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Perceptions on Maternal Mortality Among the Ekpeye Community

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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MHS, Towson State University of Maryland, 1999

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

In Africa, especially Nigeria, maternal mortality is a public health issue among women of childbearing age (WCBA). WCBA living in the Ekpeye community located in Rivers state in Nigeria are at high risk of maternal deaths during pregnancy and labor or delivery. Data were obtained through key informant interviews with 9 relatives, friends, and health workers. The purpose of the key informant interviews was to identify perceived barriers that result in high maternal deaths and facilitators seen as promoters to reduce pregnancy-related deaths. The participants identified 11 core themes as contributors to maternal death: (a) postpartum death, (b) financial insecurity, (c) health system capacity/infrastructure, (d) quality of care, (e) transportation barriers, (f) cultural integrity, (g) mental health, (h) trauma, (i) inadequate government role, (j) social determinants of health, and (k) other determinants of life challenges. The facilitators are linked to increased awareness, education, avoidance of negative aspects of the culture, and availability of essential resources on a continuum. Based on the results of this study, if maternal tool kits were distributed to pregnant women and WCBA, it may increase their knowledge of vulnerability and risks. The benefits of the toolkits are improved access to basic medical supplies; improved knowledge of risks and importance of antenatal care and self-care seeking behaviors; and prevention of potential harm to the baby. The integrations of these public health best practices on a consistent basis could improve health for both WCBA and children and increase perinatal and antenatal care to optimize positive birth outcomes.

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Dedication

In Christ alone, my hope is found, and my long-term dream achieved. Great is Thy faithfulness. Oh Lord my God, morning after morning, I receive blessings with enduring patience and moral strength to complete my dissertation process. In loving memory of my late mother, Mrs. Christiana Benaiah Ogide (Nee, Okoko), I dedicate my dissertation efforts and successes. Her persistent prayers and labor of love provided unequivocal moral and social support throughout my PhD studies. She believed in me and encouraged my doctoral academic pursuit. Thank you, Mom, for your vision. Rest in perfect peace.

To my admirable family, a heartfelt gratitude to my husband, Dinma Alaeze. Thank you for persistently and constructively encouraging me to complete and submit my assignments regardless of the uphill challenges I encountered throughout the PhD process. To my precious-talented children, Upadhi, Uyodhu, and Adaeze, you are all a team player in my PhD journey. You are on my team and sacrificed a great deal for me. Thank you for your trust and support through this process. Thank you, family.

I am grateful to my church family, relatives, friends, and those who supported me directly or indirectly by listening to my concerns. To all the study participants who willingly volunteered in the face-to-face interviews, thank you all. I appreciated all the responses you provided to address the research questions. Thank you for the unique lived experiences you shared about the death of a pregnant woman in labor/delivery or after childbirth. Your shared lived experiences and stories made the completion of this study

possible and meaningful. To everyone who supported my academic journey, I dedicate this dissertation success to you with all my heart.

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Beyond spoken words, I express an unconditional gratitude to my committee members, Dr. Patrick Tschida (chair), Dr. Larissa Estes (member), Dr. Jonah Gnu (former member), and Dr. Nazarene Tubman (university research reviewer), for your tremendous commitment, patience, knowledge, and inspiration advanced to support my PhD process. Thank you for your constructive engagement in my study to address important public health issue relating to maternal health during pregnancy. Together, you made the best mentor team. Thank you!

I appreciate the handiwork of my editor, Dr. Ndukuka Omelu. You are the second research lens for my study. Thank you for all the immeasurable support and wisdom provided to guide me through this exciting and challenging PhD journey. I am grateful to Walden University's vision of positive social change. My thanks go out to all the Walden support staff who responded to a series of unplanned questions when I needed support.

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Chapter 1: Introduction to the Study

Introduction

While pregnancy is upheld by the society as a reproductive passage and fundamental obligation for women (Bicchieri, Jiang, & Lindemans, 2014; Ezugwu et al., 2014 & Fatso et al., 2009). There are several risks associated with prenatal and postnatal periods, and labor/delivery. According to the United Nations (UN), *maternal mortality* is defined as the death of a woman during pregnancy, labor, and after childbirth (UN, 2011). Maternal mortality is a serious public health concern globally. Pregnancy-related risks such as preexisting conditions, maternal age, cigarette smoking during pregnancy, gestational hypertension, premature births, excessive bleeding, and preeclampsia/eclampsia with associated problems, can lead to life-threatening complications, adverse health outcomes, and even death of the woman or the unborn or neonate (UN, 2011). Therefore, developing methods to improve the safety of motherhood and positive birth outcomes, particularly among women of low-resource countries, is warranted.

In 2017, the UN's interagency report estimated 211 pregnancy-related deaths per 100,000 live births worldwide. This was a 38% reduction from 342 pregnancy-related deaths per 100,000 live births reported in 2015 (World Health Organization [WHO], UN Children Endowment Fund [UNICEF], UN Fund for Population Activities [UNFPA], World Bank Group, and the UN Population Division, 2017). In 2014, the WHO indicated that 99% of the deaths occurred in the global south countries, specifically in West African nations, such as Benin, Burkina Faso, Ghana, Senegal, Togo, Niger, and Nigeria

(Åhman & Shah, 2015; Anastasi, Borchert, Oona, Campbell, Sondorp, Kaducu, & Lange, 2015; Blade et al., 2016; Doctor et al., 2013; Ezugwu et al., 2014; Say et al., 2014). Chapter 1 of this dissertation covers the background, problem statement, purpose of the study, significance, and other relevant introductory elements of this study.

Background

Nigeria has the highest rates in some of the adverse pregnancy outcomes, which has been attributed in part to preventable preexisting health conditions including malnutrition, untreated high blood pressure, gestational diabetes, preeclampsia/eclampsia, and other social determinants of health such as sociocultural and socioeconomic factors (WHO, UNICEF, UNFPA, World Bank Group, and the UN Population Division, 2017). Other direct causes linked to childbirth complications include excessive bleeding in labor and delivery, obstructive labor, and use of antiquated medical equipment due to a poor health care system in Nigeria compared to other countries (WHO et al., 2010). According to the UNICEF and WHO (2016), Nigeria performed poorly in reducing maternal deaths at the end of the Millennium Developmental Goal (MDG) declaration performance evaluation in 2015. For instance, Nigeria accounts for 59,000 deaths among women each year and ranked second to India worldwide when compared to other developing countries, such as Ghana, Benin, and Burkina Faso (Olonade, Olawande, Alabi, & Imhonopi, 2019). Pregnant women in Nigeria are 500 times more likely to die, with an estimate of 32,000 deaths per 100,000 live births, than women in developed nations (Olonade et al., 2019). Furthermore, Nigeria's national health care system is fragmented and in need of reform (Aigbiremolen, Alenoghena, Eboreime, & Abejegah, 2014).

According to Harrison (2009), only 4.2% of the health facilities in Nigeria met international standards for obstetric care in 2003. In 2014, only 1% of maternal health systems in Nigeria were sufficiently equipped to address obstetric emergencies and diagnostic services (WHO, 2014). Also, Nigeria health care facilities are poorly equipped and lacked modern health care infrastructures and skilled health workers (Abimbola & Chinawa, 2015). The issue of poorly equipped health care systems is prevalent in Nigeria (Abimbola & Chinawa, 2015). Similarly, according to Adamu et al. (2009), 77% of health care facilities operate without basic standard amenities in Nigeria. Therefore, it is extremely difficult for health care workers to provide quality health care services needed to produce effective and desired outcomes. The issues of poorly equipped health facilities in Nigeria are driven by a systemic lack of government commitment to promote change in health facility processes across states and local government jurisdictions (Federal Ministry of Health [FMOH], 2013).

Approximately 40,000 maternal deaths occur annually in Nigeria, and represented a combined maternal mortality ratio (MMR) of 630 in 2013 (UNICEF & WHO, 2014; The World Bank, UN, & WHO, 2014; World Health Statistics, 2014). The MMR in Nigeria increased from 630 in 2013 to 813 in 2015 (UNICEF & WHO, 2016; The World Bank, UN & WHO, 2014; World Health Statistics, 2014). In Nigeria, the risk of dying during pregnancy, labor or delivery, or 42 days postpartum is four times higher than it is in Ghana, Kenya, Uganda, and Cameroon (Ezugwu et al., 2014; Mselle et al., 2013; Mojekwu & Ibekwe, 2012; Okigbo, Adegoke, & Olorunsaiye, 2016). In addition, severe bleeding and infections after childbirth and high blood pressure in pregnancy

(preeclampsia and eclampsia are common factors observed among pregnant women in Nigeria (WHO, 2016). Limited access to clinics or health care centers due to upfront registration fees, time of operation and availability of skilled health providers, and quality of maternal health services were identified as barriers to obstetric care in Nigeria (Okigbo, et al 2016). Transportation, distance to clinics, cultural beliefs, inadequate care, and unskilled health care providers, abuse and maltreatment by partner or by health care provider, and lack of autonomy or informed decision making process were linked to poor maternal health and low uptake in maternal participation in antenatal clinics (Okigbo et al., 2016; Say et al., 2014; UNICEF, 2014). Political climate, lack of policy to invest in maternal and child programs, socioeconomic inequalities, gender inequality, and limited knowledge about perceived vulnerability of risks about health choices and lifestyle behaviors towards preventive or health promotion measures are also come of the social determinants of health that are common among WCBA who live in rural and underserved communities (Abimbola et al., 2016; Alkema et al., 2016; Anastasi et al., 2016; Balde et al., 2017; Bustreo et al., 2013; Coast et al., 2012; Fatso, Ezeh, & Essendi, 2009; Guerrier et al., 2013; Mselle et al., 2013; Obiechina & Ekenedo, 2013; Olusanya, 2011; Orazulike, Alegbeleye, Obiorah, Nyengidiki, & Uzoigwe, 2017; Owais et al., 2013). In sub-Saharan African countries, such as Nigeria, implementation of quality health care systems is necessary to improve the quality of life of vulnerable women.

Problem Statement

Decades of staggering increases in maternal mortality among women remain a challenge despite advancement in modern medicine, technology, and psychosocial cues

about women's health in many sub-Saharan African countries (Balde et al., 2017). In the global south, which includes many sub-Saharan African countries, high maternal mortality rates remain a huge public health issue (Say et al., 2014; WHO, 2015). In 2015, the MMR per 100,000 live births in Nigeria was 814 (World Bank, 2015). Also, in Nigeria, the overall MMR or lifetime maternal mortality risk was the second highest globally compared to other developing and developed nations (WHO, 2016; World Bank, 2015). In 2008, the National Population Commission (NPC) and ICF International reported no progress on reduction of maternal mortality in Nigeria because a woman's lifetime risk of dying was 1 in 180 live births (Wilmoth, Mathers, Say, & Mills, 2010). According to Umukoro (2012), poor health outcomes among Nigerians were linked to inadequate health care funds, poor governance, bad economy, and unstable sociopolitical culture and administration.

Anastasi et al. (2015) using a mixed-method research design explored the qualitative and quantitative aspects of deaths among women during pregnancy. They examined limitations of woman's choice of participating in prenatal care and underutilization of skilled birth attendance in rural Uganda communities (Anastasi et al., 2015). They concluded that the current situation of maternal and newborn health in Northern Uganda require further intervention research to address the barriers and facilitators (Anastasi et al., 2015). By exploring the lived experiences of maternal mortality affects vulnerable individuals in a community following the deaths of women during pregnancy or up to 6 weeks postpartum could inform implementation of targeted interventions to address high maternal mortality rates.

According to Balde et al. (2017), maltreatment was a potential contributing factor associated with high rates of maternal deaths among women during pregnancy, labor/delivery, or after childbirth in Northern Uganda. Ononge, Okello, and Mirembe (2010) also explored the issue of excessive hemorrhaging after childbirth among women in rural Uganda. They found that there are subjective identifiers of maternal mortality that should be explored based on the lived experiences of individuals within the community of interest. These evidence-based studies informed the current qualitative research inquiry about the perception of barriers to accessing care and risk factors for maternal mortality in the Ekpeye community in River state, Nigeria.

Purpose of the Study

The primary purpose of this study was to explore how and what individuals living in Ekpeye perceived the barriers to maternal care and risk factors for high rates of maternal mortality in their community. The overwhelming burden of the lived experiences of spouses, children, relatives, friends, and health care providers who witnessed the death of a woman due to pregnancy cannot be ignored. Therefore, understanding the barriers to maternal care and facilitators of high rates of maternal deaths may assist or support public health efforts to improve the quality of life for women and may advance health promotion measures. This qualitative phenomenological inquiry has the potential to offer improved understandings of how targeted interventions function or lack thereof in rural poor resource areas. Additionally, the results of this research could provide insights on behaviors that contribute to pregnancy-related mortalities as well as meaningful public health practices that add values to maternal health during pregnancy.

Such changes could further support the application of targeted assessments on the sociocultural beliefs, socioeconomics, and other prevailing determinants of life issues experienced by pregnant women or WCBA. Other factors, such as proximity of clinics or health centers/services, poverty levels, resource constraints in the villages, intimate partner violence, and the overall community perception of pregnancy are also barriers to maternal services and use (Åhman & Shah, 2011; Ezugwu et al., 2014; Fawole & Adeoye, 2015; Joshua et al., 2017; Say et al., 2014). Identifying key themes of maternal mortality-related cases based on lived experiences among the study population could improve the use of targeted approaches to expand the adoption maternal care and services during pregnancy and delivery. It may also promote future studies to support current findings and recommended use of toolkits at all levels of community care intervention.

Balde et al. (2017) explored community perceptions about medical maltreatment experienced by pregnant women who either died during labor/delivery or 42 days after childbirth, and their conclusion supported the findings described by Anastasi et al. (2015), and further advanced other ideas worth exploring. Exploring the lived experiences of selected individuals in Ekpeye is an addition to the body of knowledge advance by other researchers in the discipline. This study specifically explored key themes participants from Ekpeye village identified as contributing to high maternal death rates in that community. The findings from this current study could promote education and awareness on maternal health, access and use of maternal health services, and positive birth outcome in rural areas. Open-ended face-to-face interviews were implemented for data collection to understand the perspectives of the barriers to maternal

care and facilitators of maternal mortality among selected individuals in the Ekpeye community.

Sub-Saharan African nations have the highest burden of maternal deaths, and the majority of these deaths occur in Nigeria (Say et al., 2014; WHO, 2015). Some of the factors affecting high maternal mortality rate in Nigeria include behavior toward seeking and accessing quality antenatal care earlier during pregnancy (Åhman & Shah, 2011). Socioeconomic factors, such as inadequate nutrition, certain cultural beliefs, and abject poverty were also attributable components to high maternal and fetal mortality in remote and impoverished villages in Nigeria (Åhman & Shah, 2011; Fawole & Adeoye, 2015). Poverty can play a crucial role in pregnancy outcomes (Fawole & Adeoye, 2015). Udofia, Akwaowo, and Ekanem (2012) explored the impacts of lack of transportation to antenatal clinics or hospitals, inadequate care from health providers, and unskilled care of pregnant women while in the hospital or antenatal clinics are some of the barriers and contributing factors to maternal deaths. These factors were identified through a quantitative approach, and unfortunately, there was no assessment of qualitative aspects of the barriers and facilitators described. An appropriate qualitative approach could advance tailored intervention and further inform communities about the benefits of early prenatal care, policy-making decisions, and community public health status and health services. It could inform strategies focused on improving the unmet needs of reproductive health issues among WCBA. Ultimately, in this qualitative study I explored the barriers to maternal care and facilitators of maternal mortality that impact the perceptions of individuals living in the Ekpeye community.

Research Question

The following is the main research question: What are the perceived barriers to maternal care and facilitators of maternal mortality among individuals in the Ekpeye community who witnessed the death of a woman either during pregnancy, labor/delivery, or up to 42 days after childbirth?

The response from the research question led to the underlying generalized interview questions that were further broken down into seven different questions with emphasis on socioeconomic and sociocultural issues that influence pregnancy and birth outcomes. These seven interview questions were presented to the participants to answer during a 45-minute and 20-minute follow-up interview sessions.

Conceptual Framework for the Study

The conceptual focus of this study was based on a phenomenology design. Primarily, the current qualitative inquiry was evaluated using an open-ended face-to-face interview approach. A qualitative approach allows for an in-depth subjective understanding of the dynamics of maternal health decision-making processes by pregnant women in the Ekpeye community. The health belief model (HBM) was the theoretical framework used because of the subjective or perceptive nature of this study. The HBM's operational constructs was used to explain perceptions or experiences, behaviors, lifestyles, and even outcome risks expressed by the participants. The HBM constructs include perceived susceptibility, severity, benefits, barriers, and cues to action (see Figure 1). The HBM was developed in the United States by social psychologists. Hochbaum, Rosenstock, and Kegels were the instrumental pioneers in the development of the HBM

in 1950s (Rosenstock, 1974). Based on the HBM's operational constructs (perceived experiences/susceptibility, severity, benefits, barriers, and cues to action), the model was the best fitted theoretical concept that had subjective perceptions components such as susceptibility about health events or outcomes. Specifically, the HBM was used to explain and describe the lived experiences about the barriers to maternal care and facilitators of maternal deaths in the Ekpeye community. The narrative nature of this study offered insights on health-seeking behaviors and attitudes shared among individuals in the Ekpeye community about maternal health issues, including prenatal services or other reproductive health needs for WCBA. The HBM's operational constructs are based on three components: (a) individual perceptions, (b) modifying factors, and (c) likelihood to action, Figure 1. The risk or threat to perceptions of an event or outcome or exposure represent the level of an individual's susceptibility or severity perceived (Rosenstock, Strecher, & Becker (1994). For instance, a woman with a lived experience of pregnancy-related maternal deaths of relatives/friends or mortality occurring after childbirth among vulnerable women may be traumatized by that experience.

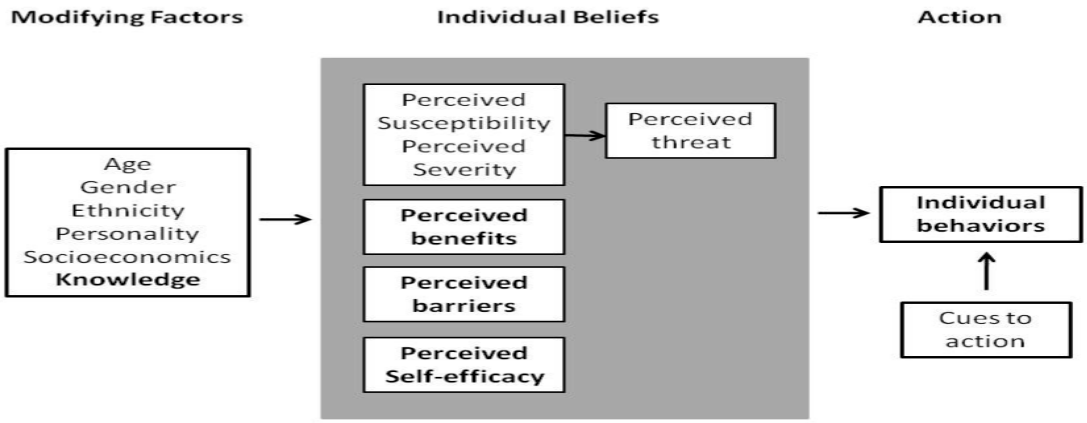

Figure 1. The health belief model constructs. Source: Glanz, Rimer, & Viswanath (2008)

The modifying construct included factors such as maternal age, gender, preexisting maternal conditions, socioeconomic status (SES), perceived threat of an event or disease, and cues to action (education, awareness, heightened attention; Becker, 1974; Glanz, Lewis, Marcus, & Rimer, 1990; Hochbaum, Rosenstock, & Kegels, 1950; Rosenstock, 1974). The likelihood of action or inaction includes the perceived benefits of action or inaction, perceived barriers, and the likelihood of behavioral change (Becker, 1974; Glanz, Lewis, Marcus, & Rimer, 1990; Rosenstock, 1974). Interviews regarding perceived severity involve the evaluation of the short and long-term behavioral or psychological effects on the individual's perception of the severity of the barriers to maternal care and facilitators of maternal mortality. Interviews about perceived benefits involve the assessment of the interpretation of efficacy of action in reducing perceived risk or seriousness of maternal mortality events. In other words, assessing whether the perception of the quality and accessibility or affordability of maternal antenatal and postnatal care reduces the risks associated with maternal mortality. On the other hand, perceived barriers may also implicate physical, fiscal, and psychological costs associated with the proposed actions intended to minimize the risks of the event under any circumstances (Becker, 1974; Glanz, Lewis, Marcus, & Rimer, 1990; Rosenstock, 1974). The cues to action are the actionable strategies intended to activate or motivate readiness to action (Becker, 1974; Glanz, Lewis, Marcus, & Rimer, 1990; Rosenstock, 1974). For instance, *cue to action* involves meaningful health promotion measures tailored to prevent or minimize the occurrence of adverse health events, especially outcomes that could be prevented with the advancement of quality care such as maternal care programs

aligned with the community or target population values/cultures or individuals' subjective opinions.

The HBM's self-efficacy operational components involve the level of confidence in one's ability to take actions. The economic status, sociocultural health care settings, and other determinants of life factors play a huge role on how a person or pregnant woman and their family, friends, and members of the community perceive the circumstances that either hinder or enhance a woman's chances of accessing antenatal or a prenatal care (maternal care). The idea for using an open-ended face-to-face interviews i in this study is that it could guide efforts in understanding an individual's perception of their economic status, sociocultural, environmental, and attitude toward health-seeking behaviors to improve maternal health. A better understanding of these factors using the HBM offers explanation from an individual's perspective that relate to interpersonal choices, family issues, support systems, and social networks to gather credible and perhaps transferable subjective information that could be used to develop and implement targeted interventions to reduce maternal deaths in rural communities (Rosenstock, 1950; Schwartz, Tuchman, Hobbie, & Ginsberg, 2011; Ungar, Ghazinour, & Richter, 2013).

Nature of the Study

The current research inquiry is a qualitative-driven study. A phenomenological design was used to describe the real-life event experienced by community members who witnessed the death of a pregnant woman at labor or delivery or up to 42 days after childbirth. A one-on-one interview approach was used to gather relevant information from selected participants. A direct interaction or personal observational assessment

offers a great opportunity to identify real-life and real-time experiences of individuals or other behavioral cues regarding their perspectives on barriers to maternal care and facilitators of maternal mortality issues in the Ekpeye community. Qualitative approaches using a phenomenological design require use of a smaller sample size (Creswell, 2013). Overall, a total of nine participants including the pilot and main interviews were used in this qualitative-phenomenological inquiry.

In this study, I conducted open-ended and in-depth face-to-face interviews with nine randomly selected community members to gather subjective information on participants' perspectives about the perceived experiences on the barriers to maternal care and facilitators of maternal deaths. I conducted two different sets of interviews. One initial interview for 45 minutes, and a second 20-minute reflective interview for verification and clarification of the responses. Interview questions posed to all participants were the same for both the first and second interviews to allow for credible and reliable comparison and validation of responses. The use of open-ended questions through a face-to-face interview enhances the emic and etic understanding of the issue regarding the experiences shared by individuals who lost a wife or mother or relative or friend due to pregnancy complications.

Beyond the study's scope of work, information derived from the participants could facilitate systematic or social evaluation of population-based intervention about pregnancy-related deaths among members of the Ekpeye community, which could also promote future studies. With a unique perspective and experience, stories were shared about each pregnancy-related death incidence. Community members who lived the

experience of or were affected by a pregnancy-related deaths are credible sources of these real stories and perceptions of lived experiences.

Definitions

This is the operational definitions of some terms used in this dissertation to help the reader understand the study contents.

Access and use of perinatal health care: The differences in access to or availability of health care services. For instance, the number of pregnant women who enrolled and participated in at least one health care visit and were evaluated by health care professionals could be used to measure assess and utility of perinatal health care (Anastasi et al., 2015; WHO, 2014).

Autonomy: The ability for an individual to make informed decisions willingly. For instance, making a decision to participate in or withdraw from a perinatal health program, clinical trial, family planning, self-health management, and other healthy lifestyle programs (Ahmed et al., 2010; Ajenifuja et al., 2010; Bustreo et al., 2013; Fawole & Adeoye, 2015; Fatso et al., 2009).

Barriers to low antenatal uptake: Refers to factors that hinder a woman's chance of receiving adequate antenatal care and related services during pregnancy or labor/delivery or after childbirth (Anastasi et al., 2015; Bustreo et al., 2013; Say et al., 2014).

Community: Within the context of this study, *community* refers to a group of individuals with common religious, sociocultural, and sociopolitical values. A community may include spouses, family members, leaders, faith-based groups, social

workers, health systems, health promoters, public health, and other health care professionals.

Cultural health: A belief system based on cultural practices that tend to influence decision-making processes about individuals' health options (Shim, 2010).

Delivery facility or site: A location where a pregnant woman gives birth (WHO & UNICEF, 2012). A woman or family may choose a home delivery or health facility with or without the presence of formal skilled birth attendants. They may also choose non-skilled birth attendants or traditional birth attendants for the in-home delivery of a child.

Facilitators to high antenatal care: Imply to factors that help improve access and use of antenatal care and related support services, including decision making and understanding of risks of vulnerability and benefits.

Lifetime risk: The likelihood of an event occurrence for an exposure or a condition such as pregnancy or labor or delivery or postnatal event (such as 42 days postnatal events after childbirth; WHO et al., 2010).

Maternal death: The death of a woman during pregnancy or labor or delivery or within 42 days after childbirth, irrespective of the duration or circumstances. Maternal-related deaths can occur within short or long-term pregnancy duration regardless of the social determinants or environmental factors. Other internal or external factors could be directly or indirectly linked to pregnancy-induced deaths (WHO et al., 2010). At prenatal, delivery, and postpartum periods of pregnancy, infant or maternal mortality could occur due to health complications or natural causes (WHO et al., 2010).

Maternal mortality rate: The incidence of deaths within a given period. For instance, the proportion of pregnancy-related deaths that occurred among pregnant women within a given period and for a given set of a target population could be used to estimate the maternal mortality rate (Say et al., 2014; WHO et al., 2010).

Maternal mortality ratio: The standardized incidence of maternal deaths for a defined population size. For instance, the standardized value could be normalized per every 100,000 live births annually or semiannually for estimation of MMR (WHO et al., 2010).

Perception: A subjective view about the knowledge of an event or outcome or a situation or the understanding of the risk and barriers associated with lifestyle choices or behaviors (Becker, Stretcher, & Rosenstock, 1994; Rosenstock, 1950).

Preconception: A form of predetermined view about a given situation or thing that may influence or distort ones' decision-making processes about health preventive measures and promotion or maintenance health care and services. Health promotion could be advanced via informed-health education such as sex education, health literacy, family planning, counseling, etc., before, during, and after pregnancy to improve health and reproductive status and prevent unwanted pregnancy and sexually transmitted infections (Babalola & Fatusi, 2009; Centers for Disease Control and Prevention [CDC], 2010).

