

Effects of Health Promotion on Safe Motherhood Services Knowledge and Utilization Among Women of Reproductive Age in Bayelsa State, Nigeria

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Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.	
Citation: Samuel, G.K. (PhD), Amakoromo, Bodisere Augustina. (2026). Effects of health promotion on safe motherhood services on knowledge and utilization among women of reproductive age in Bayelsa State. UKR Journal of Medicine and Medical Research, 2(5), 21-27.	<i>When safe motherhood services are not sufficiently used, maternal morbidity and death can negatively impact the health and well-being of both mothers and infants. The study examined the effect of health promotion on knowledge and use of safe maternity services among women of reproductive age in Bayelsa State. The research design of this study was quasi-experimental pretest posttest control group. The study population included 1,838,789 women of reproductive age and 150 of them were selected by a multistage sampling technique. The data was collected by utilising a self-designed instrument entitled Safe Motherhood Services Knowledge and Utilisation Test Instrument (SMSKUTQ). Data collection was done in three phases pre-intervention, intervention and post-intervention. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) Version 27. Descriptive statistics like mean and standard deviation and inferential statistics of Analysis of Covariance (ANCOVA) at 0.05 level of significance were used. The results indicated that health promotion had significant effect on knowledge of prevention and management of unsafe abortion [$F(1, 143) = 36.47, p < 0.05$], knowledge of STI prevention and control [$F(1, 143) = 29.70, p < 0.05$] and utilisation of safe motherhood services [$F(1, 143) = 29.70, p < 0.05$]. The study concluded that health promotion is an effective technique in developing intervention programs to improve knowledge and utilisation of safe maternity services among women of reproductive age in Bayelsa State. It was recommended, among others, that the Ministry of Health ought to give priority to women of reproductive age in the promotion of family planning by deploying more personnel to households to provide family planning information and commodities in a similar manner as the current community-based immunisation outreach activities.</i> Keywords: Safe Motherhood Services, Reproductive Age, Knowledge, Utilization.

Introduction

Safe motherhood is a United Nations initiative, started in 1987 as a global programme to ensure that all women experience pregnancy and childbirth safely and achieve their full potential of giving birth to healthy children (United Nations, 2020). Antenatal care, skilled attendance at delivery, emergency obstetric care, postnatal care, family planning and prevention and management of unsafe abortion are all components of safe motherhood (Togarepi et al., 2018). The current study is limited to antenatal care, postnatal care, family planning, prevention and management of unsafe abortion and STI prevention and control. Safe motherhood encompasses a set of medical,

educational and health interventions to reduce maternal death and disabilities (Black et al., 2021). Safe motherhood is based on the idea that every woman should have access to quality care during pregnancy and childbirth so that both mother and child can be healthy. It is the one that aims on safe motherhood which means accessibility of good quality safe motherhood service to all pregnant women for safe management of abortion.

Unsafe abortion is a major public health challenge worldwide due to its harmful health consequences. World Health Organization (2020) described abortion as the

removal of a pregnancy at or before 28 weeks of gestation, or expulsion or extraction from the womb of a foetus or embryo weighing 500 grams or less. It is the deliberate termination of pregnancy other than as a consequence of miscarriage; nor with the sole purpose, which is doing something to cause a live delivery or removing dead tissue (Ubaja et al., 2014). An unsafe abortion is defined as one performed either by persons lacking the necessary skills, or in an environment that does not conform to minimal medical standards, or both. Unsafe abortion causes significant long-term morbidity and mortality, which may include post procedure complications arising from sepsis, perforation of the uterus/ intestine or haemorrhage, chronic pelvic infection and infertility (Bayer et al., 2011). To compound this, this can be exacerbated in the absence of relevant obstetric care.

