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EFFECT OF HEALTH EDUCATION INTERVENTION ON KNOWLEDGE OF SOCIO CULTURAL INDICES OF PRE-ECLAMPSIA AND ECLAMPSIA AMONG MARRIED WOMEN IN BAUCHI STATE, NIGERIA

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Abstract
The paper examine the effect of health education intervention on knowledge of socio-cultural indices of preeclampsia and eclampsia among married women in Bauchi state Nigeria, one objectives, one hypothesis ware formulated to guide the study. Research design used was quasi experimental designed of two group pretest and posttest was used, population for the study was 250 married women ware continently selected using simple random sampling. Questionnaire and training models was also used during eight weeks intervention. Results revels that the p-value for the test was 0.000 ($p < 0.05$). These observations provided sufficient evidence for rejecting the null hypothesis. In conclusion health education intervention was very effective. Recommendation Health Educators: Develop culturally sensitive health education materials (posters, videos, leaflets) in local languages to improve awareness of pre-eclampsia and eclampsia indices. Organize seminars, workshops, and community-based education sessions focusing on nutrition, stress management, and ANC acceptability. Continuously assess the impact of health education programmes on participants' knowledge and behaviour, making necessary adjustments to improve outcomes.

Keyword: Effect, Socio-cultural, Preeclampsia, Eclampsia, Married Women

Introduction

Globally, about 830 women die every day from pregnancy, from pregnancy or childbirth-related causes, persisting causes of death among women of reproductive age are hemorrhage (18%), unsafe abortion (18%), hypertensive disorders (12%), sepsis (9%), and other maternal disorders (22%). Ninety-nine percent of these deaths occur in low- and middle-income countries and are more common among poor, rural women than urban women (Graham, 2016). Preventing these deaths requires deeper investigation into the contributory causes of maternal mortality, the quality-of-care women receive, and those experiences during labor and delivery at health facilities. In Nigeria, research has shown that hemorrhage and pre-eclampsia/eclampsia make up over 50% of the country's maternal mortality. With significant strides in preventing hemorrhage-related deaths hypertensive disorders have become the country's leading cause of maternal mortality, accounting for 29% of these deaths in tertiary hospitals (Oladapo, 2015). A study conducted in Ogun State, Southwestern Nigeria found that location, and time, obstetric condition, and socio-cultural characteristics influence health-seeking behaviors among pregnant women (Akeju, 2016). This study also revealed that while some women preferred accessing health services at facilities, most preferred traditional doctors, healers, religious care, and traditional birth attendants during pregnancy and delivery. A lack of financial resources further delay seeking care, as women depend on their husbands to provide money for health services.

Family members' play a significant role in women's ability to access health care during pregnancy (Fagbamigbe et. al., 2015). Since families consider pregnancy to be a natural part of life, they underestimate the importance of antenatal care (ANC) and the severity of danger signs and symptoms of pregnancy-related complications. Despite their social proximity to a care seeking woman, limited qualitative research exists on the influence of family members, spouses, parents, guardians and others

and community members on maternal care-seeking decisions in Nigeria. Hypertensive disorders in pregnancy are among the leading causes of maternal morbidity and mortality among pregnant women globally, among which are pre-eclampsia and eclampsia (Oluseye, et al. 2023). Pre-eclampsia is characterized by high blood pressure, it damages body organs like the kidneys and liver which can lead to heart failure, stroke, coronary heart disease and even death. (Ross, 2022).Pre-eclampsiais accountable for fetal complications such as pre-term birth, fetal growth restriction and maternal complications such as abnormal kidney function, severe hypertension, pulmonary oedema, and abnormal liver function among many others. (Fondjo et al., 2019). Mekie et al. (2021) was of the opinion that if the problem is not identified and managed early, pre-eclampsia may progress to eclampsia.