Social determinants of health: Social conditions that influence the quality of life, life choices, life course perspectives, and health status based on the exposures to socially

constructed environments, such as race, gender, culture, SES, residential locations, health care status, and other external factors (CDC, 2010).

Trained and skilled health care worker: A health care provider or practitioner with required professional training and competency needed to perform health care services or duties safely and effectively without inflicting harm to patients or clients (UNICEF, 2012).

Town crier or *bell bearer*: A person designated by the traditional village chief or elders to make public announcements to the people in the village. The crier receives an official order or direction from the village headman or chief on what information to pass to the villagers. The town crier also plays the role of delivering letters or court papers to people in the villages (Webster, n.d.).

Assumptions

Sociocultural, socioeconomic, and other determinants of life factors are associated with high maternal deaths among individuals with low income in rural communities in Nigeria. Individuals with high income are also affected with maternal deaths. However, in this current study, I explored the perceived barriers to maternal care and risk factors for high rates of maternal mortality in their community among individuals living in Ekpeye. From a subjective perspective, a thorough understanding of how community's cultural values and exposure to known risks explains the high maternal mortality during pregnancy was part of qualitative lens described in this study. Limited knowledge about barriers to improve maternal health, maternal death facilitators, and benefits of perinatal or postpartum care offers information on how to mitigate the risks and improve attitude

and behavior toward access and use of maternal care to improve maternal quality of life and birth outcome in rural areas. However, the information generated via this qualitative study may not be quantified or replicated in an objective study setting.

A qualitative research approach informs real-life experiences as perceived subjectively by the individuals who witnessed the events in question. With a qualitative approach, demographic characteristic and event-related information obtained from a face-to-face interview were thematized and used to form an inductive and a deductive opinion about the pattern of the event phenomenon observed in this study. In any study, the research questions and key informant interview questions were the key instruments to the credible observations made in this study. Similarly, as a primary investigator to this study I am as well an instrument and a constructivist of this study. It is also important to note that the application of a validated open-ended question approach in a study setting, strengthens study credibility (Abedi, 2010; Creswell, 2013).

Scope and Delimitations

The current study's findings will not expand beyond qualitative and subjective views of the study participants. Individual perceptions of what the barriers and facilitators are regarding pregnancy-related maternal mortality in Ekpeye are not quantified. Also, the investigation was not an intervention study; thus, concurrent provision of targeted maternal health services to the subjects to address their needs was not examined in this study. More importantly, subjects included in this study are individuals who have close relationships or acquainted to the person who died due to pregnancy-related

complications. As such, the perception of the subjective views of individuals unfamiliar to the victims was not evaluated or examined.

Limitations

There are several limitations associated with the current research design (phenomenology), research method (qualitative approach), inclusion criteria (individuals with lived experiences of death of a loved one during pregnancy), and sample size (small sample of nine participants) used. Overall, I cannot generalize the findings of this study inquiry outside of the nine participants used in this study. Limitations in these areas could distort the findings of this study. For instance, the use of a small sample size of nine participants were small in terms of overall population of Ekpeye communities and may not be representative of other community member's experiences. However, with a qualitative study, a small sample size described is within a normal sample size recommended. To advance generalization on this topic or any research findings, a multisite study should be conducted that represents the larger part of the target population.

Phenomenological study is ideal to explore lived experiences. Though according Creswell (2013) other indicators of non-lived experiences may not be captured or explained using the approach. The physical geographical location representing the Ekpeye community of Rivers state posed inherent limitations especially on selection bias because participants was selected from one local government area (LGA) region out of 23 regions. Lack of evidence of valid death records in the Ekpeye community was a credibility issue regarding the accuracy of maternal death verification processes. The

stories shared were believed as a true events not fictitious claims. Therefore, an inclusion of participants who did not experience maternal death of a loved one or friend or acquaintance in any of the interviews erroneously constitutes a misclassification bias. Another limitation of the study is that a qualitative study did not provide any information about the objective or quantitative nature of this research inquiry. To capture the quantitative aspect of this inquiry, another study should be conducted using a quantitative or mixed-method approach.

Significance

A thorough understanding of the barriers to maternal care and facilitators of maternal mortality from a subjective perspective among members of the Ekpeye community informs tailored public health intervention approaches to address the sociocultural and sociopolitical issues identified in this study. The subjective knowledge of the barriers to maternal care and facilitators that contributes to maternal deaths among individuals at risk within the Ekpeye community could be explored further by the public health practitioners to facilitate or support efficient and effective health promotion measures. The findings could promote meaningful assessments of maternal risk to address health indicators adversely influencing health-seeking behaviors of individuals in the Ekpeye community. Change is difficult, yet change is necessary for growth and progress. Perhaps, the positive and negative themes emerged through the current study inquiry could advance a movement towards a cohesive sociocultural and sociopolitical shift for the common interest of the community. Also, the current study inform strategies intended to improve maternal care and quality-based birth outcomes, a process with a

substantial value in the efforts to reduce the high prevalence of maternal deaths among individuals at risk in the Ekpeye community and perhaps, other regions in Nigeria.

The quantitative reviews, qualitative studies, and the identified gap in the literature described in the problem statement and background sections are the basis for this current qualitative study. The findings from this study could promote quantitative risk assessments on the effects of the barriers to maternal care and facilitators associated with high maternal mortality rates. Other determinants of health factors associated with maternal mortality or lived experiences of the barriers to maternal care and facilitators about high maternal mortality rates could also be explored further. This current study could inform research communities, enhance policy formulation, and promote the opportunity for intervention research capable of transforming perceptions into actionable and quantifiable public health efforts.

Identification of contributing perceptual themes for a health issue may promote health literacy to advance better quality of life among community members, inform policy, and strengthen the community's capacity on reproductive health education intervention approaches, maternal health care, and social interactions among community members and health practitioners (Adewole et al., 2015; Resnick & Siegel, 2013). The rate of return on investments on maternal health extend beyond the reduction of new cases of maternal deaths among pregnant women but presents a promising future with improved birth outcomes for both infants and mothers and health utility cost effectiveness by using preventive measures to address complications or deaths due to pregnancy. Addressing the unmet public health needs among individuals living in the Ekpeye

community could mitigate the overarching health burdens described in MDG-5 and sustainable development 3.1 goals (WHO, 2014). Overall, engaging rural communities to reduce maternal deaths is a promising problem-solving strategy. In addition, the findings from this study offers clarity on missed opportunities concerning key perceptive precipitating factors, feedback reflections, and lessons learned on how individuals in the community perceive the death of a pregnant woman during pregnancy or child birth or 42 days after childbirth and how it could be prevented moving forward.

Summary

Nigeria has one of the highest rates of infant and maternal mortality (WHO, 2014). It appears that pregnancy-related deaths could be preventable when quality maternal care is promoted and applied. Most villages in Ekpeye community in Rivers state of Nigeria do not have quality medical facilities. Even with the high burden of pregnancy-related deaths in the community, there are insufficiently skilled medical staff, trained health workers, and resources to support access to quality health care to increase use of maternal health care or services. The basic humanitarian activities and human right issues must focus on reinforcing health care services as a right not a privilege. Such social and health policies will strengthen the community's resolve and active participation in health care surveillance.

Nigeria as a nation could achieve a transformative reduction in maternal-infant deaths only when the political willpower reforms becomes the primary goal of its health reform to serve its stakeholders, residents, and citizens. Nigeria should invest in human capital, social infrastructure, and resources at the community levels. Maternal and child

health is of public health interest. Therefore, a reduction in maternal deaths among WCBA living in rural areas can improve the overall health of women in the community and could promote better quality of life among mothers, pregnant women, and infants. The body of literature reviewed supporting the claims regarding maternal and infant mortality problems and pregnancy complication issues was described in detail in Chapter 2 of this dissertation.

Chapter 2: Review of the Literature

Introduction

Nigeria is an emerging country in sub-Saharan Africa and has 175 times higher maternal deaths compared to countries such as Germany, United States, and other developed nations (WHO, 2014). Ekpeye in Rivers State in Nigeria, an impoverished, resource-constrained community, appears to experience higher maternal deaths. In this study, I explored how individuals in this community perceived barriers to accessing maternal care and what they perceived as facilitators of high rates of maternal mortality. In this qualitative study, I identified the common themes that emerged from such perceptions. Previous research has shown that limited access and quality maternal health services remain a major problem among WCBA who reside in rural and remote villages in Nigeria (Ahmed et al., 2010; Miselle et al., 2013; Orazulike et al., 2017). Sociocultural and socioeconomic factors such as scarce resources, untrained health workers, and cultural issues are challenges that affect health-seeking behavior among women in their reproductive years (Ahmed et al., 2010; Miselle et al., 2013 & Orazulike et al., 2017). In this chapter, the literature review search strategy, literature synthesis, and literature review related to key variables and concepts was discussed and provided evidence-based foundation for this study.

Literature Search Strategy

The methods and strategies used for the literature search relating to perceptions about maternal deaths involved multiple journal databases such as Lancet, Elsevier, Walden Library, CINAHL Plus, Nursing and Allied Health Source, Social Science

Direct, Sage, Medline, Thompson Reuters, and the CDC Maternal Mortality-MMR weekly portal. Additional literature searches were performed using Google scholar, PubMed, WHO, UNICEF, UNFPA, U.S. Agency for International Development (USAID), and World Bank websites or portals. The national and state health department websites were another credible sources used to identify pertinent information concerning maternal health and mortality publications.

The key terms used to conduct literature search in the aforementioned databases were *health care in Nigeria*, *sexual and reproductive health in Nigeria, pregnancy and maternal health, vulnerability to risk and threats of pregnancy, pregnancy-induced complications, maternal deaths, and MMR, benefits of antenatal, community perceptions,* and *access and utilization of maternal health services*. Other search terms used were *pregnancy and women of childbearing age (15-49 years) in the developing countries, reasons for delays in obstetric service and opportunities, socio-cultural and socio-economic demography of maternal health, autonomy and role of women in decision making in a household and society, gender difference in perception of pregnancy, poverty and influence on pregnancy outcome, barriers to and benefits of pregnancy,* and *skilled and unskilled maternal health facilities*.

To capture relevant articles, I placed emphasis on literature published within the last 9 years from 2018, which was time when most the literature search was performed. I filtered and limited the search to only articles published between 2009 and 2018. However, additional searches were performed on older articles (1990s to 2008), especially for articles related to the methodology, research design, and HBM which the

theoretical model applied to this study. Evaluating older articles helped to assess the major changes from the ways maternal mortality has been perceived in terms of known barriers to accessing maternal care and facilitators to maternal death rates especially in low-income countries such as Nigeria, India, and others. In Google Scholar, the total number of articles generated using the term *health care in Nigeria* was 1.08 million results. When limited to only articles published between 2009 and 2018 at the time of the search for the same search term '*health care in Nigeria'*, only 165,000 articles were generated. This was a substantial reduction of the total number of articles populated in the previous search. However, I could not review all 165,000 articles but I randomly selected few literature from this search based on the relevance of the publications to my current study. For literature search on '*sexual and reproductive health'*, the selection was limited to literature published from 2009 to 2018, and a total of 444,000 articles was populated. I further localized the site of the study with the term '*sexual and reproductive health in Nigeria*', 17,000 results were retrieved, and I used 47 articles from that list. Similarly, when the term 'pregnancy and women of childbearing age (15-49 years) in the developing countries' was used and limited to literature published from 2009 to 2017, a total of 20,300 articles populated, but when I specified the site of interest of my study with the term 'pregnancy and women of childbearing age (15-49 years) in river state, Nigeria', 1,610 results were retrieved, but only very few on top of the list were selected. Articles on maternal and child health were identified in a similar manner in different search engines mentioned above. Articles with similar searched terms were used in this study because its relevancy in the literature reviews synthesis. Those that did not cover

maternal or infant health were irrelevant to this topic and were excluded from the literature review synthesis.

Some of the older articles I reviewed did not report conclusive evidence; rather, they specified reasons for high maternal mortality in Nigeria by focusing on the availability of fewer health facilities and delays in seeking and accessing antenatal care due to the proximity of the residential area to the health clinics (Say & Raine, 2007 & Onah et al., 2005). Unfortunately, fewer evaluations of other social determinants of health were explored (Chigbu et al., 2003; Onah et al., 2005; Say & Raine, 2007). However, Ononge et al. (2010) used a mixed-method approach to expand the discussion on unsanitary conditions and excessive hemorrhaging post childbirth among women in rural Uganda, which remains a major obstetric risk and known factor in maternal deaths. Years after Ononge et al.'s (2010) study, conclusions were reached by several researchers that delays in maternal health-related intervention and preventive measures were responsible for higher maternal deaths in Nigeria and in other sub-Saharan African regions (Alkema, et al., 2016; Anastasi, et al., 2015; Bustreo et al., 2013; Orazulike et al., 2017; UN, 2014; World Bank & WHO, 2015). Researchers also examined how sociocultural, SES, and other determinants of health influenced maternal health outcomes and what barriers and facilitators affect WCBA in rural areas (Alkema, et al., 2016; Anastasi, et al., 2015; Bustreo et al., 2013; Orazulike et al., 2017; UN, 2014; World Bank & WHO, 2015).

Theoretical Foundation

Theories and models are the guiding principles that advance the understanding of how certain health phenomena can be explained and support effective approaches to influence health behavioral changes, including inquiries to address important study questions (Creswell, 2013). Venable (2006) suggested that theories contain tailored constructs developed by social and behavioral scientists meant to be used as indicator measures to understand how behaviors or outcomes could be explained by the environmental cues or extrinsic and intrinsic factors that predict or influence the behaviors or outcomes in question. Theoretical models can be used to validate or refute existing knowledge and, in some cases, establish or build new sets of knowledge (Venable, 2006). In this study, I selected HBM as the theoretical foundation because it is a framework that aligns with the posed subjective research questions. HBM is an important theory used for a qualitative study that focuses on perceptions and lived experiences or addresses lifestyle or behavioral change (Creswell, 2013; Glanz, Rimer, & Viswanath, 2008). In this study, the focus was to use qualitative research to identify the perceived experiences on the barriers and facilitators of maternal death rate among individuals in the Ekpeye community who lived the experience of witnessing the death of a woman either during pregnancy, labor/delivery, or up to 42 days after childbirth.

Health Belief Model

The HBM is an applied theory that appeals to behavior change (Glanz, Rimer, & Viswanath, 2008; Creswell, 2013). One notable strength of the HBM is its application in assisting an individual to reduce or eliminate the risk of adverse health conditions due to

exposure to amendable health determinants (Glanz et al., 2008; Creswell, 2013). Pregnancy-induced complications, poor maternal-child health, negative birth outcomes, stillbirths, and maternal mortalities including neonatal deaths are all preventable (Ezugwu et al., 2014; Bustreo et al., 2013; Mselle et al., 2013).The HBM was developed in the United States in 1950s by Irwin M. Rosenstock, a social psychologist focusing on four main constructs (perceived susceptibility, perceived severity, perceived benefits, and perceived barriers) (Glanz, Lewis, & Rimer, 1990). In 1974, Rosenstock expanded the HBM by adding another construct, the 'cues to action' to examine how people respond to illness, diagnosis of a health condition and the types of behaviors that a sick person would exhibit, and whether the person used or failed to seek for health care services (Rosenstock, Strecher, & Becker, 1994). HBM was later modified to include self-efficacy in 1988 by Godfrey Hochbaum, Irwin Rosenstock, and Stephen Kegels, which was applied to explore the challenges of routine unhealthy practices such as smoking and lack of motivation to seek medical help to amend health risks associated with unhealthy behaviors (Rosenstock et al., 1994). Glanz et al. (2008) examined the application of HBM in sex health education among adolescents. Collectively, there are six operational constructs included in the HBM: (a) the perceived susceptibility, (b) severity, (c) threat, (d) self-efficacy, (e) benefits, and (f) cues to action or inaction (Baum, Rosenstock, & Kegels, 1950s; Rosenstock, 1974; Glanz et al., 2008). As shown in Figure 1, the HBM constructs are grouped into three categories: (a) individual perceptions (perceived susceptibility, severity, and self-efficacy), (b) modifying factors (perceived threat, demographic variables and socio-psychological variables), and (c) likelihood of action

(benefits, action or inaction; Baum, Rosenstock, & Kegels, 1950s; Glanz et al., 2008; Rosenstock, 1974; Rosenstock et al., 1994). Based on the established constructs and the posed research question in this study, HBM was the most appropriate theoretical concept to explore and explain individuals' perceptions on susceptibility, severity, threats, self-efficacy, benefits, and cues to action about maternal mortality barriers and facilitators and the extent each event changed their views and behaviors.

Aligning constructs that reflects the core elements in a study to explain the observed phenomenon is important. The relevance of the HBM in this study was drawn from the operational constructs that represents an individual's perception, aspects of live that can be modified, and the likelihood of the person taking action to reduce or control or prevent exposure to the health or behavioral risk such as pregnancy-related complications that are preventable. The level of risk for an event occurrence could be subject to the individual's perception based on their understanding of the susceptibility to or severity of the event (Becker, Strecher, & Rosenstock, 1994). For instance, in 2010, the risk of vulnerability or susceptibility and severity of a woman dying during pregnancy or labor/deliver or after childbirth live births in Nigeria compared to maternal deaths in high income countries like Canada, Germany, Sweden and United States (WHO et al., 2010). WCBA in Sub-Saharan Africa has a higher burden of risk of dying (139 times) than a woman of similar reproductive age in a developed country (WHO et al., 2010). To quantify this data, a woman's chance of dying due to pregnancy-related causes was 1 in 140 worldwide and1 in 4300 for women in developed nations (WHO et al., 2010). The data revealed a huge difference in disparities of risk, thus, requires urgent attention. The

greater risk of disparities for adverse health outcomes between developed and developing countries illustrated varying perspectives burden of maternal deaths in many regions of the world.

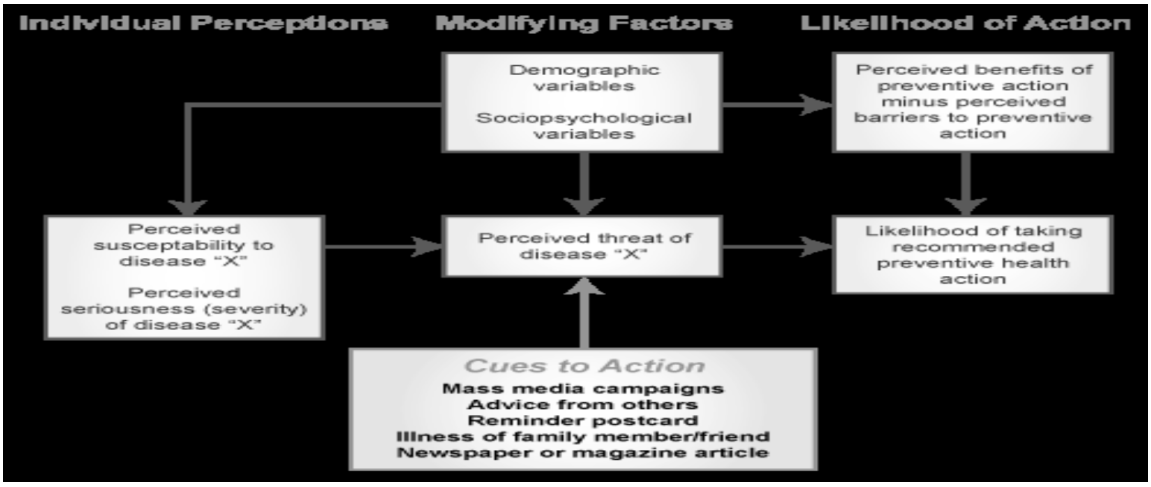

Figure 1. The health belief model. Source: Adapted from Becker, M. H. & Maiman, L. A., (1975). Socio-behavioral determinants of compliance with health and medical care recommendations. Medical Care, 134(1), 10-24. Figure 1, p. 12.

Benefits, Challenges, and Opportunities of HBM

The HBM has been credited successfully as a tool in the implementations of positive health outcomes and health promotion measures in many public health programs such as the car seat belt use, medical compliance, sex education, condom use, preventive health screening interventions, and use for diagnostic procedures (Glanz, Rimer, &Viswanath, 2008). Within the scope of this research, the HBM helped to explore subjective information such as known risk of vulnerability, maternal health history prior to pregnancy and the examinations of community members who lived the experience of witnessing the death of a woman during childbirth or 42 days after childbirth. This type of study has not been done in Ekpeye community and in Rivers State in general.

Therefore, there was a great opportunity to identify meaningful themes or patterns to substantiate credible evidence on how individuals feel after experiencing the death of a woman in Ekpeye community after giving birth to a child or during childbirth. Such measure can be translated into action research to advance live saving strategies and targeted interventions to address reproductive health issues earlier through various approaches, including pre-conception health education and pregnancy counseling. Findings from this study revealed that knowledge of perceived susceptibility and severity, cues to action, and self-efficacy through support networks and care services could collectively inform pregnant women's cue for action towards a healthier obstetric lifestyle behavior. Key informants in this study expressed that proactive measure such as knowledge of self-care management can reduce pregnancy-related health risks and other determinants of life factors to promote maternal health and positive birth outcomes.

Literature Review Related to Key Variables and Concepts

Under this section, all the reviewed literature pertaining to this study was described in detail. The relevant information that were described for each of the reviewed articles included in the literature review section of this manuscript are research design, research method, topic of the article and purpose of the study, targeted population, sample size used, location of the study, the results, conclusions, and recommendations. As such, the description of the reviewed articles based on ascribed list provided important information on key variables and concept covered. It also showed how the identified variables or themes, or concepts were connected to the current study.

Historical Overview of Nigeria: Population and Demography

Nigeria is Africa's most populated country located in the West African Region with an approximate landscape of 923,768 square kilometers bounded by Cameron and Chad republics to the east, Benin republic to the west, Atlantic Ocean to the south and Niger republic to the north, see Figure 3 (National Bureau of Statistics (NBS) (2010). The 2010 census data suggested that Nigeria's population tripled from 38 million in 1960 to roughly 120 million in 1999 (NPC & ICF Macro, 2009). By 2025, Nigeria population is estimated to surpass 200 million (Dauda, 2016; UNICEF, 2012; Nigerian Census Bureau, 2010).

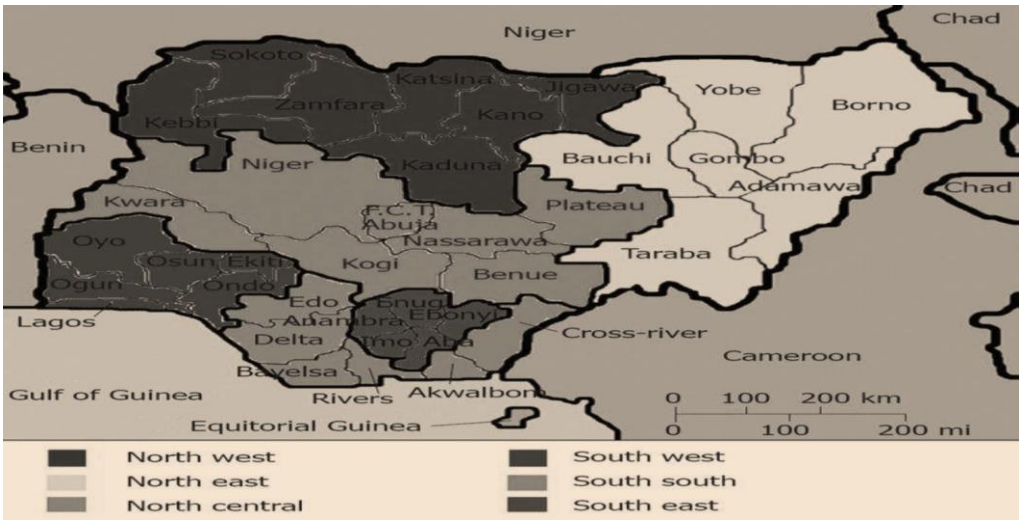

Figure 2. Map of Nigeria with geo-political zones and states. *Source: http://nghubs.com/?p=1*

Population of the WCBA In Nigeria

According to the Nigerian NPC and ICF macro (2009), two-thirds of Nigerians resides in rural communities. In Nigeria, WCBA in the rural communities represents 31.4 million and infants who survived at 8.3 million (NPHCDA, 2013; WHO, 2014). In Nigeria, the population of women with a steady fertility was approximately 2.8% to 5.6%

(FMOH, 2011; UN, 2014; WHO, 2014). These women were commonly at high risk of maternal complications during pregnancy and child delivery (FMOH, 2011; UN, 2014; WHO, 2014).

Disparities and Gender Inequalities in Nigeria

Overt disparities and inequalities in access and utilizations of maternal services are social barriers affecting maternal health and birth outcomes in Nigeria (Fawole et al., 2012). It is possible that elimination of disparities in maternal health care or an approach towards health equity could substantially reduce maternal deaths, and also address the inequalities that exist between gender in terms of SES and health perceptions. For WCBA, high risk and disparity on the burden of maternal death exists among women who reside in remote and impoverished communities (Kress, Su, & Wang, 2016; Okigbo, et al, 2016; Anastasi et al., 2015; Ezugwu et al., 2014; Mselle et al., 2013; Mojekwu & Ibekwe, 2012; Omoruyi, 2008). The risk seems to widen among women who are less educated, poor, marginalized, and medically underserved. Accessing quality perinatal health promotion and preventive interventions are extremely challenging in high poverty-stricken communities such as Ekpeye. Structural social inequalities and inequity contributed immensely to the perception driven by gender bias, which facilitates some of the barriers associated to adverse health and social well-being among women and young girls (Ezugwu et al., 2014; Fawole et al., 2012; Mojekwu & Ibekwe, 2012). In many report, illiteracy and low level of health literacy among women is associated with the increase in maternal and infant mortalities (Agency for Healthcare Research and Quality, 2004; UNICEF, 2014; US DHHS, 2012; Shi & Singh, 2008). Maternal health and

pregnancy outcomes among women in low-income countries has shown limited access to perinatal services with high economic, cultural, and social infrastructural barriers (Balde et al. 2017; Abimbola, et al. 2015; Anastasi, et al. 2015; Mselle et al., 2013 & Fatso, et al. 2009).

