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A critical analysis of the extent to which social determinant of health explains health inequalities regarding maternal mortality in Nigeria

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Abstract

This article critically analyzes and quantified the extent to which social determinants of health explains health inequalities regarding maternal mortality in Nigeria. Evidence suggests that maternal mortality is predominant in developing countries. This formed the rationale in using Nigeria as a case study for critical analysis. This study showed the relationship between social status/determinants, health inequalities and maternal mortality outcomes in Nigeria. Using a critical analytical approach, this study shows that access to a good health care by maternal patients depends on a number of social determinants (such as education/awareness, income level/unemployment, cultural beliefs, insecurity, environmental conditions and healthcare decline/lackadaisical attitude displayed by some health workers in some parts of Nigeria) which can be linked to explain health inequalities that results in maternal mortality in Nigeria. To tackle inequalities, this study recommends targeted social policy reforms and maternal program/education for affected populace in Nigeria.

Keywords: Maternal mortality; Public health; Health inequalities; Social determinants; Nigeria

1. Introduction

Maternal mortality remains a menace that has abruptly ended the lives of many women globally. However, there has been significant success in the fight against global maternal mortality, as suggested by the decline in the maternal mortality ratio (MMR). According to the UN inter-agency estimates, global MMR has declined about 40 per cent, i.e., from about 345 to 210 deaths per 100,000 live births in 10 years (2007 - 2017). Unfortunately, an unbelievable 94 per cent of maternal-related deaths have occurred in developing and underdeveloped nations [1]. It constitutes a significant public health challenge across countries, especially in developing and underdeveloped nations. Maternal mortality negatively affects women, their spouses, families and the rest of their society. The World Health Organization [2]estimated that the MMR in low-income nations was 462 per 100,000 live births against 11 per 100,000 live births in developed nations. Countries, including Nigeria, are working towards achieving the Sustainable Development Goal (SDG) 3, which aims to reduce the death rate to 70 per 100,000 live births by 2030 [3]. Despite these efforts, several factors and determinants and inherent health inequality have impacted the outcomes.

Inequalities distinguish populations [4,5,6] through their influence on human immunity, social justice, behaviours, identities, and human efforts. Health inequalities occur when there is an unfair advantage in accessing quality healthcare services by one group of populations over another. This could result from the uneven distribution of several social determinants of health, such as education, income, employment, security, access to affordable healthcare, and the environment [7]. Health Inequality is a significant social health challenge. It creates health injustice, interferes with

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society's public functioning, exposes the vulnerable in the society, and accentuates public health problems like maternal mortality [6,8]. Also, Wilkinson and Picket (2010) stated that the dilemmas attributed to health inequalities influence the well-being and integrity of life and establish health discrepancies in expectant women. This statement is true because inequalities in health expand the gaps among the societal class in populations. It also barricades societies by facilitating the appearance of the perpetuity of inclusion and exclusion [9]. Thus, this research aims to analyse how social determinants of health explain health inequality as it concerns maternal mortality in Nigeria. It will first give a brief overview of maternal mortality and then define the concept of health inequalities. After that, it will further discuss how the various social health determinants, i.e., income, access to affordable healthcare, education, job security, and the environment, explains inequalities considering maternal mortality in Nigeria.

2. Literature review and critical analysis

Holistically, health is affected by multiple variables broadly classified into five groups identified as health determinants: genetical, behavioural, environmental and biological effects, medical attention, and social components [10]. These groupings are all interconnected. The fifth group, i.e., social determinants of health, encompass the socioeconomic conditions that impact the health of populations. These dispositions are moulded by socioeconomic status, the quantity of money, power, and resources that people possess, all of which are impacted by socioeconomic and political components (e.g., procedures, civilisation, and societal importance). The World Health Organization [11] defines social determinants of health as "the non-medical factors that influence health outcomes". They are the situations that shape society. They include occurrences through which the population in communities grows, gives birth, learns, lives, worships and the daily struggles of circumstances that shape the everyday existence of communities. These challenges form an integral part of economic policies, developmental projects, civic rights and politics [11].

