GENDER ATTITUDES AND MALE INVOLVEMENT IN MATERNAL NUTRITION AND HEALTH CARE AMONG RURAL DWELLERS IN IMO STATE, NIGERIA

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ABSTRACT: Recently, there has been increasing recognition of the importance of male involvement in improving maternal nutrition and healthcare. However, studies have shown that cultural gender roles always limit the involvement of men in areas that are socially defined as feminine. Hence, this study investigated the importance of male involvement, their level of involvement and gender factors that limit male involvement in maternal nutrition and healthcare in rural Imo State. The gender schema theory propounded by Sandra Bem was the study's theoretical framework. A mixed research design and multistage sampling method were used for this study. For the quantitative data, 591 questionnaires were administered and analysed via descriptive and inferential statistics, whereas 18 in-depth interviews were conducted for the qualitative data and analysed via the content analysis method. It was found that men are involved in maternal nutrition and healthcare in Imo State. However, the level of involvement is low, and the reasons are not farfetched, as cultural gender roles have been identified as major factors that undermine male involvement in maternal nutrition and healthcare. To improve male involvement in maternal nutrition and healthcare, cultural gender roles that negatively affect male involvement in maternal nutrition and healthcare need to be addressed. Therefore, men should be sensitized to the need to jettison those cultural gender role prescriptions and see their involvement as significantly important in improving maternal nutrition and healthcare in Imo State.

Keywords: Gender, Men, Maternal Nutrition, Maternal Healthcare, Rural Dweller

INTRODUCTION

Globally, women's maternal health remains crucial to the outcomes of pregnancy, childbirth and continuity of society. According to the World Health Organisation, approximately 287,000 women died during and following pregnancy and childbirth in 2020 (WHO, 2024), even though the majority of the cases were preventable. The picture is more worrisome compared with regional bases. In low-income countries, the maternal mortality rate (MMR) in 2020 was 430 per 100 000 live births versus 13 per 100 000 live births in high-income countries (WHO, 2024). Specifically, the MMR of Nigeria was 814 (per 100,000 live births), whereas the MMR in the United States was 23.8 deaths per 100,000 live births in 2020 (Hoyert, 2022).

Complications during and after pregnancy and delivery are the leading cause of death for women (Hoyert, 2022). Most of these issues arise during pregnancy and can be avoided or treated. Other issues may occur prior to conception, but they exacerbate throughout pregnancy, particularly if they are not treated as part of the woman's care. Major consequences include preeclampsia and eclampsia, high blood pressure during pregnancy, infections after delivery, complications during childbirth, and unsafe abortions. These complications account for approximately 75% of all maternal mortalities (WHO, 2019). The remaining infections are caused by or linked to chronic illnesses such as diabetes or heart disease, as well as infections such as malaria.

Nigeria has one of the highest rates of maternal death in the world, second only to that of India (Oluwatoyin et al., 2021). The high rate of maternal and neonatal mortality in Nigeria has been associated with three forms of maternal delay (Okonofua et al., 2018). These challenges include delaying the decision to seek maternal health care, delaying the woman's ability to find and reach a medical facility, and delaying the woman's ability to receive professional prenatal care once she arrives at the medical centre.

The available data suggest that in most urban areas, more than 90% of all births benefit from the presence of a trained midwife, doctor or nurse. However, fewer than half of all births in several remote areas are assisted by skilled health personnel (World Health Organization and United Nations Children's Fund, 2019). This disparity in access to quality maternal healthcare between rural and urban areas is influenced by several socioeconomic and cultural factors. According to the World Health Organization (2024), the main factors that prevent women from receiving or seeking care during pregnancy and childbirth are poverty, distance to facilities, lack of information, inadequate and poorquality services, cultural beliefs and gender issues.

Although there is evidence that access to skilled medical care may positively affect maternal mortality, it remains inadequate in ensuring a substantial decline in maternal deaths in Nigeria (Ope, 2020). This is because an improvement in the standard of care offered at a medical facility does not always result in an increase in the number of women using the facility's services. This is because in many rural homes, the gender division of labour has placed the majority of decision-making in the hands of males; therefore, the decisions that these women make regarding the utilization of a health facility are not always entirely their own.

According to Nwokocha (2008), a large majority of men in Nigeria are indifferent to reproductive health issues, and even women are accused of deliberately refusing to involve men in this regard (Eisele, 2011). The inaction of men in the area of decision and participation in maternal nutrition and healthcare continues to increase the number of maternal deaths. The implication of such attitudes in a maledominated society is that activities that influence maternal nutrition and healthcare are taken for granted and may result in maternal health crises (Akpandara, Isiugo-Abanihe & Fayehun, 2015).

