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Understanding the Interplay between Structural Inequality and Health Outcomes during COVID 19 in Gusau Metropolis: Evidence from Medical Sociology

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ABSTRACT

The COVID-19 pandemic has underscored the profound influence of social structures on health outcomes, particularly in low-resource settings. This qualitative study investigates how structural inequalities shaped vulnerability, access to healthcare, and health outcomes during the COVID-19 pandemic in Gusau Metropolis, Zamfara State, Nigeria. Drawing on medical sociology and the social determinants of health framework, the study employs in-depth interviews, focus group discussions, and participant observation involving healthcare workers, community leaders, and residents across diverse socioeconomic backgrounds. Findings reveal that poverty, informal employment, overcrowded housing, weak healthcare infrastructure, gendered care giving roles, and historical mistrust of state institutions significantly influenced exposure to COVID-19 and access to treatment. The study argues that COVID-19 functioned not only as a biomedical crisis but also as a structural and social crisis that mirrored and deepened existing inequalities. The article concludes by advocating for equity-centered health policies, strengthened primary healthcare systems, and structurally informed pandemic preparedness strategies.

1. Introduction

The COVID-19 pandemic constitutes a defining moment in global public health, revealing the extent to which health and illness are socially patterned. Although the SARS-CoV-2 virus does not discriminate biologically, its impacts have been profoundly unequal across and within societies (Berthelot & Bornstein, 2023; Mishra et al, 2021). From infection risk to treatment access and recovery outcomes, social position has played a decisive role in shaping pandemic experiences. In Nigeria, the pandemic unfolded within a context characterized by long standing structural inequalities, regional disparities, and fragile healthcare systems (Novisky, 2021). Northern Nigerian urban centers such as Gusau Metropolis face intersecting challenges including high poverty rates, reliance on informal economies, limited health infrastructure, and low health literacy. These conditions created fertile ground for unequal pandemic outcomes. Medical sociology offers critical tools for understanding these dynamics by situating health within broader social, economic, and political structures (Kerschbaumer et al., 2023). Rather than attributing poor health outcomes solely to individual behavior or cultural beliefs, medical sociology emphasizes how institutions, policies, and power relations shape vulnerability and resilience (Sajjadi et al., 2025). This study examines the interplay between structural inequality and health outcomes during COVID-19 in Gusau Metropolis. It seeks to move beyond descriptive epidemiology to provide a sociologically grounded explanation of how structural conditions shaped lived experiences of the pandemic.

2. Literature Review

Conceptualizing Structural Inequality in Medical Sociology

Medical sociology provides a critical framework for understanding health and illness as outcomes of social organization rather than purely biological phenomena (Yang & Qi, 2022). Structural inequality refers to the patterned and institutionalized arrangements of power, resources, and opportunities that systematically advantage certain social groups while disadvantaging others. Seminal scholars such as Link and Phelan conceptualize these inequalities as fundamental causes of disease, arguing that social conditions like poverty, education, and occupational status persistently shape health outcomes even as specific disease mechanisms change (Toure, Langlois & Shah, 2021). During the COVID-19 pandemic, this perspective became particularly salient, as disparities in infection rates, hospitalization, and mortality closely followed existing lines of social stratification (Yang & Qi, 2022). Medical sociologists emphasize that such inequalities are embedded within political, economic, and cultural institutions, making them resistant to short-term interventions and necessitating structural explanations for pandemic health outcomes (Berthelot & Bornstein, 2023; Mishra et al, 2021; Sajjadi et al., 2025).

Social Determinants of Health and Pandemic Vulnerability

The social determinants of health framework have been widely employed to explain differential vulnerability to COVID-19 across populations (Berthelot & Bornstein, 2023; Mishra et al, 2021; Sajjadi et al., 2025; Yang & Qi, 2022). This body of literature

highlights how conditions in which people are born, grow, work, and age shape exposure to disease and capacity for prevention (Guerrina & Borisch, 2021). In the context of COVID-19, determinants such as overcrowded housing, lack of access to clean water, food insecurity, and precarious employment significantly increased susceptibility to infection. Medical sociology extends this framework by situating these determinants within broader systems of inequality, emphasizing that such conditions are produced through historical processes of marginalization and policy neglect (Guerrina & Borisch, 2021). The pandemic thus did not create new vulnerabilities but rather intensified existing ones, revealing how structural arrangements constrained individuals' ability to comply with public health measures such as social distancing and hygiene practices (Guerrina & Borisch, 2021; Krieger 2021; Shaw, Brewer & Veinot, 2021).