Social determinant of health is significantly linked with health inequalities. This relationship and disparity in access to health due to several factors have been observed and studied in Nigeria. The nature of this relationship seems to be relatively similar across nations. For example, income level, access to quality health care services and quality of life tend to follow a social gradient. As a result, the poor socioeconomic condition results in lower quality of health among citizens. To put things in perspective, the rest of this paper will describe some of the social determinants of health (income, access to affordable health care, unemployment and job safety, education, and environment) which can negatively or positively impact health equity.

Firstly, the level of income for an individual or household determines the capacity of that individual or household to afford the necessities needed for a comfortable life. Income plays a significant role as a determinant of health. Also, there is a strong connection between income and educational success, power, access to quality healthcare, and the quality of food and nutrition [12]. Guven and Sorensen [13] also stated that low income-level women possess a poor sense of consciousness regarding their health. Hence, income is a driving force for quality health and prosperity among women. The harmful impact of low-income levels on health was also studied by Kawachi *et al*. [14]. They hypothesise that the income level is inversely proportional to the risk of maternal mortality. This implies that, as a woman's income increases, it decreases her chances of being a victim of maternal mortality. Kawachi *et al*. [14] also noted the detrimental effect of income inequality among Nigerian women and their health and the rest of the population.

From the cultural perspective, some tribes in Nigeria see men as a superior entity for economic empowerment and inheritance [15, 16]. For example, the Igbo tribe neglects females from benefiting from any possessions (lands, assets, properties, money) belonging to the family [17, 18]. Society somewhat erroneously relegates women to the kitchen and considers them to assist with obligations on the farm. This kind of notion removes the power and influence from most women, especially those in rural communities, making them utterly dependent on their husbands or male counterparts [19]. As of 2010, the data from the World Bank estimated that about 62% of Nigerians survive on less than US$1.25 per day. Therefore, most Nigerians are living below the global poverty line. Hence, this poses an apparent critical social health dilemma. Consequently, the low income of most Nigerians, especially women, results in inequality in accessing quality health services across the country.

Secondly, access to affordable health care is another social determinant that explains health inequalities in maternal mortality. Health is considered a primary right for every human. The United Nations acknowledges the right for everyone to be in the most excellent possible ideal physical and mental health [20]. Inequalities in accessing healthcare services are profound in Nigeria; there seems to be a gap from the point of provision to access by those in need. Arcaya *et al* [21] described the existence of health inequalities, especially in a situation where it is needless, as injustice. According to Oidwai *et al*. [22], equity in healthcare is achieved when health aids and healthcare services, when provided, reach the intended population and meet the demand. Data available reveals that Nigeria reports over 34 per cent of widespread maternal causalities. According to Nicholas [23], 1 in 22 Nigerian women risk experiencing death

during pregnancy, labour, after pregnancy or an abortion. These stats are worrisome, especially compared to the figures from developed countries, i.e., about 1 in 4900 women [23]. Although Nigeria has made progress in tackling the maternal mortality rate in the country, there is still much work. For instance, the MMR in Nigeria dropped from 840 per 100,00 live births in 2007 [24] to 560 deaths per 100,000 in 2013. This high number is a combination of factors such as a lack of access to quality healthcare delivery [25].

Nigeria has achieved a small feat in protecting the lives of expectant women and infants from preventable deaths during delivery. However, maternal and infant mortality rates are more crucial in the Northern states than in other parts of the country. The alarming rate is illustrated by the northeastern region's increased maternal death rate, three times greater than the national standard. The inability to attain high-quality health care in most Nigerian health facilities subscribes significantly to this increased maternal mortality rate [23]. Most Nigerian women, especially those in rural communities, only have access to primary healthcare centres for maternal care. Due to this high demand and shortage of healthcare personnel, the required attention and maternal services required by these visiting women are not provided. Thus, the depleted healthcare workforce remains a challenge in quality health service delivery. Also, health workers are reluctant to play their professional roles or stay on the contract due to a lack of motivation and the overwhelming nature of the job. Instead, healthcare professionals choose to move to high-paying urban hospitals or the private sector because of the comfortable working conditions provided by the employer.

