Running head: Spousal involvement in cervical cancer screening

Original Paper

Does Spousal Engagement Improve Cervical Cancer Screening Discussions and Uptake? Lessons from a Before-After Study in a Rural Nigerian Community

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Abbreviations: Comprehensive Practicing Centre (CPC), Federal Teaching Hospital Abakaliki (FETHA), Key Informant Interviews (KII), low and middle-income countries (LMICs)
Abstract: **Background.** This study determined spousal involvement and the effect of community-based spousal engagement on cervical cancer screening-related discussions and uptake in a rural Nigerian community. **Methods.** A before-after mixed methods study was conducted among 245 married men in a rural Nigerian community. Spousal engagement involved advocacy to men groups, awareness creation, and monthly meeting-based announcements/reminders about screening. Three months post-intervention, uptake was determined from facility registers. Thematic analysis and SPSS were used for data analysis.

**Results.** A large minority of respondents were aged 29-39 years (95/245, 38.8%). At baseline, respondents generally had poor spousal involvement. Post-intervention, inter-spousal discussion on screening increased from 17.2% to 46.9% (p<.001). There was no significant increase in uptake post-intervention. Having more than 5 children was a predictor of screening discussions (AOR=2.017; CI=1.196-3.403; p=.009). **Conclusion.** Despite increased inter-spousal discussions on cervical cancer screening, uptake remained low. We recommend community-driven interventions on cervical cancer screening with a gender-transformative perspective.

Key words: Cervical cancer, screening, male involvement, inter-spousal discussions, uptake, rural community, Nigeria.
Cervical cancer is the second most prevalent cancer in women worldwide and the most prevalent cancer among sub-Saharan African women. Every year more than 270,000 women die from cervical cancer with over 85% of these deaths occurring in low and middle-income countries (LMICs). In contrast, only 35,000 of these deaths occur in high-income countries.\textsuperscript{1,2}

Cervical cancer is the second most frequent cause of cancer deaths among Nigerian women.\textsuperscript{1}
The main reasons for the high morbidity and mortality from cervical cancer in Nigeria and other sub-Saharan African countries are the lack of and poor access to effective prevention, early detection via screening and treatment programmes, and the lack of equal access to such programmes.\textsuperscript{3} Despite this disparity between high-income countries and LMICs, cervical cancer prevention has not been fully recognized as a high priority. Low prioritization negatively affects the family economy and sustainable development due to premature mortality and lost years of productivity.\textsuperscript{4} It also highlights the fragility of health systems in such contexts. With the compromise in primary prevention and early diagnosis, there is a further increase in the incidence of cervical cancer and its related morbidity and mortality.\textsuperscript{4}

Despite the availability of potent vaccines against the causative agent of cervical cancer (human papillomavirus), there is a strong emphasis on periodic screening in less developed countries because of the high out-of-pocket costs of these vaccines.\textsuperscript{3} Several methods of cervical cancer screening exist however, and visual inspection is a cost-effective method for women who live in resource-limited countries.\textsuperscript{5} Although screening services are available in different parts of Nigeria, the uptake of cervical cancer screening continues to be low, leaving much to be desired in reversing the scourge of cervical cancer among Nigerian women.\textsuperscript{6-8} Poor spousal support has been identified as a significant barrier to cervical cancer screening.\textsuperscript{9} More precisely, studies conducted among women in Nigeria and other developing countries have
identified the need for women to have spousal financial and emotional support before attending screening services.\textsuperscript{10–13}

Men are not the primary targets for cervical cancer screening, but they can serve as secondary targets who can play significant roles in improving screening among women. Male involvement in sexual and reproductive health has been associated with improvements in care-seeking, utilization of reproductive health services, maternal and child health outcomes. Studies in this area have explored the roles of men in family planning, antenatal care, prevention of mother-to-child transmission of HIV, and child health services.\textsuperscript{14–22} The support of men for services in these studies was expressed in various ways such as increased inter-spousal communication, shared decision-making, referral to and encouragement of the use of such services, provision of funds, emotional support, accompaniment to the health facility for receipt of services, and self-use of related services such as family planning. Although a few studies have shown that male partners were willing to support cervical cancer screening,\textsuperscript{23–26} no study to the best of our search and knowledge has explored the effect of an intervention on the role of men in promoting cervical cancer screening. This study explored spousal involvement and the effect of community-based spousal engagement on cervical cancer screening discussions and uptake in a rural community in Ebonyi, Nigeria. We also assessed perspectives and challenges to spousal involvement in cervical cancer prevention.