Background Maternal nutrition is an essential component of maternal and child health. Maternal malnutrition remains unacceptably high in all regions of Africa (Black et al., 2020), and although countries at the bottom of the economic gradients have made great strides, maternal under-nutrition continues to be a prominent global challenge in low-income countries. Maternal malnutrition is therefore also a key determinant of maternal, neonatal and child health [7]. Likewise, inadequate maternal nutrition prior to and during pregnancy is significantly linked with an elevated risk of deleterious birth outcomes including maternal anaemia, mortality as well and low birth weight (LBW) and preterm delivery (PTB) (Bompong et al., 2020), although Bhutta et al. The explanation for this relationship is not so simple (2020). According to Black et al. The idea is that by targeting these specific young women, nutrition interventions are effective in increasing intake of key nutrients [2] and ultimately can help improve health outcomes. Thus, strategies including health education along with health promotion through nutrition communication have a potential to continue addressing improving maternal and neonates' outcomes.

Health education on safe motherhood is an essential tool to help women of reproductive because it enlightens them. Gupta et al (2015) asserted that, health education for pregnant mothers is the all-inclusive health intervention that reduce the likelihood of mortality and morbidity arising from food borne diseases. Achalu (2019) defined health education as consisting of deliberately planned programme of learning that involves some form of communication that is aimed at improving health literacy encompassing knowledge and generating life skills that are beneficial to the individual. Health information, education and communication in relation to safe motherhood services are important tools for influencing behaviour (Swain et al., 2015). Information, Education, and Communication (IEC)

is a strategic approach used to disseminate knowledge, shape attitudes, and foster positive behaviors across various sectors, including health, education, and development (Thompson, 2019). IEC encompasses the systematic delivery of information through education and communication strategies designed to create awareness, encourage participation, and facilitate behavioral change (Rogers et al., 2019). According to Patel and Kumar (2021), IEC initiatives are essential in public health, where accurate and timely information can significantly impact the prevention and management of diseases. Through a variety of platforms such as mass media, community engagement, and digital tools, IEC campaigns ensure that vital information reaches diverse populations effectively. One of the critical strengths of IEC lies in its multi-dimensional approach to behavior change. Information provides the foundation by supplying accurate data about a particular issue, while education helps deepen understanding by contextualizing this information in a way that resonates with the audience. Communication, on the other hand, fosters dialogue and feedback, enabling a two-way exchange that enhances the likelihood of message retention and behavioral adaptation. One of the ways to better communicate health information is through health education.

Providing health promotion could enhance the understanding of issues and an excellent tool to overcome challenges bordering on safe motherhood. In the words of Sarjeet (2018), health promotion is the process of persuading people to accept measures which will improve their health and to reject those that will have an adverse effect. Health promotion had an effect on both knowledge and utilization of safe motherhood (Farea et al., 2020). According to World Health Organization (2018), women of reproductive age who received health promotion were less likely to experience motherhood complications. Health promotion is seen as information, hence education and communication is an essential aspect of health programme.

In Bayelsa State, the government had established several measures to prevent and reduce maternal morbidity and mortality such as: building healthcare facilities and equipping them, as well as posting skilled personnel (nurses, midwives, doctors and other health workers) to render skilled services. Other services include the annual celebration of Maternal and Child Health Week. Safe Motherhood Day with the distribution of free mosquito nets to pregnant and nursing mothers, free intermittent preventive treatment of malaria and tetanus immunization, and family planning services across all the Local Government Areas in the state. However, utilization level is still sub-optimal as many still resort to quacks and clandestine means of healthcare. On the other hand, women

of reproductive age who are the study population are of reproductive age, and needs safe motherhood services thus, the need to carry out this intervention to enlighten them and influence both their knowledge and utilization. It is against this background that the researcher carried out this study on effects of health promotion on safe motherhood services knowledge and utilization among women of reproductive age in Bayelsa State. The study sought to provide answers to the following research questions:

1. What is the effect of health promotion on the knowledge of prevention and management of unsafe abortion among women of reproductive age in Bayelsa State?
2. What is the effect of health promotion on the knowledge of STI prevention/control among women of reproductive age in Bayelsa State?
3. What is the effect of health promotion on safe motherhood services utilization among women of reproductive age in Bayelsa State?

