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INTRODUCTION

Case Study: High Rate of Maternal Mortality among the Hausa-Fulani Population in Northern Nigeria

Health inequalities are significant, observable differences in health outcomes or distributions that exist among certain population groups. They result from various societal circumstances such as cultural practices, socioeconomic status, and geographical location, among others (Marmot *et al.*, 2008). One of these observable health inequalities is evident in the high maternal mortality rates amongst the Hausa-Fulani population in Northern Nigeria (Sharma *et al.*, 2017). The Hausa-Fulani are a large ethnic group residing in Northern Nigeria. They are predominantly Muslim and live mainly in rural areas where they are traditionally engaged in farming, cattle rearing, and trade. The Hausa-Fulani comprise about 29% of Nigeria's population and are one of the dominant ethnic groups in the region (Ryan and John, 2018). The high rates of maternal mortality amidst this particular population reveal underlying disparities that demand critical analysis. According to the World Health Organization (WHO), Nigeria was ranked the third African country with an extremely high case of Maternal Mortality Rate (MMR) with 1047 deaths/100,000 live births. Most cases are unreported or inaccurately documented, thereby potentially intensifying the crisis (WHO, 2018). It has been speculated that socio-cultural and health system disparities heavily impact these catastrophic statistics (Nkhana-Salimu and Anibilowo, 2018).

Maternal mortality is a key indicator of a nation's healthcare quality and reflects systemic socio-economic, cultural, and geographical inequities (Hogan *et al.*, 2010). Maternal deaths usually occur due to complications arising during pregnancy and childbirth, and most of them are preventable through effective interventions such as quality prenatal and postnatal care, skilled

healthcare providers, access to family planning, and the capacity to handle emergencies through surgical interventions such as cesarean sections (World Health Organization, 2019).

Unfortunately, for the Hausa-Fulani population in Northern Nigeria, these life-saving measures seem unattainable, causing a disparity in maternal health. This demographic is recognized as one of the most impoverished in the country, with their women bearing the brunt of systemic negligence and sociocultural norms that discourage female education and empowerment (Okafor *et al.*, 2015). Consequently, these factors negatively impact their accessibility to quality maternal healthcare, resulting in alarmingly high maternal mortality rates. Research has indicated that poverty, low education levels, limited access to health facilities, traditional practices, and socio-cultural beliefs are among the root causes of the high maternal mortality rates in Northern Nigeria (Ononokpono *et al.*, 2013). More importantly, women's low socio-economic status in this patriarchal society greatly contributes to these appalling rates (Galadanci *et al.*, 2017). Given this grim reality, there is a crucial need to investigate the intricacies of these circumstances that are undermining the well-being of the Hausa-Fulani women.

Thus, this study will comprehensively examine the health needs assessment of high maternal mortality rates amidst the Hausa-Fulani population in Northern Nigeria. It will scrutinize the cycles and outcomes of a health need assessment in the population to the end that it provides empirical evidence for policymakers and stakeholders that will inform comprehensive interventions for reducing maternal mortality rates and ensuring equity in health for the Hausa-Fulani women.

There is a growing recognition that resolving health inequalities necessitates more than just an improvement in healthcare quality and accessibility. Instead, it demands comprehensive strategies that also address the root socio-economic, cultural, and systemic causes of health disparities (Kruk *et al.*, 2018). Thus, understanding these complexities within the Hausa-Fulani context is vital. This

research will thus offer valuable insights into potential solutions tailored to the unique needs and circumstances of the Hausa-Fulani women in Northern Nigeria.

RATIONALE

Over recent years, Northern Nigeria has witnessed alarmingly high rates of maternal mortality among the Hausa-Fulani population, prompting a dire need for a comprehensive Health Needs Assessment (HNA). A region where an estimated 1,549 deaths occur per 100,000 live births, primarily due to preventable complications related to pregnancy and childbirth (Oleribe et al., 2020). The HNA aims to identify these health needs and inequalities and establish a robust foundation for the development of targeted healthcare policies and intervention strategies. Among the Hausa-Fulani community, specific societal and cultural practices potentially exacerbate maternal health challenges. The community's low literacy level and poor health education contribute significantly to these rates (Galadanci et al., 2007). Additionally, a cultural norm encourages childbirth at home without skilled birth attendants, posing substantial risks to both the mother and the newborn (Babalola and Fatusi, 2009).