Eclampsia is one major complication of pre-eclampsia which is responsible for high mortality among pregnant women (Mekie et al, 2021). Eclampsia is a severe complication of pre-eclampsia with seizures being a significant manifestation (Akeju et al., 2016). Pre-eclampsia affects an estimated 4.6% of pregnancies globally (Yang, 2021). Generally, hypertensive disorders in pregnancy are more prevalent in developing countries than in developed countries and the occurrence of pre-eclampsia and eclampsia in the developed countries of North America and Europe are almost the same and it is about5–7 cases in 10,000 deliveries (Osungbade et al., 2017). In Africa, it varies from country to country such as in South Africa, Egypt, Tanzania, Ethiopia with ratio 1.8% to 7.1%. Nigeria has a prevalence of pre-eclampsia and eclampsia ranges between 2% to 16.7%. (Akaba, 2021). Pre-eclampsia and eclampsia are responsible for approximately 72,000 maternal mortalities and 500,000 infant mortality per year worldwide. (Olaoye, et al., 2019). Pre-eclampsia and eclampsia are responsible for the increase in maternal morbidity and mortality in Africa and Nigeria has one of the highest maternal mortality ratios ranging from 496 to 560 per 100,000 live births and few studies have been carried out among mothers on pre-eclampsia and eclampsia in Nigeria, Ogun State inclusive.

Available data reported that, pre-eclampsia is one of the disorders with high prevalence rate of 2% and16% and a high maternal mortality rate of more than 30,000 yearly deaths in Nigeria. In the Northern part of Nigeria, maternal deaths as a result of pre-eclampsia is approximately 40% while it is approximately 6% in the Southern part of the country. Lack of knowledge about the causes and complications of pre-eclampsia and eclampsia and poor perception of these disorders are major factors responsible for the alarming rate of these diseases and resultant death. A study reported that many women perceived hypertension in pregnancy as a problem related to depressive thoughts due to marital and/or financial problems conflict while seizures in pregnancy was perceived to result from prolonged exposure to cold (Osungbade et al. 2017). Despite the alarming global and national burden of pre-eclampsia and eclampsia, the situation in Nigeria remains particularly dire, with disproportionate mortality in the northern regions. While biomedical causes are well-documented, socio-cultural determinants such as family influence, financial dependency, cultural beliefs, and health-seeking behavior remain understudied, especially among women of reproductive age. Limited knowledge and misperceptions about these disorders further contribute to delayed care and preventable deaths. Therefore, this study seeks to fill this critical gap by examining women's knowledge of socio-cultural factors influencing pre-eclampsia and eclampsia in Nigeria, with a particular focus on the northern region.

Statement of the Problem

Socio-cultural factors significantly contribute to the development and mismanagement of pregnancy complications, particularly pre-eclampsia and eclampsia, among women of childbearing age. Societal norms, beliefs, and cultural practices shape health-seeking behaviors and access to maternal health care during pregnancy. In many communities, symptoms such as swelling (edema) and persistent headaches are culturally interpreted as normal aspects of pregnancy rather than warning signs of hypertensive disorders. This perception often delays timely diagnosis and appropriate care. Similarly, seizures associated with eclampsia are sometimes attributed to spiritual causes or "evil forces," resulting in reliance on traditional healers instead of prompt medical intervention. The consequences of these socio-cultural misinterpretations are evident in Nigeria, where maternal mortality remains one of the highest globally, with ratios ranging from 496 to 560 deaths per 100,000 live births. Pre-eclampsia and

eclampsia alone account for between 2% and 16.7% of all pregnancies and contribute to more than 30,000 maternal deaths annually, with northern Nigeria bearing a disproportionate burden. Despite this, limited research has been conducted in Bauchi State to explore how socio-cultural factors influence women's knowledge and perceptions of pre-eclampsia and eclampsia. However, it is against this backdrop, which this study seeks to tackle this critical gap by assessing the effect of a health education intervention on the knowledge of socio-cultural indices influencing pre-eclampsia and eclampsia among married women in Bauchi State, Nigeria.