**Methods**

**Study design and setting.** This was a before-after mixed methods study. The study was conducted in three phases: baseline survey, intervention, and post-intervention survey.
The study was conducted in Nwezenyi, a rural community located in Izzi Local Government Area of Ebonyi State, South-Eastern Nigeria. The population of Nwezenyi is mostly Ibo, the dominant tribe of the South-East geopolitical zone of Nigeria. The occupations of the inhabitants of the Nwezenyi community include farming, trading, and making crafts. Some residents are civil servants. Izi\(^1\) is the common language in the community. Nwezenyi community has a trans-generational association for men mainly comprising married men, with a membership strength of 245 men. These men meet on a monthly basis to plan and implement activities related to the organization and development of the community.

Nwezenyi community is host to a Comprehensive Practicing Centre (CPC) annex which is a primary health centre owned and administered by the Federal Teaching Hospital Abakaliki (FETHA). This study was undertaken following the recent establishment of cervical cancer screening services in the CPC FETHA annex and in light of the need to increase uptake of cervical screening by the community members. Interest in the study was birthed after some women who had aceto-whitening following the screening in CPC FETHA did not proceed to access further diagnosis and treatment, citing lack of spousal approval as their reason for not doing so. Additionally, some women in the community had requested more time to obtain their husband’s approval before being screened.

**Study population.** The study population consisted of married partners of women who were at least 18 years old and belonged to the men’s association in Nwezenyi community.

**Sample size determination.** This was a total population study as all the 245 married men who belonged to the Nwezenyi men’s association took part.

\(^1\)Izi is a language in the same language family as Igbo, forming a dialect cluster with other Igboic languages including Ikwo, Ezza, and Mgbo. [Source: Wikipedia entries for Izi and Igboic languages.]—ed.
Data collection methods and instruments. At baseline, general information on spousal involvement in cervical cancer screening, proposed avenues of male involvement in cervical cancer prevention, and gender preferences for screening providers were collected using an interviewer-administered structured questionnaire adapted from previous studies.\textsuperscript{24,26} Data on uptake of cervical screening was obtained from the screening registers in CPC Nwezenyi and a mini questionnaire. Key Informant Interviews (KII) were used to explore an array of perspectives on spousal involvement in cervical cancer screening.

The baseline questionnaire assessed dimensions of self-reported spousal involvement in cervical cancer screening using a total of four questions on a five-point Likert scale. The dimensions evaluated were the extent of support and funding offered to the spouse to enable cervical cancer screening; the accompaniment of the spouse to the health facility to obtain cervical cancer screening services; and provision of emotional support to the spouse to carry out cervical cancer screening. Three questions (discussion, accompaniment, emotional support) measured agreement with statements (strongly disagree=5, agree=4, undecided=3, disagree=2, strongly disagree=1) while two questions assessed extent of spousal involvement (funding, support) in cervical cancer screening (high extent=5, moderate extent=4, undecided=3, low extent=2, very low extent=1). Binary coded questions (Yes/No) were used to elicit perspectives on ways men can be involved in cervical cancer screening. Inter-spousal cervical cancer screening-related discussion was assessed using a Yes/No question. Intention to support spousal cervical cancer screening was determined using a Yes/No question. Gender preferences for screening provider were determined using a single choice, multiple option question. The questionnaire was pre-tested among men in a neighboring community who met the inclusion criteria. Issues detected from the pre-testing were addressed and necessary
corrections made. More information on baseline data collection has been documented in another publication.\textsuperscript{27}

Post-intervention, a mini-questionnaire was used to assess whether cervical cancer screening-related inter-spousal discussions were held using Yes/No questions. The uptake of screening services was determined from the facility registers where screening services were provided. The reasons for non-discussion and non-uptake of screening services were also ascertained from respondents. Because of the low uptake of screening, the other dimensions of spousal involvement assessed at baseline could not be assessed following the intervention.