Class, Poverty, and Unequal Exposure to COVID-19 Risks

Socioeconomic class emerged as one of the most powerful predictors of COVID-19 exposure and outcomes (Guerrina & Borisch, 2021; Krieger 2021; Shaw, Brewer & Veinot, 2021). Empirical studies consistently demonstrate that individuals in lower socioeconomic positions were more likely to work in essential sectors such as transportation, healthcare support, sanitation, and informal trade, where remote work was not feasible (Mheidly & Fares, 2020). Medical sociologists interpret this pattern through the political economy of health, which links labor market stratification to health risks. Poverty further exacerbated vulnerability by limiting access to quality healthcare, nutritious food, and safe living conditions (Maness, Merrell, & Dean, 2021). Additionally, economically disadvantaged populations experienced greater difficulty absorbing income shocks caused by lockdowns, leading to trade-offs between health protection and economic survival. These dynamics underscore how class-based inequalities translated directly into unequal pandemic experiences (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021).

Racial, Ethnic Inequalities and gender in COVID-19 Health Outcomes

The COVID-19 pandemic vividly exposed racial and ethnic disparities in health outcomes across multiple national contexts. A growing sociological literature attributes these disparities to structural racism rather than individual behavior or genetic differences (Zelner et al., 2021). Structural racism operates through mechanisms such as residential segregation, differential exposure to environmental hazards, unequal educational opportunities, and discriminatory healthcare practices (Seto, Khademi, Graif, & Honavar, 2020). Medical sociologists argue that cumulative disadvantage across the life course results in higher prevalence of chronic conditions among racialized groups, increasing susceptibility to severe COVID-19 outcomes (Seto, Khademi, Graif, & Honavar, 2020). Furthermore, experiences of racism within healthcare systems have been shown to reduce timely healthcare utilization, contributing to delayed treatment and higher mortality (WHO, 2021). The pandemic thus reinforced longstanding sociological claims that race functions as a central axis of structural inequality in health. Gendered social structures significantly shaped health risks and outcomes during the COVID-19 crisis (Krendl, & Perry, 2021). Literature (Seto, Khademi, Graif, & Honavar, 2020) indicates that women disproportionately occupied frontline healthcare and caregiving roles, increasing their exposure to infection while simultaneously bearing the burden of unpaid domestic labor (Seto, Khademi, Graif, & Honavar, 2020). Medical sociology highlights how gender norms and institutional arrangements assign care giving responsibilities primarily to women, often without corresponding social or economic support (Shadmi, Chen, & Dourado, 2020). Lockdown measures intensified these inequalities, as school closures and care facility shutdowns expanded unpaid care work within households. Additionally, women experienced heightened mental health stress and increased vulnerability to domestic violence during the pandemic (Shadmi, Chen, & Dourado, 2020). These findings illustrate how gender operates as a structural determinant of health, intersecting with class and race to produce layered forms of disadvantage (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021).

Healthcare, Access, trust, vaccine and Institutional Inequality

Healthcare systems played a central role in mediating the relationship between structural inequality and COVID-19 outcomes. Research (WHO, 2021) reveals that marginalized populations were more likely to rely on under-resourced public health facilities, which faced severe shortages of personnel, equipment, and intensive care capacity during the pandemic (Nwosu & Oyenubi, 2021). Medical sociologists argue that healthcare systems are not neutral institutions but reflect broader social hierarchies and policy priorities. Privatization, user fees, and uneven geographic distribution of services contributed to unequal access to testing, treatment, and critical care (Nwosu & Oyenubi, 2021). The pandemic thus exposed how institutional inequalities within healthcare systems reinforced existing social disparities, shaping who received timely and effective medical intervention (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021; WHO, 2021).

Trust in medical institutions emerged as a critical factor influencing health behavior during the COVID-19 pandemic, particularly in relation to vaccination. Sociological studies suggest that vaccine hesitancy among marginalized populations is rooted in historical experiences of medical exploitation, neglect, and discrimination. Medical sociology frames mistrust as a rational response to unequal power relations between healthcare providers and socially excluded communities (Giddens, 1984). Moreover, vaccine distribution strategies often prioritized economically and politically powerful groups, reproducing structural inequalities at both national and global levels (Giddens, 1984). Limited access to accurate health information, digital divides, and language barriers further constrained vaccine uptake among disadvantaged populations, highlighting the social dimensions of biomedical interventions (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021; WHO, 2021).

Psychosocial Stress, Global Inequalities and the Political Economy

The mental health consequences of the COVID-19 pandemic were deeply stratified along lines of structural inequality. Research documents higher rates of anxiety, depression, and psychological distress among low-income individuals, informal workers, and

socially marginalized groups (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021; WHO, 2021). Medical sociology draws on the stress process model to explain how chronic exposure to socioeconomic hardship, job insecurity, and social isolation increases vulnerability to mental illness (Guerrina & Borisch, 2021). The pandemic intensified these stressors by disrupting social support networks and increasing uncertainty about health and livelihood. Structural inequality thus functioned as both a direct and indirect determinant of mental health outcomes during COVID-19 (Krieger 2021). At the global level, the COVID-19 pandemic exposed stark inequalities between high-income and low-income countries. Medical sociologists situate these disparities within the global political economy of health, emphasizing how historical colonial relationships, debt structures, and pharmaceutical monopolies shape access to medical resources (Guerrina & Borisch, 2021). Vaccine nationalism and intellectual property regimes limited the availability of life-saving technologies in many low- and middle-income countries (Guerrina & Borisch, 2021). These global inequalities translated into prolonged pandemic waves and higher mortality in resource-poor settings, reinforcing the argument that health outcomes are shaped by transnational structures of power rather than national policy choices alone (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021; WHO, 2021).

