

Midwives' Understanding and Preparedness for Pre-Eclampsia Risk Identification and Prevention in Nigeria: A Qualitative Study

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Abstract

Background

Pre-eclampsia, is among the major causes of maternal and neonatal mortality worldwide, especially in developing countries. The World Health Organization recommends identifying and preventing pre-eclampsia as cost-saving measures essential to controlling the disease. Being the front-line managers of maternal care, the midwives' understanding and preparedness for pre-eclampsia prevention is absolutely necessary.

Objectives

This study examined midwives' understanding and preparedness for risk identification and prevention of pre-eclampsia among pregnant women.

Methods

A descriptive qualitative study that used an in-depth interview guide to collect data from 18 midwives who were purposively selected in south-western Nigeria. Data were collected between June and August, 2023, and analysed using content and thematic analysis.

Results

Four major themes emerged: (1) midwives' understanding of pre-eclampsia risk identification and prevention (2) midwives' preparedness for pre-eclampsia prevention (3) midwives' responsibilities towards pre-eclampsia prevention and (4) challenges faced in pre-eclampsia prevention. The midwives demonstrated poor understanding and preparedness for pre-eclampsia prevention.

Conclusion

Poor understanding, inadequate preparedness, and challenges of heavy workload, lack of approved guidelines and equipment for pre-eclampsia risk identification and prevention were observed among the midwives. Hence, the need for training and adequate provision of equipment to enhance pre-eclampsia prevention.

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Keywords: Midwives, Pre-eclampsia, Risk identification, Prevention, Preparedness

Introduction

Pre-eclampsia is the most common hypertensive disorder of pregnancy, significantly increasing the incidence of severe maternal and neonatal morbidity and mortality.[1-3] It complicates 2 to 8% of pregnancies and responsible for approximately 70,000 maternal and 500,000 neonatal deaths on yearly basis across the globe, accounting for up to 26% of maternal deaths in low-income countries. [4] A nationwide survey of Nigerian tertiary hospitals indicates that pre-eclampsia and eclampsia are major contributors to direct maternal mortality, claiming lives of hundreds of Nigerian mothers daily.[5,6]

Traditionally, pre-eclampsia was defined as hypertension accompanied by proteinuria in the second half of pregnancy.[7] However, it is now recognized that some women exhibit multi-systemic complications before proteinuria is detected.[7,8] Consequently, pre-eclampsia is defined as the presence of hypertension in the latter half of pregnancy, occurring with any significant signs of end-organ dysfunction, with or without proteinuria.[9,10] The pathophysiology of pre-eclampsia is largely attributed to hormonal imbalances during pregnancy, leading to increased vascular resistance and blood pressure.[11] This results in multi-systemic failure of vital organs such as the liver, kidneys, and blood clotting functions, as maternal organs experience poor blood perfusion and the foetus suffers from placental insufficiency, oligohydramnios, and intrauterine growth issues.[11,12] These complications can lead to poor pregnancy outcomes, including foetal distress, preterm births, stillbirths, and an increased need for operative procedures [7,13] Furthermore, the affected women and their infants face elevated risks of developing cardiovascular, renal, and chronic hypertensive diseases later in life.[7,13,14]

Effective identification and prevention of pre-eclampsia are essential and cost-saving measures.[15] Organizations such as the World Health Organization,[16]

the American College of Obstetrics and Gynaecology,[17] the Society for the Study of Hypertension in Pregnancy (ISSH),[18] and the National Institute for Health and Care Excellence (NICE)[19] recommend these practices be integrated into routine antenatal screening services.[20] As frontline providers of maternity care, midwives have been identified by the International Confederation of Midwives (ICM) as essential professionals in delivering skilled maternity care to reduce maternal mortality. [21] They bear the responsibilities of pre-eclampsia prevention, risk assessment, and the initiation of appropriate prophylactic treatments or referrals for specialized care. [22] However, many developing countries lack the necessary skilled professionals and resources to effectively prevent pre-eclampsia. Consequently, some midwives may delay diagnosis until proteinuria and hypertension are present, despite significant signs of end-organ dysfunction in clients. [23,24]

A lack of competence in recognizing patients at risk for pre-eclampsia has significantly contributed to delayed diagnoses and treatment in developing countries, where over 90% of preventable cases of severe maternal mortality occur annually.[25,26] In contrast, developed countries like the United Kingdom report fewer than one maternal death per million pregnancies due to pre-eclampsia, largely because midwives are well-equipped to provide antenatal surveillance, risk identification, early diagnosis, and timely intervention.[27] Nigeria ranks among the countries most affected by pre-eclampsia, necessitating targeted efforts for its prevention due to the high prevalence of the condition.[10] However, literature regarding the roles of midwives in pre-eclampsia prevention in Nigeria remains scarce.[28,29] Thus, this study aims to explore the understanding, training, and skills possessed to provide pre-eclampsia risk identification and prevention to the maternity clients.