Beyond the socio-cultural aspect, access to adequate healthcare services also stands as a significant problem. Due to a significant disparity in resource allocation and distribution, health services are predominantly concentrated in urban areas. This situation also has socioeconomic factors ranging from the family's ability to access basic needs like food, education, healthcare, and also the well-being of the children (Hounton et al., 2015; Yamin, and Boulanger, 2013) Therefore, women residing in rural communities find accessing antenatal care challenging. Infrastructure is often substandard or nonexistent in rural areas, leading to the inaccessibility of emergency obstetric care services (Doctor et al., 2012).

Implementing an HNA will help to highlight these pertinent issues and create awareness of the areas that need urgent intervention. This evidence-based process is essential in mitigating preventable maternal mortality rates, advancing health services and interventions specifically

tailored to the needs of the Hausa-Fulani women in Northern Nigeria. Indeed, if Northern Nigeria hopes to achieve significant reductions in maternal mortality rates and the global Sustainable Development Goals by 2030, addressing the issue among Hausa-Fulani women should not just be seen as necessary but urgent. A thorough Health Needs Assessment is the crucial first step in this essential health intervention process. This involves systematically reviewing the health issues facing a population, leading to agreed priorities and resource allocation that will improve health outcomes and reduce health inequalities. The Hausa-Fulani population, residing predominantly in Northern Nigeria, also requires a health needs assessment for various reasons which includes:

Identify Health Challenges

The primary objective of an HNA is to pinpoint the health issues prevalent in this population. In Nigeria, especially in the Northern region, challenges such as malaria, malnutrition, high child and maternal mortality rates, poor sanitation, and infectious diseases such as polio and meningitis have been reported (Garba and Gadanya, 2017). Thus, understanding the magnitude of these issues can enable a more focused health intervention strategy.

Improve Resource Allocation

Through an HNA, a better understanding of where resources such as manpower, health facilities, equipment, and medications need to be allocated to achieve the best possible health outcomes for this population can be achieved (Oleribe *et al.*, 2013).

Develop Health Programs and Policies

Information derived from an HNA can inform policy-making at different levels of government. The results can provide the needed data to design, implement, and monitor programs that will improve the health conditions in Northern Nigeria.

Improve Accessibility and Utilization of Health Services

In many rural parts of Northern Nigeria, access to healthcare services remains limited (Amedari and Ejidike, 2021). An HNA would be essential to establish the current state of access to health services and proffer measures to improve the situation.

Address Health Inequalities

Different groups in society can face different health problems. In Northern Nigeria, the Hausa-Fulani women and children may face distinct health issues. One major goal of this assessment would be to address health disparities and to develop strategies to address such health inequalities.

METHODS

The research methodology that will be considered by the researcher to assess the health needs assessment among the Hausa-Fulani population of Northern Nigeria is a Mixed-method research design. The mixed-method research design involves the use of both quantitative and qualitative data collection techniques. The quantitative data will be in the form of secondary data sources by collecting information about maternal mortality from hospitals that the researcher considers as suitable for the study while qualitative data will be generated through the use of interview guides from respondents that will be suitable. As such mixed-method research design offers the opportunity to collect data from some selected respondents and use existing data sources to explain the incidence of high maternal mortality in the Northern population in Nigeria. The reason for this method is that it is suitable for understanding the rate of maternal mortality among the Northern Population in Nigeria and it allows us to understand the incidence of high maternal mortality from the perspective of various respondents if the health needs of the Hausa population in Northern-Nigeria will be achieved.

Population of Study

The population of interest in this study involves women of reproductive age group (15-49) years. These women will be seen as the population because the incidence of maternal mortality can only occur among women who are exposed to childbearing age. These women will be considered from all the northern-population which are the primary residents of the Hausa-speaking population in the country of Nigeria.