A total of five KIIIs were conducted using a key informant discussion guide. The KII was used to explore perspectives on male involvement in cervical cancer screening in the community, ways husbands can support cervical cancer screening, challenges and, recommendations to improve spousal involvement in cervical cancer screening. The key informants were as follows: the officer-in-charge (matron) of the CPC where screening services were being provided, a male community health worker, a male community leader, a female community leader who had been screened, and a female community member. The interviews were conducted in a quiet environment that afforded privacy and was agreed on by the interviewer and each key informant. The interview sessions lasted for an average of 45 minutes and were conducted by the principal researcher with the assistance of a note-taker. An electronic recorder was also used to record the interviews. Before the beginning of the KII, written informed consent and permission to record the interview were obtained. Verbatim transcription from the electronic recorder was carried out within 24 hours after each session and compared with the notes from the note-taker, including observed non-verbal communications.
Following the baseline survey, the intervention component of the study was implemented. This consisted of advocacy to community leaders and leaders of the men’s association, community sensitization and education on cervical cancer, cervical cancer screening, and role of spousal involvement in preventing cancer of the cervix. The intervention was carried out using the platforms of the men’s association, market association and, bike riders (locally known as okada) associations in the community. The health education on cervical cancer and prevention through screening was adapted from the training manual on cervical cancer for peer educators.\textsuperscript{28} The health education session lasted one and half hours and included short didactic lectures on the following topics: an overview of cervical cancer including but not limited to stages, clinical features, transmission and prevention; myths/misconceptions regarding cervical cancer screening; and the role of spousal involvement in cervical cancer prevention/screening. Dramas/role plays to portray the importance of spousal involvement in cervical cancer screening were carried out with the aid of the research assistants. The training sessions were highly interactive and participatory with question-and-answer sessions. The language of communication was Izi. After the educational session, the leaders of the association summarized the message in Izi while addressing the people and further urged them to refer their wives to screen for cervical cancer. Following the health education, monthly meeting-based reminders (in the form of announcements by the leaders of the association) were issued during the men’s monthly meetings. As part of the announcements, the men were reminded to discuss cervical cancer with their wives and refer them for the screening. Three months post-intervention, the uptake of the screening services was obtained from the screening registers in the health facility offering the screening services.

\textbf{Data management/analysis.} The independent variables included the socio-demographic variables (such as age of respondent, age of respondent’s spouse, level of
education, occupation, family type, employment status, number of children borne by spouse) and awareness of the availability of screening services. The dependent variables were inter-spousal cervical cancer screening-related discussions and uptake of cervical cancer screening, both assessed using yes/no questions. To assess spousal involvement in cervical cancer screening at baseline, Mean Neutral Rating (MNR) of the Likert scale responses was done using the methods developed at McMaster University Canada by Johnson and Lavis. Spousal involvement was classified as good at mean values between 3.00 and 5.00 while values less than 3.00 were categorized as poor. Data entry and analysis was done using SPSS version 20.

Frequencies, proportions, means, and standard deviations were used to summarize the data in relation to the different variables. The chi-square test was used for bivariate analysis and comparison of pre and post-intervention data at p < .05. Binary logistic regression modelling was used to identify the predictor variables.

For the qualitative data, thematic analysis was carried out using predetermined themes guided by the study objectives and the interview guide. The KII recordings were transcribed verbatim with translation to English where necessary and compared with the hand-written notes to ensure completeness and inclusion of non-spoken responses. An initial coding framework was developed using themes conceived from the interview guide. Subsequently, we compared the transcripts with the coding framework to detect themes not present in the initial coding framework. Two data coders were involved in data coding. The revised coding framework was then applied to all the transcripts. In the final coding framework, the main themes were: 1) perceptions of male/spousal involvement in reproductive health, cervical cancer prevention, and screening; 2) challenges/barriers to male/spousal involvement in cervical cancer screening; and 3) recommendations for increasing male/spousal involvement in cervical cancer screening.
Ethical considerations. Ethical clearance for this study was obtained from the Research and Ethics Committee of Ebonyi State University, Nigeria. Written informed consent was obtained from the respondents prior to participating in the study. The questionnaire did not include self-identifying characteristics, and participation was voluntary.

Results

Quantitative findings. The respondents were mostly aged 29-39 years (95/245, 38.8%), were self-employed (205/245, 83.7%) and, practiced Christianity (224/245, 91.4%). The highest educational level was bimodal with primary school (75/245, 30.6%) and senior secondary school (75/245, 30.6%) as the highest educational levels. The respondents’ wives were mostly aged 18-28 years (110/245, 44.9%). About half of the respondents had one to five children (111/245, 45.3%). Most of the men were in a monogamous family setting (192/245, 78.4%). Only a small minority (31/245, 12.7%) of them were aware of the availability of cervical cancer screening services in the community. See Table 1.