The research seeks to address the following questions: 1. What is the midwives' understanding of pre-eclampsia and its prevention? 2. How do midwives describe their preparedness (training and competency) for risk and prevention of pre-eclampsia? 3. What do midwives perceive as their roles in the risk identification and prevention of pre-eclampsia? 4. What challenges do midwives encounter in pre-eclampsia prevention?

Methods

Study Design

This study utilized a descriptive qualitative approach to explore midwives' understanding and preparedness for risk identification and prevention of pre-eclampsia.

Study Setting

The study was conducted in facilities providing maternity care across Lagos, Ondo, and Osun States in Southwestern Nigeria. Lagos State, known for its high population and the largest number of midwives, was selected alongside Ondo State, which pioneered the Abiye program—a comprehensive health initiative to combat maternal morbidity and mortality.[30] Osun State was included as it was among the first beneficiaries of the Saving One Million Lives initiative, aimed at enhancing maternal and infant health through essential healthcare interventions.[31]

Study population and eligibility criteria

Three secondary healthcare facility with the highest patronage of maternity clients were purposively chosen from Lagos and Osun States but due to availability, only two were chosen at Ondo State. The selected facilities in Lagos were Ifako-Ijaiye General Hospital, Ikeja; Gbaja General Hospital, Surulere and Ikorodu General Hospital. In Osun State, the selected hospitals were State Specialist Hospital, Asubiaro; State Hospital, Ilesa and State Hospital, Ede. In Ondo State, the Mother and Child Hospital, Oke-Aro, Akure, and General Hospital, Idanre were selected. Six midwives were selected from each of the three states.

Eligibility criteria include having at least six months of work experience in the maternity unit and being a head of the maternity unit or a first-line midwife attending to maternity clients.

Sample size and sampling procedures

The secondary facilities were purposively chosen for the study so as to get enough population because the number of midwives working in the primary healthcare facilities in this region is small. Twelve to fifteen key informants were recommended in literature to ensure maximum saturation of data.[32] To ensure uniformity, three heads of maternity units and three first-line midwives were selected from each of the three states making a total of 18 informants.

Instrument for data collection

Data were collected using a Key Informant Interview (KII) Guide for Midwives on the Prevention of Pre-eclampsia. This guide was developed based on existing literature and World Health Organization (WHO) guidelines for pre-eclampsia prevention.[16] The instrument has two Sections A and B. Section A contains questions that elicited information on the informants' socio-demographic and professional characteristics while Section B aimed to gather insights into midwives' understanding of pre-eclampsia and its prevention, their perceived roles, and the challenges they face in delivering pre-eclampsia prevention care.

Data Collection

Interviews were conducted in English in a private, noise-free setting that was chosen by each of the informants. Voice recording was done with a portable voice recorder after obtaining the informants' written informed consent. They were all provided with detailed information about the study before data collection. Each interview lasted approximately 25 minutes. Participation was voluntary, with no coercion or incentives offered, and the informants were informed that they could withdraw from the study at any time if they so wished. The ethical clearance was obtained from the Ministries of health in each state.

Data collection lasted about three months, from June to August 2023.

Data Analysis

The data collected from the key informant interviews were transcribed and analysed using ATLAS.ti version 23 software. The analysis employed a thematic approach, consisting of several systematic steps: familiarization with the data, coding, generating and reviewing themes, defining and naming themes, and writing up the results.[33] Initially, the transcribed interviews were read multiple times to develop a comprehensive understanding of their content and context. Key concepts and ideas pertinent to the research questions were identified, and codes were generated by sorting them based on similarities and interconnections. After generating initial themes, a thorough review was conducted to ensure that they accurately represented the data content. This iterative process allowed for refinement and alignment of themes before drafting the results section. To ensure the trustworthiness of the findings, criteria of credibility (accurate presentation of informants’ view), dependability (ensuring transparency and consistency in data processing), transferability (giving enough details for others to evaluate the relevance of information), and confirmability (not allowing personal views or biases to affect the data findings) were meticulously applied throughout the analysis process.