Sample Size

This study will determine the sample size through the use of two methods due to the mixed—method research design that was used in the study. Firstly, for the primary data that will be collected through the use of an interview guide which is qualitative, the sample size will be determined through saturation point. According to Fusch, and Ness (2015), saturation point refers to the point at which no new information or themes emerge from additional data collection or analysis. This is a point achieved when there is no new response that is gotten from any additional focus group discussion that is conducted. Secondly, in order to arrive at a suitable sample size for the collection of quantitative data from the population that will serve as a representative sample to understand the incidence of high maternal mortality among the Hausa population in Northern Nigeria, the Cochran formula for determining sample size will be used. Krejcie, and Morgan (1970), posited that the Cochran formula is particularly useful when researchers aim to obtain representative and statistically valid samples from large populations. This is considered appropriate because the population size of women in reproductive age 15-49 years is unknown. The formula is as follows:

$$n = \frac{Z^2 \times p \times q}{d^2} \text{ where:}$$

n= sample size

z= 1.96, the standard normal deviation corresponds to the 95% confidence interval.

p = 50% = (0.5), an estimate of the proportion of women of reproductive age 15-49 years who may experience maternal mortality among the Northern population.

q= q= 1-p = 1-0.5 = (0.5), an estimate of the proportion of women in reproductive age 15-49 years who may not experience maternal mortality among the Northern population.

$$n = \frac{(1.96)^2 \times (0.5) \times (0.5)}{(0.5)^2}$$

$$n = \frac{(3.8416) \times (0.25)}{(0.025)}$$

$$n = \frac{3.8416}{(0.025)}$$

$$n = 384.16$$

Sampling Technique

This study will use probability and non-probability sampling techniques called Multistage and purposive sampling techniques. Multistage sampling allows for increased representation, as each stage can be stratified to ensure that various subgroups are included (Lohr, 2019). Likewise, purposive sampling is a non-random sampling technique used in research when researchers intentionally select specific individuals, groups, or elements from the target population for a particular purpose or research objective (Dworkin, 2012). In the first stage, Northern Nigeria was divided into three categories based on geo-political division. This brings the regions to North-central, North-east and North-west. In the second stage, from each of the geo-political regions, two states are randomly selected that will represent each of the regions. In the third stage, purposive sampling will be used to select two hospitals from each of the six selected states to make six hospitals in all that would serve as a representative sample from which data will be gathered.

Sources of Data

This study will use a secondary dataset that will be collected from Hospitals that are located in the selected states that will serve as a sample of maternal mortality and reflect the rate at which it occurs among women of reproductive age in the region. In addition, it gives us insight into

understanding the incidence of maternal mortality and the factors that increase the undesired event. Moreover, the study will collect primary data by conducting focus group discussions from two sets of people. The first set of people are health practitioners with in other to have a broader perspective of factors that are causing maternal mortality among women who belong to the reproductive age group in the region. The second set of people are respondents who use these hospitals, the focus group discussion would reveal to us challenges and ways to assess health challenges in the region.

Research instruments

The secondary data that will be collected by the researcher does not involve the use of a questionnaire. However, two interview guides will be prepared for the collection of qualitative data from the respondents. The interview guides will have two sections the first section will collect information on the socio-demographics information of the respondents while the second part will collect information about the incidence of maternal mortality in the region, the leading factors causing maternal mortality, the current state of health facility that supports child birth that can reduce maternal mortality and lastly to identify some possible policy and practice that will reduce the event of maternal mortality among the Northern-Nigeria population.

Method of data analysis

The data analysis involves the use of two methods due to the considered sources of data. The use of statistical package for Service Solution (SPSS) version 20.0. According to Field (2018), SPSS is a widely use software tool for quantitative data analysis in various fields, including social sciences, health research, business, and beyond will be used for the quantitative data analysis and will be done in three stages which are the univariate, bivariate, and multivariate analysis levels. The univariate analysis will present the sociodemographic information of the participants with tables, frequency, and percentages. At the bivariate level, the population in Northern Nigeria that

experienced maternal mortality or did not experience maternal mortality will be conducted with chi-square analysis to check the significant association against the background characteristics of the population in Northern Nigeria. At the multivariate level, all women's background factors that show significant association with maternal mortality will be analyzed using Odds ratio Binary Logistics Regression Analysis.

In addition, the data that will be gathered through the use of focus group discussion will be analyzed with the use of Atlas T software to reveal the various themes that the participants of the study will discuss as they will be mentioned by the respondents. According to Saldaña (2015), Atlas T software allows researchers to code and annotate text and media data, helping to systematically categorize and organize information for thematic analysis.

Stakeholders

Health needs assessment for the Hausa-Fulani population in Northern Nigeria involves understanding their unique health needs, social conditions, and factors that impact their access to health services. Key stakeholders that should be involved in this process include:

The Hausa-Fulani community

This is an essential stakeholder since they are the study population and recipients of the health interventions. Their insights into the community's health practices, barriers to healthcare access, and priorities are vital in creating effective health strategies.