Description of Rivers State in Nigeria and Health Services

Ekpeye is a community in River state. Rivers State along with five other states (Akwa Ibom, Bayelsa, Cross River, Delta, and Edo) are in the Niger-Delta region of South Nigeria. Based on the 2006 census data, River state is made up of over 5.2 million people and it has the sixth largest population in Nigeria (Census, 2010), and majority of its citizens are farmers, fishermen, and traders (National Demographic and Health Survey, 2009). Rivers State also housed the second busiest seaport, an international airport, railway system, four universities, and rich oil reserves (National Demographic and Health Survey, 2009). The state is vital to Nigeria economy it is dubbed the "treasure Base of the Nation", yet, many of its citizens are poor with 76.9% unemployment rate (Niger-Delta Ministry, Fact Sheet). Joshua, Kayode, and Gbenga (2017) emphasized that poverty in rural communities in Nigeria is high. Ekpeye is one of those rural community. The unemployment rate among women (21-59 years) and youths (17- 23 years) are about 57% and 70% respectively, and these women live in abject poverty with less than $0.50 per day (Joshua et al, 2017; NDS, 2010). Majority of women in Nigeria are marginalized and medically underserved (Joshua et al, 2017).

Just as in other states in Nigeria, the people of Rivers state receive health care services from the state-owned general hospitals, community health centers, and privately-

operated clinics (Fawole et al., 2012; Mojekwu & Ibekwe, 2012). The hospital and health centers lack modern equipment and still operate with debilitated infrastructures (Abimbola, et al., 2016 & Fawole et al., 2012) . There is no free health coverage, but rather a fee-for-service system (Health Reform Foundation of Nigeria, 2007). Medical care and services for patients is based on fee-for-service, which means that the client must pay for service or "put down a deposit" of $100 before any examination by a physician or a nurse or a health practitioner is performed (Abimbola, et al., 2016).

Orazulike et al. (2017) conducted a three-year retrospective survey study of all 340 deaths that occurred among women of reproductive age (WRA) (15-49 years). The period covered in the study was from January 1, 2013 to December 31, 2015 from the University of Port Harcourt Teaching Hospital patient population in River State, Nigeria (Orazulike et al., 2017). The purpose of this study was to examine the causes of death and contributing risk factors associated with the tertiary institution in Port Harcourt, Nigeria (Orazulike et al 2017). In the study, survey data, review of hospital records, death registers, death certificates, face to face interviews with the health care providers in the obstetrics and gynecology department, including interviews with the significant others who witnessed and lived the experience of losing a woman were evaluated (Orazulike et al 2017). Findings from this study revealed that 340 deaths occurred from January 1, 2013 to December 2015 in WRA (Orazulike et al 2017). Out of the 340 deaths, 265 (77.9%) were considered as non-maternal deaths due to infectious disease such as human immunodeficiency virus (HIV); 124 (46.8%) due to cancer such as breast cancer (13 [4.9%]), and ovarian cancer (11 [4.2%]) whereas 75 (22.1%) were attributed to maternal

deaths caused by eclampsia (high blood pressure in pregnancy) (31 [41.3%]) and infection that occurred after childbirth (puerperal sepsis) (20 [26.7%]) (Orazulike et al 2017).

The authors identified lack of autopsy results in the record reviewed, low uptake on antenatal clinic visits and lack of awareness and health education particularly in rural areas as main limitations of the study (Orazulike et al 2017). Therefore, the authors recommended improvement in reproductive health education to increase enrollment, access, and utilization of maternity services, increased voluntary testing and counseling, early diagnosis of both infectious diseases and autopsy after death of WRA to improve health and pregnancy outcomes (Orazulike et al 2017). The authors' identified socio-cultural vulnerability, excessive bleeding, and untreated high blood as major contributors of deaths and the health risk factors among women of WCBA in Port Harcourt (Orazulike et al 2017). Shown in Figure 4 is the map of River State indicating the central region of the state, PortHarcourt.

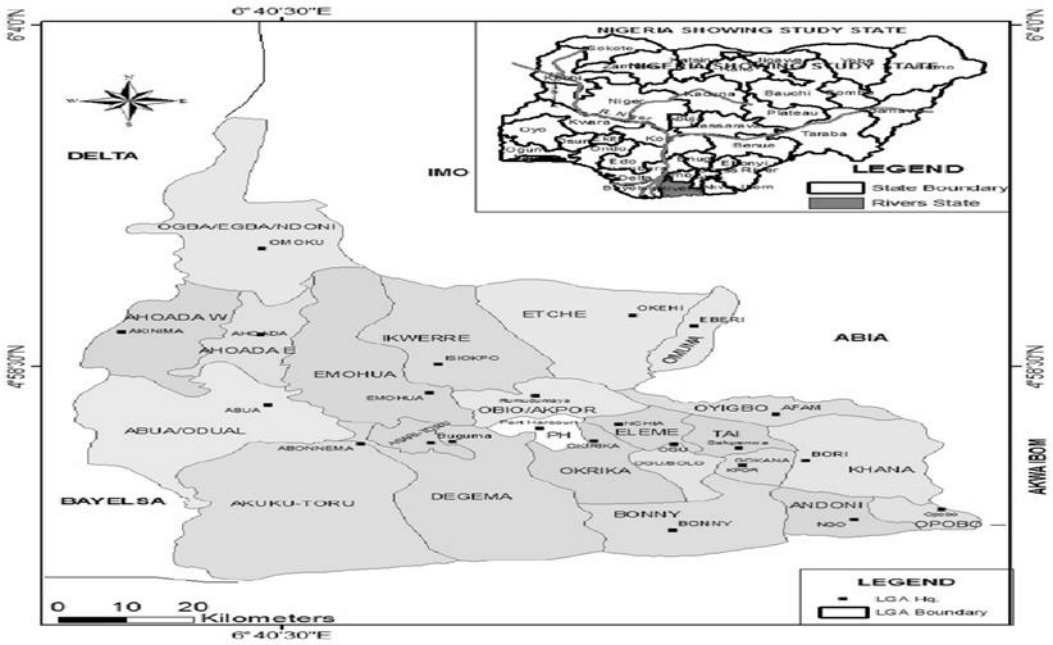

Figure 3. Map of Rivers State in Nigeria display all 23 local government areas (LGA) Source: Rivers state government and its geo-political footage. *http://nghubs.com/? p=1*

Description of Ekpeye Tribe in Rivers Sate in Nigeria

Shown in Figure 5, Ekpeye is one of the ethnic groups in Rivers State. Ekpeye is located in the Southeastern part of Rivers State surrounded by 4 other ethnic groups (Engenni, Egbema, Abua and Were) and less than 15 miles apart. There are 77 villages in Ekpeye with Ahoada Town as the capital headquarters. The population is 768,000 (Census Bureau Data, 2010; NDHS, 2009). The spoken dialect is Ekpeye. The community is enriched with a strong cultural tradition and historical heritage, which supports customary way of life and social interactions. Equally important is the indigenous belief systems and perceptions on issues concerning sex, pregnancy, and motherhood. With the unique cultures and disparate resources, Ekpeye people have different challenges regarding maternal-child health outcomes. Ekpeye community is made up of 51% of women and 49% of men (National Bureau of Statistics (NBS) (2010).

According to the 2010 Census data, 29.5% of Ekpeye WBCA has 4-7 children, and a high infant mortality of 6 deaths out of 10 infants (NDS, 2010; Census Bureau, 2010).

About 30% of adult women in Ekpeye are farmers and petty traders on local cash crops produce (NPC & ICF International, 2014). Women contribute two-third of the working hours and produce half of the food in Ekpeye (Federal Research Division, 2008). However, they earn 4% of the income generated in Ekpeye and own less than 1% of the community's assets and properties (NDS, 2010). They remain the poorest and most vulnerable to preventable health conditions in almost every village and continue to face an uphill struggle to achieve equitable human rights (NPC & ICF International, 2014).

Life expectancy in Ekpeye among adult men is 47-51 years old (Federal Research Division, 2008). Life expectancy for adult women ranges between 51-62 years old (Joshua et al., 2017; NDS, 2010). Unfortunately, life expectancy lowers among younger people under the age of 24 years old due to internal socio-political conflicts and violence (Joshua et al., 2017; NPC, 2010). Similarly, young women in their 20s and mid 30s are dying from HIV/AIDS-related causes and a high rate of infant mortality persists (Joshua et al., 2017; NPC, 2010).

Ekpeye community is a high poverty rural area where more than 75% of the population lives in poverty (National Demographic and Health Survey, 2009). There is one government owned hospital serving over 768,000 people within 78 villages in Ekpeye (Census, 2010). Unfortunately, most of the local hospitals are understaffed and under-equipped (National Demographic and Health Survey, 2009). It appears that a broader view of community-based maternal child intervention will be of immense benefit

to the natives since the traditional government-based hospitals and health centers are located miles away from the villages. It seems reasonable that health workers from community health centers should be incentivizing to partner with the regional hospitals to improve the quality of population health. It appears as in many developing countries that most people in rural areas of Ekpeye suffer from illnesses that are preventable due to lack of basic hygiene and healthy living practices including access to afford adequate nutrition.

Figure 4. Map of Ekpeye clan in Rivers State in Nigeria. Source: Rivers state local government areas and Its ethnic groups

Health Care Delivery in Nigeria

Collectively, the local or municipal authority, state, and federal government of Nigeria are responsible for the planning, development, implementation, and evaluation of health care services (Kress et al, 2016; & Obiechina, & Ekenedo, 2013). Overall, there are very few affordable hospitals in the region, and most middle-class families use the

public hospitals (Kress, et al 2016). However, medically trained health care professionals and students are needed because the hospital is still poorly equipped and understaffed (Joshua, et al 2017 & Kress, et al 2016). Critical social amenities such as sustainable and affordable clean water, food source, electricity supply, and functioning toilet facilities are needed to advance effective health care service delivery and management in hospital or clinic settings (NPC & ICF International, 2014).

Kress et al (2016) conducted a quantitative research study using systematic review analysis to assess the performance of the Nigerian's Primary Health Care Systems (PHC). The PHC performance indicators such as input, output, outcomes, service delivery, and facility level were key variables of interest in the assessment (Kress et al., 2016). Also, the authors used the Service Delivery Indicator (SDI) data source using health facility survey from multiple countries particularly those in Sub-Saharan African (Kenya, Senegal, Tanzania, Uganda and Nigeria) for a comparative assessment between Nigeria; and Kenya, Senegal, Tanzania and Uganda (Kress et al., 2016). They concluded that Nigeria performed poorly on almost all the PHC system indicators compared to the other countries (Kress et al., 2016). Factors such as lack of sufficient health care facilities, inadequate health workforce and basic infrastructure (toilets, electricity, and running water) was not readily available in 77% of facilities and were critical to low performance in the Nigerian's PHC systems (Kress et al., 2016). The count breakdown of the observations was as follows: The number of available health facilities are; 2,480 in Nigeria, 403 in Tanzania, 401 in Uganda, 294 in Kenya, and 151 in Senegal (Kress et al., 2016). The number of health worker absence is 12,678 in Nigeria, 2,573 in Tanzania,

2,383 in Uganda, 1,862 in Kenya, and 703 in Senegal (Kress et al., 2016). The clinical vignettes assessments is 5,153 in Nigeria, 629 in Kenya, 575 in Uganda, 574 IN Tanzania, and 153 in Senegal (Kress et al., 2016). Similarly, shortage of essential medical equipment and supplies (sterilizers, stethoscopes, blood pressure cuffs, and refrigerators) and drugs are major barriers to optimizing utilization of maternal health service in Nigeria (Kress et al., 2016). The availability of drugs is 49% below the global standard, and these are the major problems and challenges adversely influencing the optimal function of the PHC systems in Nigeria (Kress et al., 2016).

At the national level, 5.7% of the Gross National Product (GDP) was spent in health services in 2011, while 34% and 66% respectively were the combined annual expenditures by the FMOH and private health sectors (WHO, 2014). Still, consumers paid approximately 95.6% of the health service cost (paid to providers patients' treatment) via out-of-pocket in 2011 compared to 60.35% reported in 2001(Okigbo et al., 2016; WHO, 2014). With over 817 health facilities and the out-of-pockets payments, the health outcome performance in Nigeria is drastically low (Kress et al., 2016).

Inadequate financing and inefficient government were identified in the 2013 World Bank survey as elements that sub-optimal and low performance in the PHC systems (NPC & ICF International, 2014). They are considered the driving force or indicators of inefficient PHC systems (NPC and ICF International, 2014). Critical infrastructure to attend to various health need is lacking including qualified staff and necessary resources to support the coordination of care and services to improve and promote maternal-child health outcomes (Kress et al., 2016; NPC & ICF International,

2014). Facilities also lacked sufficient availability of patented drugs (Obiechina, & Ekenedo, 2013). Harrison (2009) stated that about 4.2% of the public facilities in Nigeria did not meet the global standards to address obstetric care in the 21st Century. The 2014 WHO report aligned with the Harrison (2009) findings suggesting that about 1% of maternal health services in Nigeria are equipped to address obstetric emergencies and diagnostic services. Regrettably, the most compelling aspect of disparities in health care services in Nigeria is represented by remarkable differences in health outcomes between people who reside in the city and individuals living in the villages (Kress et al., 2016). Similarly, other researchers indicated that the existence of abject poverty was a critical health determinants and known barrier to improved maternal health and antenatal uptake in impoverished communities (Okigbo, et al, 2016; Anastasi et al., 2015; Ezugwu et al., 2014; Mselle et al., 2013; Mojekwu & Ibekwe, 2012). To the extent that fewer modern health facilities and trained skilled health care professionals exists to care for the poor and individuals with high risks of dying from pregnancy-related problems. The authors cited lack of investment and funding to support availability of infrastructural and capacity building in the rural areas or regions where it is needed most (Okigbo, et al, 2016; Anastasi et al., 2015; Ezugwu et al., 2014; Mselle et al., 2013; Mojekwu & Ibekwe, 2012). A systematic analysis by the WHO on country-level's performance of health outcome measures ranked Nigeria in the 187th place out of 191 of the UN member states in 2003 (WHO, 2010). With all indications, Nigeria has yet to follow road map for accelerating the attainment of the millennium development goals set in 2005 lieu to reducing high maternal and newborn deaths ((FMOH), Nigeria, (2010, 2013). Umukoro

(2012) attributed poor health outcome in Nigerian to contextual issues such as inadequate financing, poor governance, bad economy, unstable system of administration, and socio-political culture (Shim, 2010).

A prospective systematic analysis of PHC at the country's level assessment was conducted by Aigbiremolen, Alenoghena, Eboreime, and Abejegah (2014). The purpose was to identify the constraints and explore strategies to improve PHC systems in Nigeria. It seems that strategies such as efforts in building capacity at the grass root level to increase community participation in health promotion activities, preventive measures, and curative, and rehabilitative services remains important factors to improve health outcomes. The authors indicated that the primary health care in Nigeria is fragmented and need a comprehensive reform to improve quality, participation, and positive health outcomes (Kress, et al 2016 &Aigbiremolen, et al 2014). They recommended improvement in quality indicators such as routine data collection and management, modern infrastructure, trained health professionals, and skilled health care providers (Aigbiremolen et al 2014). National strategies such as access to and affordable health service, effective communication channels, community mobilization, and culturally competent intervention approaches are anecdotes in reducing maternal and infant mortality in Nigeria (Aigbiremolen et al., 2014). Also, partnership with health agencies such as the Nigeria General Household Survey Panel (GHSP) provided data necessary to inform, identify and improve strategy to quality health care systems (Aigbiremolen et al., 2014).

Adamu et al. (2009) conducted a mixed method study which included 107 pregnant women to determine the socio-cultural economic factors that function as barriers to the use of antenatal health services and reasons for low utilizations of hospital during child birth. The study performed in the rural community of Kano State, Nigeria (Adamu et al., 2009). Using pre-selected questions, interviews were conducted in the native language by a skilled trained midwife who was familiar with the culture and social interactions among the community members (Adamu et al., 2009). It was indicated from the findings that cultural, economic, culture, and issues pertinent to a woman's perception of her circumstances were associated with decision making processes as to whether to participate in antenatal health care services and to deliver the baby in the hospital or at the local birth attendants' (LBA) house in the village (Adamu et al., 2009). About 88% (CI: 81.8–94.2%) of those interviewed did not participate in antenatal care, and 96.3% (CI: 93.0–99.8%) planned to deliver at home or had delivered at the LBA house (Adamu et al., 2009). There was no prior study conducted in Kano about barriers to antenatal health care access and utilization, and maternal death (Adamu et al., 2009). As a result, an intensive grass root health education to increase maternal health awareness and knowledge of prenatal health, poverty reduction, and economic empowerment of women who resides in rural and resource-scare communities was strongly recommended (Adamu et al., 2009). The hope is that such interventions could improve access and utilization of antenatal care services and informed decision-making processes about maternal health (Adamu et al., 2009).

Preconception Health Services in Nigeria

Preconception health is vital to improving sexual and reproductive health services that can impact future events. Maternal and infant health outcomes are critical indicators for measuring the health of any nation irrespective of its SES (United Nation & WHO, 2015; CDC, 2010). Regrettably, more women particularly in Nigeria continue to die during pregnancy or in labor and delivery or up to 6 months after childbirth (Fawole, & Adeoye, 2015; Doctor, et al 2014; Ezugwu, et al 2014 & Fatso et al., 2009). It seems hopeful that increasing the number of pregnant women with access to preventive social and medical visits to perinatal health care and a close follow-up monitoring during pregnancy or after child birth could decrease death incidence and thus, improve maternal health outcomes.

Preconception health involves activities that fosters and maintains better pregnancy and health outcomes before, during, and after pregnancy. Routine visits to the doctor, adequate nutrition to prevent dietary deficiencies (e. g. anemia, low calcium, and potassium), and assessments of complete blood counts (CBC) are recommended components of preconception care (NCCDP, 2013; Onokerhoraye & Maticka-Tyndale, 2012; CDC, 2010). Seeking advice from health care professionals about contraceptives or family planning, pregnancy counseling, and healthy discussions of sexually transmitted infections (STIs) including HIV due to unprotected sex behavior with multiple partners, and unplanned pregnancies are also important aspects of the intervention approach (NCCDP, 2013; Onokerhoraye & Maticka-Tyndale, 2012; CDC, 2010).

Using a mixed method research, Udofia et al. (2012) explored the perceptions of adolescent ages 15-24 years old in Akwa Ibom concerning their level of knowledge of the issues of reproductive health education and sexually transmitted infections (STIs) such as chlamydia, genital herpes, gonorrhea, syphilis, trichomoniasis, and HIV. The aim is to assess the cultural perceptions and individual's behaviors associated with STIs' risks and unplanned pregnancy (Udofia et al., 2012). Udofia et al. (2012) espoused that WCBA with prior diagnosis of HIV/AIDS tend not to disclose a-positive result because of shame and stigma, and as such, are not willing to utilize perinatal health services, which could adversely affect their health and the unborn baby. About 80% of the WCBA indicate limited knowledge of the most occurring types of STIs as well as increase risk of unplanned pregnancy (Udofia et al., 2012). They recommended a culturally appropriate STI and reproductive health approach to support the community values, norms, and social interaction to prevent adverse pregnancy outcomes (Udofia et al., 2012).

Gender Differences in Perception of Pregnancy and Maternal Risk

In Nigeria, majority of men holds the notion that pregnancy is a normal part of a woman's social responsibility in the society (Ezugwu, et al 2014 & Fatso et al 2009). Women are expected to stay healthy throughout the three trimesters and beyond (Agan et al 2010 & Ahmed, et al 2010). Women who felt short of the pregnancy-driven socio-cultural or traditional expectation are perceived as 'weak' or 'unmotherly' and often blamed for their problems (Alam et al 2015). To avoid public shaming, many women remained silence to both verbal and physical abuse, and maltreatment by their spouse or partner (Alam, et al 2015 & Anastasi et al 2015). Balde et al. (2017) indicate that

maltreatment is a contributing factor to high rate of maternal deaths among pregnant women or mothers that had newborns in Northern Uganda. Uganda is a low-income country in the Eastern region of Africa and shares many cultural, beliefs, and social similarities with Nigeria (Anastasi et al 2015). Fatso et al (2009) suggested that the lack of autonomy based on cultural practices and social interactions among men and women is partly due to barrier to improving maternal-child's health. Based on the 2012 report by UNICEF regarding national contraceptive utilization in Nigeria, there was a lack of consistency among WCBA with less than 10% contraceptive utilization while the total fertility remains at 4-6 children per woman (UNICEF, 2012).

Population of Women of Childbearing Age (WCBA) in Nigeria

According to the Nigerian NPC and ICF Macro (2009), two-thirds of Nigerians resides in rural communities, with WCBA accounting for 31.4 million (NPHCDA, 2013; WHO, 2014). The Nigerian FMOH reported the increase in the population of women with a steady fertility rate at 2.8% (2011). Annually, the number of newborns that survived past 12 months is between 7.3- 8.3 (World Bank, 2014; WHO et al., 2014; NPHCDA, 2013; NPC & ICF Macro, 2009). Improved maternal health literacy level among pregnant women could influence positive attitude and behavior toward taking charge of their health and the unborn or newly born (Agency for Healthcare Research and Quality (AHRQ), 2005). Increased knowledge and self-management skills about pregnancy related conditions such as gestational diabetes, dietary deficiencies, warning signs of fetus distress, miscarriage symptoms and determinants, preterm birth, consistent follow-up, and prenatal care are important maternal and child care components that can

improve quality of life and health outcomes (Babalola & Fatusi, 2009; Endres et al. 2004).

Sociocultural Influence and Maternal Health Outcome

Culture plays an important role in the decision-making process. In Nigeria, there are several myths concerning why and how certain health conditions or diseases occurs, including why a pregnant woman experience pregnancy complication. The myths produce mixed opinions and become barriers to informed pregnancy care services and utilization (Anastasi et al 2015; Ezugwu, et al 2014& Doctor et al 2013). For instance, childbirth delivery by traditional birth attendants (TBA) in a home-based setting was perceived as the normal tradition and considers women who delivered in a health care facility as either weak and sick or had complicated pregnancy (Anastasi, et al., 2015). These subjective societal views equally prevent people from consulting with doctors to address adverse health conditions earlier enough in order to avoid complications.

According to Coast et al. (2012), culture creates a barrier to access to and utilization of skilled health facilities is one of the leading indicators for low health-seeking behaviors. Lack of trust towards the scientific and medical community is another barrier as well (Coast et al., 2012). Such barriers foster low-uptake in health care utilizations as well as the reduction of effort against disease prevention and health promotion activities in low-income rural communities (Blade et al., 2017; Anastasi, et al., 2015)

Global Strategies: Trends and Strategy to Reducing Maternal Deaths

Reproductive health is a public health interest in the global community. The focus aligned with two of the UN's global strategy, under the MDG-4 and 5 to reduce maternal deaths by three quarters between 1990-2015 and to improve maternal health status (Anastasi et al., 2015; WHO, et al., 2015; UN, 2014; Bustreo et al., 2013). Interestly, the new UN report with the adoption of the Sustainable Development Goals (SDGs) on trends on maternal mortality from 2000-2017 (2017), revealed a decline from 451,000 in 2000 to an estimate of 295,000 in 2017. However, despite the decline, many regions of the world such as Chad, South Sudan, Somali, Central Africa Republic, Yemen, Syria, still experience The MDG goal has been partially achieved by 44% decrease in targeted period in India, compared to a one-third decline from 1990 to 2008 (Wilmoth et al., 2010). Despite this notable decline, countries in sub-Saharan Africa continuously had high rate of pregnancy-related mortality each year (Alkema, et al, 2016 &; WHO, 2015).

Challenges and Opportunities

The Sustainable Development Goals (SDGs) through various approaches promotes the reduction of maternal deaths by 75% on or before 2030 (WHO et al., 2016). The growing concerns and intractable challenges in many countries led the UN to set renewed energy initiatives in 2016 as the benchmark (Orazulike et al 2017 & WHO et al, 2016). The overall goal is to promote actionable interventions for reducing maternal deaths worldwide to fewer than 75 per 100,000 live births (WHO et al., 2016). Also, a portion of the '2030' strategy aims at decreasing the number of newborns who died within 28 days of birth to 12 per 1,000 live births in every country (Okigbo, et al 2016;

WHO et al., 2016& Alkema et al, 2015). In addition, the SDGs objective is to reduce the under-five year's old deaths to lower than 25 per 1,000 live births across the globe (WHO & UN, 2017). Also, Hafner & Shiffman (2013) suggested that the international community should strengthen the health systems around the world to achieve SDGs .

Adewole, Adebayo, Udeh, Shaahu, & Dairo (2015) conducted a cross-sectional study in Orire LGA of Oyo State in Nigeria. The participants were 345 consenting adults (21 years and older). The participants were members of the community, which included farmers, traders, artisans, teachers, and health care workers (Adewole, Adebayo, Udeh, Shaahu, & Dairo, 2015). The purpose of the study was meant to assess individual's knowledge of health care payment methods for health services utilized and their perceptions about the National Health Insurance Scheme (NHIS) which was implemented in 2005 in Nigeria (Adewole et al., 2015). The data collection was performed using semi-structured interviews (Adewole et al., 2015). They concluded that poverty contributed to limited or no access to quality health services in Nigeria (Adewole et al., 2015). Approximately, 94.2% of the participants were aware that the out-of-pocket payment is their only means of receiving health care services (Adewole et al., 2015). About 6.4% of the sampled participants expressed knowledge of the NHIS (Adewole et al., 2015). On the other hand, 88.4% shared lack of transparency on the national prepayment plans while 62.3% expressed lack of trust of how the government manages the national health plans (Adewole et al., 2015).

Three barriers were described in the study included: 1)lack of engagement on repayment plan discussions because of the quantitative nature of the study, 2) lack of

cultural relevant of the prepayment system for persons who resides in rural communities, and 3) limited number of participants and LGAS enrolled in the study (Adewole et al., 2015). Adewole et al., 2015 suggested that future research should explore a payment plan model applicable in rural communities. Overall, it was concluded that the out-of-pocket payment is a hindrance to quality maternal health care improvement and positive pregnancy outcomes (Adewole et al., 2015).

Sub-Saharan Africa: Maternal Health and Pregnancy-Induced Deaths

In the global south, which includes 12 countries in sub-Saharan Africa, high maternal death rates remain a major public health issue (Say et al., 2014; WHO, 2015). In 2014, WHO reported 289,000 maternal deaths worldwide, of which 1% of the mortality occurred in high-income countries. Sociocultural inequality was recognized as a predisposing factor of negative maternal health and birth outcomes in many regions, while progressive countries experienced less unequal burden of maternal health risks and deaths (Say et al., 2014; WHO, 2015). Doctor**,** Ariyo, and Ozodiegwu (2013) conducted a retrospective analysis of nationally representative dataset obtained from the 2013 NDHS. The purpose of the study was to examine whether the social and cultural issues are associated with maternal deaths in Nigeria (Doctor, et al 2013). A multilevel logistic regression analysis was utilized to investigate the correlations between maternal deaths, preterm birth and birth outcomes, and the autonomy or unequal treatment of women (Doctor et al 2013& Fatso et al 2009). Women empowerment, level of education, maternal health or reproductive education (health literacy), place and type of living arrangements, and religion were factors evaluated (Doctor et al., 2013). Using lists from

different households, 38,948 women ages 15-49 years old were recruited and interviewed through a ‘direct sisterhood method’ with 97.6% response rate. Using the ‘direct sisterhood method’, it was concluded that a total of 3,302 deaths among WCBA were linked to pregnancy (Doctor et al., 2013). With a 95% confidence interval (CI); 30.7 ± 36.1 about 33.4% mortalities were identified as pregnancy-related deaths following childbirth (Doctor et al., 2013). With some variations in different geographical settings, the highest proportion (53.6%) was reported in the North West region of Nigeria (Doctor et al., 2013). About 54.6% of those reported had minimum levels of knowledge on women’s health issues (Doctor et al., 2013). Social characteristics based on the inequality in education, income, autonomy, and role between women and men were remarkably significant and correlated to maternal death (Doctor et al., 2013). For instance, the pregnancy-related deaths ratio was up to 1,012 deaths per 100,000 live births among women living in the Northwestern region (predominantly Muslims) particularly in Jigawa compared to the Southern region (Doctor et al., 2013).

