2021). Systematic review of the concept 'male involvement in maternal health' by natural language processing and descriptive analysis. *BMJ Glob. Health* 6 (4). <https://doi.org/10.1136/bmjgh-2020-004909>.
- Gedilu T, Debalkie D & Setegn T. (2018). Prevalence and Determinants of Institutional Delivery Service uptake among Women in Farta District, Northwest Ethiopia. *J Nurs Care*. 7(2):2167–1168.
- Kakaire O, Kaye DK. & Osinde MO. (2011). Male involvement in birth preparedness and complication readiness for emergency obstetric referrals in rural Uganda; 2011. p. 1–7
- Millennium T. & Goals D. (2015). *The Millennium Development Goals Report*. p. 2015.
- Mohammed A., Kife G., Beshir F., Mume A., Abdullahi Y. & Abdulwehab R. (2022). Magnitude of husbands' involvement in skilled birth attendant service utilization in Deder town, Oromiya, Ethiopia
- Nahar S, Banu M, Nasreen HE. (2011). Women-focused development intervention reduces delays in accessing emergency obstetric care in urban slums in Bangladesh : a cross-sectional study.
- Rahman AE, Perkins J, Islam S, Siddique AB, Anwar MR, & Mazumder T. (2018). Knowledge and involvement of husbands in maternal and newborn health in rural Bangladesh. P. 1–12.
- Srivastava, A., Avan, B., Rajbangshi, P., Bhattacharyya, S. (2015). Determinants of women's satisfaction with maternal health care: a review of literature from developing countries. *BMC Pregnancy ChildBirth* 15 (1), 97. <https://doi.org/10.1186/s12884-015-0525-0>
- Tamirat Z, Tilahun T. & Abdulahi M. (2015). Male involvement on skilled delivery care utilization in Mareka Woreda, Southern Ethiopia : A Community Based Cross Sectional Study. *Sci J Public Health*. 3(5):699–706

- Tokhi, M., Comrie-Thomson, L., Davis, J., Portela, A., Chersich, M., Luchters, S., et al. (2018). Involving men to improve maternal and newborn health: a systematic review of the effectiveness of interventions. *PLoS ONE* 13 (1), e0191620. <https://doi.org/10.1371/journal.pone.0191620>.
- Tsawe, M. & Susuman, A. (2014). Determinants of access to and use of maternal health care services in the Eastern Cape, South Africa: a quantitative and qualitative investigation. *BMC. Res. Notes.* 7 (1), 723. <https://doi.org/10.1186/1756-0500-7-723>.
- WHO (2015). WHO recommendations on health promotion interventions for maternal and newborn health 2015. Available from: <https://www.who.int/publications/i/item/9789241508742> (Accessed: 20 December 2024).
- WHO (2018). *World health statistics 2018: Monitoring health for the SDGs, sustainable development goals.* Geneva: World Health Organization.
- WHO (2023). *Maternal mortality: The urgency of a systemic and multisectoral approach in mitigating maternal deaths in Africa.* accessed on 13 December 2024 via <https://aho.afro.who.int/country-profiles/af>
- WHO, UNICEF, UNFPA, World Bank Group, and UNDESA/Population Division (2023). *Trends in maternal mortality 2000 to 2020: estimates from WHO, UNICEF, UNFPA, World Bank Group, and UNDESA/Population Division.* Available from: <https://www.who.int/publications/i/item/9789240068759> (Accessed: 15 December 2024).
- Yargawa, J., Leonardi-Bee, J. (2015). Male involvement and maternal health outcomes: systematic review and meta-analysis. *J. Epidemiol. Community Health* 69 (6), 604–612. <https://doi.org/10.1136/jech-2014-204784>.