Ethical consideration

Ethical approvals were obtained from the Health Research Ethics Committee at the Institute of Public Health, Obafemi Awolowo University, Ile-Ife, Nigeria (HREC No: IPHOAU/12/2342), and the Ministry of Health, Ondo State (OSHREC 1701/23/502). Official permission letters were secured from the Lagos State Service Commission and the Osun State Health Research Ethics Committee, as well as from the chief medical directors of the selected healthcare facilities and the heads of their maternity units. All the recommended research ethics were followed throughout the study.

Results

Characteristics of the Informants

A total of eighteen key informants participated in the interviews, all of whom were female midwives aged between 36 and 62 years, with a mean age of 48 years. Each informant was a Registered Nurse and Midwife, and a significant majority (16 out of 18; 83.2%) held a first academic degree in Nursing. The average years of experience was 18.2 years, with most having dedicated up to three years of consistent service in both antenatal clinics and labour wards (Table 1).

Table 1. Socio-demographic characteristics of the Key informants

Characteristics	Frequency	Percentage (%)	
Age	30-40	3	16.7
	41-50	8	44.4
	51-60	6	33.3
	61 and above	1	5.6
Academic / Professional Qualification	RN, RM	2	11.1
	RN., RM, BSc./ BNSc.	15	83.3
	RN., RM, BNSc, MSc.	1	5.6
Designation	Senior Nursing Officer	3	16.7
	Principal Nursing Officer	3	16.7
	Chief Nursing Officer	9	50.0
	Director of Nursing	3	16.7
	1-10	1	5.6
Years of experience as midwives	11-20	10	55.5
	21-30	7	38.9
	31-40	1	5.6
Unit/ department	Antenatal clinic/ ward	14	77.8
	Antenatal clinic/ Labour ward	3	16.7
	Antenatal clinic/ Family Planning clinic	1	5.5
	1-2	7	38.9
Years spent in the present unit	3-4	7	38.9
	5-6	3	16.7
	7 and above	1	5.5

Registered Nurse (RN); Registered Midwife (RM); Bachelor of Nursing Science (BNSc.); Bachelor of Nursing Science (BNSc.); Master of Science (MSc.) (Source: Primary data, 2023)

Four major themes emanated from the prevention (3) midwives’ responsibilities data: (1) midwives’ understanding of towards pre-eclampsia prevention and pre-eclampsia, risk identification and (4) challenges faced by midwives on pre-prevention (2) midwives’ preparedness for eclampsia prevention (Table 2). pre-eclampsia

Table 2. Themes and codes generated from the key informant interviews

Themes	Sub-themes
Midwives’ understanding of pre-eclampsia risk identification and prevention	Definition and identification of signs of pre-eclampsia
	Definition: Risk identification of pre-eclampsia
	Prevention of pre-eclampsia
Midwives’ preparedness for pre-eclampsia prevention	Training on prevention and risk identification
	Competency in pre-eclampsia prevention and risk identification
Midwives’ responsibilities towards pre-eclampsia prevention	Who should provide prevention care
	Midwives’ statutory roles in prevention care
	Midwives’ alertness and readiness for prevention
	Perception towards risks and emergency
Challenges faced by midwives on pre-eclampsia prevention	Specific activities performed for prevention
	High workload
	Lack of periodic training
	Inadequate provision of guidelines, equipment and drugs
	Patient factors: ignorance, uncooperative attitude, financial demands

Midwives’ understanding of pre-eclampsia risk identification and prevention

The midwives defined pre-eclampsia as a disease of pregnancy which is characterised by hypertension in pregnancy, proteinuria and edema (Figure 1).

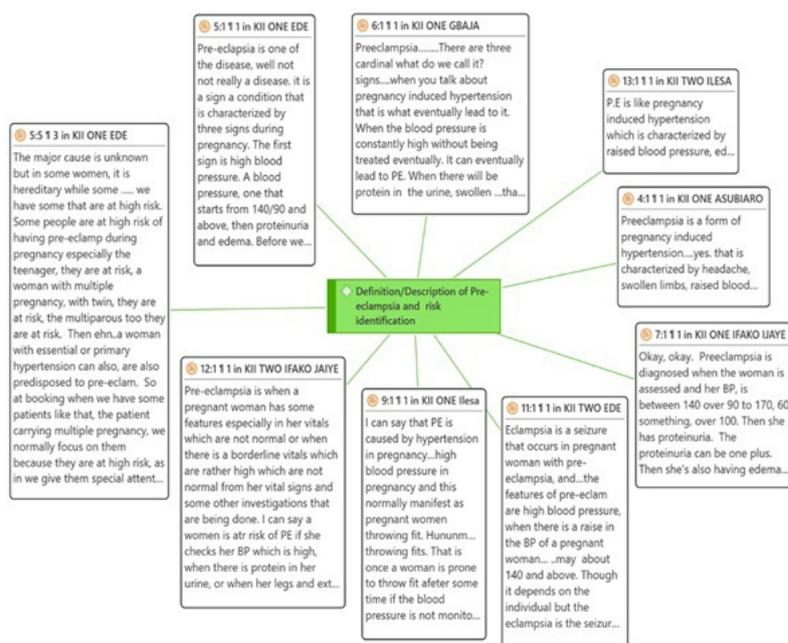


Figure 1. Showing midwives’ description of pre-eclampsia

The following definitions of pre-eclampsia were given by the key informants:

“Pre-eclampsia has three cardinal signs. Pregnancy induced hypertension is what eventually leads to it. When the blood pressure is constantly high without being treated. When there is protein in the urine, swollen limbs, that is edema, then high blood pressure” (KII One, Gbaja,).

“Pre-eclampsia is a form of pregnancy induced hypertension...yes, that is characterised by headache, swollen limbs, raised blood pressure and proteinuria” (KII One, Asubiaro).

“Pre-eclampsia is diagnosed when the woman is assessed and her blood pressure is between 140/90 to 170/100. Then she has proteinuria...edema, pedal oedema” (KII One, Ifako-Ijaiye).

When asked to describe pre-eclampsia risk factors, some identified previous hypertension in pregnancy, chronic hypertension, proteinuria, obesity, diabetes, while some mentioned eating of junk foods, not performing exercises and not taking potassium. Their responses were:

“The only thing I know that can contribute to the development of pre-eclampsia is that the person is prone to hypertension in pregnancy and if she doesn't take enough exercise, then, take enough potassium” (KII One, Asubiaro)

“I can say a woman is at risk of pre-eclampsia if her BP is high, when there is protein in her urine, or when her legs and extremities are being swollen. As a nurse when you touch and there is pitting in her leg...” (KII Two, Ifako-Ijaiye)

“Yes, risk factor...like people that are obese before getting pregnant, sedentary lifestyle, previously hypertensive patient, pregnant women with diabetes, that is diabetic women, life style, the nature of their work, economic factor.” (KII One, Ilesa)

When asked to describe means of prevention, one informant mentioned reducing salt intake and spices like “maggi (monosodium glutamate)”

“It can be prevented by reducing salt intake...not putting salt inside the food, reducing maggi intake, then any sodium diet. Then, it can also be prevented by history taking. When you are taking the history and the patient is saying, I used to have increased blood pressure in the past. Then, if the patient suspects headaches during pregnancy, she should be advised to report any of these signs (KII Two, Asubiaro).

Midwives' preparedness for pre-eclampsia prevention

The subthemes emerging from midwives' preparedness for pre-eclampsia prevention include training received and their competencies in providing pre-eclampsia prevention care.

Training received by midwives on pre-eclampsia prevention

Many of the midwives said they have been trained on pre-eclampsia prevention during the pre-service years but have not received any training in the hospital they were working with. Here are some of their responses

“Personally, I have not gone on any training. If they can allow more nurses to go on training on pre-eclampsia management and how to detect it, it would be good...it's going to add more to our knowledge.” (KII One, Ifako-Ijaiye)

“...our people have not attended training for prevention of pre-eclampsia” (KII, Two Ilesa)

“...no training for midwives here specifically on prevention of pre-eclampsia” (KII One, Idanre)

“We need to be trained and we should have all these guidelines. I feel the midwives are neglected, now if you ask the doctors, “have you gone for this training”,

most of them will say yes, they have gone, so the midwives should not be pushed aside, if you want a good result, everybody should be effective and it will give us better results and we will render quality services to patients.” (KII One, Ifako-Ijaiye)

Competencies of midwives on pre-eclampsia prevention

The midwives claimed they were competent in providing pre-eclampsia prevention in their facility by virtue of the previous training and the experience they have had in caring for pre-eclamptic patients. Here are some responses...

“I will rate myself as having high experience. When you see them (the patients with pre-eclampsia), some of them have swollen leg, some of them they are anaemic, when you notice that, you check their vital signs, when you check it, the blood pressure is very high, check their urine, proteinuria is very high, without even fitting, we have already known such patient” (KII One, Ikorodu)

“I believe eclampsia or pre-eclampsia is an obstetric emergency, and any trained midwife that is ready to work and knows what she is doing will not see it as an additional thing...” (KII One, Akure).

Midwives’ responsibilities towards pre-eclampsia prevention

Regarding what midwives perceived as their responsibilities towards pre-eclampsia prevention care, the following themes emerged: who should provide pre-eclampsia prevention, the approach to prevention care (multidisciplinary or unitary approach), professional alertness and readiness for prevention and risk identification and prevention.