Traditionally, women are undervalued and relegated to mere help mates, which often influences their disposition towards matters that concern them, such as childbirth. In the majority of rural homes, women experience gender inequity and imbalance, which promotes males as slave masters and women as slaves (USAID, 2010). This results in male dominance in rural areas, as cultural beliefs and stereotypes regarding the roles and responsibilities of women and men in family matters. This can limit women's control over their nutritional health needs and access to quality healthcare. Adamu and Salihu (2002) emphasized that because men predominate in most traditional cultures, women must obtain the consent of both men and their family members to use primary healthcare institutions known for good maternal health, even in cases of dire need.

Despite efforts aimed at addressing maternal deaths, there are concerns that Nigeria in general and Imo State in particular may not meet the Sustainable Development Goal (SDG) regarding maternal mortality, and the role of men has been identified as critical (Okonofua et al., 2018; WHO, 2019; Oluwatoyin etal., 2021). Men make most decisions within the family and in government, where they preside over policies and programs that directly affect women and girls. Therefore, if success is achieved on maternal nutrition and healthcare issues, men need to engage and be engaged in the process actively. However, cultural gender roles have always limited the involvement of men in areas that are socially defined as feminine. Hence, this study investigated the importance of male involvement, their level of involvement and gender factors that limit male involvement in maternal nutrition and healthcare in rural Imo State.

Theoretical Framework

Gender schema theory

The gender schema theory introduced by psychologist Sandra Bem in 1981 was used as the study's theoretical framework. The theory asserted that children learn about male and female roles from the culture in which they live. According to the theory, children adjust their behaviour to align with the gender norms of their culture from the earliest stages of social development (Bem, 1994).

Bem's theory was influenced by the cognitive revolution of the 1960s and 1970s and her desire to remedy what she believed to be shortcomings in the psychoanalytic and social learning theories of the time (Starr & Zurbriggen, 2017). She asserted that a child's cognitive development combined with societal influences largely influences the patterns of thought (schema) that dictate "male" and "female" traits (Bem, 1994).

The ideas we have about gender (our schemas) are shaped through the cultures in which we live. This theory has played a major role in our understanding of how gender expectations are socially and culturally constructed. Knowing more about how gender schemas are formed can help one gain a better understanding of how beliefs impact behaviour and interact within society.

Gender schemas have an impact not only on how people process information but also on the attitudes and beliefs that direct "gender-appropriate" behaviour. Through the process of socialization, children form schema related to what men and women can and cannot do. For example, a child who lives in a rural area where cultural norms are held in high esteem might believe that a woman's role is in the caring and raising of children, whereas a man's role is in work and leadership in the family. This may account for men seeing maternal nutrition and healthcare as women's activities that do not require much of their input.

The theory holds that when subjected to societal disapproval, people often feel pressured to alter their behaviour or face rejection by those who disapprove of it. Within this construct, men and women are tacitly aware of the consequences of not adhering to cultural norms. Men may avoid being seen or engaging in maternal nutrition and healthcare so that society will not see them as weak or behaving like women do.

MATERIALS AND METHODS

This study was based on a mixed research design. The design is considered appropriate and was adopted because it enables the study of a large population in relatively less time and allows the researcher to use both quantitative and qualitative methods to generate extensive data.

The study was conducted in Imo State. Imo State is in the southeast geopolitical zone of Nigeria, bordered to the north by Anambra State, Rivers State to the west and south, and Abia State to the east. With a total area of approximately 5,100 sq km, the state is located between latitudes 4°45'N and 7°15'N and longitudes 6°50'E and 7°25'E. Owerri is the State's capital, and it is known as the Eastern Heartland. Imo is the fourteenth most populous of the 36 states that make up Nigeria, with an estimated population of more than 5,167,722 million as of 2019 (NBS, 2020). Imo is the third smallest state in terms of land. In addition to English, the Imo State is predominantly the Igbo-speaking State, with the Igbo people constituting a majority of 98%. Patriarchy is a dominant culture in the area, but in terms of religion, the majority of people practice Christianity. Other prominent towns include Orlu, Obowo, Oguta, Awo-Omamma, Mgbidi, Mbaize, Okigwe, and Ohaji/Egbema in addition to their capital.