Hypotheses

The following hypotheses formulated to guide the study were tested at 0.05 level of significance:

1. There is no significant effect of health promotion on the knowledge of prevention and management of unsafe abortion among women of reproductive age in Bayelsa State.
2. There is no significant effect of health promotion on the knowledge of STI prevention/control among women of reproductive age in Bayelsa State.
3. There is no significant effect of health promotion on the safe motherhood services utilization among women of reproductive age in Bayelsa State.

Table 1: Mean and standard deviation of the effect of health promotion on the knowledge of prevention and management of unsafe abortion

Group	Pretest	Post-test	Mean gain	
			Pretest	Posttest
Experimental	2.88	3.11	0.91	0.09
Control	1.97	3.02		

Table 1 indicated the mean and standard deviation on effect of health promotion on knowledge of prevention and management of unsafe abortion among women of reproductive age in Bayelsa State. The findings showed that the control group had pretest score of 2.88 and post-test score of 3.02 with grand mean difference of 0.14 whereas

Methodology

A quasi-experimental pretest-posttest control group design was used for the study. A total of 1,838,789 women of reproductive age selected from Bayelsa State formed the study population. Consequently, a sample of 150 respondents was selected using a multistage sampling procedure. In the first stage, stratified sampling was used to select the three senatorial districts-Bayelsa Central, Bayelsa West, and Bayelsa East-from the state. In the second stage, two Local Government Areas (LGAs) were randomly selected from each of the senatorial districts. As a result, six LGAs- Kolokuma and Yenagoa, Ekeremor and Sagbama, Brass and Nembe-were selected from the 15 LGAs in the state. In the third stage, cluster random sampling was used to divide the six LGAs into intervention and control groups. In the fourth stage, one community was randomly selected from each LGA, and 25 women were purposively selected from each community using the inclusion criteria of women aged 15-49 years. Thus, respondents below 15 years and those aged above 49 years were excluded from the study.

A self-structured instrument named Safe Motherhood Services Knowledge and Utilization Test Instrument (SMSKUTI) was used for the data collection. The data were collected in three stages: pre-intervention, intervention, and post-intervention. Each completed instrument was assigned an identification code for effective data management and analysis. The Statistical Package for the Social Sciences (SPSS) version 27 was used to analyze the data. Descriptive statistics (mean and standard deviation) and Analysis of Covariance (ANCOVA) as tests for treatment effects at a 0.05 level of significance were reported.

Results

The results of the study are shown below:

the experimental group had pretest score of 1.97 and post-test score of 3.11 with grand mean difference of 1.15. Hence, health promotion had a good impact on knowledge of prevention and management of unsafe abortion among women of reproductive age in Bayelsa State.

Table 2: Mean and standard deviation of the effect of health promotion on the knowledge of STI prevention and control

Group	Pretest	Post-test	Mean gain	
			Pretest	Posttest
Experimental	1.75	3.12	1.00	0.33
Control	2.75	2.79		

The mean and standard deviation on effect of health promotion on the knowledge of STI prevention/control women of reproductive age in Bayelsa State is shown in Table 2. The findings revealed that, the control group had a pretest score of 2.75 and post-test score of 2.79 with grand mean difference of 0.04 whereas the experimental group

had a pretest score of 1.75 and post-test score of 3.12 with grand mean difference of 1.19. Thus, awareness of STI prevention/control among women of reproductive age in Bayelsa State was positively influenced by health promotion.

Table 3: Mean and standard deviation of the effect of health promotion on safe motherhood services utilization among women of reproductive age in Bayelsa State

S/N	Items	Control (N = 75)		Mean diff.	Posttest (N = 143)		Mean diff.
		$\bar{X}$	SD		$\bar{X}$	SD	
1	Antenatal care services utilization	2.71	2.94	0.23	2.59	2.91	0.32
2	Postnatal care services utilization	2.77	2.87	0.1	2.65	2.71	0.06
3	Family planning	2.83	2.86	0.03	2.57	2.82	0.25
4	Prevention and Management of Unsafe Abortion	2.81	2.67	-0.14	2.63	2.98	0.35
5	Utilization of STI Prevention/Control Services	2.81	2.81	0.00	3.14	3.25	0.11
	Grand mean	2.78	2.83	0.04	2.71	2.93	0.22