Federal and State Ministry of Health, Nigeria

The Federal and State Ministry of Health in Nigeria plays a pivotal role as a stakeholder in conducting health needs assessments for any ethnic population within the country, including the Hausa-Fulani population in Northern Nigeria.

The primary mandate of the Ministry of Health at both the federal and state levels in Nigeria is to develop and implement policies that strengthen the national health system (World Health Organization, 2007). It does so by focusing on issues related to population health and wellness, disease control and prevention, health promotion, health care services, and health sector regulation and governance. This places the Ministry in a vantage position to conduct health needs assessment and implement necessary intervention measures.

Conducting a health needs assessment is critical in ensuring the well-being of a given population. This process helps identify health issues within the population and implement measures to improve the situation (Taylor-Robinson, *et al.*, 2012). This process includes defining the population, assessing their health needs, and identifying gaps in the current healthcare services.

Considering the cultural diversity of Nigeria and health inequities existing among its various ethnic groups (Musah and Danjin, 2018), the participation of the Federal and State Ministry of Health is essential in any health needs assessment. The ministry is responsible for formulating and implementing health policies that cater to the health needs of all Nigerians irrespective of their ethnic backgrounds.

For the Hausa-Fulani population in Northern Nigeria, this role is even more critical, considering that this region is known for various health challenges including poor access to health care, disease outbreaks, and malnutrition among others (Musah and Danjin, 2018).

Non-Governmental Organizations (NGOs)

Non-governmental organizations (NGOs) play an indispensable role in addressing health-related issues, and their participation is critical in the assessment of health needs for specific communities such as the Hausa-Fulani population in Northern Nigeria. The key reasons that NGOs could be considered a vital stakeholder are their expertise, resources, extensive community engagement, advocacy role, and potential for partnership development.

- **Expertise and Resources:** NGOs often have substantial experience and skills in dealing with public health concerns, specifically at a local level. They can direct their resources to meet the specific health needs of targeted communities (Mahmudat, 2019).
- **Extensive Community Engagement:** NGOs generally have strong ties with communities, allowing for an in-depth understanding of cultural contexts and community health needs. They can also implement interventions that resonate with local needs, beliefs, and practices (Ahmad, 2019).
- **Advocacy Role:** NGOs are recognized for their capacity to advocate for community health needs. They can help to bring awareness to policymakers regarding the particular health challenges of the Hausa-Fulani community (McCloughlin, 2011).

However, the specific health needs of the Hausa-Fulani community must be well-understood for NGOs to effectively function. Health needs assessments carried out by NGOs can bring focus to significant health concerns and enable more effective allocation of resources to address them (Atela *et al.*, 2017).⁵ Healthcare providers: They offer critical insight into the practical considerations in delivering healthcare to this population and can also offer advice on the prevailing health conditions.

Community Leaders

Stakeholders like community leaders are very crucial in this process as they understand the unique cultural context of the Hausa-Fulani population in Northern Nigeria and can provide essential insights and strategies to achieve the best health outcomes. The roles of Community Leaders in health needs assessment include Identification of health issues; Advocacy and communication; Encouragement of participation; Cultural sensitivity; Provision of resources and logistics and strengthening community partnership (Haldane *et al.*, 2019)

Research institutions and Universities

Research institutions and universities have an important role to play in addressing the health needs of the Hausa-Fulani population in Northern Nigeria. They can conduct research to determine the most pressing health issues, provide technical support to organizations implementing health programs, facilitate training for health workers, educate and sensitize the population about health issues, and contribute to policy development (Weerts and Sandmann, 2010)

PUBLIC HEALTH INTERVENTION PROPOSAL

The prevalence of maternal mortality among the Hausa-Fulani community in Northern Nigeria is an ongoing health crisis. Data indicates that this population suffers from one of the highest maternal mortality rates worldwide (WHO, 2015). This disturbing reality is an indicator of the unmet healthcare needs among these women, with various social, cultural, economic, and political factors hindering access to maternal health services (NPC, 2013). To effectively address this issue, there is an urgent need to propose novel public health interventions. Over the years, there's been an increasing recognition that the establishment of maternal healthcare facilities and imparting maternal education can revolutionarily transform this disheartening scenario, serving as a crucial public health intervention. This research proposes the establishment Maternal Healthcare Facilities alongside Maternal Education as a Pivotal Public Health Intervention to high rate of maternal mortality in Northern Nigeria.