The population of the study population is 5,167,722 persons, with a projected total number of people living in Imo State, as determined by the National Population Council (NPC) in 2019 (NBS, 2020). A total of 600 (300 each) married men and women purposively drawn from the population of Imo State were proposed as the study sample size. However, 591 copies of questionnaire were retrieved. This (591) now represents the sample size of the study. For the qualitative data of this study, 18 (9 each) married men and women were interviewed.

A structured questionnaire and semi-structured in-depth interview guide were used as the data collection instruments. The study adopted a multistage sampling method. First, using the quota sampling method, the three senatorial zones (Owerri, Orlu and Okigwe) that makeup Imo State were selected for the study. This was for representation of the characteristics of each senatorial zone in the study sample size. Second, a simple random sampling method was used to select one LGA each from the three selected senatorial zones. Therefore, three LGAs (Okigwe, Ideato South and Ahiazu Mbaize L.G.A.) were selected for this study. This is to give equal opportunity to all the LGA to be selected for the study. Third, a purposive sampling method was used to select one community each from the three selected LGA communities (the Umulolo, Umuaghube and Amuzi Communities). Furthermore, a purposive sampling method was used to select only married men and women in the selected communities. Finally, a convenience sampling method was used to administer the questionnaire to select respondents from the three selected communities. This enabled the researchers to include respondents who were willing and ready to be included in the research. For the qualitative data of the study, a convenience sampling method was used to select ten (6) married men and women from each of the three selected communities for the in-depth interview section, resulting in a total of 18 interviewees.

The quantitative data for this study were processed via the Statistical Package for Social Science (SPSS). The data were first checked for any errors that the respondents may have made while they filled out the questionnaire. The data were analysed via descriptive and inferential statistics. For the qualitative data, analysis began by repeatedly reading and listening to the tape that was used to record the data to ensure accurate data transcription. A coding manual for the interviews was then created, and the data were evaluated via the content analysis approach. To gain crucial insight into the debates, some details of the conversations were reported verbatim.

RESULTS

Table 1: Demographic characteristics of the respondents

Questions	Frequency	Percentage	
Age			
20-30 years	66	11	
31-40 years	108	18	
41-50 years	171	29	
51-60 years	154	26	
Above 60 years	92	16	
Total	591	100	
Educational level			
None	29	5	
Primary	151	26	
Secondary	196	33	
Tertiary	124	21	
Postgraduate	91	15	
Total	591	100	
Occupation			
Unemployed	38	6	
Civil/public servant	93	16	

Artisans	123	21
Traders	149	25
Farmers	188	32
Total	591	100
Monthly income		
Below N50,000	143	24
N50,000-100,000	252	43
N100,001-200,000	118	20
N200,001 and above	78	13
Total	591	100
Number of children		
1-2	89	15
3-4	136	23
5-6	202	34
Above 6	164	28
Total	591	

Table 1 shows that more of the study respondents are between the ages of 41–50 years (171, 29%) and 51–60 years (154, 26%), whereas few of the respondents are within the age bracket of 20–30 years (66, 11%). In terms of educational level, more of the study respondents had secondary education (196, 33%), whereas only a few of the respondents (29, 5%) reported that they did not have any formal education.

The data in Table 1 show that more of the respondents indicated that their occupation was farming (188, 32%), whereas only a few of the respondents reported that they were unemployed (38, 6%). With respect to income, the data in Table 1 show that more of the study respondents (252, 43%) said that their income in a month was between N50,000 and 100,000, whereas a few of the study respondents (78, 13%) reported that their income in a month was between N200,001 and above.

Finally, Table 1 shows that more of the study respondents (202, 34%) had between 5–6 children, whereas only a few of the study respondents (89, 15%) indicated that they had between 1–2 children.

To understand the level of male involvement in maternal nutrition and healthcare in Imo State, the respondents were first asked whether men participate in maternal nutrition and healthcare in the family. The responses are presented in Table 2.

Table 2: Men and involvement in maternal nutrition and healthcare in Imo State

Responses	Frequency	Percentage
Yes	307	52
No	284	48
Total	591	100

The data in Table 2 show that a slight majority of the study sample, represented by 307 (52%) respondents, stated that men participate in maternal nutrition and healthcare, whereas 284 (48%) respondents revealed that men do not participate in maternal nutrition and healthcare. While the data in the table show that more men participate in maternal nutrition and healthcare, many respondents noted that men do not participate. This finding shows that many men in the State do not participate in maternal nutrition and healthcare and may be the result of culture and gender role issues, which cause men to see maternal nutrition and healthcare as feminine and do not require the full attention of men. This is in line with the findings of the qualitative data of this study. Many interviewees noted that food and maternal healthcare issues are roles that are expected of women. A 52-year-old male farmer noted the following:

How can I concern myself with what that will be eaten or not? It is the job of my wife to think about that. When it is time to go antenatal, she will go. I don't go with her. [Male, Farmer, Aged 52, Imo State]

To understand male involvement in maternal nutrition and healthcare, the respondents were asked to identify how men are involved in maternal nutrition and healthcare in the study area. The data are presented in Table 3.