Who should provide pre-eclampsia prevention

The midwives identified themselves as the professionals most responsible for pre-eclampsia prevention. They believed they are to provide prevention care,

conduct risk identification and early detection of pre-eclampsia. This was expressed in their words as follows:

“By my own assessment, it is still the midwives...a patient that is coming in will first of all ask where she can access a nurse to attend to her, it is the nurse that will now say that go to this place” (KII Two, Akure)

“We (midwives) see it as our responsibility, I told you before, a midwife is like a foundation, it is what the midwife gives to the doctor that the doctor works on, the doctor doesn't do any investigation, it's the midwife that does the investigation and documents. So, I see myself as a midwife, as a vital tool to prevent pre-eclampsia” (KII One, Ifako-Ijaiye).

Midwives’ statutory roles in pre-eclampsia prevention

The informants also believed that the approach to pre-eclampsia prevention care can be multidisciplinary or unitary in approach. However, they identified that midwives have statutory and specific duties they should perform for pre-eclampsia prevention. These include history taking, screening for medical conditions, and referral for further management. Here are some responses to the activities performed.

“The prevention starts from us, the midwives because actually we give them health talks on diet, we teach them to take water, and we take history. From their history, it always gives us insights. For the people that have the history, we encourage them so that they will not fall victim again...” (KII One, Ede).

“Our profession is inter-collaborative in nature, so we start from laboratory investigations, coming down to the midwives, then to the doctors. Those are the three main areas that are involved in prevention” (KII Two, Asubiaro).

Midwives' professional alertness in risk identification, screening and early detection

The informants believed that by virtue of their training while in school, midwives are well prepared and should be ready to take up the responsibility for pre-eclampsia prevention. They believed they are alert and quick to identify any clients with risks of pre-eclampsia. Some of them described how prompt they were by the following statement:

"For me, I will say we are at alert and we detect pre-eclampsia very well because there are some women that come to the hospital, they may not have hypertension but you see that the woman is depressed, has problem with her marriage, she is unhappy and all that, even the socio-economic factors also, they contribute to things that make their BP to go up..." (KII One, Ikorodu)

"Pre-eclampsia is a very crucial issue... if we see any physical signs that can predispose a patient to pre-eclampsia, we take it up, we don't play with the issue of pre-eclampsia." (KII Two, Asubiaro).

Specific pre-eclampsia prevention care provided for clients

The informants claimed they routinely give health education and counseling on pre-eclampsia prevention and they encouraged the clients to attend screening services. They did not organize community awareness programme on pre-eclampsia prevention neither did they give nor advise the use of Aspirin as prophylaxis and mostly did not have opportunities for following up the affected clients in the community.

"Prophylaxis for pre-eclampsia.... there is nothing like that here. The prophylactic drug they take is only for malaria" (KII One, Ede).

"No drug is given to them as prophylaxis for pre-eclampsia" (KII Two, Ilesa)

"We don't organize community outreach to tell people specifically about pre-eclampsia, we only tell them during the antenatal clinic" (KII Two, Idanre)

Challenges encountered in the prevention of pre-eclampsia from the key informants

The informants narrated the challenges they face in pre-eclampsia prevention care in their facilities. The themes included increased professionals' workload, poor staff strength, inadequate equipment and drugs and clients' poor knowledge and lack of compliance

High workload/ poor staff strength

It was gathered from the informants that the workload of midwives was heavy in relation to the number of clients they had to care for. Likewise, the shortage of staff has aggravated this challenge.

"The only challenge is manpower, because in our clinic, we have about 150 to 200 clients with just 3 nurses working, so by the time we use all our energy to work, from 8 am to 12 noon, we become tired...." (KII Two, Ifako-Ijaiye).

"...like this morning, they (clients) are up to fifty if we are to count them and at times, we do have eighty clients and I am the only midwife..." (KII One, Ede).

"In the prevention of pre-eclampsia, I said that we need personnel, you know when we have patients like that, she needs to be coming to clinic every two or three weeks, but because we are short staffed, we may extend the next visit..." (KII Two, Ede).

Lack of training on pre-eclampsia prevention
Almost all of the informants reported lack of training on pre-eclampsia prevention and expressed their desire for the training to enhance their performance.

"We need to be trained on all these guidelines..." (KII One, Ikorodu)

"Secondly, I think they should train and re-train staffs concerning this, in fact, concerning every other medical conditions especially for pregnant women." (KII One, Ilesa).