Consequently, creating a colossal workforce gap, especially in the grass root of healthcare delivery, i.e., primary healthcare centres. These gaps could also be created due to the recurring threat of insecurity, especially in the Northeastern part of Nigeria. By this, several women are prone to sickness and complications, which most likely may result in death due to the inability to access decent quality healthcare services. The health service, which already is in a state of unconsciousness, obstructs access to comprehensive procreative health care that is put in a position to improve the chances of women's survival during pregnancy, facilitating them to have healthy children and a harmonious family [26].

Furthermore, unemployment and insecurity are also considered social determinants of health. The unemployment rate relates to the probability of the workforce who are accessible for work but do not operate for at least 39 hours in a week preceding the survey period [27]. Unemployment is considered to trigger anxiety that can influence the growth of the foetus in a mother [28]. This anxiety could be due to the limited financial power, pressure associated with finding a new job, and subsequent changes in an individual's self-perception and daily routine that accompanies job loss [28]. Research has revealed that financial problems are most likely to trigger harmful health behaviours like smoking and drinking [29]. Aside from the potential effect of these adverse health behaviours, the consequence of unemployment on health could mean that one is unable to afford quality healthcare. For instance, if a spouse depends on the income of the unemployed spouse to provide healthy foods and quality prenatal care, the expense of that income could stimulate a limited healthy diet or underuse of healthcare during the crucial duration of pregnancy, increasing the likelihood of an unwanted outcome.

On the other hand, insecurity is a severe problem that affects the economy, growth, development and every other aspect of a nation. There is a tendency that people will commit a crime when they are impoverished, hungry and unemployed. As a result, the security risks of a country are heightened. This is the current situation in Nigeria. Nigeria is a country dominated by young people. With the high unemployment rate, several unemployed youths are involved in numerous nefarious activities that threaten the nation's safety. For instance, Northern Nigeria has become a centre of joblessness, illiteracy, child marriage, maternal mortality, and violence. Various health outcomes inflicted by insecurity and revolts on the typical health of the population and adequate tensioning of the nation's health policy [30]. The insurgency has stirred problems arising in newborn & maternal mortality. Considering Borno state, 48 health employees have been murdered with 250 wounded; the state has lost over 40% of its structures, only a third being valid. Abraham [31] stated, "Within the state, a comparative percentage of health facilities stay unavailable, and 80% of the state is deemed to be in "increased danger".

In addition, education is understood to impact a woman's perspective, willingness to adopt new obstetric care, and ability to contribute to the managerial process on cases about her health [32]. Education, thus, drives personal potency at establishing the objectives to achieve practical socioeconomic importance, enjoy healthful nutrition, access to adequate sanitation capacities, and obtain a decent education. This views the health of populations as affirming the proportion of health awareness that is accessible or lacking among the people. This is the justification that one of the variables analysed as influencing health significance and maternal mortality in this essay is educational attainment/literacy. Also, education is one of the determinants stipulated by the social cognitive concept. The understanding that a specific behaviour transmits a health threat encourages the getaway of addictions that are harmful to health [33]. Saldiva *et al*. [34] examined that a mother's unhealthy eating addiction strongly correlates with the child's

formation of toxic eating habits. Those toxic foods were increased among women of poor educational statuses. Also, in Northern Nigeria, Puddah (female solitude) is very popular, where women are separated and are enabled to deliver babies at home. Several in these situations assume that enabling a stranger to assist with labour could be defiant. Even if maternal health organisations exist in this area, it might not increase health outcomes because of people's conceptions and culture [35]. Women with higher educational degrees are more inclined to pursue preventive medication, substantially decreasing maternal mortality. This implies that proficiency in the health determinants is a prerequisite for behaviour difference. As a result, education is a social determinant of health that can enable people to improve their health status. Like Oliba [36] stated, "the greater the populations educational level, the incredible effect on an individual's health".