Establish Community Maternal Health Services

This revolves around the creation of an integrative community maternal health program that harnesses local resources to address the primary reasons for the high mortality rate. These factors include the lack of access to prenatal care, skilled birth attendants during childbirth, and essential obstetric care (NPC and ICF, 2014). According to Amedari and Ejidike, 2021, the lack of properly operating Primary Health Centers hinders efficient health spending and service usage in rural areas (Northern Nigeria Inclusive) where the burden of disease morbidity and death is high. Inaccessible healthcare has been an immense barrier for the Hausa-Fulani women. Poorly equipped healthcare centers, exacerbated by the scarcity of trained personnel, not only cripple the effective management of pregnancy-related complications but also deter expectant mothers from seeking antenatal care.

The establishment of maternal healthcare facilities - antenatal clinics, labor wards, and emergency obstetric care units – replete with modern medical equipment, can address this deficit, by facilitating safe pregnancies and deliveries. For effective service provision, recruitment and retention of skilled healthcare personnel - doctors, midwives, and nurses - is also a necessary supplement. Local government authorities should collaborate with the Ministry of Health and global health partners such as WHO to garner funding and technical assistance for this venture.

Promotion of Health Education

Maternal education refers to the formal and informal education women receive during their childbearing and rearing years. This concept has both micro and macro-level impacts. At a micro level, maternal education has profound implications on child-rearing and development. At a macro level, the education of women positively affects community health and prosperity, potentially contributing to global developmental objectives (UNESCO, 2013).

Arguably as impactful as accessible healthcare is maternal education, aimed at demystifying myths surrounding maternity while promoting informed decision-making. Recent studies have shown that access to healthcare facilities does not eliminate maternal mortality in cases where there is a lack of maternal education (Karlsen *et al.*, 2011). Another recent study on the factors that contribute to maternal mortality within the age group of 15-49 years in southern and northern Nigeria identified lack of education as one of the contributing factors to maternal mortality in Northern Nigeria (Meh *et al.*, 2019).

As established in the research of Meh *et al.*, (2019) there is a need to increase girls' education in northern Nigeria in order to improve maternal health. Healthcare authorities should utilize public platforms - mosques, community centers, and local radios - for such outreach initiatives, resonating

with the traditional sensibilities of the Hausa-Fulani community. Ensuring female healthcare workers, as mediators of maternal education, can further make women more receptive. In addition, non-formal education targeted at adult women should be engaged. Flexible learning opportunities, literacy campaigns, and vocational training can effectively contribute to promoting maternal education.