Table 1.

SOCIO-DEMOGRAPHIC CHARACTERISTICS, AWARENESS OF SCREENING SERVICES AND INTENTION TO SUPPORT SCREENING AMONG MARRIED MEN IN A RURAL COMMUNITY, EBONYI, NIGERIA (N=245)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group of respondents (years)</td>
<td></td>
</tr>
<tr>
<td>18-28</td>
<td>30 (12.2)</td>
</tr>
<tr>
<td>29-39</td>
<td>95 (38.8)</td>
</tr>
<tr>
<td>40-50</td>
<td>62 (25.3)</td>
</tr>
<tr>
<td>&gt;50</td>
<td>58 (23.7)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td>224 (91.4)</td>
</tr>
<tr>
<td>Islam</td>
<td>1 (0.4)</td>
</tr>
<tr>
<td>Traditional religion</td>
<td>20 (8.2)</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
</tr>
</tbody>
</table>
No formal education 31 (12.6)
Primary school 75 (30.6)
Junior secondary school 20 (8.2)
Senior secondary school 75 (30.6)
Tertiary 44 (18.0)
Employment status
Paid employment 34 (13.8)
Self-employed 204 (83.3)
Unemployed 7 (2.9)
Family Type
Monogamy 192 (78.4)
Polygamy 53 (21.6)
Age group of respondents’ wives (years)
18-28 110 (44.9)
29-39 90 (36.7)
40-50 32 (13.1)
>50 13 (5.3)
Number of children borne by spouse
None 24 (9.8)
1-5 111 (45.3)
6-10 89 (36.3)
>10 21 (8.6)
Awareness of availability of community-level screening services
Yes 31 (12.7)
No 214 (87.3)
Intention to support spousal cervical cancer screening
Yes 235 (95.9)
No 10 (4.1)

At baseline, the mean extent of support towards spousal screening was 1.99±1.27.

Almost half of the respondents (48.2%) strongly disagreed that they supported screening. Only 18 (7.3%) and 21 (8.6%) agreed and strongly agreed, respectively, that they provide support towards spouse’s screening. The mean extent of funding spouse’s screening test was 2.09±1.22. About two-fifths of the respondents (38.8%) strongly disagreed with funding spouse’s cervical cancer screening. Mean practice of ever accompanying spouse for screening test was 1.72±1.09. A majority of the respondents (60.0%) strongly disagreed with ever accompanying spouse to the health facility for cervical cancer screening. The mean practice of
providing emotional support for one’s spouse during screening was 2.31±0.09. Half of the respondents (50.6%) strongly disagreed with ever providing emotional support for spouse during screening. The majority of the respondents (95.6%) intended to support their spouse for cervical cancer screening. See Table 2.

Table 2.
PRE-INTERVENTION SPOUSAL INVOLVEMENT IN CERVICAL CANCER SCREENING AMONG MARRIED MEN IN A RURAL COMMUNITY, EBONYI, NIGERIA (N=245)

<table>
<thead>
<tr>
<th>Parameter assessed</th>
<th>Very Low Extent/Strongly Disagree</th>
<th>Low Extent/Neutral</th>
<th>Undecided Extent/Agree</th>
<th>Moderate Extent/Agree</th>
<th>High Extent/Strongly Agree</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent of support towards spouse's screening</td>
<td>118 (48.2)</td>
<td>71 (29.0)</td>
<td>17 (6.9)</td>
<td>18 (7.3)</td>
<td>21 (8.6)</td>
<td>1.99±1.27</td>
</tr>
<tr>
<td>Extent of funding spouse's screening test</td>
<td>95 (38.8)</td>
<td>89 (36.3)</td>
<td>24 (9.8)</td>
<td>17 (6.9)</td>
<td>20 (8.2)</td>
<td>2.09±1.22</td>
</tr>
<tr>
<td>Ever accompanied spouse for screening</td>
<td>147 (60.0)</td>
<td>54 (22.0)</td>
<td>20 (8.2)</td>
<td>14 (5.7)</td>
<td>10 (4.1)</td>
<td>1.72±1.09</td>
</tr>
<tr>
<td>I provide emotional support for spouse's screening</td>
<td>51 (20.8)</td>
<td>124 (50.6)</td>
<td>28 (11.4)</td>
<td>28 (11.4)</td>
<td>14 (5.7)</td>
<td>2.31±0.09</td>
</tr>
<tr>
<td>Overall Practice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.09±0.97</td>
</tr>
</tbody>
</table>