Table 3: Ways Men are Involved in Maternal Nutrition and Healthcare

Responses	Frequency	Percentage
By making sure that their pregnant wives eat a balanced diet.	41	7
By making sure that their pregnant wife takes routine drugs as prescribed by the doctor.	12	2
By making sure that their pregnant wives do not engage in strenuous activities.	77	13
By making sure that their pregnant wives seek medical help as at when needed.	71	12
By attending antenatal service with their spouse.	18	3
By make finance available for food and healthcare needs.	372	63
Total	591	100

Table 3 shows the responses of the study respondents concerning the ways in which men are involved in maternal nutrition and healthcare. The data reveal that the majority of the study sample size represented by 372 (63%) respondents believed that men are involved in maternal nutrition and healthcare by making finances available for the food and healthcare needs of their wives, whereas only a few of the respondents (12, 2%) revealed that men are involved in maternal nutrition and healthcare by ensuring that their pregnant wives take routine drugs as prescribed by the doctor. This finding indicates that men are mainly concerned with the provision of resources that are needed for maternal nutrition and healthcare. This behaviour may be a result of the cultural gender roles that are imbibed in society, which make men bread winners, whereas women are concerned with home activities. This is in line with the views of the majority of the study interviewees. A 42-year-old female trader noted the following:

My husband does not concern himself with the type of food we eat at home. He only makes money available. It is what I cook or buy that we eat at home. When I am pregnant, I do not always go to hospital in company of my husband for medical care, unless the children are sick. [Female, Trader, Aged 42, Imo State]

To inquire about men's involvement in maternal nutrition and health, the respondents were asked to rate the level of men's involvement in maternal nutrition and healthcare in their area. The responses are presented in Figure 1.

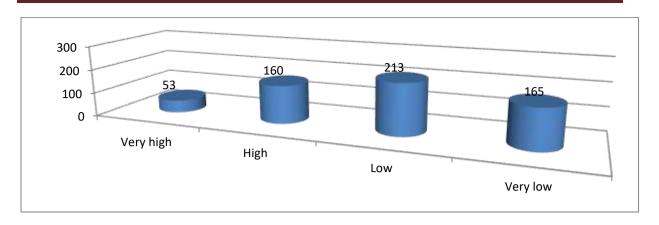


Fig. 1: Rating of Male Involvement in Maternal Nutrition and Healthcare Rural Imo State

The data in Figure 1 show that more of the study respondents (213, 36%) indicated that the level of men's involvement in maternal nutrition and healthcare is low, whereas a few of the respondents (53, 9%) stated that the level of men's involvement in maternal nutrition and healthcare is very high. This suggests that men's involvement in maternal nutrition and healthcare is low in rural Imo State and is in line with the findings of the study's qualitative data. The majority of the study interviewees revealed that, owing to cultural gender roles, men do not fully engage in issues concerning maternal nutrition and healthcare.

To investigate whether there was a significant difference between educational level and male involvement in maternal nutrition and healthcare, the Mann–Whitney U test was conducted. The findings are presented in Table 4.

Table 4: Mann-Whitney U test of educational level and men's involvement in maternal nutrition and healthcare

Ranks					
	Educational level	N	Mean Rank	Sum of Ranks	
Believe on the importance of	Secondary and below	284	285.20	144694.00	
men involvement in maternal	Tertiary and above	307	306.30	162951.00	
nutrition and healthcare	Total	591			
Test Statistics ^a					
	Believe on the importance of men involvement in maternal nutrition				
	and healthcare				
Mann–Whitney U	70389.000				
Wilcoxon W	144694.000				
Z	361				
Asymp. Sig. (2-tailed)	.595				

From the rank section in Table 4, the mean ranks of those who have secondary education and below and those with tertiary education and above are 285.20 and 306.30, respectively. This shows that since the mean rank of those who have tertiary education and above is higher than that of those who have secondary education and below, those who have tertiary education and above are more likely to believe in the importance of men's involvement in maternal nutrition and healthcare. However, according to the test statistics section of Table 4, U= 703899, p value = .595, meaning that there is no statistically significant difference between educational level and belief in the importance of men's involvement in maternal nutrition and healthcare. This means that the educational level of people does not affect their belief in the importance of male involvement in maternal nutrition and healthcare.