Purpose of the study

The purpose of the study is to determine the effect of health education intervention on knowledge of socio -cultural belief indices of pre-eclampsia and eclampsia determinant among married women in Bauchi state after the intervention.

Research Question

The following research question guided the study:

1. Is there any effect of health education intervention on knowledge of socio-cultural belief as indices of pre-eclampsia and eclampsia determinants among married Women in Bauchi State before the intervention?

Hypothesis

The following hypothesis was tested at 0.05 significant level:
There is no significant effect of health education intervention on knowledge of socio -cultural belief as indices of pre-eclampsia and eclampsia determinants among married Women in Bauchi state before the intervention

Methodology

The study adopted a quasi-experimental design using pre-test and post-test with experimental and control groups. This design was chosen to assess the effectiveness of a health education intervention programme on the knowledge of indices that determine the prevalence of eclampsia among expectant mothers in Bauchi State. While the experimental group received the eight-week intervention, the control group continued with routine antenatal care services without exposure to the intervention. The population of the study comprised 1,661,760 married women attending clinics across Bauchi State, as reported by the National Population Commission (2022). From this, a target population of 1,200 registered expectant mothers attending primary, secondary, and tertiary healthcare facilities was identified for consideration. A sample size of 60 married women representing 5% of the target population was selected. Thirty participants were assigned to the experimental group and thirty to the control group. The sampling process was multi-staged. In the first stage, simple random sampling was used to select local government areas. In the second stage, purposive sampling identified the most populated wards. In the third stage, non-probability sampling was applied to allocate participants into experimental and control groups, while in the final stage proportionate sampling ensured fair representation. Inclusion criteria were married and literate women registered for antenatal care and willing to participate, while exclusion criteria included illiteracy, unwillingness, and non-registration for ANC.

The instruments for data collection included a researcher-designed questionnaire and an eclampsia health education manual (module). The questionnaire was divided into six sections (A–G) covering socio-demographic, socio-cultural, medical, nutritional, lifestyle, and antenatal care factors, with a total of 59 items rated on a four-point Likert scale. The intervention module contained eight weekly lessons addressing eclampsia indices such as high blood pressure, protein, salt intake, obesity, genetic predisposition, the importance of ANC, and programme benefits. To ensure validity, the instruments were reviewed by experts in Health Education, Community Medicine, and Nursing Science. Reliability was established through a pilot study with ten mothers in Jigawa State, which produced high reliability coefficients (Cronbach's Alpha = 0.857, Spearman-Brown = 0.821, and Guttman Split-half = 0.832). The procedure for data collection occurred in three phases. In the first phase, a pre-test was administered to both groups one week before the intervention to establish baseline knowledge. The second phase

involved implementation of the health education intervention for the experimental group at the Urban Primary Health Care Centre, Azare. This intervention lasted eight weeks, with one weekly session of two hours each. Research assistants, trained in data collection and facilitation, supported the process. The control group, located at Ali Kwara General Hospital, attended their routine antenatal care without intervention. The third phase involved administering the post-test to both groups immediately after the intervention, with a follow-up test conducted after eight weeks to assess knowledge retention.

The study adhered to ethical considerations. Approval was obtained from the Ahmadu Bello University Health Research Ethics Committee. Participants were provided with informed consent forms to indicate voluntary participation. Confidentiality was assured, and respondents were free to withdraw at any point without consequences. For data analysis, responses were coded in Microsoft Excel and analyzed using SPSS. Descriptive statistics such as means, standard deviations, frequencies, and percentages were employed to summarize demographic data and answer research questions. Inferential statistics were applied to test the hypotheses: one-sample t-tests were used for hypotheses one to six, while paired sample t-tests were employed for hypotheses seven to eleven. All hypotheses were tested at the 0.05 alpha level of significance.