Few challenges identified included limited information on religion because Northwestern Nigerians practice Islam (Doctor et al., 2013). Cultural practice of Islam demand obedience and submission of women (Doctor et al., 2013). In addition, lack of autonomy and decision-making power or poor empowerment in the formal and informal education process of women create layers of inequality in every fabric of the community affairs (Doctor et al., 2013). Therefore, improving health literacy could promote uptake of preconception, access, and use of antenatal health care services to prevent deaths (Doctor et al., 2013).

Challenges

While ample literature exists on maternal deaths in the developed world, there is an urgent need to extend research studies to rural and improvised communities in sub-Sahara countries in Africa. In this study, literature search for relevant qualitative studies with focus on sub-Saharan Africa yielded fewer results. According to the post-MDGs' report, countries that made huge progress on maternal deaths were listed, unfortunately, Nigeria was not one of the nations. Nigeria was ranked fourth and as one of the worst countries with maternal deaths (WHO et al., 2016). In Nigeria, many pregnancies resulted in stillbirths or neonatal deaths (under 28 days after birth) (WHO et al., 2016; UNICEF, 2012; Mojekwu & Ibekwe, 2012; WHO, 2010). The high infant mortality rate put Nigeria in the 28th place in terms of maternal death outcomes, globally (WHO et al., 2016; UNICEF, 2012; Mojekwu & Ibekwe, 2012 & WHO, 2010). A qualitative study by Somé, Sombie and Meda (2013) in rural Burkina Faso and by Hackett, et al (2013) in rural Bangladesh suggested that poor health-seeking behavior among WCBA remains a big factor because of low use of perinatal care, limited participation in family planning, and lesser use of contraceptives, all of which increases a woman's risk of adverse birth outcome. UNICEF offered similar report in 2012 that the prevalence for the national contraceptive utilization in Nigeria is smaller than 10% in a population with total fertility of 4-6 children per woman. Inequalities in Nigeria are higher in rural communities, therefore, high maternal deaths, deaths under five years of age, and related determinants issues should be addressed (Mojekwu & Ibekwe, 2012; Oyibo, 2016; UN & WHO, 2015).

According to WHO et al. (2010) about 86% of sub-Sahara Africa regions indicated that maternal deaths are common phenomenon. Alam, Hajizadeh, Dumont, and Fournier (2015) assessment of the progress in sub-Saharan Africa suggested a slow decline in maternal deaths and a gradual increase in utilization of maternal health services. Using a cross-sectional design, the demographic and health surveys (DHS) in six sub-Saharan African countries (Ethiopia, Madagascar, Uganda, Cameroon, Zambia, and Zimbabwe), Alam et al. (2015) conducted a systematic exploratory assessment to examine the use of antenatal health services and to evaluate its influence on MMR among WCBA ages 15-49 years old. The six countries were divided into two groups, group A and B (Alam, Hajizadeh, Dumont, & Fournier, 2015). Group A consists of Ethiopia, Madagascar, and Uganda while group B includes Cameroon, Zambia, and Zimbabwe (Alam et al., 2015). The selection of the six countries was based on the WHO and UN efforts in achieving MDG-5 objectives to reduce maternal deaths and infant mortality (Alam et al., 2015). The data set were selected from the DHS pull between 1994 and 2011 (Alam et al., 2015). The predictable variables assessed were antenatal care, site of childbirth delivery (facility-based delivery), and the use of modern contraceptives for family planning (Alam et al., 2015). The conclusion was that women in urban areas use maternity services more than their counterparts in rural areas (Alam et al., 2015). A substantial decline in MMR in Ethiopia, Madagascar, and Uganda over the last two decades and an increase in Zimbabwe, Zambia, and Cameroon within the same period was reported in the WHO and UN assessment (WHO, UN, 2013b). The authors reported more importantly that Ethiopia had a huge decline in maternal deaths, with an MMR of

950 deaths per 100,000 live births in 1990 and 350 deaths per 100,000 live births in 2010 compared to Zimbabwe, Zambia, and Cameroon that witnessed a substantial increase from 470 deaths per 100,000 live births in 1990 to 570 deaths per 100,000 live births in 2010 (Alam et al., 2015).

They concluded that a remarkable progress was made in the utilization of antennal health care services in six of the countries selected, but Ethiopia made the most progress followed by Madagascar and Uganda (Alam et al., 2015). In Uganda, the proportion of antenatal care in the rural areas increased from 39.2 to 46.6% (Alam et al., 2015). Countries reporting satisfactory progress towards the MDG 5 goals had a decline in both the urban and rural areas, including a decrease in the levels of inequalities to access and utilization of maternal health care services between the poor and the rich (Alam et al., 2015). According to DHS survey in 2011, about 16.1% use of modern contraceptives was reported in Cameroon (WHO, 2013a).

Some of the barriers identified were lack of comparability of data because there was a wide gap for the time period (1996 to 2011), which could have created a generational effect issue (Alam et al., 2015). Also, a recall period of antenatal care utilization from four to six years after the surveys were administered, which made the data analysis on inequalities of the utilization of caesarean section more difficulty (Alam et al., 2015). There was also lack of inclusion of other relevant indicators to maternal care such as data on emergency obstetric care and current national MMR record for the year the study started were not available (Alam et al., 2015). There were also lack of data on availability of services, quality and affordability of services, transportation, and

knowledge (Alam et al., 2015). Health-facility proximity and sociocultural issues were part of the barriers identified as well (Alam et al., 2015). They suggested additional studies in other sub-Saharan African countries on the utilization of antenatal care and maternal death to perhaps increase the external validity of the findings (Alam et al., 2015).

Opportunities

Achieving a transformative SDGs by 2030 (WHO, 2016) and Global Health Strategy by 2035 "grand convergence" (Moran, 2016), requires a multi-disciplinary approach and international partnerships and commitment from all the 191 UN member nations. To strengthen community and regional capacities, it seems that adapting global strategies that reflect country-level needs can shape public policy, and thus allows for collective leadership to address common cause. Findings from this study aligns with my assumption that country's level operational plan should place greater emphasis on reducing maternal deaths, improve access to quality care and utilizations, and offer pre-screening for pregnancy induced gestational diabetes, high blood pressure and diagnostic tests for early detection of pre-existing health conditions and untreated infections, diabetes, high blood pressure Unarguably, these conditions can increase risk of vulnerability as well as create adverse pregnancy and birth outcomes. Subsequently, treatment of underlying problems or addressing the aforementioned conditions that hinders a woman's quality of life offer opportunity to reduce pregnancy-related deaths. (Alkema, et al 2015). It is possible that by bridging the gaps between the low-income and high-income countries in all the maternal health, birth outcome, children and adolescents'

health determinants could reinforce coordinated leadership and management for a sustainable development.

The combined breakdown of maternal-related deaths annually are 305,000 maternal deaths, 2.6 million stillbirths, 1.3 million adolescent deaths, and 5.9 million deaths of children less than five years old (WHO & UNICEF, 2016). Half of all babies delivered between 1995-2010 were tagged as delivered by adolescents from six low-income and resource constraint countries (Ethiopia, India, Bangladesh, Brazil, Democratic Republic of Congo, and Nigeria) (WHO & UNICEF, 2016). Nigeria with poor MMR was the only country mentioned in sub-Saharan Africa (WHO & UNICEF, 2016). In 2015, the MMR per 100,000 live births in Nigeria increased from 630 to 814 (WHO, UNCIEF, & The World Bank, 2015). The issue of under-reporting and over-estimation is likely because many rural communities in Nigeria do not have consistent health registry records of all pregnant women, maternal health conditions and deaths, and child birth registry (Alkema et al 2015). According to the 2015 report by the WHO, UNICEF and World Bank highlighted issues of under-reporting of utilization of maternal health services, which often occur when women deliver a child outside the hospital or skilled health-facility particularly in poor-resource rural communities in Nigeria and in other regions of the world (WHO & UNICEF, 2016& WHO, 2013a).

Maternal Health and Pregnancy Outcome in Nigeria

Pregnancy presents a period of uncertainty. Maternal deaths induce physical, emotional, and psychological trauma (Alam et al 2015; Doctor et al 2015; Bustreo et al 2013; Agan et al 2010 & Ahmed, 2010). The traumatic experience could indirectly lead

to other adverse health conditions such as obesity, diabetes, and hypertension (Balde et al 2017 & Anastasi et al, 2015). Not every pregnant woman or newborn survives the gestation period or six months after giving birth. Many women particularly in rural areas of Nigeria have no or limited access pregnancy care services (Say et al 2014 & Bustreo et al 2013).

Reproductive complications could lead to adverse health outcomes in both mother and the unborn child when adequate and quality care was not provided. Provision of routine health services earlier in life to young girls and WCBA reduces healthy pregnancy-related barriers (WHO, 2013a & Udofia et al 2012). Understanding the familial history before conception is crucial in assessing pregnancy risks and ensuring proper support for implementing interventions that promotes healthy lifestyles and pregnancy (CDC, 2010). Similarly, effective maternal health program that involves activities that foster healthy livings and identify risk of poor health earlier in pregnancy. Routine medical checkup visits, seeking pregnancy advice or counseling from health care professionals about contraceptives or family planning, and STIs education are necessary in improving quality of life and health status (UN & WHO, 2015; WHO, 2013a & The World Bank, 2012). Assessments of complete blood counts (CBC) and adequate nutrition to prevent dietary deficiencies such as anemia, low calcium, and potassium are also important (UN & WHO, 2015; The World Bank, 2012).

Causes of Maternal Deaths in Nigeria

While countries in sub-Saharan Africa have the highest burden of maternal deaths, the majority of these deaths occurred in Nigeria (WHO, 2013a & Agan, et al

2010). Nigeria was ranked 4th highest in maternal deaths in the world (WHO & UNICEF, 2016; The World Bank, 2015). Among WCBA, 3.5 million out of the 9.2 million pregnancies per year are unplanned, while 56% were aborted. Abortion is also a risk factor to maternal mortality (Say et al., 2014; WHO et al., 2014). In 2013, the regional, urban, and rural MMR in Nigeria were estimated as follows; 1,549 in the North-east, 165 in the South-west, 828 in the Urban areas, and 351 in the Rural regions (FMOH, 2015; WHO, 2014).

Shah and Say (2007) defined maternal deaths as the death of a woman during pregnancy or while in labor/delivery or 42 days after child birth. Regardless of the pregnancy term and environment in which it maternal death occurred or the attributable predictor factors including post-partum period but excluding unnatural causes such as accidental causes, it is a public health issue and can be prevented (Say et al., 2014; WHO, UNICEF, UNFPA, World Bank and the UN, 2015). Safe motherhood is a social, moral, health, economics, and humanitarian justice discourse. It should be embraced by all social communities, poor and rich. Unfortunately, a large number of women as many as 287,000 experience a high burden of adverse outcomes from pregnancy worldwide. (WHO 2016; Anastasi, et al 2015; Alam et al 2015; Alkema, et al 2015 & Say et al, 2014). This report aligned with the study conducted by Elem, & Nyeche, (2016) about health inequality and the empowerment of reproductive age of women for development in Rivers State, which revealed that the likelihood of a woman dying from pregnancy-related causes in Nigeria was 500 times more, which was translated to one death for every 20 live births among WCBA. In many countries, women are economically deprived

especially in rural and impoverished communities, which are a barrier in the effort of transparent engagement in activities that promotes positive health and birth outcomes (Anastasi, et al 2015). Unique cultures and disparate resources require gender and age appropriate approaches of health care services to address maternal needs and unmet needs (Anastasi, et al 2015).

Nigeria is ranked the fourth highest in maternal deaths in the world (The World Bank, 2015; WHO & UNICEF, 2016). Indicators of country-level maternal health and death outcomes include but not limited to the average number of children per woman, birth registration, maternal deaths per 100,000 live births, infant deaths per 1000 live births, child birth at health facilities, and antenatal care (Oyibo et al. 2016; Say et al., 2014; UNICEF, 2014; Omoruyi, 2008). A retrospective observation reported in 2000 ranked Nigeria's health care system the 187th with poor maternal performance outcomes among the 191 UN member states (WHO 2010).

Data obtained from the WHO Factsheet (2008) indicated that 80% of maternal deaths are attributed to biological factors such as excessive bleeding, infections or toxemia, eclampsia (pregnancy-induced-high blood pressure), and obstructed labor (Okigbo et al., 2016; Say et al., 2014; Onah, Okaro, Umeh, & Chigbu, 2005). Severe bleeding during labor and delivery accounts to 23% of total number of deaths, 17% due to systemic infections after childbirth, and 56% attributed to unsafe abortion (WHO, et al., 2015& Åhman, 2011). Also, disease conditions that could induce pregnancy complications include acute renal failure due to severe eclampsia, meningitis, AIDS, anemia, sickle cell disorder, malaria, and hepatitis (Mojekwu & Ibekwe, 2012).

Onokerhoraye and Maticka-Tyndale (2012) explained that there are competing interests with limited resources, and as a result, reproductive health education has not been a priority in Nigeria. Therefore, the discussion on sex, sexual orientation, and family planning among young people including health promotion awareness has been limited (Onokerhoraye, et al 2012). For instance, the increases in teen pregnancy, sexually transmitted infections, including HIV are high among young girls and WCBA (Onokerhoraye et al, 2012). The use of contraceptive, condom could prevent the risk of unwanted/unplanned pregnancy and transmission of STI respectively (Udofia et al, 2012).

Early marriage, cultural influence, marital status, ethnicity, religion, environment, occupation, level of education, inadequate nutrition, income, limited skilled health workers, stress, poor coping mechanism, psychosocial conditions, and low maternal health literacy are external factors associated with adverse pregnancy outcomes (Bicchieri, Jiang, & Lindemans 2014; US DHHS, 2012; Shi & Singh, 2008; Safeer & Keenan, 2005). According to the post-MDGs report, in 2013 in Nigeria, women die every 13 minutes due to pregnancy-induced problems and childbirth (WHO et al, 2016). On the other hand, 30 to 50 women have disabilities and obstetric fistula every 13 minutes (WHO, 2013a). Also, about 53 % of 8.3 million pregnant women in Nigeria did not participate in perinatal care while 45% had less than 4 visits which are below the recommended care (WHO, 2013a).

A woman's lifetime risk of dying during pregnancy or in labor/delivery or 42 days after childbirth in Nigeria is high compared to other developing countries in sub-

Saharan Africa such as in Ghana, Liberia, sierra-Leone, Benin Republic (WHO, 2016). In 2015, the MMR per 100,000 live births in Nigeria was 814 (The World Bank, 2015). The leading environmental causes of high MMR in Nigeria is delayed enrollment, access to quality antenatal care, and unskilled health workers (Aesea & Shah, 2011). Eclampsia remains one of the worst risk factors of maternal deaths in Nigeria. (Omekuju & Ibekwe, 2016; Kullima et al., 2009; Onah, Okaro, Umeh, & Chigbu, 2005).

Anastasi et al. (2015) examined the gaps between a woman's choice of participation in the prenatal care and under-utilizations of skilled birth facilities in rural Uganda communities. They concluded that further research is needed to address barriers and facilitators that influence maternal deaths (Anastasi et al., 2015). Based on the reviewed literature, it appears that the barriers and facilitators identified by Anastasi in the rural Uganda are similar to those present in communities in Nigeria (Anastasi et al., 2015). Uganda is a country in sub-Saharan Africa that shares common values with Nigeria such as cultural beliefs, early marriage perspectives, and women's decision-making roles in the household (Anastasi et al., 2015). Other shared experiences are poverty, gender's perception about pregnancy, and inadequate skilled facilities (Thaddeus & Maine 1994). Internal social conflicts and unstable political system of governance is also common (Anastasi et al., 2015).

Balde et al. (2017) on the other hand implicated maltreatment and abuse in Northern Uganda, while Chattopadhyay et al. (2017) identified obstetric violence during hospital births as part of risk factors associated with maternal health. D'Silva et al. (2017) in a qualitative study in India suggested that socio-cultural and structural violence are risk

factors to high maternal deaths among WCBA with low income nations. Socio-cultural and structural violence are also common among abusive men who subjects pregnant women to verbal and physical abuses. In general, women in many sub-Saharan Africa countries including Nigeria encounter similar abuse and maltreatment by their spouse and caregivers (Blade et al., 2016; Adewole et al., 2015; Udofia et al., 2012).

In many studies low socio-economic factors were linked to high maternal and fetal mortalities in developing countries such as in Nigeria (Blade et al., 2016; Omkeju & Ibekwe, 2016; Anastasi et al., 2015; Fawole & Adeoye, 2015; Ahmed et al. 2010). Udofia et al. (2012) explored the impacts of lack of transportation and its impact on perinatal clinics or hospital patient reach, inadequate care by health care providers, and unskilled care of pregnant women while in the hospital or antenatal clinics. All the specified determinants are essential in promoting better maternal health outcomes (Udofia et al., 2012). They concluded that the factors substantially contributed to high maternal deaths (Udofia et al., 2012).

Dauda (2016) suggested that sustainable development can be achieved economically if the structural transformation effort focuses on addressing inequality and income gaps. Shah and Say (2014) stated that two thirds of pregnant women in Nigeria gave birth outside of skilled health centers without the presence of trained providers due to low or no income to support the care and services. In addition, less than one-thirds of women in Nigeria participated in antenatal care visits during their pregnancy duration (Orazulike et al., 2017; Oyibo et al., 2016; Say et al., 2014; WHO, 2008; WHO, UNICEF, 2014).

Pregnancy-Induced Complications and Maternal Mortality Risk

There are several pregnancy-induced complication and maternal mortality risk factors (CDC, 2010; Ahmed, 2011 and WHO 2013b). Improving informed knowledge about such risk factors, its severity and threat is important in pregnancy outcomes. Such reach through public health awareness efforts could promote social and community well-being (CDC, 2010). Bleeding, heart attack, maternal literacy level, and sepsis are some of the risk factors associated with pregnancy-induced complications and maternal mortality (CDC, 2010; Ahmed, 2011). Therefore, identifying pre-existing health condition that adversely affect maternal health outcomes is extremely important in the application of preventative measures ad reducing pregnancy-related complications during labor or delivery or up to six weeks after childbirth (CDC, 2010; Ahmed, 2011).

Women's Access and Utilizations of Perinatal Care in Rural Areas in Nigeria

Women in rural areas encounter difficulties maintaining healthier lifestyles and utilizing perinatal care than women in urban areas (Alam et al, 2015; Alkema et al 2015 & Say et al 2014). The perception emerged from popularly shared views that more women have low SES in rural areas (Oyibo et al., 2016; Abimbola et al., 2015; Joshua et al., 2015& Doctor et al 2013). Thus, with such economic burden or barrier, vulnerable population have challenges accessing quality health care, essential resources, and maintaining basic personal hygiene (Balde et al., 2017; Kalipeni, Iwelunmor, & Grigsby-Toussaint, 2017; Kress et al., 2016; Anastasi et al., 2015; Mselle et al., 2013).

In 2010, the antenatal care coverage in Nigeria was 58% which is below the recommended parameter of 4 visits for the duration of pregnancy (Orazulike et al., 2017;

WHO & UNICEF, 2014). Mselle et al. (2013) and Owais et al. (2013) suggested that lack of adherence in the antenatal program and high rate of child delivery outside of health facility are associated with high maternal and newborn deaths in rural communities. In Nigeria, a major constraint to sustainability of maternal-child intervention is poor buy-in investment in the comprehensive and integrated maternal health services by the 3 tiers of leaderships in Nigeria including the federal, state, and local government authorities (Alam, et al 2015; Ezugwu et al 2014 & Babalola & Fatusi, 2009). There is no reasonable explanation to why research activities on maternal-child health and positive birth outcomes are not a priority in Nigeria.

Health Prevention and Promotion Activities Among WCBA in Nigeria

Beside access and utilization of perinatal service during pregnancy, access to health prevention, promotion, and maintenance activities sustainable at the grass root level is needed. Early prevention activities on adverse health outcomes could substantially reduce amendable barriers and risk of pregnancy complications (CDC, 2010). Health promotion includes activities that fosters and maintains healthier livings (CDC, 2010). Souza et al. (2013) using the 2001 WHO Antenatal Care Trial (WHOACT) evaluated the policy recommendations of four antenatal visits per pregnancy to improve maternal health and prevent perinatal deaths associated with pregnancy. The study was performed in Havana (Cuba), Jeddah (Saudi Arabia), Khon Kaen (Thailand), and Rosario (Argentina) within 53 clinics (Souza et al., 2013). The goal is to determine the baseline risk and link between low number of antenatal visits, antenatal care guidelines at the community level, and time of perinatal deaths (Souza et al., 2013). The relative death

risks of maternal in terms of the number of weeks with pregnancy, fetal, and neonatal were analyzed using a linear model and Poisson regression (Souza et al., 2013). To establish baseline risk, 12,568 women were recruited by 27 clinics, but 11,958 women participated in the 26 control group clinics (Souza et al., 2013).

After the study, 6,160 women were considered in high risk and 365 in low risk category. Participants who received intervention reported an average of 5 visits compared to participants in the control group with 6 visits. The number of fetal deaths were 161 fetal deaths (1.4%) in the group that participated in the 27 intervention, whereas 119 fetal deaths occurred in the control group (1.1%), with adjusted relative risk (Adjusted RR 1.27; 95% [CI 1.03, 1.58]) of fetal death (Souza et al., 2013). The effect was linked to high relative risk (Adjusted RR 2.24; 95% [CI 1.42, 3.53]) of fetal death during the 32 and 36 weeks of pregnancy was statistically significant for women in low and high-risk groups (Souza et al., 2013). There are variations in baseline risks among participants from different countries, particularly in the areas where the availability of health resources is difficult and challenging (Souza et al., 2013). The variations among participants introduced in the new model were 47.6% compared to 19.6% among those who used standard model with less than 5 visits (Souza et al., 2013). They concluded that the number of times of antenatal clinic visits is a proxy to high quality care (Souza et al., 2013). They indicated that limiting the number of antenatal visits may not really lead to a reduction in quality of care especially in resource constraints environment (Souza et al., 2013). Overall, improving the awareness, health literacy and education, knowledge of the

risks, opportunity on diagnostic screening, and treatment of other health conditions is essential.

Maternal Deaths in Nigeria

Annually, countries in sub-Saharan Africa reported 237,000 maternal deaths (Anatasi et al., 2015; Blade et al. 2016; Wojcieszek et al., 2016; WHO & UNICEF, 2015). In considerations to some known factors, it seems promising that preventing maternal deaths required a coordinated approach, targeted resources and interventions at the local, state, national and global level. According to the World Bank (2014), 287,000 women die annually as result of pregnancy-related complications. Nigeria MMR is 560 per year, which is higher risk compared to Ghana, Republic of Congo, Kenya, Uganda, and Senegal, all in sub-Saharan Africa (Balde, 2017; Reeve, 2016; Anastasi et al., 2015; the World Bank, 2015).

Bustero et al. (2014) used mixed method approach to evaluate maternal death risk factors. The global target to decrease maternal mortality was less than 50 deaths per 100,000 baby's live births by 2035. Bustero et al. (2014) offered new ideas on how each country could improve maternal survival rate and enhance positive health and birth outcomes by addressing specific direct or indirect risk factors. They also suggested that success could be achieved by tracking country-level MMR greater than 400 each year (Bustero et al, 2014). Through this approach, 75% reduction in MMR between 1990 and 2015 was achieved (Reeve, 2016; Langer, Horton, Chalamilla, 2013 & WHO, UNICEF, UNFPA, the World Bank, 2012).

Benefits and Opportunities

Investment in reproductive health matters, economic and social welfare that focus on women, infant children, and youth (WICY) in resource poor community like Ekpeye in Nigeria is a human rights issue (UN, UNICEF, & WHO, 2013a). There is urgent need to extend the benefits, opportunity, and lesson learned from several studies on this topic to rural and improvised communities in sub-Saharan African countries. The joint benefits will increase knowledge and shared humanitarian responsibility by addressing the maternal risk factors, thus, prevents pregnancy complications. Accelerating maternal health improvement efforts will involve the integration of multiple intervention approaches including sustainable infrastructure, health education awareness, health literacy services, healthy nutrition access, access to clean water, and provision of standard sanitary conditions are important quality of life determinants. It appears that with a stronger public health infrastructure, mis-representations of community level data and missed opportunities in disease prevention will be substantially reduced.

Women's Perceived Susceptibility, Severity, Threats and Vulnerability of Risk, and Safe Motherhood

Safe motherhood, healthy sex behavior, and positive birth outcome are of public health concerns and a reproductive element of human rights (WHO 2010). Vital is the rights to inform individuals of their reproductive health care rights, which allows informed-decision processes in making personal life choices (CDC 2010). Cultural beliefs, political climate, and socio-economic status, demographics, including other determinants of life factor makes the health care rights a complex issue (Aigbiremolen et

al 2014; Doctor et al 2013; Shim, 2010). For instance, low utilization of maternal services in remote part of Nigeria was attributed to the indigenous' perceptions about the health care system in Nigeria (Joshua et al., 2017; Omkeju & Ibekwe, 2016; Orazulike et al., 2016; Doctor et al 2013; Say et al., 2014; Ahmed et al., 2011). The quality of care and geo-political environment also influences maternal health outcomes because stable policies are needed to promote meaningful public health efforts in population-based levels (Umar et al., 2011; Harrison, 2010). Decision-making processes concerning pregnancy and child delivery site health-facility or home-based delivery appeared to influence the pregnancy outcome (Blade et al., 2017; Anastasi et al., 2015; WHO & UNICEF, 2015; Say et al., 2014).