The respondents were further asked whether cultural gender roles affect male involvement in maternal nutrition and healthcare in rural Imo State. The findings are presented in Figure 2.

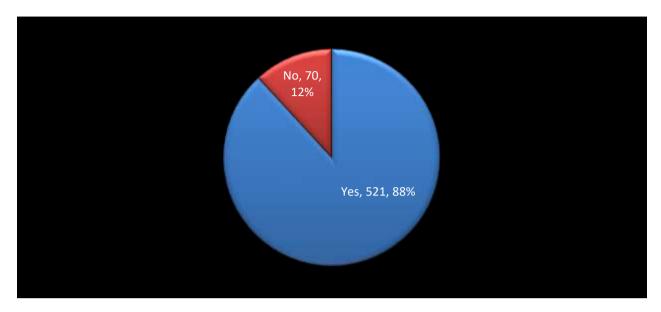


Figure 2. Cultural Gender Role and Men Involvement in Maternal Nutrition and Healthcare

The data in Figure 2 show that the majority of the study sample size, represented by 521 (88%) respondents, revealed that cultural gender roles affect male involvement in maternal nutrition and healthcare, whereas only a few of the study respondents (70, 12%) noted that cultural gender roles do not affect men's involvement in maternal nutrition and healthcare. This finding shows that men's attitudes towards maternal nutrition and healthcare may be influenced by cultural gender roles, which is supported by the findings of the study's qualitative data. The majority of the study interviewees revealed that, owing to societal expectations, men do not engage in those activities that are defined as feminine, and maternal nutrition and healthcare are seen as women's activities. In the words of an interviewee who is a Carpenter by profession:

You don't expect me to be following women up and down to the hospital or thinking of about what best and how to prepare food. What will my friends think of me when they see me in the kitchen cooking and my wife is relaxing somewhere? They will even think that I have been bewitched by her. It is not normal for a man to be attending antenatal. You will end up benign the only man in the mix of many women. [Male, Carpenter, Aged 47, Imo State]

To determine how cultural gender roles affect male involvement in maternal nutrition and healthcare in rural Imo State, multinomial logistic regression was conducted. The findings are presented in Table 5.

Table 5: Multinomial Logistic Regression Predicting the Effect of Cultural Gender Roles on Male Involvement in Maternal Nutrition and Healthcare in Rural Imo State

Model Fitting Information							
Model	Model Fitting Criteria	Likelihood Ratio Tests					
	2 Log Likelihood			Df	Si	Sig.	
Intercept Only	556.548						
Final	425.812	103.410		11		20	
	Likelihood	l Ratio Tests					
Effect		Model Fitting		Likelihood Ratio Tests			
		Criteria					
		-2 Log Likelihoo		Chi-	Df	Sig.	
		of Reduced Mod		Square .000			
Intercept		425.8	425.812a			•	
	Belief and value that it is men that make decisions		453.764		2	.000	
in the family							
Belief and value that making of food and what to		455.467		18.440	2	.020	
be eaten are the concer	be eaten are the concern of women.						
Lack of finance since it is the gender role of men		446.530		1.202	2	.664	
to provide financially for the family needs.							
	hours to provide for the	426.3	346	9.329	2	.012	
family, they have little time to be actively							
	utrition and healthcare.						
Fear of stigmatization by friends as one that has		486.4	458	37.940	2	.001	
taken over women homecare job or being							
controlled by women.							
Fear of stigmatization by friends as one that has		456.7	745	20.128	2	.030	
taken over women homecare job or being							
controlled by women.							

Table 5 shows a multinomial logistic regression analysis of the effects of cultural gender roles on men's involvement in maternal nutrition and healthcare in rural Imo State. The Model Fitting Information shows that the independent variables statistically significantly (p value = .020) predict (or are likely to predict) the dependent variable. The table further indicates that out of the 6 independent variables tested, only 1, lack of finance, since the gender role of men in providing financially for family needs (p value = .664), is not statistically significant. This means that other variables tested can or are likely to independently predict men's involvement in maternal nutrition and healthcare in rural Imo State. This is in line with the qualitative data used in this study, where interviewees identified stigmatization, the belief and value of making food and what to be eaten are concerns of women, etc., as factors that affect men's involvement in maternal nutrition and healthcare.