Results

Table 1: Participants' Socio-Demographic Characteristics

Variable	Variable Options	Experimental		Control	
		Freq.	Percent %	Freq.	Percent %
Age	15 – 20 Years	7	23	5	17
	21 – 30 Years	12	40	10	33
	31 – 40 Years	8	27	13	43
	41 – Above Years	3	10	2	7
	Total	30	100.0	30	100.0
Education Qualification	Non-Formal Education	8	27	6	20
	Primary Education	6	20	4	13
	Secondary Education	12	40	14	47
	Tertiary Education	4	13	6	20
	Total	30	100.0	30	100.0
Occupation	Civil servant	6	20	8	27
	Farming	4	13	5	16
	Trading	14	47	8	27
	Full time house wife	6	20	9	30
	Total	30	100.0	30	100.0

Source: Field survey, 2024

Table showed that on age distribution for experimental group 15 – 20 Years has 7 (23%); 21 – 30 Years has 12(40%); 31 – 40 Years, has 8(27%), 41 – above Years, has 3(10%). Making the age distribution of 21-30 years to be higher while 41-above is lowest. For the control group 41-above Years with 2(7%) is the lower while 31-40 years is highest with 13(43%).

The distribution on education qualification showed that in experimental group; Non-formal Education has 8(27%), Primary Education 6 (20%), Secondary Education, 12 (40%); and Tertiary Education 4 (13%). Secondary Education has the highest frequency while non-formal education has the lowest. In control group Primary education has the lowest with 4 (13%) and Secondary Education has highest with 14 (47%).

Hypothesis One: There is no significant effect of health education intervention on knowledge of socio -cultural belief as indices of pre-eclampsia and eclampsia determinants among married Women in Bauchi state before the intervention.

Table 2: One sample t-test on Knowledge Socio-Cultural Belief Indices of Pre-Eclampsia and Eclampsia Determinants among Married Women in Bauchi State

Variable	Test	N	Mean	Std. Dev.	Std. Error	t-value	df	p-value
Knowledge of socio cultural belief indices of pre-eclampsia and eclampsia determinants	Post-test	30	3.24	0.542	0.0241	2.661	29	0.000
Test Mean		30	2.50	0.000	0.000			

(t-critical = 1.98, p <0.05)

The test revealed that the observed mean score of 3.24 for knowledge of socio-cultural belief indices of pre-eclampsia and eclampsia determinants married women post-test was significantly higher than 2.50 used as the test mean. The observed t-value for the test (2.661) obtained at 29 degree of freedom (df) is higher than the critical value indicated at the bottom of the table. The p-value for the test was 0.000 ($p < 0.05$). These observations provided sufficient evidence for rejecting the null hypothesis. The null hypothesis that there is no significant effect of health education intervention on knowledge socio - cultural belief indices of pre-eclampsia and eclampsia among married women in Bauchi state after the intervention is therefore rejected. The result show that married women have significant knowledge of socio-cultural belief indices of pre-eclampsia and eclampsia determinants in the study area after intervention.

Discussion of Findings

The null hypothesis that the health education intervention would have no significant effect on knowledge of socio-cultural belief indices of pre-eclampsia and eclampsia was rejected. The observed t-value ($t = 2.661$, $df = 29$) exceeded the critical value, with a corresponding p-value < 0.001, indicating that the intervention significantly improved participants' knowledge. These findings align with Ijadunola et al. (2010) who reported that culturally tailored health education reduced harmful cultural beliefs and significantly increased antenatal care utilization in Northern Nigeria.

Conclusion

Health education intervention on knowledge of socio cultural belief indices of pre-eclampsia and eclampsia determinants among married women in Bauchi State, Nigeria is effective.

Recommendations

Based on the findings and conclusion, the following recommendations are made:

1. Government should develop and enforce policies that mandate routine screening and management of pre-eclampsia and eclampsia in all healthcare facilities. Incorporate pre-eclampsia and eclampsia prevention strategies into national maternal health programs.
2. Establish maternal health surveillance systems to monitor the prevalence, risk factors, and outcomes of pre-eclampsia and eclampsia.
3. Strengthen community-level awareness campaigns on maternal health, with active government support and stakeholder involvement.

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