"There is lack of training, shortage of staff, we lack everything we need" (KII Two, Gbaja).

Role definition challenge

Some of the midwives cited role definition challenge as a factor. When the roles and responsibilities of midwives towards pre-eclampsia are not specifically defined, it may affect their performance of pre-eclampsia prevention care.

“IFL 1: We are talking about pregnant woman, as I said before, the midwife is the first contact, and that's why it is very important, the role of the midwife must then be clearly identified because if she does not do it or she omits it, the doctor may not be informed, so the midwife is very important to detect early detection of pre-eclampsia” (KII Two, Ikorodu)

We have a lot of challenges...poor identification of the role of midwives. If the midwives' roles are identified then prevention of pre-eclampsia would have been resolved majorly at antenatal because they will be detected early and promptly (KII Two, Akure)

Inadequate or non-availability of equipment and drugs

Lack of adequate drug supply was also identified by some of the informants as...

“There is a lot of challenges... lack of equipment, imagine as big as this clinic is, we don't have enough sphygmomanometer to check...that is the first thing, then, the shortage of staff” (KII One, Ikorodu)

“Well, in this unit, if you refer the patient to the doctor, they may also refer her to a higher facility because they have some of those things that we don't have here.” (KII One, Asubiaro)

“I think the availability of equipment is very low as compared to number of clients. We only have four sphygmomanometers, one of them malfunctioned this morning, so we had to manage with the remaining three and the same thing operates on the labour ward and postnatal ward, there are deficiency of facilities.” (KII Two, Asubiaro)

Clients' poor knowledge and lack of compliance

Clients' lack of knowledge, poor compliance and inadequate support were identified as part of the challenges report. This was narrated by the midwives as follows:

“What I see is that most times patients don't come on time, they come so late that when you want to even treat them, it is late, for example, somebody who has been having blurred vision. Those are the challenges we face, some of them feel they know more than us (midwives) and already have questions to whatever information you want to give them, they tell you they can Google it.” (KII One, Ikorodu)

“When the patients come to the hospital, and you counsel them, some may not like the instructions given to them, some may not take their drugs. Even when you give them advice, they will tell you their mother or mother-in-law said it is not true.” (KII One, Akure).

Discussions

This descriptive study has investigated the understanding and preparedness of midwives regarding pre-eclampsia, including risk identification, prevention strategies, and the challenges faced in delivering pre-eclampsia prevention care to antenatal clients in Southwestern Nigeria. Data were collected through interviews, fostering a conversational atmosphere that enabled an in-depth exploration of the informants' knowledge, perspectives, and experiences related to the topic, as well as identifying areas for improvement and support.

Midwives, as trained healthcare professionals and frontline managers of maternal health, are seen as the most suitable and capable providers of holistic maternity care for women and their families.[34,35] Therefore, their preparedness for pre-eclampsia prevention is essential. The information gathered revealed their understanding of pre-eclampsia prevention, their roles

in preventive care, and their needs for enhanced knowledge, training, and support.

Midwives' understanding of pre-eclampsia and its prevention

Almost all the informants defined pre-eclampsia as the presence of hypertension, proteinuria, and edema in a pregnant woman. This indicates that they relied on the traditional definition, which requires the presence of these three cardinal signs before pre-eclampsia could be diagnosed. However, research shows that pre-eclampsia can occur without proteinuria, as some pre-eclamptic patients may experience multi-system organ failure before protein is detected in their urine.[4,17] This highlights the need for the updated definition of pre-eclampsia according to the International Society for the Study of Hypertension in Pregnancy (ISSHP).[18]

Furthermore, the midwives exhibited inadequate understanding of pre-eclampsia risk identification, citing diagnostic signs as risk factors for its development. Some mentioned the consumption of junk food and inadequate potassium intake as risks. Similar studies have reported a lack of knowledge regarding the causes, diagnosis, and treatment of pre-eclampsia among healthcare providers in Southwestern Nigeria, attributing this deficiency to a lack of refresher training and the absence of practice guidelines for pre-eclampsia prevention and management.[24, 36] Comparable gaps in knowledge about pre-eclampsia have also been reported among midwives in studies conducted in Bangladesh,[37] the Republic of Congo[38] and Eastern Cape, South Africa.[39] Similarly, a scoping review found that globally, midwives lacked knowledge on many aspect of pre-eclampsia diagnosis.[40]

However, a systematic review reported that midwives had good knowledge and skills of pre-eclampsia detection and management, however, with limited resources and infrastructure which deter optimal performance.[41]

A Ugandan study also reported that more than half of midwives were aware of prompt identification of pre-eclampsia which was attributed to the training attended by the majority (63.2%), but they demonstrated poor practice due to inadequate diagnostic materials.[42] This further reiterates that professional knowledge must be complemented with adequate provision of resources to improve skill and practice. Also, studies are still scare on midwives' performance on risk identification and prevention of pre-eclampsia.