The proportion of respondents who discussed cervical cancer screening with their spouse increased from 17.2% at baseline to 46.9% post-intervention (p<.0001). There was no statistically significant relationship between baseline and post-intervention screening status. See Table 3.
RELATIONSHIP BETWEEN PRE AND POST INTERVENTION INTER-SPOUSAL DISCUSSION AND SCREENING STATUS AMONG MARRIED MEN IN A RURAL COMMUNITY, EBONYI, NIGERIA

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-intervention (%)</th>
<th>Post Intervention (%)</th>
<th>Df</th>
<th>X^2 (p value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussed</td>
<td>42 (17.1)</td>
<td>115 (46.9)</td>
<td>1</td>
<td>49.844 (0.000)*</td>
</tr>
<tr>
<td>Not Discussed</td>
<td>203 (82.9)</td>
<td>130 (53.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
<td>245</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screened</td>
<td>8 (3.3)</td>
<td>7 (2.9)</td>
<td>1</td>
<td>0.069 (1.000) FT</td>
</tr>
<tr>
<td>Not Screened</td>
<td>237 (96.7)</td>
<td>238 (97.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
<td>245</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes
*Statistically significant
FT= Fishers exact test

The major reported reasons for non-discussion and screening were: Forgot to do so (76.1%), pregnancy-related reasons (8.5%), and no time to go for screening (8.5%). See Table 4.

Table 4.

REASONS FOR NON-DISCUSSION AND POOR UPTAKE OF CERVICAL CANCER SCREENING POST-INTERVENTION AMONG MARRIED MEN IN A RURAL COMMUNITY, EBONYI, NIGERIA

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Frequency</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons for only discussing without screening (n=108)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forgot</td>
<td>53</td>
<td>49.1</td>
</tr>
<tr>
<td>Wife has no time for screening</td>
<td>25</td>
<td>23.1</td>
</tr>
<tr>
<td>Pregnancy/Childbirth related</td>
<td>17</td>
<td>15.8</td>
</tr>
<tr>
<td>Disinterest/Wife not at risk</td>
<td>13</td>
<td>12.0</td>
</tr>
<tr>
<td>Reasons for not discussing/encouraging spouse to screen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=130)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forgot to discuss with wife</td>
<td>99</td>
<td>76.1</td>
</tr>
<tr>
<td>Pregnancy-related reasons</td>
<td>11</td>
<td>8.5</td>
</tr>
<tr>
<td>No time to go for screening</td>
<td>11</td>
<td>8.5</td>
</tr>
<tr>
<td>Disinterest/Perceived non-risk for spouse</td>
<td>5</td>
<td>3.9</td>
</tr>
<tr>
<td>Perceived lack of adequate information</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>
Most of the respondents (73.1%) did not have a preference for any specific gender of the screening provider who would screen their spouse for cervical cancer. About one-fourth of the respondents (24.9%) preferred a female health worker to screen their spouses for cervical cancer. See Figure 1.

**Figure 1.** Preferred gender of health worker for spousal screening.

Most of the respondents (91%) believed that sponsoring the screening was a way of spousal involvement while accompanying one’s spouse to the health facility for screening was another way of male involvement in cervical cancer prevention highlighted by 69.4%. Only 29.4% of the respondents believed that involving women in decision-making on cervical cancer screening was a role of men in cervical cancer prevention; 27.3% believed avoiding multiple sexual partners were roles of men in cervical cancer prevention. See Figure 2.
Figure 2. Perceptions on ways men can be involved in cervical cancer prevention.

**Qualitative findings.** The interviewees were the officer-in-charge of the health facility (CPC) where screening services are offered (aged 52 years); a male community health worker (aged 40 years); a male community leader (aged 50 years); a female community women’s leader who had been screened (aged 41 years); and a female community member (aged 35 years).

**Male involvement in reproductive health including cervical cancer screening.** The predominant view among the interviewees was that men should be involved in the reproductive health of their wives. The reasons given include the financial dependence of wives on their husbands, husband’s influence and, the need for their permission of husbands before women can access health services and the role wives play in the family. Some verbatim comments are highlighted below:
Being involved is very important as it takes a man and a woman to form a family and if one is sick, it makes it difficult for the other to maintain the family.