Lastly, the environment is a significant determinant of health. Amid the early research to clarify the dominant influence of community facets on health, the effort of Yen and Kaplan [37] illustrated that aspects of the community environment contributed to extensive mortality. In resource-poor locations, environmental hazards stem from sources involving polluted water, inadequate sanitation, swarmed living conditions, hazardous working conditions, and fume from biomass cooking. In developed and evolving nations, health dangers are formed by air pollution from industry and power factories and chemical pollution in water. These dangers lead to poor health and maternal mortality. For instance, air pollution in this environment inflicts deep-rooted harm to people's nerves, brain, kidneys, liver, and other organs. Some researchers speculate that air pollutants cause birth deficiencies. Almost 2.5 million persons die globally each year from outdoor or indoor air pollution [38].

Environmental contaminants are associated with potential health challenges like respiratory diseases, heart disease, and some sorts of cancer [39]. People with poor earnings are more inclined to reside in dirty neighbourhoods and have unsafe drinking water. Children and expectant mothers are at greater risk of pollution-related health issues [40]. The quality of a home and its neighbourhood are essential as well. Overcrowded homes with poorly constructed ventilation channels adversely affect the health of expectant mothers. Also, the inefficient combustion system of cooking stoves in such homes constitutes a threat to women who do most of the food preparation in Nigerian homes.

Unflued gas heaters from burning degraded solid fuels generate hazardous fumes. Air pollutants produced by this contain carbon monoxide (CO) and nitrogen dioxide (NO_2) and are toxic to health [41]. One study found that less than 20% of residences in poor neighbourhoods of Northern Nigeria are comfortable. Wood fumes and numerous chemical products such as carcinogens, carbon monoxide, and hydrocarbons are harmful to human health. According to Mosley and Chen [42], people who live in homes with these facilities are likely to die. In Northern Nigeria, indoor air pollution obtains various forms, varying from fumes released from solid fuel eruption during cooking to complex mixtures of chemicals existing in modern houses. Health dangers from indoor air pollution are primarily prevalent in Nigeria. In many families, continuous daily exposure to air pollution may explain the increasing prevalence of asthma, cancer, and cataract, which directly or indirectly may result in maternal mortality [43].

3. Conclusion

Nigerian women are further liable to retain decent behaviour to reproductive health and make more conscious judgments if they are educated and empowered materially, psychosocially, and politically [44]. Any endeavour to fight maternal mortality and its inequalities must obtain a social determinants technique for empowerment. This relates to technical and social interventions and highlights the need for both proofs of sustainability. People's insecurity is a tremendous global health problem and dangerous when involving vulnerable populations such as expectant women and children. With millions supplanted by a dispute in some fractions of northern Nigeria, substantial healthcare challenges, particularly maternal and child health, have been strengthened. The rise of revolts and violence is terrorising social security, but health security is also involved. When people are hired, involved, and can amass income, it becomes difficult for them to be recruited to perpetrate social vices. Creating employment can be accomplished through a private-public friendship, giving rise to macro-and microeconomic strategies that will enable both local and global enterprises to flourish and spur the development of new organisations of small and medium businesses, mainly among the youths. Modern research indicates that the physical health of the unemployed stays incredibly strong after job loss [28]. Nonetheless, the economic and non-financial nuisance attributed to unemployment is big enough to implicate the health of unborn children of jobless parents. By enabling sufficiently maternal nutrition, passage to healthcare, and curtailing stress, money transfers have been demonstrated to ease such effects and increase birth outcomes [45].

Recommendation

Addressing the challenges posed by education, employment, access to good health care, a good environment, and income are the pathways to decreasing health inequalities. Education boosts employability and the proficiency to endure

several problems. Employment procures income and hence, access to health-promoting reserves. All endeavours to combat inequalities must include both the intrusions that help people to improve by bolstering individuals and populations and, more importantly, those that build an atmosphere in which health-seeking behaviour is encouraged.

Compliance with ethical standards

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The authors declare no conflict of interest.

Authors' contributions

James Emmanuel Nathaniel conceptualized the topic/idea; wrote and approved the manuscript; Miteu Goshen David wrote; revised and approved the manuscript.

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