Adolescent pregnancy, older women over 45 years old, and women with multiple pregnancies are at higher risk of maternal deaths and stillbirths (Anasthsia et al, 2017; Blade et al., 2017; Adeoye, Onayade, & Fatusi, 2013; UNICEF, 2012; Gardosi & Pattinson, 2010; WHO et al., 2010). Deaths of newborn under the age of 28 days are also common among younger and older women (Fawole et al., 2014; Owais et al., 2013). According to the National Demographic and Health Survey (NDHS) (2009) unmet needs on family planning and health facilities which offers reproductive health care, far exceeded 20% when compared to other countries in West Africa (i.e., Ghana, Liberia, Benin and Burkina Faso) (Omkeju & Ibekwe, 2016; Oyibo et al., 2016; Say et al., 2014; Owais et al., 2013).

Assessments of Perceived Individual-Level Risk Among WCBA at the Village Level

This study explored lived experiences at the individual level within a community, it is important to have informed knowledge of what and how socio-cultural and socio-economic issues act as hindrance from preventing a pregnant woman access to quality care (barriers) as well as protective factors that enhance maternal's access and utilization of health and related services (facilitators) to maternal deaths and prevention efforts. Gaining insights into what people perceives as the vulnerability or susceptibility and severity factors to pregnancy-related deaths are needed to effectively translate efficacious interventions. Such can resonate with the needs and expectations of priority beneficiaries. In this study, perceived needs are focused on maternal self-assessment of susceptibility to current health situation prior to non-pregnant conditions. Perception of vulnerability of risk can be evaluated by trained and competent practitioners through screening and diagnostic procedures as applicable (Glanz, et al. & Viswanath, 2008).

Quality antenatal care during pregnancy, labor, and delivery management by skilled trained providers to facilitate safe delivery and reduce birth complications are elemental in improving maternal and birth outcomes (Omoruyi, 2008 &Rosenstock, Strecher & Becker, 1994). Nigeria is about 2% of the global population but account 10% of the world maternal deaths. Nigeria continues to have high maternal and fetal deaths with no progressive change (WHO 2013b & Glanz, et al. & Viswanath, 2008). According to WHO (2013a), about 47% enrolled and participated in perinatal care, which is less than the recommended 4 visits, while 385 delivered their babies at skilled health facilities with trained and competent practitioners. In the South of Nigeria, 475 maternal deaths per

100,000 live births occurred while 615 mortality cases were recorded in the Northern Nigeria (NPC & ICF Macro, 2009). In developed countries such as Germany and Finland 10 antenatal visits with 3 visits for 3 ultrasound diagnostic procedures are recommended (WHO & UNICEF, 2016). In many cases, a pregnant woman in Nigeria would not seek medical care but will only do so if her health conditions worsen (Mojekwu, 2012; Say et al, 2014; Shah & Say, 2007).

Oyibo et al (2017) further suggested that the decision as to where a woman will deliver her baby is often handled by the man spouse (men cultural privilege). In Nigeria, about two-thirds of women delivered outside of a skilled health facility with trained and competent providers' attendance (Oybo et al. 2017; Say et al 2014; WHO, UNICEF, 2014). Both Alkeman et al. (2016) and Milgrom et al. (2011) suggested that community support and network systems can influence utilization of antenatal health services and minimize the risk of depression among women with low-income living in poor resource rural areas.

AHRQ suggested that quality of infrastructures, processes, and outcomes are three parameters with inverse relationship with pregnancy outcomes (AHRQ, 2014). Quality of infrastructure, processes, and outcomes also limits a pregnant women's ability in resource poor communities in seeking help for health care and services (Okigbo et al., 2016; Shah & Say, 2007; Onah, 2005). At the core of the problem is a woman's socio-economic status (SES) which is grouped under the 'three delays' processes. The 'first Delay' include the following elements; poor knowledge of pregnancy-related complications prior and during period of conception, labor, delivery, and the lack of autonomy in making

informed-decision regarding pregnancy (Blade et al., 2016; Ahmed et al., 2015, Anatassi et al., 2015). Transportation distance and access is the 'second delay' process to maternal health care and services, and access to clinics could become a barrier or facilitator to maternal and child birth outcomes (Orazulike et al, 2016; Anatassi et al., 2015). The proximity of residential locations to maternal health facilities could be a barrier or facilitator depends on the level of accessibility of clinics to the population at need or target population (Coast et al., 2012; Obiechina & Ekenedo, 2013 & Shay & Raine, 2007).

Assessments of Community-Level Perceptions about Maternal Deaths in Rural Areas in Nigeria

An assessment of community's perception about knowledge of barriers that increased maternal mortality and facilitators that contribute to improved maternal health and positive birth outcomes remained an integral part in understanding how socio-cultural and socio-economic strata influence adverse health outcomes and poor decisions on maternal health-seeking behaviors. The indicators could be perceived as barriers and facilitators to poor maternal health, low perinatal uptake and death in Nigeria. Overt disparities and inequalities exist among people, so does perception of vulnerability of risks varies. People of high socio-economic strata may perceive maternal health and adverse pregnancy outcome differently from those in low-SES. According to Oyibo et al. (2016), pregnant women with high-income tend to use perinatal care, skilled attendants, and health facility.

Poverty, depilated infrastructures, socio-cultural and determinants of life factors influence health outcomes. Okonofua, Ntoimo and Ogu (2017) suggested that income, education, and occupation play a crucial role in maternal health. Together, members of the community could create a culture of healthier habits and development to improve lives. The planning, analysis, development, implementation and evaluation of the community-based interventions to address health indicators and subjective perceptions about maternal deaths in the rural areas. Members of the community with no social amenities can draw strength through collective voices to address issues concerning the death of a pregnant woman. Several studies categorized some of the unmet needs such as the sociocultural and socioeconomic barriers to quality and affordable care as key determinants of health (Omkeju & Ibekwe, 2016; Oyibo et al., 2016; Ezugwu et al., 2014; Fawole et al 2014; Coast et al., 2012).

A systematic data analysis conducted by Say and Raine (2007) in Nigeria, identified only 5 out of the 5,575 literatures reviewed discussed maternal deaths in Nigeria. SES was a contributing factor of health disparities and inequalities (Oyibo et al.2017; Kress et al 2016; Fawole et al., 2012 & Mojekwu & Ibekwe, 2012). Psychosocial factors such as age, gender, marital status, age of first marriage, culture, ethnicity, race, attitude, health seeking behavior, and other environmental issues predisposes a pregnant woman to adverse health conditions, thereby increasing obstetric risk. (Oyibo et al., 2017; Finlayson & Downe, 2013; WHO, 2016). Oyibo et al. (2016), used semi-structured interviews with 10 WCBA ages 21 years and older to explore community perceptions of maternal death in Rivers state in Nigeria. The purpose of the

study was to inform knowledge and understanding of critical issues that affect people's psychosocial well-being and to improve risk communication (Oyibo et al., 2016). Evidence such as access and utilizations, perceived quality of care, health counseling promotes positive health outcomes (Oyibo et al., 2016). Minimal social support and community cohesion influence maternal-child health and pregnancy outcomes (Oyibo et al., 2016). Also, spousal level of education, contraceptive use, residential status and location, age at first birth and marriage, and woman's attitude towards spousal abuse tend to influence use of perinatal care (Ezugwu et al., 2014 & Fawole et al., 2012).

Using a qualitative research inquiry, Blade et al (2017) explored the perceptions and experiences of maltreatment of women during childbirth by the health care providers in a health care facility in Abuja, Nigeria. In the study, maltreatment refers to negative experiences a woman under labor/delivery experienced (Blade et al., 2017). Common examples of maltreatment are physical abuse, emotional abuse, verbal abuse, and violations of privacy (Blade et al., 2017). The purpose of the study was to examine the lived experiences and perceptions of women that influence mistreatment during labor and delivery (Blade et al., 2017). The data collection was through focus group discussions and in-depth interviews through a purposive sampling of WCBA, doctors, midwives, and facility managers (Blade et al., 2017). In 2013, about 45.7% of women delivered their babies in a health care facility and majority expressed some types of maltreatment (Blade et al., 2017). Maltreatment of pregnant women or during childbirth by a spouse or at the hand of the health care providers could lead to several harmful health complications, post-partum depression, and increase maternal and infant deaths (Blade et al., 2017).

A meta-synthesis of qualitative research by Finlayson and Downe (2013) explored low antenatal uptake in low- and middle-income countries that influences the decision-making process among 1,230 WCBA in 15 countries. It was anticipated that the use of meta-synthesis approach will assist in exploring the participant's contextual world views, beliefs, lived experiences and to develop hypotheses as to why WCBA did not seek antenatal care at all, or utilized services even it is available as recommended by WHO in 2000 (Finlayson & Downe, 2013). The meta-ethnographic techniques used in generating recurring themes require further explanations and synthesis to explain the sociocultural issues and barriers to follow-up visits after the initial consult (Finlayson & Downe, 2013). reoccurring themes were Pregnancy as socially risky, physiologically healthy, resource use, survival in conditions of extreme poverty, and not getting it correct the first time (Finlayson & Downe, 2013). To prevent misalignment and misinterpretations of the local views, they suggested creating programs that reflect social and cultural issues to address cultural competency, beliefs, values, traditions, social interactions, and adequate resources particularly in low income countries (Finlayson & Downe, 2013).

Role of Social Support and Community Cohesion and Pregnancy Outcome

Unintended consequences of high maternal death environment seem to create chronic orphanage culture and conditions, which is an unhealthy social determinant of health factors especially among single or unmarried parents with no co-dependent partner. It appears that the SES impact affects the well-being of the family structure, community integrity, and national security, locally, nationally, and internationally. For unstable environment with torrent of internal conflicts such social and political

dysfunction will worsen maternal health and perhaps increase pregnancy-related mortality rate. Such an environment exposed infants with deceased mothers in higher risk of many problematic health outcomes including but not limited to mental disorders, stress induced-trauma, exposure to human trafficking, or even death (Kress et al. 2016).

Summary and Conclusion

Maternal deaths emerge from multi-factorial vantage points of the literature review processes and syntheses. As a result, findings from this study suggests that interventions should reflect a woman's current health condition, contextual environment, shared community values, socio-cultural, socio-economics, reproductive, and sexual health needs. Perhaps, effective tools to enhance social interactions and other determinants of life factors should be explored. Such multi-intervention or holistic approaches could strengthen the need for a tailored cultural representative of the individual perceptions of ways to bridge the barriers and facilitators of maternal mortality rate to address the unmet needs.

Creating sustainable solutions in preventing unnecessary deaths of a woman during pregnancy or during labor and delivery or 42 days after childbirth requires sustained investments over a period of time at the individual and community levels. A coordinated and comprehensive maternal health program that reflects the Ekpeye's people values, shared culture, contextual environment and social interaction could pave ways to advance community sense of self-driven owners or personal investment to quality health outcomes to improve a woman's choice or lifestyle behavior towards inclination to participation in perinatal care and other reproductive health services. Such

measures could substantially improve the quality of life and pregnant outcome for both the mother and unborn or newborn baby. Community empowerment could be sustained if a forward-thinking process involves integration of women's group, faith-based community, opinion leaders from various villages, tribal chiefs/kings, locale birth attendants [LBA], human service organizations, corporate businesses or stakeholders, state, national, and international affiliates. Mitigating barriers and facilitators of high maternal mortality in the Ekpeye among women during pregnancy or after given birth is doable and sustainable. The literature reviewed or presented in Chapter 2 of this dissertation provided substantial information on the evidence-based knowledge on issues relating to pregnancy, maternal mortality and infant mortality. The reviewed literature also provided substantial information to address the Chapter 3 or method section of this dissertation in detail.

Chapter 3: Methodology

Introduction

In this study, I explored the lived experiences of how and what individuals living in the Ekpeye community in Nigeria perceived barriers to maternal care and facilitators to high maternal mortality rate. In this section, I provided detailed information about the research rationale, data collection methods and procedures, phenomenological design, the role and background of the researcher, study population and setting, selection criteria for participants, research questions and instrumentation, interview protocol and questions, data analysis plan, data management including storage, threats to validity, ethical considerations on protection of human subjects, and a conclusion.

Identifying common themes offers new perspectives in addressing the gap identified by Anastasi et al. (2015) on the barriers to maternal care and facilitators of maternal mortality influencing a healthy pregnancy. In Ekpeye, women tend to experience higher maternal deaths, which in many instances are not addressed. Women with low resources, such as food insecurity, housing problems, compromised financial hardship that prevent access to transportation and essential personal hygiene products, and other sociocultural challenges such as certain traditional practices and role of women in the Ekpeye community has led to a high rate of maternal mortality cases (Anastasi, et al., 2015; Doctor et al., 2013; Ezugwu et al., 2014; Kress et al., 2016; Mselle et al., 2013; Mojekwu & Ibekwe, 2012; Okigbo et al., 2016 & Omoruyi, 2008). The results of this study could promote far-reaching behavioral and psychosocial effects on women, especially those living in poverty.

Research Design and Rationale

In this study, I explored the perceived experiences on the barriers to maternal care and facilitators of maternal death rate among individuals in the Ekpeye community who lived the experience of witnessing the death of a woman during pregnancy, labor or delivery, or up to 42 days after childbirth. Based on the nature of the research question, I applied a qualitative method and phenomenological design. A phenomenological inquiry is commonly used to explore behavioral psychosocial phenomena (Creswell, 2013; Thomas, 2011).

Through a phenomenological inquiry, an in-depth understanding of the lived experiences of individuals who witnessed an event was explored based on the subjective views of their experiences. According to Husserl (1963), translating a purposeful meaning based on pure description of lived experience is critical to advancing solutions to amendable problems such as maternal deaths due to lack of care. In this study, a phenomenological approach was useful in identifying and comparing themes identified by community members as the key barriers to maternal care and facilitators to maternal deaths within the Ekpeye community. Overall, phenomenological approach provides meaningful narrative information about an event phenomenon within a specific environment (Husserl, 1963; Willing 2013). The narrative information described through face-to-face interviews by witnesses or individuals who experienced a maternal death provides enhanced perceived self-consciousness and level of awareness on things that directly affect the persons or matters most to them. Enhancing conscious perspectives by sharing experiences about what an individual considered contributory risk behaviors of

barriers to maternal care and facilitators to high maternal deaths during pregnancy or in labor and delivery or up to 6 weeks after childbirth can stimulate conversations around the development of effective strategies to reduce maternal deaths. Thus, a thorough understanding of the factors that contributed to inadequate maternal care (barriers) and inefficient practices that compromises maternal health and increased maternal mortality rate (facilitators) as perceived by individuals living within the Ekpeye community, could inform new public health intervention approaches and policies to address these long-standing public health problems.

Roles of the Researcher

Particularly in a qualitative study, the researcher is part of the instrument and the constructivist (Creswell, 2013). A researcher is an instrument in a qualitative study because the investigator's opinion is dependent on the subjective view of the participants' experiences or observations. Through this process, a researcher establishes a point of view or an assumption about the meaning of the perceived experiences regarding the prevailing issue under investigation. An instrument of a study is the a part of the component involved in the data collection, study design, and analysis processes (Creswell, 2012).

As the researcher, I reviewed qualitative, mixed methods, and quantitative studies to expand my understanding and interpretation of themes or factors that have been identified in similar conditions relating to maternal deaths or infant mortality or birth outcomes in Nigeria and other places around the world. Similar themes observed in the literature re-emerged in this current study. The guidelines I developed for this qualitative

inquiry was in alignment with the research question and purpose of the study. Using the study guidelines, I identified specific data collection method and instrumentation, created aligned open ended key informant interview questions, drafter an interview protocol or technique, and defined the role of the participants throughout the interview process. I developed an operational plan for selection of the study location and meeting place, identification of population of interest, estimation of sample size and selection process, institutional review board (IRB) approval process, verbal or written informed consent and confidentiality authorization, and data storage processes. I also established the process for the data collection methods, data analysis, translation of data, assignment of a unique identifier for each participant, coding, and interpretation of recurring themes. I used a computerized software to enhanced data analysis, coding, and presentation of the result. I documented every and all interview discussions, including recording of participants' responses as authorized. Finally, I compiled all the information and produced a summary report of my findings as requested by the appropriate authority.

As part of the research instrument in this qualitative study, I served as the observer and interviewer with the exception of unexpected circumstances that interfered with the trustworthiness of the interview process. I am the primary person responsible in obtaining data from the participants. Central to an in-depth interview was the observer's ability to collect credible data and verify shared information. According to Chennai (2011), to maintain study credibility, it is important to assess certain characteristics, attributes, patterns of meanings of particular phenomena, material document or artifacts and analysis of repetitive themes. After all the data verification was completed, I

terminated any contact or activity with the participants because I have completed the data collection processes. There was no conflict of interest in this study. My plan to address a conflict of interest between me and a study participants was to use an alternate standby trained interviewer, a native of Ekpeye community for the interview had I had a conflict of interest with any of the participants. Fortunately, no such conflict of interest occurred. Also, bias is inherent in any study and occur through instrumentations, interviews, researchers, and participant selections (Chenail, 2011).

According to Chenail (2011), pilot study is one way through which researchers can control biases by conducting a pre-test evaluation of the quality of the interview protocol to determine the quality, reliability, and validity of the study instruments. In this study, a pilot study was conducted to assess the integrity of the study instruments. Based on the pilot study, I do not have any prior knowledge or personal information or characteristics of the participants. However, I am a native of Ekpeye tribe, a community comprised of 77 villages. As part of the study's quality control measures, participants were not recruited if their inclusion in the study constitutes a conflict of interest. Also, to provide a convenient access to transportation issue to the study or interview site, I offered a bus coupon or cash not exceeding N5, 000.00 in Nigerian currency, which is equivalent to $14 US dollars to each participant.

Methodology

The selected design for data collection in this study was a face-to-face interview in a non-threatening, safe, and comfortable location. The interviews were conducted in a private room at restaurant located at Ahoada East local government area (AELGA). The

opinions of individuals in a community were vital in framing the maternal tool kits and health prevention education, promotion messages, community-based health center activities, and trauma-informed interventions. The joint benefits of community participations in this current interview added an in-depth knowledge and a clear understanding of the missed opportunities. It also provided new insights as to what the individuals perceived as prevailing issues that influence health seeking behavior, access to, and utilization of health services. It provided valuable information on how the identified themes interacted with or influenced the contextual environment and socio-cultural perceptions of high maternal deaths among WCBA within the Ekpeye community.

Phenomenological inquiry focuses on constructivist approach (Creswell, 2013). Also, phenomenology has the most detailed, explicated procedure for representation of data and analysis (Thomas, 2011). Similarly, a theory is the guiding principle frequently used to explain the research question findings. According to Venable (2006), theory include sets of operational constructs specifically developed for that theoretical model. Some of the theories are used to explain and understand how human behavior interact with or informed by the environment (Creswell, 2012; Venable, 2006). Through the application of theoretical concepts, opinions or observations are validated or refuted to either support existing concept or establish a new set of knowledge or concept (Creswell, 2012; Venable, 2006). The HBM constructs are best to explain the perceived risks and vulnerabilities of members of Ekpeye community on barriers for access to maternal care and facilitators of maternal deaths. Information gathered from this inquiry could

subsequently guide future researchers in the understanding of how and to what extent the death of a woman has changed the members of the Ekpeye community's view about issues relating to pregnancy and child birth outcomes.

Participants were informed of the procedural approach used in the study. Two sets of in-depth interviews provided to each participant. The first interview lasted for 45-minutes. The second interview was a 20-minute reflective moment for validation and possible questions and answers including the assessment of artifacts. The duration of the interview process for all the participants took approximately 6 weeks to complete. I identified the first 40 participants who met the eligibility criteria in the first week, and the last four by the second week. The eligible criteria for the interview included participants who are 21years and older, in good relationship with the deceased woman for at least 5 years prior to her death and living in Ekpeye for the past 10 years from the interview date. Participants who speak Ekpeye dialect are also part of inclusion criteria. I also conducted pre-screening interviews to exclusively identify and select participants who met the eligibility criteria established for this study. It was through this process that I recruited nine participants who participated in the key informant interviews and shared their stories concerning barriers to access to maternal care and maternal mortality in Ekpeye community.

The second sets of interviews focused on reflective moments and allowed comparison of responses with the initial interview sessions. There was one main question with 7 sub-category questions in the interview, see appendix A. Each participant was asked the same questions twice within an interval of at least two week apart from the first

interview session. Upon completion of the first interviews I waited 14 days to conduct the second interviews for follow-up sessions with all 8 participants who were interviewed in the first week in an orderly manner used in the first interview. The reason for the first and second interview sessions was to establish or validate the level of consistency and clarity of participants' responses as well as to capture some aspects of the contextual theme that are common among those interviewed. Verbal authorization was obtained from patients and in addition, participants were asked to read and sign the informed consent form before enrollment or participation in the study and before any interview was conducted. The follow up interview sessions and compliance to written and verbal informed consents were strategies that supports verification of data triangulation and ethical validity of study, respectively. Finally, before the IRB approval was requested and obtained, I read the Walden IRB) manual on how to complete the form, recruit patients, and protect participant's confidentiality and privacy.

Participant Selection Logic

Prior to conducting the interview sessions, I distributed promotional flyers to invite participants to the study. From the flyers' responses, I identified and selected the final nine participants. The interview setting for the current study took place in a private room at a restaurant located in Ekpeye community in AELGA, in Rivers State, Nigeria. Participants from Ekpeye community were selected for a face-to-face interview sessions. The recruitment was based upon satisfactory evaluation of the inclusion criteria. Those selected completed the informed consent form. Participants were informed about their rights and voluntary decision to respond to interview questions or terminate the

interviews at any time or perhaps withdraw from the study at any time. Participants were allowed to ask questions on issues about the study.

I recruited and interviewed a total of nine participants from Ekpeye community who lived the experience of losing a wife, mother, a relative or friend, or health care workers who provided services to a deceased woman during pregnancy, or labor/delivery or 42 days after childbirth for this current study. Although, 40 individuals responded to the invitation to participate in this research study. Despite this huge number of respondents, I had to narrow it down to nine to only participants who met the established criteria for inclusion. For this reason, I interviewed only the nine participants in respect to the sample size approved by the Walden Institutional Review Board (IRB). Of nine participants selected, five women and four men were included in the study. I selected a balanced gender-based participation to avoid gender bias opinions or make gender biased conclusion in this study.

Sampling Approach and Justifications

Selection of the study participants was done through team collaboration to allow triangulation and peer evaluation of data source and collection (Thomas et al., 2011). To ensure increasing variability in phenomenological study, it is important to understand how people share and interpret their personal experiences in facilitating effective health promotion measures. Also, maintaining demographic homogeneity in sampling selection is vital in exploring other potential factors and could add special meaning to the common themes identified (Creswell, 2013). Purposeful sampling enhances the quality of the information collected from the respondents in the natural settings. Purposive samples are

the most frequently used form of non-probability sampling, and heavily relies on the concept of "saturation" (Creswell, 2013; Chenail, 2011). Saturation is an end point in the data collection process whereby a sampling effort is maximized to the extent that no new information is available to add to the thematic analysis (Creswell, 2013).

Sampling Inclusion and Exclusion Criteria

I recruited nine adults (women and men) who lives and work within Ekpeyeland, including health care professionals at the hospital and local clinics. The participants were not coerced to participate. The inclusion criteria for this study were as follows: Adults ages 21 years and older who lived in Ekpeye, English language speaker, women who had traumatic experience and disability related to pregnancy but survived, doctors and midwives who cared and provided services. Husband or significant others who played an important role in the woman's life, close friends and relatives, and local birth attendants who witnessed at least a woman who died due of pregnancy-related causes were selected. The exclusion criteria included the following: Individuals less than 21 years old, non-English language speaker, women who may be currently pregnant at the time of the interview, prisoners, individuals with developmental disabilities, or mentally incompetent to provide informed consent, individuals who are not close to the deceased, individuals who did not know the cause of death, and individuals who are not a health care professional attending to a pregnant women were not included in the study.

Procedures for Identification of Participants

I utilized convenience sampling method to ascertain true representation of the priority participants. Additionally, I used the town-crier to inform the selected villages of

a town hall meeting and to introduce myself and discuss the study goals and purpose. I provided the town-crier specific talking points focusing on a researcher who expressed interest to interview people who knew a woman who died from pregnancy-related causes. Also, the town-crier provided my contact information on how to participants. Printed materials such as flyers and posters about the study participation assisted to strengthen the information provided by the town-crier. Promotional flyers with my contact information was distributed in the community to announce the recruitment process. For the health care workers recruitment, I visited two maternity clinics or selected health-facility and spoke with the administrator about the study. upon approval from the administrator to use enroll willing volunteer health care workers, I administered a pre-identification to assess the eligibility of each study participants. The pre-identification process, was a closed-ended interview approach which included age verification and English language fluency?

Community gate-keepers who are knowledgeable about maternal health, pregnancy, and maternal related problems helped in the data collection efforts. Community-gate keepers are well respected and often provide counseling and advice to villagers on variety of beneficial community-based activities. Such approach is cost-effective and allows for partnership and trust building between community members to promote community well-being and cohesiveness. According to Lodico, Spaulding, and Voegtle (2010), attributed such as the “immersion” quality help researchers develop good relationship with participants to enhance attendance attentiveness, keen observation, and promote open-ended questions to produce credible information.

Saturation and Sample Size

According to Creswell (2013) and Chenail (2011), saturation in a qualitative study is reaching the maximum level of response in the interview process. Saturation occurs when new response does not produce new themes not already identified by other participants or when no new response is available to enhance the data analysis of the main theme (Creswell, 2013; Chenail, 2011). Saturation could lead to a recycling of questions or responses with no added values or information (Creswell, 2013; Chenail, 2011). The concept of saturation is relevant in any study because the ability to capture new and unique information enhances data quality for both objective and subjective type studies (Creswell, 2013; Chenail, 2011).

Instrumentation

Specifically, an in-depth interview instrument was the source of the data collection for this study. Interviews play a central role in the data collection in a phenomenology inquiry. Moreover, identifying robust data during an in-depth face-to-face interview adds substantial value and quality in the data collection process. A face-to-face interview enhances the verbal and non-verbal cues critical in ascertaining the quality of the interviews.

An accurate record keeping of the interview was documented using the interview protocol I established prior to the interview. I kept notes and observation checklist. I also created and maintained audio-tape recording, material documents or artifacts as well as maintained a good management system to store data and participants' personal information (privacy and confidentiality) as appropriate. The information was stored in a

safe locked cabinet with a secured password protected database for five years. After the five years period from the time of study elapsed, the data will be destroyed. Capturing raw data during face-to-face interviews from study participants was a reputable means of ensuring integrity and validity of the data source. The narrative of sharing real story based on personal experience improves the trustworthiness of the data source, which is a major advantage of a qualitative study (Creswell, 2013; Chenail, 2011).