Interventions Measurement

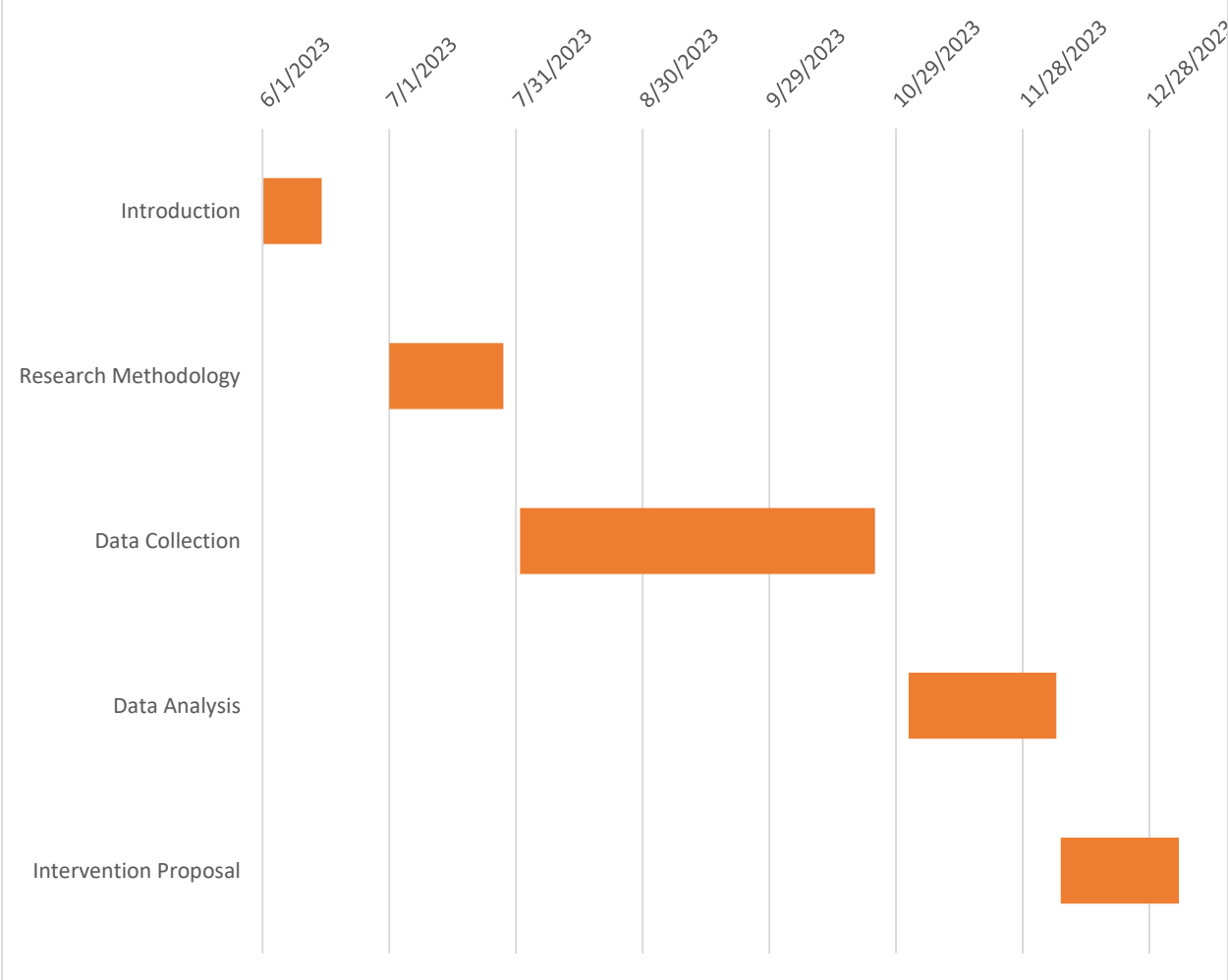
One significant measure of establishing maternal healthcare facilities could be the number and geographical spread of such centers. However, the impact is not just about quantity, but also about quality, reflected in the services offered. This includes antenatal care, safe delivery options, postnatal care, and the availability of emergency obstetric services. Another effective measure is the change in healthcare utilization rates, particularly for antenatal visits, institutional deliveries, and postnatal checkups. It's also beneficial to track patient satisfaction levels and feedback for continuous improvements (Abimbola et al., 2012).

Secondly, evaluating the effect of maternal education as a public health intervention would involve assessing the percentage of women who received maternal health education. Additionally, examining changes in health-seeking behavior, knowledge about potential pregnancy-related complications, and compliance with antenatal and postnatal visits can provide substantial evidence on the impact of education (Doctor et al., 2012). Tracking improvements in literacy rates and advancements in health awareness among the general populace would also offer broader indicators of the impact of maternal education initiatives.

Overall, while measuring these indicators does provide crucial data about the effectiveness of these interventions, one of the ultimate measures is the change in maternal mortality rates. With a

successful implementation of enhanced maternal healthcare facilities and maternal education, Northern Nigeria can hopefully observe a significant decline in its maternal mortality rates. This would indicate a substantial progression towards improving maternal health, making it a model for other regions with similar health challenges.

GANTT CHART FOR THE STUDY HIGH RATE OF MATERNAL MORTALITY AMIDST THE HAUSA-FULANI POPULATION IN NORTHERN NIGERIA



CHALLENGES

Data Collection Challenges

In a bid to address the issue of maternal mortality which is a pressing global health challenge in the Northern region of Nigeria, particularly among the Hausa-Fulani population, the rate of maternal mortality is alarmingly high. The researcher in the study to understand and address this issue requires accurate and comprehensive data collection. However, when collecting the data through focus group discussion, some of the challenges the researcher experienced are:

Cultural Sensitivity

The Hausa-Fulani culture places high importance on privacy, especially regarding sensitive topics like maternal health. Discussing pregnancy-related issues openly can be perceived as taboo, making it difficult to obtain honest and detailed responses. This cultural barrier affects the quality and reliability of the data collected through questionnaire by the researcher.