Regarding routine prevention protocols, one informant in the present study suggested reducing or completely avoiding salt intake, a recommendation that lacks robust evidence according to the WHO guidelines. Only one informant correctly identified the use of aspirin as prophylaxis. This finding aligns with the reports from the 'Ending Eclampsia' project, conducted among healthcare providers in Nigeria and Bangladesh,[43] which revealed that very few providers mentioned aspirin and supplemental calcium as prophylactic treatments for pre-eclampsia. Within the last decade, many healthcare providers in Nigeria were trained on diagnosis and drug management of eclampsia and pre-eclampsia. This could only reduce the fatality rate while the incidence of pre-eclampsia and its resource-draining complications would still be high within the population.

Therefore, the best practices for pre-eclampsia prevention are yet to be adopted into the routine antenatal care in Nigeria. This is evidenced by the lack of staff and supplies for pre-eclampsia prevention in many public healthcare facilities. It is crucial to organize comprehensive training programs for the maternity healthcare professionals, especially, the midwives, to update their knowledge and skills on pre-eclampsia risk assessment and prevention so as to enhance their delivery of appropriate evidence-based care.[36]

Midwives' preparedness for pre-eclampsia prevention care

Regarding midwives' preparedness for pre-eclampsia prevention, the majority of informants believed that it was their responsibility to provide this care and felt confident in their ability to do so, giving credence to their pre-service training. However, they expressed concerns about lack of access to, and poor familiarity with the current WHO guidelines for pre-eclampsia prevention. Despite obtaining additional academic qualifications after becoming licensed midwives, many have not participated in specific training focused on pre-eclampsia prevention, hence poor knowledge and skills persist in this regard. This shows that while midwives affirmed they are passionate and competent in pre-eclampsia prevention as reported in some qualitative studies,[44,45] their performances showed a need for further training to improve their skill in prevention care as resounded in many other studies. [38,46,47]

This situation is echoed in the findings in a Tanzanian study, which reported a lack of knowledge regarding pre-eclampsia prevention among maternity professionals in Tanzania was due to insufficient training on pre-eclampsia prevention.[48] Similar finding was obtained in Pakistani secondary healthcare facilities where the healthcare workers exhibited limited knowledge of pre-eclampsia, primarily due to a lack of refresher training and written guidelines for its management.[49]

Midwives' responsibilities towards pre-eclampsia prevention

In terms of activities performed by midwives for pre-eclampsia prevention, some midwives recommended strict bed rest and dietary salt restrictions. However, scientific evidence does not support these practices, leading to their exclusion from the WHO guidelines for pre-eclampsia prevention. For example, prolonged bed rest can increase the risk of deep vein thrombosis, which may result in pulmonary embolism—a condition associated with high morbidity

and mortality.[16] Total bed rest is only indicated when specific or severe medical conditions necessitate it. Furthermore, dietary salt restriction is not recommended as a preventive measure for pre-eclampsia during pregnancy; instead, promotion of healthy dietary practices is advised.[16]

Suboptimal preventive care may contribute to the rising incidence of maternal complications and deaths due to pre-eclampsia, particularly in resource-limited countries where this condition poses a significant public health challenge. Nigeria, in particular, currently faces a severe burden from pre-eclampsia, highlighting the need for comprehensive prevention measures, including risk identification and use of appropriate prophylaxis. Midwives should be trained to implement these interventions as part of routine antenatal care in resource-constrained settings. Given the inadequate health resources impacting Nigeria's healthcare sector,[51] further research is essential to identify the training and support needs of midwives to enhance their capacity for pre-eclampsia prevention.[52] Such action-oriented research can inform strategies to bolster midwives' knowledge and skills, improve their preparedness, and strengthen the healthcare system's ability to control the disease.