Procedure for Pilot studies

I conducted pilot study to evaluate the integrity and clarity of the interview questions and to assess the feasibility of the selected methods. This was accomplished by going through the entire interview process with minimum interruptions to validate the selected methods and protocols. Conducting a validation of the procedures improved quality assurance and content validity of the study instruments to ensure alignment (Creswell, 2013; Chenail, 2011). Chenail (2011) refers to this process as interviewing the investigator or pre-testing. Pre-testing of instrument is helpful in addressing content validity of protocols, IRB concern such as human subject issues, and potential bias such as conflict of interest. The pilot study I conducted addressed and prevented priori assumptions of the participants, offered maximal knowledge gained about participant's risk of vulnerability, improved interview processes and eliminated amendable bias.

Procedures for Recruitment, Participation, and Data Collection

Prior to the interviews, I reminded the participants about their roles, duration of the study (March 22, 2019 through April 10, 2019). I conducted the interviews and generated the data collection. I also identified the "themes" and interpreted the data. For

the sampling processes I used a convenience sampling. For the data analysis I explored the response in terms of details about sound knowledge about the WCBA in question, different stages of pregnancy, maternal health and child birth status, current systems of health care delivery, socio-cultural issues, socio-economic and other social determinants of life factors to gather relevant and emerging themes from the response provided in this interviews. I was familiar and competent in the application of the interview processes, as well as preserved the confidentiality and privacy of the participants. In addition, I analyzed the data to specifically address the main research question.

Data collection involved gathering of relevant information, coding, and analysis of data via in-depth face-to-face interviews for 45 minutes (the first set) and 20 minutes (the second set) after one week from the initial interview. During the initial stage of the interview process the key informants reviewed the interview questions and then provide responses to the questions as I interview them. I recorded the interview and took notes using notebook as I observe the participants. I followed up with participants when participants do not show up as scheduled. One participant did not show up for the second interview on the assigned date and time. Of the nine participants interviewed initially but eight showed up in the second interview and one participant did not return for the second interview. The participants exited the study once the required interviews were completed, followed by debriefing procedures about the termination process either on when the participants choses, especially if they changed their mind not to participate any further. I discussed additional follow-up for only those participants who revealed other critical detailed information that proved to strengthen the information provided.

Data Analysis Plan

According to Creswell (2013) data analysis in qualitative research is a process involved in data organizing, coding, analysis for themes, and interpretation of themes. I used data collection, coding, transfiguration and analysis which led to the generation of meaningful emergent themes. Therefore, accurate note-taking, recording, coding, categorizing and translation of data enhanced the ability to identify key elements that contributed in the creation of pattern for the most accounted and re-occurring themes. However, I noted a series of bias in data collection process due to my subjective influence and interpretative nature of the participants' stream of thoughts on shared information, body language, and socio-cultural perspectives. I performed the coding using manual and a computer-based software program -NVivo for large data coding. Collected data was stored in a secured in and safe condition, and the electronic version saved in password protected platform for at least five years.

One of the advantages of phenomenological approach is in its ability to provide meaningful and detailed explanations about a phenomenon that happened to people in a particular environment without advance forecasting (Willing 2013; Husserl, 1963)

In this study the research question I addressed was, "What are the perceived experiences on the barriers to access to maternal care and facilitators of maternal death rate among individuals in the Ekpeye community who lived the experience of witnessing the death of a woman either during pregnancy, labor/delivery, or up to 42 days after childbirth?". The participants' personal and lived experience shared in this study helped address the research question based on their narrative encounters. Each participant

expressed that the high maternal deaths observed in the community requires a drastic intervention to reduce the frequency of such death cases. One quality attributes to qualitative study is that data or information collected are usually interpersonal and uniquely personal. For that reason, I carefully observed and examined the participant's verbal and non-verbal behaviors, attitudes, feelings, facial expressions, body postures, and other behaviors they exhibited that added meaning to the themes.

Issues of Trustworthiness

The problem of the investigator serving as an instrumentation and constructivist raises questions concerning bias (Mehra, 2002). Poggenpoel (2003) suggested that the issues of trustworthiness can be attributed to (a) Inadequate preparation to engage in field observations; (b) The mental well-being of the investigator and other challenging conditions stand as barriers to the actual value of data derived and pertinent information from the analysis of data and (c) Inappropriate interviews (p. 419-420) by the investigator (Chenail, 2011). Other factors such as close ties with the participants could prevent probing for in-depth discussion about the unknown aspects of the person's perception on maternal deaths because of fear and encroaching or personal information. In this study, I noted that an individual perspective was a desired asset to fully understand the leading indicators or socio-demographic factors that contribute to maternal mortality as well as providing relevant information in order to ascertain the type of intervention needed to support efforts in preventing adverse pregnancy outcomes or deaths.

Threats to Validity

Validity is a major problem in a qualitative research method. This issue is enhanced because the researcher served as an instrument for the data collection process and as well the constructivist used in collecting the data and identifying the observed themes (Creswell, 2013; Abedi, 2010). The conclusion obtained in this study depends heavily on the subjective view or opinion of the participants. Also, lack of consistency in responses creates credibility issues, which produces an interviewee or a respondent bias and thus, distorts the credibility of the participants.

Ethical Considerations

Protection of human subjects is critical and all investigators must comply with the IRB standards and adheres to local norms, and laws of the host country. I complied with all the ethical standards established by the Walden university in this study setting. I provided an informed consent each participant. In this study, the participant recruitment was organized and non-threatening. No participant was forced to participate against their will. I protected participants' privacy by securing all their information in a secured database to avoid compromise of the information.

I maintained participants' confidentiality and privacy by assigning special unique identifier to each participant according to the events. For example, I categorized and coded the in depth interviews or face-to-face interviews as follows: PI1, PI2, PI3, PI4, PI5, and PI6; personal observations PO1, PO2, PO3, PO4, PO5, and PO6. The Town Hall or focus group meeting (X), artifacts or pictures (Z), and follow-up activities (YP1, YP2, YP3, YP4, YP5, and YP6). I secured IRB approval prior to having any conversations

with the participants, followed by providing detailed explanations of the nature of the study to the participants, and obtained informed consent (Written and verbal) to facilitate the process through voluntary action and readiness. I disclosed any conflict of interest to reduce researcher's bias. I made an arrangement to use an alternate interviewer as a back-up for areas where conflict of interest becomes an issue. Fortunately, I did not used the alternate interviewer since the interview process did not encounter any conflict of interest. I avoided exerting my opinion, beliefs, and values as the standard for the data collection process or to suppress participant's response or obscure their personal views about maternal death. I strictly abided by all ethical procedures to ensure that the participants understood the full nature of the study and their rights as it pertains to the study. Information sharing was limited to using unique identifier, which means that all the data were de-identified. No harm or any kind of discomfort was observed towards the participants.

Summary

This chapter provided a detailed overview of the methodology that was applied to sampling, data collection, data narratives, and theme development that addresses the barriers to access to maternal care and facilitators that attributed to high maternal deaths in Ekpeye community among pregnant women. Applications of the stated methodology for the data collection assisted in the improvement of the data integrity and quality of the information generated during the interview processes. Additionally, by conducting two interview sessions for each participant using the same questions further enhanced prioritization of the emergent themes as well as offered validation of the instrument and

strengthened the credibility or reliability of the responses provided by the interviewees. It also assessed the level of consistency of the interviewer. Chapter 3 laid the foundation to the data analysis and interpretations described in Chapter 4 and Chapter 5, respectively.

Chapter 4: Results

Introduction

Using a phenomenological inquiry and a qualitative method, I explored how and what selected individuals living in Ekpeye village in Rivers State in Nigeria perceived as barriers of low maternal mortality and facilitators of high maternal mortality in that community. In addition, understanding the extent to which participants perceived key roles of certain limiting factors as barriers to maternal death in Ekpeye was equally important in the identification of the common themes observed in this study. Pregnancy-related risks could lead to life-threatening complications, adverse health outcomes, and even death of the woman, unborn, or neonate.

In Chapter 4, I applied all the procedures discussed in Chapter 3 to collect the data for appropriate thematic analysis. Following the data analysis and interpretation from the stories shared by all eight participants, common themes emerged as the barriers of low maternal mortality and facilitators of high maternal deaths in Ekpeye. The emerged themes are described in detail in this study. I used member checking after transcription of the interview responses and narratives to verify and validate data integrity with the participants. I also provided a brief summary to describe the key themes. The following research question was the overarching inquiry that guided the exploration of the selected target population perceptions on how and what barriers and facilitators influenced high rate of maternal mortality in that community: What are the perceived experiences on the barriers and facilitators of maternal death rate among individuals in the Ekpeye

community who lived the experience of witnessing the death of a woman either during pregnancy, labor/delivery, or up to 42 days after childbirth?

The analysis of the data was generated from the participants' responses to the seven different interview questions and contributed to the identifications of eight emergent themes (arranged and prioritized in Figure 3) based on participant responses: (a) postpartum death (occurring between 2 hours and 7 days following child birth); (b) influence of cultural practices; (c) ignorance and lack of awareness, (d) impoverished, antiquated medical equipment; (e) poor quality care; (f) lack of government investment and support; (g) abuse/maltreatment; and (h) pregnancy-related psychosocial issues and other socioeconomic factors.

Setting

I conducted the face-to-face interviews with all eight participants who met the eligibility criteria in a private meeting room. The first interviews with participants lasted for 45 minutes, and follow-up interviews 2 weeks later lasted 20 minutes. The environment was conducive and nonthreatening, as participants waited in an air-conditioned lobby area before their interviews. I provided snacks and water for participants who were waiting for their interviews. Participants expressed being comfortable and relaxed and did not appeared to be in a rush to leave; rather, they stayed actively engaged and answered interview questions as expected.

Demographics

This is a phenomenological research study. I distributed promotional flyers in 13 villages containing specific information about the study. Also, I used a town crier as a

follow-up plan to ensure that villagers who may not have seen the flyers received the information. Fourty people responded to the flyers and the town crier. The sample size was reduced to 22 after the initial prescreening using the eligibility criteria. Additional screening of participants was conducted to ensure that only those that met the specific criteria were recruited. Thus, I conducted personal interviews with nine participants for data collection purposes. The participants resided in Ekpeye community within the last 10 years and lived the experience of knowing a wife, sister, friend, relative, patient, or client who died during pregnancy, labor/delivery, or after childbirth in Ekpeye. Participants (men and women) ages 21 years and older met the inclusion criteria. All eight participants included in the study spoke, understand, and could write in English. Thus, the interview was conducted in English and there was no need for an interpreter during either interview session. All eight participants reported that they completed at least a secondary school (Grade 12) education.

Prior to conducting the interviews, I provided a copy of the informed consent forms to the participants to read. In person, I also verified participants' understanding of the information provided and clarified or provided a detailed explanation about the informed consent and interview process. For instance, one participant asked for clarifications about Question 3 of the interview, "Can you explain the processes before a woman can see a doctor in the hospital/antenatal health clinic." I clarified the question as follows: "You are expected to only describe what you know, experienced, or witnessed when, for instance, they were present or accompanied the deceased to the antenatal clinic for their visit(s).

I began the interview using a probing, open-ended approach until I exhausted and addressed all the questions posed by the participants as well as clarifying remarks such as seeking to know if the outcome of this study would lead to community intervention program, which I responded "no." At that point, I was confident the participants had a better understanding of the consent form and the interview processes. I conducted the first set of the interview for roughly 45 minutes and 20 minutes for the second session. All eight participants had different backgrounds and education levels. One of the women indicated that she was a "graduate student and so glad to be among the people to be interviewed" and further suggested that this type of interview was "a rare opportunity in Ekpeye community." Table 1 shows the demographic characteristics by age, gender, ethnic group, and occupation of participants included in this study.

Table 1

Participants Demographic Information

Name	Age	Gender	Ethnicity	Occupation
P1TIV	46	Female	Ekpeye	Farmer
P2TUEV	23	Female	Ekpeye	Trader
P3TEV	57	Female	Ekpeye	Local birth attendant
P4TAV	47	Female	Ekpeye	Health care worker
P5MUV	63	Male	Ekpeye	Village chief
P6MUV	44	Male	Ogba	Construction worker
P7IV	48	Male	Oduwa	Civil servant
P8UV	39	Male	Ekpeye	Resident medical student

Data Collection

Before finalizing the processes, protocols, instruments, and data collection tools in this study; I conducted a pilot study with nine participants recruited from Ekpeye community in Rivers State in Nigeria to evaluate the study processes, integrity, and clarity of the interview questions. Similarly, the feasibility of the methods and approaches implemented in the study were examined using the pilot study. The pilot exercise was useful because it provided information that helped in addressing challenges related to preparedness and, as a result, informed quality improvement changes as I became familiar and comfortable with face-to-face interview processes. The pilot exercise also provided information that helped to validate and improve the interview methods, procedures, and protocols. By validating the procedures, quality assurance and improvement processes were substantially improved to minimize bias, explore potential study limitations, and ensure content validity and assess reliability of the study instruments and design. The findings of the pilot suggested that participants had a clear understanding of the interview questions and expectations. Hence, it was not necessary to alter the interview questions or protocols. For addressing the purpose of this study, I examined participants' responses or the interview transcripts from all the participants and validated the information shared or expressed during the interviews.

Data Analysis

The data were organized using a log. The coding was categorized into themes. The themes were organized to create patterns. The demographic and other characteristic profiles such as observational information was documented using an audio recording

device and was also handwritten. I reviewed the interview questions and the corresponding handwritten responses submitted by the participants and the information documented by the interviewer during the interview process for alignment. I documented the interview questions and corresponding responses using a Microsoft Word document. I also scanned and saved the interview questions posed and the corresponding responses provided by interviewees in the sessions in a password-protected computer, which I will keep for at least 5 years. I used NVivo 10 software to perform coding for the interview responses for thematization and generation of summary narratives of all the responses.

The participants consisted of four women and four men. To protect participants' identities, I used color coding: pink for the women and blue for the men. The order of the coding represents the order the interviews were conducted. Additionally, I coded each emerged theme in order of priorities ranging from red (high), yellow (low), and light gray (very low). These specific color-coded labels were flagged to reflect areas of major barriers to maternal deaths in Ekpeye community. Furthermore, each emerged theme flagged in red and yellow also generated subthemes, which triggered additional comments, provided and clarified in the data analysis and interpretations of the findings. For instance, postpartum death generated subthemes such as ignorance, impoverished facility, lack of awareness, poverty, and others. In this case, a myriad of issues around maternal death were expressed by the participants as preventable.

Epoche

The use of transcendental phenomenology fosters new perspectives to understanding different experiences (Husseri, 1963; Moustakas, 1994). According to

Moustakas (1994), epoche refers to the initial action a researcher launches to identify their personal beliefs, researcher biases and interpretations of worldviews about an individual or groups on a specific issue. In this study, knowledge of community perceptions about the barriers and facilitators of maternal mortality was explored from a subjective perspective of lived experiences of all nine participants.

Phenomenological Reduction

Creswell (2013) suggested that the use of phenomenological reduction approach in data analysis is an important step. Using this constructivist approach, researchers could identify and explore preconceived perspectives or notions about emerged themes (Thomas, 2011). Also, phenomenological reduction allows the researcher to review and bracket the themes. After bracketing the themes, the researcher can then perform horizontalization to ensure that the stories shared by each participant received equal or similar attention (Creswell, 2013). According to Moustakas (1994), operationalized horizontalization is the ability to acknowledge specific characteristics, such as ideas, personal views or opinions, thoughts, quotes, expressions, and body language, exhibited by the participants during face-to-face interviews (Creswell, 2013). These targeted characteristics provide in-depth information in the application of phenomenological inquiry as the most detailed and explicated procedure for data collection technique and analysis (Thomas, 2011).

Coding

After I completed the compilation of the information gathered from the face-to-face interviews, I grouped or stratified the participants' responses by research questions.

Then, I used color coding to differentiate women from men for the ease of sorting all eight participants by gender profile. According to Chenail (2011), color coding could be performed for the purpose of identifying specific demographics, words, quotes, opinions, or personal views as a means to organize data or themes or phrases.

Evidence of Trustworthiness

According to O'Connor (2011), there are four criteria to trustworthiness that qualitative research embodies: (a) credibility, (b) dependability, (c) transferability, and (d) confirmability. The first element is credibility. In this study, I used triangulation through multiple data collection sources and member checking by asking the exact interview questions to all eight participants each time; thus, I made comparisons with the different responses provided by each participant in all seven interview questions. For instance, after informing each participant about what the research study entailed and having the consent form signed, I provided a copy of the interview questions to the participants privately to write their responses down on paper. Then, I collected the papers before the first oral face-to-face interview took place where I took notes and recorded responses accordingly. The participants' written responses were compared with my notes, and the information was consistent and aligned with the research study's findings.

Two weeks after the first interviews, I met with participants again for a 20-minute follow-up interview to ensure dependability and to gain a better understanding of participants' perspectives about barriers and facilitators to maternal death in a rural Ekpeye community. In addition to responses generated from the follow-up interviews, each participant provided additional comments on how to improve access to and use of

antenatal care. Again, participants were dependable and consistent in their respective responses to all seven interview questions. This confirmed participants' consistency and trustworthiness in their responses to each interview question and thus earned the research findings more credibility. This process was rigorous, rich, and robust in understanding the community's perspectives and conformed to the key 10 emerged themes about maternal death in Ekpeye.

Results

After sorting each participant's handwritten and coded responses, I scanned or transferred and saved the interview transcripts to a computer. I uploaded or transferred the information to NVivo 10 software for analysis. I used the NVivo software to organize the responses and appropriately thematize the responses. NVivo was helpful in transfiguring the raw data to enhance thematization accuracy and identifying commonalities to provide meaningful pattern of themes and in-depth understanding on how each participant perceived the death of a woman resulting from pregnancy. In reviewing all eight participants' stories, I identified 11 themes. I grouped the themes by question and based on the frequency they occurred in responses provided by the participants for each question posed. They are grouped into the most repeated to the least mentioned themes: (a) postpartum death, (b) financial insecurity (lack of money for health care registration and identification card purchase), (c) health system capacity/infrastructure (poorly equipped medical facility and use of antiquated medical equipment), (d) quality of care (poor quality care in government operated facilities), (e) transportation barriers (difficulty with transportation/distance to clinics), (f) cultural

integrity (influence of cultural beliefs on maternal nutrition and strength, (g) mental health (pregnancy-driven mental health issues such as depression and postpartum psychosis), (h) trauma (abuse and maltreatment during pregnancy, labor/delivery, and after childbirth), (i) inadequate government role (no government support in form of incentives), (j) social determinants of health (lack of social support), and (k) other determinants of life challenges. Saturation was reached on four different interview questions: 1, 3, 4, and 6. A limitation is that saturation was not achieved in any of the other three questions (2, 5, and 7) and thus additional research is necessary.

According to Creswell (2013), saturation refers to an end point in the data collection process in which the researcher's efforts to obtain new information from a specific interview question is maximized and no new information is available for thematic analysis. In this study, saturation was achieved with participant responses to Question 1 and Question 3 during the follow-up sessions. Interview Question 1 was, At what month did the deceased died due to pregnancy-related causes? For interview Sessions 1 and 2, the responses provided indicated that five out of eight interviewees reported postpartum death, death occurring in less than 1–3 hours and within 11 days after childbirth. An interesting observation was noted when each of these five participants also repeated postpartum as a preventable problem when responding to Interview Question 7: How can your experience help prevent pregnancy-related deaths among women in Ekpeye in Rivers State, Nigeria? In addition, four participants stated that their relatives (sister, wife, or other relative) were healthy all throughout the pregnancy, only

to die after delivering the baby. Thus, during the interview, they suggested based on what they experienced, something was wrong somewhere in the pregnancy care or process.

These post-delivery maternal mortality cases observed by these participants invoked many concerns about the capacity of skilled health facility, the role of health care professionals, and the need for an integrated intensive continuum of care. The emerged themes are illustrated in Figure 6.

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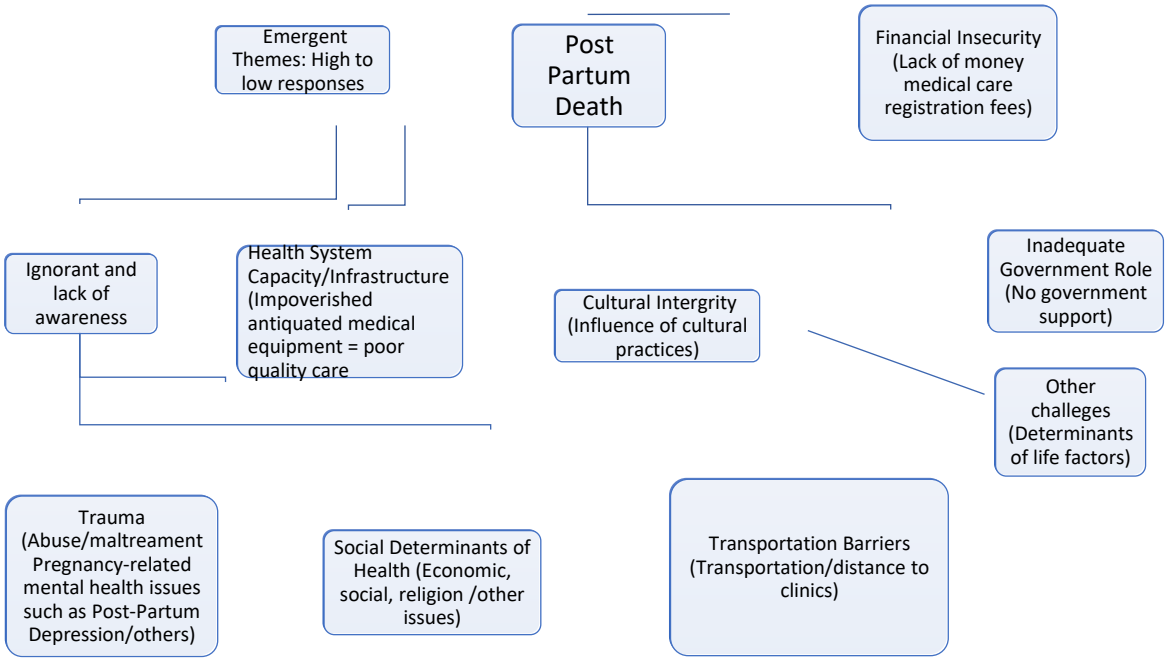

Figure 5. Emerged themes.

Theme 1: Postpartum Death

The most recurring responses generated from Question 1 was after childbirth (postpartum). Some participants further explained that the death occurred after 9 months within less than 1-3 hours and within 11 days after childbirth. Participants described their understanding of postpartum death as the death of a woman who carried her pregnancy

for 9 months but died during labor/deliver or after childbirth. It demonstrated participants' clear understanding of the concept in this study. The participants further suggested that pregnant women, regardless of their welfare status, should not die during pregnancy or after childbirth. The following are participants' responses to Question 1 during Interview Sessions 1 and 2:

P1TIVQ1 said in Interview Session 1, "The deceased died in the ninth month of pregnancy, 2 hours after childbirth in the maternity ward in the same hospital and was only 26 years old." In Interview Session 2 (follow-up), P1TIVQ1 said, "It is sad that after she carried her pregnancy for 9 months and had normal delivery at the hospital, but still died 2 hours later on the same day, which I believed is preventable nowadays."

P2TUEVQ1 said in Interview Session 1, "She carried her baby for 9 full months and my brother's wife still died on March 18, 2018, immediately after childbirth." In Interview Session 2 (follow-up), P2TUEVQ1 said, "The death of a learnth woman after 9 months of pregnancy is so sad. She died in less than an hour after she gave birth to a baby and she was just 28 years old."

P3TEVQ1 said in Interview Session 1,

> This young woman carried her pregnancy for 9 months and died about 2 hours after she delivered her baby as normal, but few minutes later, she started bleeding so badly in such a way that I have never seen in my 15 years as a native midwife.

In Interview Session 2 (follow-up), P3TEVQ1 said, "I am so sad that she died after full-term pregnancy and had normal delivery, but the bleeding was really bad, and I could not save her."

P5MUVQ1 said in Interview Session 1, “The deceased died 11 days after the birth of twin boys through cesarean section at a private clinic on April 28, 2018, and her pregnancy was full term.” In Interview Session 2 (follow-up), P5MUVQ1 said, “Although she carried her pregnancy for 9 months, she died 11 days after a cesarean section with a twin at a private clinic.”

P8UVQ1 stated in Interview Session 1, “My brother’s wife died 3 hours after she delivered her baby at the native midwife’s house on December 1, 2018. She carried her baby for 9 full months.” In Interview Session 2 (follow-up), P8UVQ1 said, “My brother’s wife carried her pregnancy to full-term and died 3 hours after delivery in the midwife’s house on December 1, 2018.”

In summary, it is evident that 5 out of 8 participants in both interviews identified post-partum death of the deceased woman as a common experience for these five cases. “It is too bad that women are dying all the time because of pregnancy and no good maternity clinics in the villages because it is for poor people and no help from anywhere”. Thus, they suggested prompt need for improved care and access to reliable medical infrastructures to facilitate capacity building within health care facilities and among staff. Capacity building will improve the tracking and monitoring processes of obstetric hemorrhage delivery practices or care during labor, delivery, and immediately after childbirth to reduce or eliminate complications and death associated with pregnancy.

Theme 2: Financial Insecurity

For question 3; can you explain the processes before a woman can see a doctor in the hospital/antenatal health clinic? Lack of money for required medical care registration

and identification card purchase at antenatal care clinic was identified as a barrier to care in this study. Of 8 participants, 6 indicated that lack of money for medical care registration and identification card purchase required at the antenatal care clinic was a strong barrier to care. Another sub-theme response to this question was the need for money for food at home.

Participants responded to question 3; can you explain the processes before a woman can see a doctor in the hospital/antenatal health clinic follows:

- **P1TIVQ3** (46 yrs., a farmer):
    - Interview session 1:*"I think the process is quite simple but they asked you to pay 600 Naria (N600, Nigerian Currency) first for registration, before they give you ID card on each visit before you can see a doctor at the maternity clinic".*
    - Interview session 2: "*The registration process for antenatal health clinic is easy, but a pregnant woman is required to pay 600 Naira (N600, Nigerian Currency) at each visits to get an ID card before she can even see a doctor at the maternity clinic and too far* ".
- **P2TUEVQ3** (32 yrs., a petti cash trader):
    - Interview session 1: "*The registration process is simple except that the woman is usually asked to pay 600 Naira (N600, Nigerian Currency) for an ID card before she can see a doctor… this makes many women not to attend antenatal clinic".*

- Interview session 2: *"Even if the process is easy, this woman refused to go to maternity clinic because she complaint about the money she had to pay for registration and ID card and the place is too far to trek".*

- **P3TEVQ3 (**57 yrs., Native Midwife or Local Birth Attendant):
  - Interview session 1: *"Many pregnant from the village usually walk to my house for me to check how the baby is doing in their uterus and they only pay 200 Naira for the whole time that they are pregnant until they delivered*".
  - Interview session 2:*"Pregnant women in our village always complaint of the registration fees of 600 Naira and it makes some of them come to me because I charge only 200 Naira to check them until the date of her delivery".*

- **P4TAVQ3** (47 yrs., Health care worker at the immunization clinic):
  - Interview session 1:*"The deceased woman registered and attended antenatal clinic only one time when she was 4 month pregnant and didn't come back until she was really sick and came back in her 6th month and complaint that 600 Naira was too much for a single visits when she could use the money to buy fish for the family to eat".*
  - Interview session 2: "*The registration process is easy but like the deceased, many women complaint about the fees and won't come until they get very sick… the deceased woman came just when she was very sick*

in her 6th month…always complaint of money to buy food and fish as more important than paying 600 Naira to see a doctor".