—— Male community leader

I think male involvement is important because most of the women are financially dependent on their husbands and so always listen to them. Even though the money for cervical cancer screening is a small amount, most of them need their husband’s permission to do the test. If the men are involved, they will encourage their wives to seek to do the test.

—— Matron

It is important that the man supports and is involved in the screening as they can infect their wives or vice versa.

—— Female community member

Male involvement is very important as women listen to their husbands more than even health care workers. They do whatever their husbands tell them as they see their husbands as their second god. Some women here may be in labor and if the husband is not around to permit them, they will not visit the health facility. Some even opt to go home to seek their husband’s consent when they are told they are already in labor in the hospital. This is why some of our women deliver at home.

—— Male community health worker

*Perception of community (menfolk) attitude towards husbands being involved in reproductive health including cervical cancer screening of their wives.* All of the interviewees opined that men in the community barely supported their wives’ reproductive health. The health workers interviewed responded to this using their work experience in the community. The
matron and the community health worker had worked in the community for over 10 years and six years, respectively. They were of the opinion that men were generally not supportive of reproductive health programs such as family planning and facility-based childbirth as they were viewed as culturally inappropriate. Although the community leader agreed that many community men were not involved in the health of their wives, he stated that he had personally supported his wife’s screening. Some excerpts are below.

Generally, men here do not know so much about reproductive health. For instance, on the issue of family planning, they so much believe in their culture that a woman is supposed to have all the children that God put inside her. They always ask their wives whether their mothers delivered them in the hospital or even did cervical cancer screening and believe that their old ways have been working for them so they do not need change.

——Matron

Formerly, men in this community were not supportive of their wife’s reproductive health but there have been slight improvements. Also, most community mobilization activities on reproductive health have been focused on women without involving the men and this may explain their low involvement.

——Male community health worker

It is true that some of our men are not involved in their wives’ health but I can only speak for myself. After we learned of this screening test, I encouraged my wife to do it.

——Male community leader
Ways husbands can support their spouse’s cervical cancer screening. Emotional and financial support were the most cited ways through which husbands could be involved in cervical cancer screening. Accompaniment to the health facility was not considered an option by one of the interviewees.

Emotional support is very important as fear of the disease can lead to death.

——Male community leader

I particularly think accompaniment by the husband for the screening is very important because the wife will feel more secure. But we know the men of this community well, they will say that since you won’t test them, there will be no need to come with their wives so they will go about their business.

——Matron

I think bearing financial responsibility for the screening test and further management if necessary is a very important aspect of the husband’s support. They should also encourage and ensure that their wives get screened.

——Male community health worker

Challenges/barriers to male involvement in cervical cancer screening for their spouses.

The barriers identified by the key informants include poor knowledge of cervical cancer, the perceived costliness of the screening test, fear of screening-related injury to the reproductive system resulting in infertility, husbands not loving their wives, fear of a positive result, perceived tedious hospital logistics and religious beliefs. Some of the verbatim comments are below.

Some men are afraid of a positive result or wife dying from the sickness.

——Female community leader
There is poor knowledge of cervical cancer in the community because of poor sensitization.

——Matron

Some men are afraid that the screening may injure the woman’s organs (especially their ability to bear children) or introduce infection.

——Male community health worker

Cost concerns are also another issue as people believe that any service rendered in the hospital will be expensive.

——Male community health worker

Recommendations on increasing male involvement in cervical cancer screening. All the key informants suggested awareness creation about cervical cancer screening and community mobilization as a strategy for improving male involvement in cervical cancer screening. Incentives to encourage male involvement in reproductive health were also suggested.

It is not easy for people to start using what they are not used to. There’s a need for more awareness creation targeting men of our community.

——Male community leader

I recommend that incentives be put to encourage women to come with their spouse to the health facility for any reproductive health concern.