Limited Literacy Levels

Illiteracy rates are higher in some regions of Northern Nigeria, including among the Hausa-Fulani population as noted from researchers. Designing questionnaires that are accessible to those with limited literacy skills is crucial. However, even with simplified language, the interpretation of questions might be challenging, leading to inaccuracies in the responses.

Access to Healthcare Facilities

In many rural areas, access to healthcare facilities is limited, making it difficult to reach women who have experienced maternal complications. This lack of accessibility hampers the inclusion

of crucial data, as those who are most affected may be underrepresented in the questionnaire responses.

Reliability of Responses

The fear of social stigma or legal consequences may influence respondents to underreport maternal health issues or to provide socially desirable responses. This compromises the reliability of the collected data, making it challenging to gauge the true extent of the maternal mortality problem that has occurred among women in Northern Nigeria.

Language Barriers

Diverse linguistic variations exist within the Hausa-Fulani population. Creating questionnaires in a language that is universally understood can be challenging. Misinterpretation of questions due to language differences can lead to inaccurate data, hindering the effectiveness of the research.

Traditional Beliefs and Practices

Traditional beliefs surrounding pregnancy and childbirth may clash with modern healthcare practices. Questionnaires that do not account for these cultural nuances may fail to capture important data related to traditional birthing methods and associated risks.

Security Concerns

Northern Nigeria has faced security challenges, including conflicts and insurgencies. Conducting field surveys to collect data can be dangerous, limiting the ability to reach certain areas. This security risk hampers the inclusivity of the data collected by the researcher, which could have made the findings of the study more enriched.

Challenges in Intervention Program

A lack of sufficient maternal healthcare facilities poses the most prominent challenge in Northern Nigeria. Women residing in rural or hard-to-reach areas are often compelled to travel great distances to access MHFs. This challenge is compounded by the poor road network and insufficient public transport systems. Moreover, the limited number of facilities and understaffing frequently lead to overcrowded facilities, resulting in delays in accessing maternal health services, which, in extreme cases, may be a matter of life and death.

Once these facilities are in place, other barriers emerge, such as the affordability and quality of care provided. Although public healthcare services in Nigeria are theoretically free, indirect costs, such as transportation, still make access to these services financially prohibitive for many families. Even if affordability is not an issue, the quality of care is a significant determinant of maternal health service utilization. It's essential to provide adequate medical equipment, hygienic conditions, and skilled healthcare professionals to deliver high-quality services that can improve maternal health outcomes. In Northern Nigeria, however, shortages in equipment and skilled professionals, coupled with a lack of adherence to protocols and guidelines, undermine the quality of maternal healthcare.

Cultural factors and low levels of maternal education further compound these problems. Some Northern Nigerian communities maintain deeply-rooted socio-cultural norms and beliefs that promote home births attended by traditional birth attendants or family members, undermining the use of professional maternal health services. Without education, many women may not comprehend the risks and complications related to pregnancy and childbirth or recognize the significance of prenatal and postnatal care.

Initiatives promoting maternal education face considerable hurdles, as well. Limited resources and funding for maternal education programs, the socio-cultural relegation of women to traditional roles, and high illiteracy levels among women impede efforts to implement comprehensive maternal education interventions. Some women may be unable or unwilling to participate in such programs due to social pressures or family responsibilities. This dynamic suggests that comprehensive interventions addressing maternal education must go beyond conventional didactic programs, incorporating community involvement and integrating maternal education into broader empowerment initiatives.

Finally, implementing these interventions and their continuity poses governance and accountability challenges. Public health interventions in this region have traditionally been plagued by issues of poor governance, lack of continuity, and weak accountability mechanisms, impeding their success and sustainability. Greater emphasis must be placed on creating transparent, accountable systems, focusing on long-term plans rather than short-term interventions and building effective collaborations between government and non-government organizations.

Addressing these challenges will necessitate multisectoral collaboration, strong leadership, political will, and a collective resolve. It will also require embracing a rights-based approach to maternal health, focusing on empowering women and expanding their access to quality education and healthcare. Despite the complexity and scale of these challenges, overcoming them is critical to reducing the unacceptably high rate of maternal mortality in Northern Nigeria, fulfilling the universal promise of the right to health for all women.

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