Criterion mean = 2.50

Table 3 presents the mean and standard deviation of the effect of health promotion on safe motherhood services utilization among women of reproductive age in Bayelsa State. The results indicate that the control group recorded a pre-test mean score of 2.78 and a post-test mean score of 2.83, with a grand mean difference of 0.04, while the experimental group recorded a pre-test mean score of 2.71

and a post-test mean score of 2.93, with a grand mean difference of 0.22. The higher mean difference observed in the experimental group suggests that health promotion had a positive effect on knowledge of STI prevention and control among women of reproductive age in Bayelsa State.

Test of Hypotheses

Table 4: Analysis of Covariate (ANCOVA) on effect of health promotion on the knowledge of prevention and management of unsafe abortion among women of reproductive age in Bayelsa State

Source	Type III Sum of Squares	df	Mean Square	F-value	Sig.	Partial eta square
Corrected Model	23.87	1	23.871	36.478	.000	.112
Intercept	97.14	1	97.73	75.672	.000	.340
Pretest	23.87	1	23.871	36.478	.000	.112
Error	189.11	73	.654			
Total	2336.00	75				
Corrected Total	212.99	73				

*Significant; $p < 0.05$

Table 4 presents the Analysis of Covariance (ANCOVA) conducted to determine the effect of health promotion on knowledge of the prevention and management of unsafe abortion. The ANCOVA results revealed that the intervention had a statistically significant effect on participants' knowledge, $F(1, 73) = 36.47$, $p < 0.05$. However, the effect size indicated that only 11.2% of the

variance in the post-test knowledge scores was explained by the health promotion intervention ($\omega^2 = 0.112$). Therefore, the null hypothesis, which stated that there is no significant effect of health promotion on knowledge of the prevention and management of unsafe abortion among women of reproductive age in Bayelsa State, was rejected.

Table 5: Analysis of Covariate (ANCOVA) on effect of health promotion on the knowledge of STI prevention/control among women of reproductive age in Bayelsa State

Source	Type III Sum of Squares	df	Mean Square	F-value	Sig.	Partial eta square
Corrected Model	15.12	1	15.12	29.70	.000	.093
Intercept	144.19	1	144.19	283.09	.000	.495
Pretest	15.12	1	15.12	29.70	.000	.093
Error	147.20	73	.50			
Total	2651.00	75				
Corrected Total	162.33	73				

*Significant; $p < 0.05$

Table 5 presents the Analysis of Covariance (ANCOVA) conducted to determine the effect of health promotion on knowledge of STI prevention and control. The results of the ANCOVA revealed that the intervention had a statistically significant effect on knowledge of STI prevention and control, $F(1, 73) = 29.70$, $p < 0.05$. However, the effect size indicated that only 9.3% of the variance in the post-test

knowledge scores was explained by the health promotion intervention ($\omega^2 = 0.093$). Therefore, the null hypothesis, which stated that there is no significant effect of health promotion on knowledge of STI prevention and control among women of reproductive age in Bayelsa State, was rejected.

Table 6: Analysis of Covariate (ANCOVA) on effect of health promotion on safe motherhood services utilization among women of reproductive age in Bayelsa State

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial eta square
Corrected Model	7.86	1	7.86	9.14	.003	.031
Intercept	218.75	1	218.75	258.23	.000	.472
Pretest	7.86	1	7.86	9.14	.003	.031
Error	244.81	73	.84			
Total	3328.00	75				
Corrected Total	252.68	73				

*Significant; $p < 0.05$

Table 6 showed the Analysis of Covariate (ANCOVA) which was conducted to ascertain the effect of health promotion on safe motherhood services utilization. The result of the ANCOVA showed that the intervention had a significant effect [$F(1, 73) = 29.70$, $p < 0.05$] on safe motherhood services utilization. However, only 3.1% ($\omega^2 = 0.031$) of the variance in the post-test knowledge scores could be explained by the health promotion intervention. Therefore, the null hypothesis which stated that, there is no significant effect of health promotion on safe motherhood services utilization among women of reproductive age in Bayelsa State was rejected.