DISCUSSION

This study investigated the importance of male involvement, their level of involvement and gender factors that limit male involvement in maternal nutrition and healthcare. A greater number of the study respondents agreed that men are involved in maternal nutrition and healthcare in rural Imo State. However, the data from the study also show that a significant number of the study respondents (48%) believe that men are not involved in maternal nutrition and healthcare. This suggests that while the majority of the people believe that men are involved in maternal nutrition and healthcare, many people believe otherwise. This approach is in line with the study's qualitative data and is supported by the literature. For Nwokocha (2008), a large majority of men in Nigeria are indifferent to reproductive health issues, and even women are accused of deliberately refusing to involve men in this regard.

Most men who are involved in maternal nutrition and healthcare do so by providing financing for the purchase of food and healthcare needs (63%). The data from the study also reveal that only a few men are involved in maternal nutrition and healthcare by ensuring that their pregnant wife takes routine drugs as prescribed by the doctor (2%) and by attending antenatal services with their spouse (3%). This finding shows that men are more likely to be involved in maternal nutrition and healthcare when they are concerned with providing money and are unlikely to physically participate in it. The findings from the quantitative data of the study are supported by the findings from the qualitative data of the study. The majority of the interviewees revealed that men do not concern themselves with the type of food eaten at home, as it is the social role of women. This line of thought can be explained via gender schema theory. The theory holds that the ideas we have about gender (our schemas) are shaped through the cultures in which we live (Bem, 1994). This means that since society sees maternal nutrition and healthcare as female roles, men are more likely not to be fully involved in them. In terms of the level of male involvement in maternal nutrition and healthcare, more of the study respondents believed that the level of male involvement in maternal nutrition and healthcare in rural Imo State was low.

To investigate whether there is a significant difference between educational level and men's involvement in maternal nutrition and healthcare, the Mann–Whitney U test revealed that while those who have tertiary education and above are more likely to believe in the importance of men's involvement in maternal nutrition and healthcare, there is no statistically significant difference between educational level and belief in the importance of men's involvement in maternal nutrition and healthcare in rural Imo State. This means that the educational level of people does not affect their belief in the importance of male involvement in maternal nutrition and healthcare.

In terms of whether cultural gender roles affect male involvement in maternal nutrition and healthcare, the majority of the study respondents affirmed that cultural gender roles affect male involvement in maternal nutrition and healthcare. These findings indicate that the cultural gender role affects male involvement in maternal nutrition and healthcare in Imo State. Using a multinominal logistic regression analysis tool, it was found that the independent variables tested (belief and value that men make decisions in the family, belief and value that make of food and what to be eaten are the concern of women, lack of finance since it is the gender role of men to provide financially for family needs. Because men work long hours to provide for the family, they have little time to be actively involved in maternal nutrition and healthcare, fear of stigmatization by friends as one that has taken over women's homecare job or being controlled by women, and fear of stigmatization by friends as one that has taken over women's homecare job or being controlled by women) statistically significantly (p value = .020) predicts (or are likely to predict) the dependent variable (Male Involvement in Maternal Nutrition and Healthcare in the Rural Imo State). This is also supported by the findings of the study's qualitative data. The majority of the study interviewees revealed that, owing to societal expectations, stigmatization, the belief and value of making food and what to be eaten are concerns of women, etc., men do not engage in activities that are defined as feminine, and maternal nutrition and healthcare are seen as women's activities. Gender schema theory can also be used to explain this line of thought. The theory suggests that when subjected to societal disapproval, people often feel pressured to alter their behaviour or face rejection by those who disapprove of it (Bem, 1994). Within this construct, men and women are tacitly aware of the consequences of not adhering to cultural norms. Men may avoid being seen or engaging in maternal nutrition and healthcare so that society will not see them as weak or that they behave like women do.

Conclusion

The study investigated the importance of male involvement, their level of involvement and gender factors that limit male involvement in maternal nutrition and healthcare. It was found that men are involved in maternal nutrition and healthcare in Imo State. However, the level of involvement is low, and the reasons are not farfetched, as cultural gender roles have been identified as major factors that undermine male involvement in maternal nutrition and healthcare. To improve male involvement in

maternal nutrition and healthcare, cultural gender roles that negatively affect male involvement in maternal nutrition and healthcare need to be addressed. Therefore, men should be sensitized to the need to jettison those cultural gender role prescriptions and see their involvement as significantly important in improving maternal nutrition and healthcare in Imo State.

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.

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