- **P7IVQ3** (48 yrs., Civil servant):
    - Interview session 1: *"The steps to register for antenatal health clinic are simple. Pregnant women should go to the clinic on Wednesday, give the nurse her name, then pay 600 Naira for the registration to get an ID card, and wait for her name to be called before she can see doctor or nurse-midwife, but many do not have the money to pay on each visit"*.
    - Interview session 2: "*The pregnant woman must go to the antenatal clinic on a Wednesday to register, then pay 600 Naira for the registration to get an ID card, then wait to hear her name before she can see the doctor or nurse-midwife and sometimes very hungry*".
- **P8UVQ3** (39 yrs., Resident Medical Student):
    - Interview session 1: "*I think the government should eliminate the registration fee and just give pregnant women an ID card once they come to the maternity clinic to see a doctor"*.
    - Interview session 2: *"This registration fee is a major problem for almost all the pregnant women who live in the Ekpeye villages…Maternity clinic day is only on Wednesday each week and the woman must first pay 600 Naira to register before she get an ID card, then wait for her name to be called before she can see doctor and sometimes, they appeared very hungry and thirsty and complaint of no money to buy snack"*.

Of the final 8 participants interviewed, 6 interviewees stated that the registration process is easy. They also expressed deep concerns about the registration fees and the financial difficulty encountered by the deceased women in making payment each visit to see a doctor. *"We have no money to pay for registration fees each time before we see a doctor and why can't the government make it free".* Among the participants, desires to meet their basic needs overweighed the importance of proactive engagement of prenatal or pregnancy-related care due to prioritization of competing financial needs. After the session 1 interview, no new information was provided during the session 2.

Theme 3: Trauma

There were expression of abuse and maltreatment during pregnancy, labor/delivery and after childbirth. This emerged theme was linked to the interview question #4;*"Do you think that health care workers treat pregnant women with respect and dignity? If yes explain how. If no, explain how"?* Participants expressed their views about abuse and maltreatment of the deceased woman in form of verbal and non-verbal behaviors from health workers during their visit or phone appointment. The responses shared by participants are as follows

P1TIVQ4 (46 yrs., farmer):

- Interview session 1:"*Only few nurses and doctors treat pregnant women with respect and dignity, but some think that they are gods… the really bad workers even said, 'madam, no be me give you belly, please push'", this phrase in Nigeria means, I was not the one that get your pregnant, so push and take my instructions.*

- Interview session 2: "*It is unfortunate that only few doctors and nurses are nice to pregnant women and sometimes act like semi-gods and don't want to hear screaming or complain from the pregnant woman and many refused to enroll in the antenatal clinic program*".

- **P3TEVQ4** (57 yrs., Native Midwife/Local Birth Attendant):
  - Interview session 1:*"I know that some health care workers in the hospital are very rude and mean to women in labor/delivery who experience difficulty in delivering the baby…I have 6 children of my own and I know that pregnant women needs tender loving care and all the support she can get".*
  - Interview session 2:*"As a woman with 6 children, I know pregnancy through child birth is a special journey, pregnant women deserve to be treated with respect and support system and tender loving care from the husband, health care workers or native midwife, but unfortunately some workers treat women who cannot push their baby so terrible".*

- **P4TAVQ4** (47 yrs., Health care worker/Immunization):
  - Interview session 1:*"Yes, health care workers treat pregnant women with respect, dignity, and usually friendly but many of these women are afraid of the workers because of certain rules and activities that the workers would advise them to follow throughout pregnancy...unfortunately the deceased never attended antenatal clinic until she died with pregnancy in the 7th month".*

- Interview session 2: *"I know health care workers supposed to be very friendly with pregnant women, we treat them with respect, dignity and make them feel comfortable when they come to the maternity program, even if some of them are afraid of the workers especially* those who experienced difficult *childbirth felt disrespected by health care workers*".

- **P5MUVQ4** (63 yrs., Village Chief):
  - Interview session 1: "*The private clinic workers are much nicer to pregnant women than those who works at the general hospital, and it also depends on the conditions of the pregnant women".*
  - Interview session 2: "*Health care workers at the private clinic treat pregnant women much better than in the general hospital even if the deceased died nurses were so kind to her*".

Of the final 8 participants interviewed,4 in both interview sessions 1 and 2 shared some level of what they perceived as disrespectful treatments that the patients felt from the health care workers during pregnancy, labor/delivery or after childbirth. The remaining 4 participants shared mixed views. They also suggested the duration of labor and delivery without prolonged and complicated childbirth experience is a factor that determines how a woman feels about the treatment they received by health care workers. *"You see, a pregnant woman who deliver her baby within few hours when she goes into labor without too much trouble makes everybody happy and may not feel that the health workers treat her bad or insulted".*

Theme 4: Cultural Integrity

Cultural integrity in the form of cultural beliefs was expressed as one factor that influences maternal health during pregnancy, delivery and maternal care. Emergence of cultural integrity was linked to interview question 5;*"What aspect of the culture, traditions and way of living in the villages concerns you most about a pregnant woman in the village? Explain how these practices affect a woman's health and pregnancy outcome"?* According to the participants, Ekpeye's cultural practices are revered, but some aspects of it should be transformed to meet the need of the 21st Century generation. Findings from this study revealed that certain aspects of the indigenous culture marginalized and diminished a woman's power to act independently within her household and community settings. Of the final 8 participants, 6 suggested that in Ekpeye village, women have no authority to make decision about their family over their husbands 'opinion, and even more difficulty during pregnancy, especially when the husband is the financial backbone of the family.

Similarly, all 8 participants suggested that male-controlled culture adversely affects pregnancy and birth outcomes. In addition, sub-themes such as inadequate nutrition, superstitious beliefs during pregnancy, resource constraints, poverty, and use of hospital or maternity for delivery as weakness trait emerged.

Subtheme 1: Superstitious Beliefs on Nutrition During Pregnancy

Of 8 participants, 5 believed that eating certain foods during pregnancy causes major bleeding and eclampsia during childbirth. They also, suggested that such diets are linked to behavioral problems of unborn baby later in life.

P1TIVQ5 (46 yrs., a farmer):

Interview: *"Yes, socio-cultural norms are deeply ingrained beliefs, and we hold them in our way of living and thinking in Ekpeyeland. Do you know that pregnant women who eat egg during pregnancy will make her baby to steal once she or he becomes a teenager"*?

- **P2TUEVQ5 (32 yrs., a petti cash trader):**
    - **Interview:** *"I don't eat egg whenever I am pregnant because our belief is that kids steal because the mom ate egg during pregnancy, and I don't want my baby to be a thief".*
- **P3TEVQ5 (57 yrs., Native Midwife or Local Birth Attendant):**
    - **Interview:** *"There are certain food a pregnant should not eat like egg, animal meat, and fish without scale because they cause swollen foot, excessive bleeding and prolonged childbirth problems".*
- **P4TAVQ5 (47 yrs., Health care worker at the immunization clinic):**
    - **Interview:** *"We teach women the benefits of good nutrition or vegetable and fruit during and after pregnancy, but they still follow the traditional beliefs… even when they know lack of good protein can lead to some nutritional problems to both mama and baby".*
- **P5MUVQ5 (63 years, Village Chief):**
    - **Interview:** *"Some foods are good, but others bad like orange…. if a pregnant woman eat orange, it makes the skin of the newborn baby to look yellow as if they suffer from kwashiorkor and jaundice and*

unattractive….new baby supposed to be very beautiful and not look like an orange or squash".

- **P6MUVQ5 (44 yrs., Construction worker):**
    - **Interview:** *"Eating animal meat during pregnancy makes women to bleed really badly and they can die….. sometimes, the baby will suffer from blood infection".*

Subtheme 2: Lack of Education About Benefits of Antenatal Care

Somehow there is this perception among the participants that only weak women use maternity clinic or hospital for childbirth delivery. This perception about strength steamed from home delivery practices in Ekpeye to suggest that women that deliver a child in the hospital are weak or "not strong enough" for home delivery. As such, many in Ekpeye believe that even in the late stage of their pregnancy or during the onset of labor pain that they can go to the farm or market, which they believe can facilitate childbirth quicker than women who attended maternity clinic. Consequently, lack of knowledge of risk factors of pregnancy complications and pregnancy-related maternal death often lead to delay in seeking appropriate medical care.

P1TIVQ5 (46 yrs., a farmer):

Interview *"Real women do not go to the clinic… I have 5 children and never attended clinic or hospital and I delivered all my babies so fast than those weak one that always talked about maternity clinic".*

P2TUEVQ5 (32 yrs., a petti cash trader):

Interview: *"Although my brother's wife was educated, but she was still ignorant about many things because of our culture and the way she was raised by her mama".*

- **P7IVQ5 (48 yrs., Civil servant):**
    - **Interview:** *"My brother's wife did not attend antenatal clinic at all Oh no, she did not attend antenatal health visit because she think it is for weak women and unfortunately, she died when she was only 7th month pregnant".*

Subtheme 3: Lack of Resources and Poverty Among Women

Lack of resources and poverty emerged as a barrier to quality maternal health outcomes. It drives adverse health outcomes and pregnancy-related complications. Participants stated that the Ekpeye community lacked resources and infrastructures to assist women before and during pregnancy and after childbirth. Lack of resources and infrastructures were linked to pervasive poverty, which may trigger other health conditions. Most of these adverse health outcomes are preventable. Greater emphasis was placed on inequality in socio-economic status (SES) and government inaction to community capacity building relating to women and children adversely affects maternal and children quality of life.

P3TEVQ5 (57 yrs., Native Midwife or Local Birth Attendant):

Interview: *"Not so much to do with our culture but too many women is very poor and the government doesn't even help with anything such as food, transportation to the clinic or money to buy vitamins and other medicine".*

- **P4TAVQ5 (47 yrs., Health care worker at the immunization clinic):**

- **Interview:** *"Even if we blame the women for being ignorant and the influence of our traditions for poor health of a pregnant woman, the health care workers always improvise everything because the government failed to provide basic medical equipment and supplies to help us do a better…. Women are poor anyways, what else can they do".*

- **P8UVQ5 (39 years, Resident Medical Student):**
  - **Interview** *"I think observing some aspects of our culture is good but some of the bad part is rooted in lack of essential resources to support community people and programs to reduce poverty".*

Also, participants agreed that transportation and residential distance from the health centers and hospitals is a facilitator to low maternal and pregnancy care participation or visits to antenatal clinics. Also, it is a barrier to access to skill birth attendants (SBA) or local birth attendants (LBA).

Theme 5: Health System Capacity/Infrastructure

The impoverished medical facility and quality care in government operated health facilities in Ekpeye is prevalent. This termed emerged from interview question 2; *"Did the deceased attend any antenatal health care visit during pregnancy? If so, how many? If yes, at what trimester of her pregnancy"?*. Of all 8 interviewed, only 2women were reported by the participants of having 1 or 3 antenatal clinic visits. However, all 8 participants expressed troubling concerns and felt that the government negligent maternal well-being and appeared incapable or unwilling to invest in building infrastructure and necessary capacity in public health and medical care facilities. Three sub-themes emerged

from the capacity and infrastructure theme: Poor quality care, lack of government support to improve health, and rural clinics' distance/transportation and unskilled health care workers

Responses generated from interview questions 2 *"Did the deceased attend any antenatal health care visit during pregnancy? If so, how many? If yes, at what trimester of her pregnancy"?.* As indicated earlier, only 2participants indicated that the deceased registered with antenatal clinics. One in the 4th month and the other in the 7thmonth. Participants expanded their responses beyond visits to antenatal clinics but expressed strong views about how and why many pregnant women refused to enroll and participate in antenatal visit. They indicated that lack of optimized investment in medical facilities and the unmet needs on social infrastructure capacity building expected to be fulfilled by the government to improve public health care facilities and medical care are the is still void, thus making them feel that the impoverished government operated medical facilities are *"meant for the poor people*".

Similarly, for interview question 6;*"Was transportation a problem of keeping appointment with the health care provider at the maternity clinic? If yes, please explain"*. Suggested another element of capacity building issue. Of 8 participants, 6 expressed that constant electricity power failures, ineffective communication channels among hospital staff, inadequate clean water supply, and unreliable and insufficient local and medical transportation services including wheelchair, stretcher, and ambulance to support efficient in-house transfer of patients from one unit to another and patient compliance to routine visits are persistent problems in patient care in Ekpeye. The use of antiquated

medical equipment/device and lack of essential functional operated medical supply (Portable oxygen tank, probes to monitor bleeding, thermometer, quality light source, sphygmometer, stethoscope and scale for weight measurement) were identified as critical amenities to enhance quality of care and health outcomes. Based on these experiences, participants concluded that inadequate amenities deemed as essential components of medical care for the sick or pregnant women are barriers to achieving quality health outcomes. Lack of these quality amenities also demoralizes adherence to participation in routine clinic visits during pregnancy or delivery or after birth except in extreme cases emergencies. A low uptake of pregnant women who participate in antenatal care or refused to give birth at the hospital in Ekpeye is alarming. The following were the stories shared by two participants.

- **P1TIVQ2/6 (46 yrs., a farmer):**
    - **Interview session 1:** *"The deceased woman did not attend antenatal clinic because she felt it was waste of time because the doctors and nurses only check temperature and don't have good equipment but ask you to come back next week"*
    - **Interview session 2:** *"Going to the maternity clinic is a waste of time and is too far from my village …when doctors and nurses are always on strike and don't even have equipment to check how the baby is doing"*.
- **P6MUVQ2/6** (44 yrs., Construction worker):
    - Interview session 1: *"Yes, the first time my wife attended antenatal health visits was in the 4th month of her pregnancy and unfortunately she died the*

same day after we returned from antenatal clinic day in her 9th of pregnancy on January 27, 2017".

- Interview session 2:*"Yes, my wife attended antenatal program when she was 4 months pregnant and still died on January 27, 2017 from severe headache few minutes after we came back home from this so called antenatal clinic".*

Subtheme 4: Poor Quality Care

Poor quality care emerged from health system capacity/infrastructure. Two of the interviewees shared that antenatal clinic visits did not help the deceased women because they both died within 2-11 days after childbirth. The deceased women's deaths were perceived to be attributed to lack of essential medical equipment and supply used by the clinic staff during the visits.

Subtheme 5: Inadequate Government Role

All 8 participants expressed disappointment for the lack of high-level government involvement and accountability to improve maternal health and pregnancy outcomes in Ekpeye. Such lack of capacity building commitment was considered a barrier by the MDG 5(WHO, 2014).

Subtheme 6: Rural Clinics Distance and Unskilled Health Care Workers

Participants stated that there were many clinics in the rural areas with unskilled health care workers. They also indicated that the long distance of health facilities with skilled health care workers was a key barrier for lack of adherence or compliance to routine visits. All 8 participants agreed that long distance to maternity clinics is a barrier

and does not facilitate adherence to routine clinics visits as recommended by health workers

P1TIVQ6 (46 yrs., a Farmer):

- Interview: *"The clinic is too far to walk and no money for transportation"*.

- **P2TUEVQ6** (32 yrs., a Petti Cash Trader):
  - Interview: *"Do they expect a pregnant woman who is hungry to try to trek 10 miles to the maternity clinic just to show up without any doctor or nurses"?*
- **P3TEVQ6** (57 yrs., Native Midwife or Local Birth Attendant):
  - Interview: *"If government really wants to help pregnant women in Ekpeyeland, they should have provided transport to women who lived far away from the hospital or health centers"*.
- **P4TAVQ6** (47 yrs., Health care Worker at the Immunization Clinic):
  - Interview: "*Every village needs a small maternity clinic to avoid pregnant women from trekking too far to the hospital or clinic"*.
- **P5MUVQ6** (63 years, Village Chief):
  - Interview**:** *"Advising pregnant women to participate in antenatal clinic far away from the village is difficult because they have no money for transportation"*.
- **P6MUVQ6** (44 yrs., Construction Worker):

- Interview: "*Our road is too bad for a pregnant woman to walk, and sometimes the only available transportation is through motorcycle*".

- **P7IVQ6** (48 yrs., Civil Servant):
  - Interview: "*There is a maternity clinic in my village but sometimes, the nurses are not on duty and the women will travel to another village to get checked if she is getting too sick"***.**

- **P8UVQ6** (39 years, Resident Medical Student):
  - Interview: *"A woman in my family actually died on her way to the hospital 3 hours after childbirth at the native midwife house, because of complication with placenta retention, finding a car to transport her to the hospital was hard".*

In summary, data analysis demonstrated participants' understanding of the inverse relationships that exists between the availability of essential medical equipment and utilization of health facilities provided by skilled health professionals. All 8 participants' shared same views about their real time lived experience on how depilated government hospital and maternity ward without modern medical devices and technology served as barriers and facilitators to higher obstetric risks among women of child bearing age (WCBA) in Ekpeyeland.

Theme 6: Life Challenges

Determinants of life challenges emerged as perceived factor in this study in response to interview question 7; *"How can your experience help prevent pregnancy-*

related deaths among women in Ekpeye in Rivers State, Nigeria"? From this question, participants identified determinants of life challenges as a major concern.

Within the 'life challenge' construct, two sub-themes emerged; the need to create socio-health and village-based peer education programs. Participants indicated that creating social incentives and social support that motivates women and community members could gradually improve good aspects of Ekpeye culture. Specifically, participants in response to interview question 7 stated the following:

- **P1TIVQ7** (46 yrs., a farmer):
    - Interview: *"I hope my story can help save another woman and her family the pain and experience of losing a woman who died after childbirth... I can freely do pet-talk now to educate other women to understand their risk and take good care of themselves in the villages where there is no clinic".*
- **P2TUEVQ7** (32 yrs., a Petti Cash Trader):
    - Interview: "*I pray that this researcher can use the information I shared today to understand some of our problems and why our women don't value going to see a doctor until they become too sick".*
- **P3TEVQ7** (57 yrs., Native Midwife or Local Birth Attendant):
    - Interview: "*I pray that this research woman can use my experience as native midwife to teach women about certain risk concerning pregnancy"*
- **P4TAVQ7** (47 yrs., Health care Worker at the Immunization Clinic):
    - Interview: *"I am happy to be part of this study. I know we need to hold a strong sense of cultural identity but women should be educated about the*

negative aspects that prevent a pregnant woman from eating food such as eggs, orange, and others that can help her and the baby to be healthy"

- **P5MUVQ7** (63 years, Village Chief):
    - Interview: "*My wife almost died with our first child and I hope that my story can be used to increase awareness and knowledge of certain risk that comes with pregnancy and to support women to visit maternity clinics".*
- **P6MUVQ7** (44 yrs., Construction Worker):
    - Interview: "*I commend this researcher for her interest to know how Ekpeye community feels about the death of pregnant women. I hope that my story can be used to enlighten health care workers and more women in the village to attend maternity clinic and deliver their babies at the hospital and not at home*".
- **P7IVQ7** (48 yrs., Civil Servant):
    - Interview: "*I would like this researcher to use the information I shared with her to ask our government to provide registration at no cost, free vitamins, transportation, and some snacks to all the pregnant when they are at the clinics*"
- **P8UVQ7** (39 years, Resident Medical Student):
    - Interview: *"I think my experience after the 2 interviews with the researcher can personally help me as a future medical doctor to examine*

pregnant women thoroughly and to encourage participation in activities that can lower a woman's risks of dying from pregnancy-related causes".

Subtheme 7: Need for Socio-Health Education

The need for socio-health education emerged as a sub-theme under interview question 7. All 8 participants agreed that maternal death is preventable. They also indicated that the government should be involved in implementing effective village-level women's health initiatives that could help address some of the problems pregnant woman encounter earlier on prior to pregnancy complications. In addition, participants unanimously suggested that abject poverty among people who live in remote villages is the greatest threat to healthy pregnancy outcomes.

Subtheme 8: Village-Based Peer Education and Support Group Program

The benefits of social support from one woman are another critical theme suggested. One participant put it this way "Experience is the best teacher and we can no longer be ignorant about many things and death of a pregnant woman...because too many are dying every day". Another participant expressed and stated, "Unforgiveness is the invisible umbilical cord that reminds us the relationships that exists between a pregnant woman and her baby that ends in a silent death of the mother during pregnancy or labor/delivery or after childbirth". Participants perceived that peer education can build personal bonds and relationship, improve social support, and enhance social cohesion among women within the community.

- **P2TUEVQ6** (32 yrs., a Petti Cash Trader):

- Interview: *"A program that allows women to have conversations with other women and young girls will bring knowledge and break the circle of high maternal death caused by pregnancy in Ekpeyeland".*

- **P3TEVQ6** (57 yrs., Native Midwife or Local Birth Attendant):
  - Interview: *"I know we have deep roots and rich cultural heritage, yet we need program that educate our women to stop ignorant about many things concerning pregnancy and women's health" .Extreme-poverty is really bad especially in high poverty community like Ekpeye".*

- **P8UVQ6**(39 years, Resident Medical Student):
  - Interview: *"It is important for the government to create programs in the villages that mirror's community's values, beliefs, norms, and ways of life. This can improve accessing and quality perinatal health services and increase awareness among women in the villages".*

Overall, maintaining cultural integrity and heritage in Ekpeye is important, but gender inequality was one of the most consistent themes mentioned from the participants' narrative as an account to their lived experiences. Strong sense of community identity and social cohesion emerged as critical factors to break the barriers among women with low SES and other determinants of life factors such as lack of parity and social support, gender inequality, and certain aspects of culture.

Summary

I provided the synthesis and in-depth narrative accounts of the results generated from the data collected through personal interviews from 8 participants recruited in this

study. The collective shared lived experiences reflected the subjective perspectives about what the participants considered barriers to low maternal mortality and facilitators attributed to high maternal deaths in Ekpeye community. Participants shared their stories by answering 7 key interview questions designed to address the main research question; "*What are the perceived experiences on the barriers and facilitators of maternal death rate among individuals in the Ekpeye community who lived the experience of witnessing the death of a woman either during pregnancy, labor/delivery, or up to 42 days after childbirth?"*. Six major themes emerged and were categorized from high frequency of repeats to low occurrence. These themes are post-partum death, financial insecurity (lack of money for registration and ID card), trauma (abuse/maltreatment during pregnancy, labor/delivery, etc.), cultural integrity (influence of cultural beliefs), health system capacity/infrastructure (impoverished medical facility and use of antiquated medical equipment), and determinants of life challenges. Also, three sub-themes poor quality care, inadequate government role, and rural clinics distance/unskilled health care worker were identified under the fifth theme (health system capacity/infrastructure). Similarly, two sub-themes (need for social health education and village-based peer education and support group programs) were identified under the sixth theme (life challenges). Detailed interpretation of these results will be discussed in Chapter 5, which will also include the description of the study limitation, recommendations and social implications.

Chapter 5: Discussion, Recommendations, and Conclusions

Introduction

In this study, I explored how and what individuals living in an Ekpeye community in Rivers State in Nigeria perceived as barriers to high maternal deaths and facilitators to improve maternal health by reducing risk factors for the high rate of maternal mortality in the community. The explored core research question was: What are the perceived experiences on the barriers and facilitators of maternal death rate among individuals in the Ekpeye community who lived the experience of witnessing the death of a woman during pregnancy, labor/delivery, or up to 42 days after childbirth? Eight major themes emerged from this study.

Interpretation of the Findings

This study revealed that participants' perceptions support the idea of self-identity and status within Ekpeye culture and social interactions. The influence of cultural integrity or practices shapes transfer of knowledge about associated risk of pregnancy or labor/delivery or childbirth complications among women in Ekpeye. These conditions identified by the participants aligned with obstetric risk determinants reported by the WHO's assessment on maternal morbidity and mortality (WHO et al., 2016; World Bank, UN, & WHO, 2014; World Health Statistics, 2014). A total of 11 themes emerged: six core themes and five subthemes: (a) postpartum death, (b) financial insecurity (lack of money for registration and ID card), (c) trauma (abuse/maltreatment during pregnancy, labor/delivery, etc.), (d) cultural integrity (influence of cultural beliefs), (e) health system capacity/infrastructure (impoverished medical facility and use of antiquated medical

equipment), and (f) social determinants of health challenges. The five subthemes are (a) poor quality care, (c) inadequate government role, (d) rural clinics distance/unskilled health care worker, (e) need for social health education, and (f) village-based peer education and support group programs.

Postpartum Death

Postpartum death occurs within minutes to 3 hours in some cases or within 11 days in other cases after childbirth. This theme supports the conclusions reached by Balde et al. (2017); WHO, UNICEF, UNFPA, World Bank Group, and the UN Population Division (2017); Kress, Su, and Wang, (2016); Anastasi et al. (2015); and Say et al. (2014), which suggested that a woman's chance of dying in Nigeria during pregnancy, labor or delivery, or after childbirth or abortion is 1 in 22, compared to the lifetime risk of 1 in 4,900 among women in developed countries.

Similarly to the findings of this study, are excessive bleeding during or after childbirth, poverty, limited access to health facility, difficulty with transportation, cultural beliefs, impoverished health clinics, abuse and maltreatment by the partner or health professionals, gender inequality, and lack of government support were previously reported as factors leading to MMR (Orazulike et al., 2017). Therefore, postpartum death is a shared threat among pregnant women in the Ekpeye community.

Among the five participants who reported postpartum death, they indicated that the deceased died within 3 hours or 11 days after childbirth. Of these deaths, three occurred in a health care facility and two at the LBA's house in the village. According to P8UVQ6, there are salient identifiers to maternal mortality such as delays in seeking

health care, evaluation of clinical staff, and review of traditional practices requires further investigation.

The findings in this study revealed that the inability of the clinical health care professionals to properly identify health issues and properly treat pregnant women with preexisting conditions that adversely affect pregnancy health outcomes was a critical factor in these cases. One participant said, “Just because a pregnant attend antenatal doesn’t mean that the doctor will find all her problem because the clinic don’t even have equipment to test her.” The latter comment aligned with other research studies cited in this study that delays in seeking medical care, prolonged labor, excessive bleeding, eclampsia and high blood pressure, malnutrition, and other conditions occur as a result of lack of adequate health capacity or infrastructure to operate health systems at the optimal level (Åhman & Shah, 2015; Anastasi et al., 2015; Blade et al., 2016; Doctor et al., 2013; Ezugwu et al., 2014; Say et al., 2014).