Discussion of Findings

The study finding showed that health promotion significantly influenced knowledge of prevention and management of unsafe abortion among women of reproductive age. This finding was anticipated as the first intervention type producing a health promotion focused on information communication to deliver data that would sufficiently prepare participants with the appropriate knowledge related to information provided. The effect observed is beneficial to women of reproductive age because, where family planning commodities fail or pregnancies occur as a result of the inconsistent or improper

use of such services, they can obtain safe abortion and post-abortion care which could prevent the repercussions related to clandestine abortion. This result matches the finding of Rangi and Mwageni (2012) who, in a study investigating the impact of sexual and reproductive health promotion in Morogoro Municipality, Tanzania reported that sex education significantly influenced abortion knowledge. The similarities between the previous and current studies could be because of homogeneity, as both included women in a reproductive age range.

Another finding of the study indicated that health promotion positively influenced knowledge on STI prevention and control among reproductive age women. This finding was expected since the health promotion intervention aimed to provide the women with relevant information and IEC material to advance on the already existing knowledge. Conclusion The intervention of sexual health education was warranted considering the enormous impacts sexually transmitted infections can have on women of childbearing age within the study area. Reproductive health educators need to urgently plan for and implement programmes on STIs preventive strategies especially targeting sexually active women of reproductive ages to sustain their knowledge and avoid future health challenges. This result is consistent with the findings from the study conducted by Malleshappa et al. (2011), based in Kuppam, Andhra Pradesh, looked at the effect of an intervention on reproductive health knowledge among females of reproductive age and showed that knowledge of STI prevention improved through the intervention in a sample of adolescents. The result also agrees with that of Rangi and Mwageni (2012) [29] who reported in a study on health promotion in Morogoro Municipality, Tanzania, that health promotion significantly improves STI prevention knowledge. In addition, the result is consistent with that of Peter-Kio et al. (2013) whose findings of knowledge about HIV/AIDS and sexual behaviour among secondary school students in few selected secondary schools in Port Harcourt Local Government Area of Rivers State concluded that respondents had good knowledge on STI prevention. The similarities of these earlier studies to the present study may be attributed to the prevalence of reproductive health knowledge and more so, the study populations.

Conclusion

Based on the findings of the study, it was concluded that health promotion interventions, especially those relating to health information, education and communication, are viable options for improving programmes, which seek to increase knowledge and use of safe motherhood services among women of reproductive age in Bayelsa State.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Non-governmental organizations interested in maternal healthcare should launch a campaign on abortion to ensure a sustained awareness about abortion among women of reproductive age.
2. The maternal healthcare professionals should encourage women of reproductive age to prevent STIs by re-strategizing and establishing friendly reproductive health clinics or clubs at strategic locations in the community.
3. Policy makers and social welfare workers should intensify the campaign on healthy motherhood in different communities.

The finding of the study revealed that the health promotion had a significant effect on the safe motherhood services utilization among women of reproductive age. The finding of this study is also encouraging because it implies that health promotion intervention such as health promotion and information communication are veritable tool for influencing health behaviour such as the utilization of safe motherhood services and can aid the translation of knowledge to action among women of reproductive age because they were exposed to health promotion. This finding also shows that learning has taken place. The influence of health promotion also implies that more women of reproductive age are now utilization safe motherhood services and by extension they may influence their friends or peers, thereby promoting health and reduce the risk of maternal morbidity and mortality among the population. The finding of this study gives credence to that of Reis et al. (2011) whose study on the effect of health promotion in promoting reproductive health in Portuguese revealed that health promotion had an effect on the utilization of healthcare services as there was an increase in the level of utilization after the intervention. The finding of this study is akin to that of Rangi and Mwageni (2012) whose study on the role of sexual reproductive health promotion in Morogoro Municipality, Tanzania showed that, health promotion intervention such as sex education had an effect on the utilization of such services. The similarity found between the previous studies and the present one might be due to the homogeneity of the study population as they both focused on those of reproductive age.

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