According to the World Health Organization guidelines, healthcare providers are expected to raise awareness about pre-eclampsia prevention within the community and ensure that every pregnant woman receives routine assessments and health education on prevention strategies.[16] However, these practices were rarely observed by the midwives in this study, largely due to various challenges such as heavy workloads, the constraints of working in secondary healthcare facilities, and insufficient training on preventive care. This highlights notable gaps in communication and referral pathways between midwives in secondary and primary healthcare settings. Additionally, the findings revealed that most of the informants received their initial training during their pre-service education,

which primarily focused on the diagnosis and management of pre-eclampsia. Consequently, many midwives did not perform the specific physical assessments or interventions necessary for identifying pre-eclampsia risk in contrast to practices in developed nations where midwives perform these as statutory roles.[27]

Challenges faced by midwives in providing pre-eclampsia prevention

Midwives in this study identified numerous challenges that hinder their ability to provide effective pre-eclampsia prevention care. A significant challenge reported was the lack of training on current guidelines for pre-eclampsia risk identification and prevention. Additionally, most of the healthcare facilities are yet to implement policies and strategies specifically designed for pre-eclampsia prevention into routine antenatal care. Other factors contributing to inadequate care included insufficient personnel, limited supplies, malfunctioning diagnostic equipment, and the absence of clinical guidelines and essential infrastructure. These findings align with previous research,[36] which documented that the persistent challenges to pre-eclampsia control in Nigeria stem from poor provider preparedness and facility readiness. In their assessment, only 31% of the facilities evaluated had all the necessary equipment and supplies, such as blood pressure monitors, urine dipsticks for rapid urinalysis, magnesium sulfate, and antihypertensive medications available in their maternity units.

Similarly, it was reported in Northern Nigeria that a significant lack of essential equipment and supplies, along with irregular electricity and water supply, and the absence of clinical protocols for pre-eclampsia care were observed in 80% of the health facilities studied.[53] The situation is comparable with Ghana,[40] where it was noted that heavy workloads, a lack of essential equipment, and inadequate training of midwives further limited their capacity to provide pre-eclampsia care as outlined in current guidelines.

Likewise, a critical deficiency in knowledge among maternity healthcare providers in Tanzania has resulted in poor pre-eclampsia prevention and management. [48] Similar challenges were reported by healthcare providers interviewed in Malawi. [54] These findings highlight the reasons for the higher rates of maternal deaths due to pre-eclampsia in developing countries compared to developed nations.[27]

Additional major challenges identified by the midwives in the present study included a lack of cooperation from clients regarding preventive care services. Many clients book their pregnancies late, while some refuse to undergo prescribed screenings due to misinformation, personal arrogance, or the unaffordability of screening services. Moreover, high costs associated with screening and other healthcare services can deter clients from adhering to timely booking, scheduled antenatal care visits, and screenings, which further delay opportunities for pre-eclampsia prevention and control.[29,55]

Limitations of the Study

The study encountered the following limitations:

A key limitation of this qualitative study was the inadequate number of midwives in primary healthcare centers (PHCs) across the states, particularly in Osun State, where some PHCs had no nurse or midwife available at all. Given that the study primarily focused on prevention, PHCs would have been a more appropriate setting. However, this limitation necessitated the selection of secondary healthcare facilities that provide routine maternity care. The generalisability of the study findings is also limited because it was conducted in few states in the region. Despite this constraint, a major strength of the study was its ability to capture in-depth insights from midwives in secondary healthcare settings, where maternity services are more structured and midwives are exposed to broader clinical experiences, enriching the study's findings.

Conclusion

In conclusion, this study has explored and described the midwives' preparedness for pre-eclampsia risk identification and prevention care in the study setting. The midwives demonstrated poor understanding, inadequate training and skills regarding pre-eclampsia risk identification and prevention which they attributed to numerous challenges in the study setting. Based on the findings of this study, there is a need for periodic training of midwives and provision of current guidelines and adequate equipment for pre-eclampsia risk-identification and prevention to enhance the control of the disease.

Recommendations

Based on the findings from this study, the following recommendations are proposed:

Midwifery Education: To enhance midwives' knowledge and skills in pre-eclampsia prevention, the professional body for midwives should incorporate the current guidelines for pre-eclampsia prevention and management into midwifery training curriculum and continuing education workshops for professional development.

Midwifery Practice: The heads of maternity units, supervisors, and hospital management should integrate pre-eclampsia prevention into routine antenatal care. The possibility of using a standard checklist focusing on early screening, risk identification, prophylaxis, early detection, and prompt referral for specialized management should be explored.

Midwifery Research: Further research should be conducted to evaluate midwives' capabilities and the healthcare system's needs regarding pre-eclampsia prevention. This research should identify necessary resources, including personnel, equipment, infrastructure, and guidelines, to ensure that healthcare facilities can efficiently perform this crucial task.

Conflict of interest

The author declared that there is no conflict of interest.

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Author's contribution

The author initiated the study, designed the study, formulated the title, was involved in instrument development, data collection and data analysis; wrote the discussion and did critical review of the manuscript

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