Financial Insecurity

Lack of money for registration and ID card at antenatal clinics was identified as a barrier to low maternal mortality and a facilitator for high maternal death. Of eight participants, six indicated that the 600 Naira required for the medical care registration fee was unnecessary and a barrier to routine clinic visits. The unemployment rate is about 76% among women in Nigeria (Labor Statistics, 2017; NBS, 2018). Of 144 countries, Nigeria ranks 122 in employment and gender inequality (Labor Statistics, 2017; NBS, 2018).

According to the WHO (2014) estimate, about 99% of the deaths occurred in low income countries. Nigeria and 6 other countries in West African countries; Benin, Burkina Faso, Ghana, Senegal, Togo, and Niger are included as high maternal mortality risk countries (Blade et al. 2016; Áhman & Shah, 2011; Anastasi et al., 2015; Ezugwu et al., 2014; Say et al, 2014; Doctor et al., 2013). Financial insecurity or lack of money for registration or medical ID card purchase was identified as a barrier to low maternal mortality and facilitator to high maternal deaths during pregnancy, labor or after childbirth. Food security and employment are both essential needs that are linked to financial insecurity. They are the more important needs than medical registration fees and ID cards. In Nigeria, according to the National Labor Bureau Statistics [NLBS](2018), of the49% of the women population, 6.3% unemployment gap exists between women and men. Findings from this depict similar challenges from all 8 participants who mentioned money for food and basic needs for daily survival as more important than going to antenatal clinic. Hence, the prioritization need for money for food before budgeting money for medical care enrollment and participation onto antenatal program is more important than the later. Determinants of life factors such as pre-existing or competing priorities or basic needs such as food, clothes, and provision of school fees and supplies to their children were perceived as insurmountable and essential needs for daily survivals over pregnancy medical care costs. The findings supported the idea that low income pregnant women continue to experience financial insecurity as a barrier to appropriate pregnancy care in rural Ekpeye and nearby communities. In this study, respondents suggested that in many cases the deceased women were poor and cannot afford N600

(600 Nigerian Naira currency) for medical care registration fees. For instance, P8UVQ1 echoed this statement “It is too bad that women are dying all the time because of pregnancy and no good maternity clinics in the villages because it is for poor people and no help from anywhere”.

Cultural Integrity

The influence of cultural practices in Ekpeye community was identified as a theme in this study. All 8 participants stated that Ekpeye cultural values and heritage be preserved and maintained as a way of life. However, 6 out of 8 participants, suggested that certain aspects of Ekpeye’s cultural practices and norms that adversely influence informed decision-making processes or autonomy to adopt and act on measures that improves quality of life and prevent adverse health outcomes should not be encouraged. Participants linked superstitious beliefs nutritious food intake such as egg consumption during pregnancy as a predictor of an adverse health outcome or behavioral problems in children later in life. Adoption of such belief may lead to several nutrition deficiency in diet and could eventually lead to adverse maternal or child health outcomes including death. On the other hand, pica (no nutritional benefits) was perceived as an important craving that prevents bleeding during childbirth and post-partum period. Culturally, women are less dominant in the society settings and family unit, as such, they are perceived with less power to make decisions in the family, negotiate for sex, family planning and not free to speak against domestic abuse. Women are inherently expected to raise the children and take care of the daily household activities. Women who attend antenatal clinics are perceived as being weak and not strong enough to bear the pain and

womanhood of carrying a baby for 9 months till delivery. These sets of belief systems and cultural practices supports similar cultural values or culture-based quality of life in many African countries (Abimbola et al., 20165; Alkema et al., 2016; Anastasi et al., 2015; Bustreo et al., 2013). It is possible and most likely that these sets of misdirected cultural principles and values practiced in Ekpeye are contributors of increased burden of high maternal morbidity and mortality.

Health System Capacity/Infrastructure

Transportation barrier/distance to clinic was a sub-theme identified within the spectrum of health system capacity construct. All the 8 participants cited transportation and clinic distance, including bad road infrastructure as major barriers for community linkages and access to adequate medical care. This current finding supported the study conducted by the WHO, UNICEF, UNFPA, World Bank Group and the UN Population Division (2019) and Say, et al., (2014). Among women with low income status, health disparity gap widens as underserved women population in Ekpeye cannot afford to enroll in antenatal care programs. For instance, findings from this study identified use of antiquated equipment and lack of critical infrastructural as a structural barrier that is amendable yet, not addressed in Ekpeye. Government provision of good road for transportation accessibility to clinics can encourage private and public transportation businesses, and similarly, reduce the cost of travelling. Additionally, absence of these basic but essential social amenities weakens the argument to some extent as to the low-uptake on antenatal visit by women who resides in rural areas and where there is no doctor or trained and skilled nurse-midwife. Similarly, shared subjective perception on

how clinic distance creates a barrier to access to medical care was not new, the finding supported the conclusion reached by Kress & Wang (2016) for similar study. The collective consciousness expressed by all 8 participants was that determinants of life or challenges in life were inclusive of personal, institutional, and social determinants of life course perspectives. Therefore could be remedied through a coordinated strategic plan and political intervention to support rural development to improve population health and quality of life. To address these barriers, participants suggested that the following should be improved: Availability of social amenities, modern health facilities, and employment opportunity for women, health education, and elevation of women in the society, social support services, prevention of religious oppression, injustice and equity, and promotion of healthier living.

Furthermore, without financial backing and sufficient health literacy resources, the everyday problems, including transportation access to the clinic and affordable registration and ID card fees for prenatal and antenatal visits, poor and underserved women or families cannot afford proper routine and needed health care services.

Trauma

Abuse and Maltreatment during pregnancy or labor/delivery or after childbirth was another interesting them that emerged. In Nigeria women are marginalized and are not giving a fair opportunity to hold high position in many sectors of businesses and government jobs. The social construct that put women in Ekpeye at a lower spectrum of community leadership role also serves as indicators of implicit and explicit societal biases as women have less power and social support within a family unit to negotiate for sex

such as family planning. In addition, lack social support regarding abuse either by the husband or partner or those inflicted by health professionals or others. The finding supported Balde et al. (2017) conclusion about how recurring abuse of pregnant women by their spouse or health care providers are not properly addressed. Similarly, Chattopadhyay et al. (2017) and D'Silva et al. (2017) suggested that obstetric violence during childbirth at the hospital births is a risk factor to high rate of maternal death. According to D'Silva et al. (2017), the risk of maternal death is greater among WCBA in low income countries because of pervasive cultural practice and structural violence against women that prohibits them from speaking or reporting the abuser. A clear demonstration of the above research studies was echoed in this study as the participants stated. "You see, a pregnant woman who delivers her baby within few hours when she goes into labor without too much trouble makes everybody happy and may not feel that the health workers treat her bad or insulted."

Trauma (maltreatment) perception across gender was differentially expressed. Male participants suggested that any trauma subjected to a pregnant woman in form of verbal or physical abuse and maltreatment is simply wrong and adversely affects women quality of life. They suggested that men who are abusive are likely to cause other forms of trauma to both the mother and baby. They indicated that the victimizer of such trauma should be brought to justice. They suggested that the community should promote and reinforce social support systems to prevent violence and abuse against pregnant woman and encourage victims to report trauma cases to community leaders or proper authority. Similarly, establishment of comprehensive mental health services will inform public

health practitioners, social worker, and academia on the impact of trauma. Identification of trauma in this study as a major theme supported the findings how trauma risks were linked to high maternal deaths (Balde et al. 2017; Orazulike, et al.2017; Alkema et al. 2016 & Anastasi et al. 2015). The collective voice among the participants indicated that a society that values women and recognize them as a contributing economic power can eliminate or substantially minimize the adoption of certain cultural practices that adversely affect pregnant women health outcomes, especially the belief systems that promotes ignorant and lack of knowledge and hinders a woman's progress. These factors are conveyed as compelling contributory conditions that impede improved maternal health and positive social change on childbirth and maternal outcomes experienced by these participants.

Ignorance and Lack of Awareness

Ignorant and lack of awareness was a sub-theme that emerged from almost all the responses provided in six of the seven interview questions except for interview question number six (the transportation/clinic distance question). Basic credible public health information about pregnancy and its associated risks are not properly disseminated among priority populations. Participants shared their experience and supported the need to promote awareness and education on pregnancy risk factors to improve informed knowledge on maternal health and reduce morbidity and mortality.

Participants agreed that WCBA should change their mindsets concerning certain aspects of the culture that affect both maternal and the health of the unborn baby negatively. Example are superstitious beliefs concerning pregnancy and nutrition,

difficulty during labor/delivery as a curse from the family gods or poison-spell by juju, and equating women who participated and attended antenatal clinics as weak and not enough to be a real woman. Observation of ignorance and lack of information on maternal health as a key barrier to poor quality of health supports the findings discussed by Doctor, et al. (2013), where they suggested that access to health resources and material (information) promote health literacy. Awareness and education on benefits of preventative health measures increases knowledge and reduces the adoption of superstitious myths that can cause harm to people (Ezugwu et al., 2014). So relevant is the need to respect women and include them in family discussions and decision-making processes as participants strongly expressed this desire during the interview. The participants believed that the historically patriarchal male-dominant culture is a barrier to women's reproductive rights. Often, women in Ekpeye lack negotiating power to their opinion and expression of sex and sexual behaviors. In other cases, women do not participate in making the decision about family planning or number of children or pregnancy desired.

Inadequate Government Role

All eight participants identified failure by the government to invest in both capital infrastructures and human resources to improve skills and development in the health care system as a barrier hindering progress in public health and medical innovations. Availability of necessary infrastructure and essential medical supplies such as portable oxygen tank, stethoscope, blood glucose monitor and other pre-diagnostic devices such as sonogram and EKG machine are important tools perform basic routine care, diagnosis,

and treatment. Health system capacity optimization will produce an environment for optimal care and improve quality of life (Abimbola et al., 2016; Adamu et al., 2009). Unfortunately, many health facilities in Ekpeye has not reach anything close to optimal health capacity, and most likely operating under a sub-optimal capacity. Clearly, participant's' collective voice in this study served as spoken text shared by many people across the globe irrespective of the geographical locations or regions about having a coordinated and quality health system in place to address health needs of its citizens. In this study, the researcher recommends the integration of maternal tool kits as a vital check to improve self-management measures, foster early identification of risk or illness, inspire investment and use of modern medical devices and technologies during pregnancy, labor and delivery care. Also, there is the need immediately after childbirth to schedule and refer the patients to a follow-up clinic for post-natal care. Enhanced and streamlined protocol should be incorporated or adopted in delivery facilities that could help the providers to detect and treat adverse health conditions such as bleeding, hypoxia, high fever and others pregnancy/post-delivery-related cases. Such measures could prevent or at least minimize post-partum bleeding, complications, and perhaps, death.

Life Challenges Determinants

SES, religion, level of education, geographical location, low income, and number of children born by a woman adversely affect maternal health. Life challenges were defined within the boundary of this study by participants as subjective and objective measures and how it affects quality of life. Specifically, participants referred to objective measures as external factors (extrinsic) that they had no control over. For instance,

routine visit registration fees, gender inequality, place of birth, violence, role of women in the community, and poverty are quantifiable variables that could be observed or measured. However, subjective measures (Intrinsic) were operationalized as factors that are to some extent within their control. Some example of intrinsic bias shared in this study includes acceptance of cultural and religious rituals, perception or idea about the adverse effects of western medicine (that immunization causes sterilization among WCBA), a woman's body as the property of the husband or partner, censorship in reporting domestic abuse or maltreatment, misconceptions/miscarriages, deaths as a juju curse rather than as a result of poor quality of care, and linking nutritious food to behavioral problems in children later on in life. In this study, the researcher assumed that availability of effective government-based psychosocial support services to pregnant women can improve maternal health and birth outcomes. At the time when the researcher conducted the interviews, participants vehemently commented that lack of support services by the government to assist women during pregnancy, labor/delivery, and after childbirth create high level of anxiety, street, and ineffective copping mechanism. For instance, 5 out of 8 participants stated "A woman become poorer when she is pregnant because she cannot do a lot of things she is used to doing like farming and petti-trading on cash crops to make money". The aforementioned participants' statement appealed for social incentives in form of financial assistance and provision for reduced cost of food, nutrition vouchers and other micronutrients and transportation assistance to ensure patient adherence to antenatal clinic appointments, particularly to women who lived 10-20 miles away from the clinics.

Limitations of the Study

To minimize bias, the researcher utilized the epoche process to assess the initial steps to ensure the trustworthiness of the study and to identify personal beliefs, and perceived interpretations of participants' world views about high maternal death in Ekpeye community. Through this process, researcher's bias, selection bias, sample size and witness to the character of cultural activities were addressed earlier on in the study. According to Creswell (2013), a researcher bias occurs when a pre-conceived notion or assumption was reached based on previous knowledge or myths concerning the participants' belief system, culture, or values. The limitations to this study include the utilization of small sample size of eight participants, construct validity and re-call bias due to participants' characteristics that hinders the researcher's ability to draw meaningful conclusions and duplication. Hence, further studies are required to understand whether providing registration and ID card at no cost, improved awareness and education to all pregnant women and prevention of negative aspects of cultural beliefs help to reduce maternal deaths among women with at risk of pregnancy-related illness and deaths.

It is noteworthy that, the study was approved for 9 participants using a flyer (see Appendix 3) posted in 13 villages across the Ekpeye community. In addition, a town crier was used to increase awareness of the study opportunity. A town crier is an Ekpeye tradition for announcing or informing villages about certain events. Unexpectedly 40 participants responded to the flyer. Each participant was screened using the selection and eligibility criteria outlined in Chapter 3. The actually number of participants that

completed all required interview sessions were 8 because one participant did not return for the follow-up interview. I reached out to her through telephone conversation but cited death in the family as the main reason for not showing up for the final interview. Another limitation was that despites the fact that saturation were reached with interview questions 1, 3, 4 & 6 but were not achieved in any of the other questions (2, 5 & 7) and thus additional research is necessary. Also, the study lack the ability to generalize or duplicate the results to the general population because of small sample size and it was not from a homogenous group.

Recommendations

Participants perceived maternal death and related complications as preventable. This study serves as the first qualitative study conducted on phenomenological inquiry about maternal health in Ekpeye community. The goal of the study is to understand the perceived barriers and facilitators leading to maternal death due to pregnancy, delivery, or labor. Effective implementation of a sustainable maternal health education programs is necessary to address high maternal deaths and reduce the barriers associated with identified themes. So relevant is the need to inform and advocate for policy makers to invest on maternal and child health programs, thereby ensuring local clinics meet the recommended standard by the WHO and UN, (2016). It is also hoped that information obtained from the study can be examined by both local and national health department to advance specific training and skill sets to reduce high maternal morbidity and mortality in rural areas in Nigeria. Similarly, implementation of appropriate maternal health education

programs could facilitate reduction of adverse maternal health outcomes including deaths.

Throughout the conversations with the participants, there were high degrees of connectedness with each story which support the need for community level maternal health awareness and education program. In this study the researcher recommended making maternal toolkits available and accessible in the community in four different phases. The assumption is that the development of a reproductive tool kit focusing on prevention activities, early identification of potential dangers to pregnancy-induced complications, early referrals for obstetric care, and availability of critical equipment and essential medical supplies and network of social support are desirable in the rural areas where there are no medical doctors or skilled practitioners. Specifically, the maternal tool kits could contain information and materials relevant for each stage of pregnancy for a pregnant woman and for network of providers. The rationale for four different designs in the toolkits is to mirror maternal-centered needs from self-management phase through labor and delivery including a follow-up strategy in postnatal period for both mother and child. A systematic integration or adoption of these recommendations can shape policy and strengthen community and regional capacities. Each of these phases should be included in a standard obstetric and preventative guidelines and to be used when providing care to pregnant woman irrespective of her social strata in the community.

1. Preconception health education and counseling and other sexually transmitted infections (STIs),including HIV/AIDS for young girls and WCBA

2. Maternal-family centered health toolkit for WCBA in their reproductive period of life
3. Native midwives or LBA-centered tool kit
4. Health care workers-centered tool kit (including nurse-midwives)
5. Doctors and network of providers-centered tool kit
6. Hospital/facility-based modern infrastructure and technology to foster a systematic change

Preconception Health Education and Counseling

The proposed preconception health education tool kit targeted educational intervention will consists of series of selected health education, prevention, health promotion and maintenance material promote lifestyle behavior change. Family planning and use of contraception is included in the tool kit. Introducing the adoption of this tool kit within the community health center's as a routine best practice could promote positive aspects of Ekpeye culture and social interactions. It could also facilitate informed knowledge on risk of pregnancy-related complications.

Maternal-Family Centered Health Tool Kit

The Maternal-Family Centered Health Tool kit for WCBA in their reproductive period of life designed should be gender and culturally relevant to encourage usability and it must be accessible in health clinic in Ekpeye to everyone and translated in multiple dialects and languages. Individuals should also take responsibility of their lifestyle and keep good documentation of their quality of life and conditions. A standard tool kit will include basic health educational materials, writing pad/journal, mask, catheter,

thermometer to check body temperature, gloves, self-monitoring blood pressure machine, litmus test strip, bandage and lists of community resources and referrals.

Native Midwives or Local Birth Attendant and Community-Centered Tool Kit

Pregnant women in the villages often used LBA who assumed the role of care provider for unorthodox assessments, childbirth and post-partum period. LBA is a herbalist in the village who is not trained or equipped with knowledge of obstetric risks and how to work in collaborations with other health care providers. Content of the LBA and Community-Centered tool kit includes gloves, masks, manual nasal suctioning or bubble syringe, ambubag for oxygen, clean mat pad, sterile surgical blade, and scissor. Appropriate training should be provided to demonstrate effective understanding and use of each items listed in the tool kit and how to partner with when to call for help with potential complication.

Health Care Workers-Centered Tool Kit

This kit is designed to equip health care workers particularly nurses and midwives with the appropriate risk management tools to effectively perform the job in a more efficient manner and decrease risk of infection to baby and prevent pregnancy complications. Some of the items in the tool kit could be used to perform simple procedures or manipulations, take simple clinical reading and for performing simple routine evaluations or physical examinations to reduce major obstetric complications. For instance, blood pressure measurements especially during labor obstructed labor and Vesico-vaginal fistula (VVF) and bladder incontinence may occur during labor. The expected outcome measures is to ensure women and newborns received the care that

prevents hospital-acquired infections. Vesico-vaginal fistula presents a grim future and other compounding complications (Okigbo et al., 2016 & Say et al., 2014). Also, the following equipment must be ready and available for use: portable oxygen tank, sonogram, and EKG machine, specimen collection apparatus, speculum, probes to monitor internal bleeding, thermometer, good lighting source, sphygmomanometer, stethoscope, and others.

Doctors Network of Providers-Centered Response Approach

The rationale for the doctors network of providers' toolkit is to encourage trained and experienced physicians or obstetricians to recognize risk earlier in pregnancy. The goal is to provide accurate and precise care based on best practices focusing on maternal needs at all stages of pregnancy, post-partum period. For instance, physicians should have strong knowledge of potential risk associated with labor and delivery such as excessive bleeding, obstructed labor, poor oxygenation, and use of certain medical equipment. Therefore, the following medical equipment and supplies but not limited to Sonogram and EKG machine, pulse oximetry, portable oxygen tank, speculum, probes to monitor bleeding, thermometer, good lighting source, sphygmomanometer, stethoscope and functional running tap water should be available on a ready-to use stands.

Hospital/Facility-Based Modern Medical Infrastructure and Technology Tool Kit

Designed to foster a systematic approach, system change and behavioral change approach to encourage sustainable best practices. Government entities especially public health and medical boards should encourage the availability and accessibility of this type of medical infrastructure to help providers identify, assess, treat, and refer patients to

appropriate line of care in a timely manner. Hospitals should develop and constantly upgrade care processes, workflow, and checklist for best practices and us if critical medical equipment such as sonogram machine, EKG machine, incentive spirometer, and ambubag, effective transport system (Functioning ambulance) for safe patient transfer. Examples are existence of active and functional emergency room department with skilled and experienced practitioners, laboratory unit with accessories, constant electricity and good lighting source, efficient running water system, availability of hospital bed, stretcher and others. Availability of these critical supplies will ensure efficient continuum of care, improve quality of care, and improved birth outcomes.

Overall, implementing an individualized or team-centered approach tool kit will not only improve quality of care but will prevent adverse health outcomes and death. These measures address both proximal and distal health problems, but most importantly will empower WCBA, family, and community members to engage in self-seeking behaviors to improve health outcomes. A well-coordinated and comprehensive culturally-centered maternal health education program and self-management tool kit is likely to empower women to take charge of their health as well as make informed decision on reproductive health issues. A sustained behavioral change in WCBA can enhance continuum of care in a sustainable manner to improve development and prevention of future pregnancy-related morbidity and mortality cases.

Implications

This research study is the first of its kind in Ekpeye community. The findings highlights to the urgency of now to prevent and reduce maternal deaths in Ekpeye

community as well offers the trajectory to address the negative aspects of certain cultural practices and its influence on maternal health and pregnancy outcomes. As a result, the integration of these subjective narratives can be used to correct and address unmet WCBA needs. These needs may yield to increased government's involvement in funding and new direction in policy-making in areas that impact women in resource scare communities by reducing inequality and improve on policy that affect pregnant women in the work place. These types of social and economic incentives could promote self-seeking behaviors aimed at increasing community's awareness, knowledge of self-management, and in depth understanding of the risks and preventative efforts to mitigate low uptake to maternal health services and facilitate mechanism to high maternal deaths in Ekpeye. Additionally, the findings could galvanized community leaders to work in collaborations with policymakers to advocate and invest in maternal and child health services. Such can equally offer them information on the rate of return of investment toward a reduction in maternal and infant mortality. Measures such as preconception health education, adequate nutrition, elimination of registration fees at the clinics, transportation to clinics, network of social support and a coordinated reproductive health education services at the village level may likely empower women in leadership and policy decision-makers. Thus enable WCBA to advocate for implementation of improved quality measures for the promotion of maternal health and positive birth outcomes, which in-turn may lead to reduction in infant mortality. Effective programming requires ongoing monitoring and evaluation to assess the worth of its impact. Within the scope of these recommendation, maintenance of activities can be enforced through active

community participatory processes and self-management approach, use of lay peer-leaders, health workers or educator, advisory board committee or coalition of advocates and consistent funding to ensure continuity of care and services. WCBA and young girls through this study could be empowered to become agents of change in their communities. Also, in the Ekpeye, the findings are reference points to promote further studies in this regard within this underserved a community since this is one of its kind in this village. Overall, it provided information about what community perceived as barriers of low maternal mortality and facilitators of high maternal death and how to prevent it or address the issue.

Another recommendation is for the policy-makers at local, state, and national sectors to prioritize funding appropriation to address the prevention of maternal death in rural poor communities in Ekpeye. While this study is not an intervention research study, the researcher anticipates that information gained can create better understanding about community perception and way forward on how to prevent risk of vulnerability and with the potential to expand on this study in the future focusing on the emergent themes that were identified. (I.e., post-partum death, use of antiquated health facility, financial insecurity and lack of government support).

The influence of socio-cultural, SES, and other determinants of health factors on antenatal care and utilization (Kress et al. 2016; Okigbo, et al, 2016; Anastasia et al., 2015; Ezugwu et al., 2014 & Mselle et al., 2013); structural gender inequality (Joshua et al, 2017) and poor health outcome among WCBA in rural areas (Obiechina, & Ekenedo, 2013) were all supported by the findings of this current study.

Moreover, availability of tool kits on preconception education on reproductive health, maternal-family centered level, health care providers centered, LBA and hospital-based strategic response pathway could increase awareness, improve pre-pregnancy health-seeking behavior and at all stages of pregnancy, enhance communication among WCBA with team of health care professionals. Consequentially, the findings answered the research question posed on this qualitative study. Also, it confirmed existing research report on progress on women, inequality, and the main causes of maternal mortality in Nigeria and in other countries in Sub-Saharan Africa and regions of the world (WHO, UN, 2018 & Martin & Lawson 2017).

Implications for Social Change

The implications for social change of this study may serve a critical role in establishing the preliminary dataset about Ekpeye since this study is the first of its kind in the entire community. Also, it may serve as exposition of new ideas to ignite communication among the authorities at the FMOH, Rivers state ministry of health, local health centers, health care practitioners as well as generate a broader influence to inform policymakers at the national level, particularly among the legislative committee on health matters to fund maternal and child health programs. Additionally, is noteworthy that findings from this study echoed a shared urgency of need to integrate contextual cultural practices in the development of targeted maternal health services. Hence, the paucity of benefits to educate the public about health seeking behaviors earlier in pregnancy especially in poor resource areas may improve access and uptake to quality antenatal care, positive birth outcome and may lead to a reduction on the current high maternal

mortality among pregnant women in Ekpeye community. Thus, this study further call for future study to advance evidence-based research on maternal mortality in rural resource constrains areas in Nigeria.

Conclusion

In summary, participants' ages 21 years and older, from a non-homogenous group participated in face-to-face interviews to share their lived experiences pertinent to the death of woman during pregnancy or labor/delivery or after child birth. The study provided informed themes that are essential in improving the well-being of women and individuals in Ekpeye community. Policy makers, health care professional, stakeholders and invested community members could learn from this study on how to improve their quality of life and seek appropriate medical help or services as necessary and recommended by health practitioners. Community sense of involvement and ownership could be achieved by applying comprehensive and culturally relevant strategic planning, implementation of evidence-based care practices, and exploratory assessments approaches to access utilization of antenatal care at the grass root level to reduce maternal risk of maternal complications among WCBA.

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Appendix A: Interview Questions

Research Question/ Participants' Interview Questionnaire

Title: Exploring Perceptions about Maternal Mortality in Ekpeye Community **Study Design**: Qualitative Study of Phenomenology Inquiry **Study Participant**:

_____

Research Question:

What are the perceived experiences on the barriers and facilitators of maternal death rate among individuals in the Ekpeye community who lived the experience of witnessing the death of a woman either during pregnancy, labor/delivery, or up to 42 days after childbirth?

PARTICIPANTS INTERVIEW QUESTIONNAIRE

Q1. At what month did the deceased died due to pregnancy-related causes?

Q2. Did the deceased attend any antenatal health care visit during pregnancy? If so, how many____? If yes, at what trimester of her pregnancy?

Q3. Can you explain the processes before a woman can see a doctor in the hospital/antenatal health clinic?

Q4. Do you think that health care workers treat pregnant women with respect and dignity? If yes explain how. If no, explain how.

Q5. What aspect of the culture, traditions and way of living in the villages concerns you most about a pregnant woman in the village? Explain how these practices affect a woman's health and pregnancy outcome?

Q6. Was transportation a problem of keeping appointment with the healthcare provider at the maternity clinic? If yes, please explain.

Q7. How can your experience help prevent pregnancy-related deaths among women in Ekpeye in Rivers State?

Additional comments_____