——Matron

Discussion
At baseline, spousal involvement in cervical cancer screening was low in all the ways it was assessed. This is in keeping with findings from other similar studies that assessed male involvement in reproductive health. Poor knowledge of the disease, cultural norms that limit such spousal discussions could have accounted for this low level of involvement. Additionally, this suboptimal spousal involvement could be because respondents were from a rural patriarchal community where reproductive health has been largely perceived to be a woman’s domain due to gender norms and traditional communication geared towards women. Fear of ridicule by their peers and being seen as lesser men who are controlled by their wives have been reported as reasons for spousal non-involvement in reproductive health from other studies. Our baseline findings showed that most of the men in this study intended to support cervical cancer screening by their wives similar to findings from other studies. This finding also corroborates the high levels of willingness to support cervical cancer screening previously identified among these respondents. Women have also been shown to have intentions to screen for cervical cancer from other studies. However, this has not always translated into actual screening.

Inter-spousal communication on reproductive health issues is important for promoting the uptake of services. Although the inter-spousal discussion on cervical cancer screening improved significantly, there was no significant change in screening uptake in our study. Inter-spousal discussion was the only aspect of spousal involvement assessed post-intervention. Some men in other studies have suggested that their wives/partners were more knowledgeable and proactive about such reproductive health matters and felt embarrassed holding such discussions with them. Similarly, an Ethiopian study reported increased inter-spousal discussion on family planning following couple-based family planning education. However, this study was focused on couples and not just men as in our study. In contrast with our findings
on uptake of the intervention, another study to promote family planning uptake by ongoing community dialogues about gender and family planning in Kenya showed significant improvement in uptake of family planning post-intervention. However, this was a three-year-long study that focused on family planning, which seems to have received more global attention than cervical cancer over the years.

Following this poor uptake of screening services, we sought to find out reasons for it. Forgetting to discuss or refer wife, wife having no time for screening, pregnancy/childbirth-related reasons and poor risk perception were the commonest reasons for not discussing or not screening. Additional reasons for poor spousal involvement elucidated from the qualitative data were poor knowledge of cervical cancer, perceived costliness of the screening test, and fear of screening-related injury to the reproductive system resulting in infertility. The belief that one is not at risk of the disease has also been identified elsewhere as a reason for poor cervical cancer screening behavior. Cost considerations for the screening test and disease management in the event of a positive test result have also been identified as possible reasons that could deter men from being involved in their spouse’s cervical screening.

Uptake of cervical cancer screening services has remained low in Nigeria especially in rural areas, where there is limited awareness of cervical cancer and where there are frequently no screening services available. In our study, the fact that screening services only became available in the community months before this study commenced could affect the general community awareness of the availability of the services, and this may have contributed to the low uptake. Additionally, poor knowledge of cervical cancer and cancer prevention found among the respondents may have contributed to the suboptimal involvement and slow progress towards the uptake of cervical cancer screening. Community-based and driven
activities should be reinforced to increase awareness of cervical cancer prevention including screening. Existing community structures such as community social groups (such as the men’s associations) could be leveraged as platforms to achieve this.

Acquiescence bias (socially desirable answers) may have played a role in the disparity between the intention to support spousal cervical cancer screening and actual involvement in cervical cancer screening both pre and post-intervention. This is because Likert scale questions (including agree-disagree questions) were used for the baseline inquiry. However, both the qualitative and quantitative aspects of the study showed a favorable disposition towards spousal involvement in cervical cancer screening, and the respondents were assured of the confidentiality and anonymity of their responses. Future research is recommended in order to understand the reasons why discussions between partners did not translate to screening.

Higher spousal parity increased the likelihood of inters-spousal screening-related discussion. With multiple confinements, a man may become more exposed to and interested in maternal health information (cervical cancer inclusive) in addition to a higher level of readiness cum confidence in discussing such issues. However, more research is required to understand the relationship between family size and inter-spousal discussions on cervical cancer. The findings from this study should be interpreted with caution because some aspects were based on self-reported assessments, which could have introduced some response bias. Because the study was conducted in only one rural community in Nigeria, its findings may not be generalizable to urban communities or communities in other regions.

**Conclusion.** There was poor spousal involvement in cervical cancer screening at baseline in this study. Following the intervention, there was improved inter-spousal communication on cervical cancer screening but no difference in screening uptake. Non-
prioritization of cervical cancer screening, limited awareness on cervical cancer, and the short post-intervention duration could have contributed to findings. To improve the uptake of cervical cancer screening, we recommend community–driven interventions on cervical cancer screening with a gender transformative-perspective. This will involve women’s empowerment, promotion of female autonomy in health decision-making, and sustained menfolk advocacy and engagement.
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