Implications for Medical Sociology and Health Equity

Collectively, the literature demonstrates that COVID-19 functioned as a magnifying lens for structural inequality in health. Medical sociology offers indispensable theoretical and methodological tools for linking individual health outcomes to broader social, economic, and political structures. Scholars increasingly argue that meaningful health equity cannot be achieved through biomedical solutions alone but requires structural reforms addressing poverty, labor conditions, healthcare access, and systemic discrimination. The pandemic thus underscores the urgency of integrating sociological insights into public health policy and planning, positioning medical sociology as central to post-pandemic health equity debates (Guerrina & Borisch, 2021; Krieger 2021; Maness, Merrell, & Dean, 2021; Shaw, Brewer & Veinot, 2021; WHO, 2021).

Theoretical Framework: The political economy of health

The political economy of health perspective emerged from critical traditions in social science that sought to explain health and disease beyond individual behaviors and biomedical factors (Farmer, 2005; Link & Phelan, 1995). Its intellectual roots can be traced to classical political economy, particularly the works of Karl Marx and Friedrich Engels, who emphasized how economic systems, class relations, and modes of production shape living and working conditions (Farmer, 2005; Link & Phelan, 1995). Engels' seminal analysis of the health conditions of the working class in industrial England demonstrated that disease patterns were not random but socially produced through exploitative labor relations, poor housing, and environmental deprivation (Farmer, 2005). These early insights laid the foundation for viewing health as a social outcome embedded within broader political and economic structures (Link, 2014). During the mid-twentieth century, the political economy of health gained renewed attention as a response to the limitations of the biomedical model, which largely ignored social inequality and power relations (Link, 2014). Scholars in medical sociology and social medicine began to argue that health disparities could not be adequately understood without examining the distribution of resources, state policies, and capitalist development (Link, 2014). This period marked the formal emergence of the political economy of health as a distinct analytical framework, particularly in the context of post-war welfare states and growing awareness of class-based health inequalities in both industrialized and developing societies (Evans & Stoddart, 1990).

The development of the political economy of health perspective was significantly influenced by global political and economic transformations in the 1970s and 1980s, including neoliberal reforms, structural adjustment programs, and the retrenchment of welfare states (Evans & Stoddart, 1990). Scholars increasingly focused on how market-oriented health reforms, privatization, and reduced public spending exacerbated health inequalities (Link, 2014). In this context, health was conceptualized as a product of political decisions and economic priorities rather than merely individual choice or biological vulnerability (Williams & Mohammed, 2013). Medical sociologists emphasized that unequal access to healthcare, safe housing, employment security, and social protection were direct consequences of political and economic arrangements (Evans & Stoddart, 1990; Williams & Mohammed, 2013). In the Global South, including Africa, the political economy of health framework evolved to address colonial legacies, dependency, and global power relations. Researchers ((Evans & Stoddart, 1990; Williams & Mohammed, 2013) highlighted how historical patterns of underdevelopment, weak health systems, and reliance on international aid shaped population health outcomes (Evans & Stoddart, 1990; Williams & Mohammed, 2013). This development broadened the scope of the political economy of health to include global governance, international financial institutions, and transnational inequalities (Evans & Stoddart, 1990; Williams & Mohammed, 2013). As a result, the framework became particularly relevant for analyzing public health crises, where existing structural weaknesses were magnified by global economic and political forces (Evans & Stoddart, 1990; Williams & Mohammed, 2013). More recently, the political economy of health perspective has incorporated insights from critical public health, social determinants of health, and intersectionality (Farmer, Nizeye, Stulac, & Keshavjee, 2006). This contemporary development emphasizes how class intersects with gender, race, ethnicity, and geography to produce layered forms of vulnerability. Health outcomes are now understood as the cumulative result of long-term structural inequalities operating across multiple levels local, national, and global. This evolution has strengthened the framework's capacity to explain complex health emergencies, such as pandemics, which disproportionately affect marginalized populations (Farmer, Nizeye, Stulac, & Keshavjee, 2006).

In this study, the political economy of health perspective is used as a central analytical lens to examine how structural inequalities shaped health outcomes during the COVID-19 pandemic. Rather than treating COVID-19 as a purely biological or epidemiological event, the framework enables an understanding of the pandemic as a socially mediated crisis (Farmer, Nizeye,

Stulac, & Keshavjee, 2006). It highlights how unequal access to healthcare services, income insecurity, overcrowded housing, and inadequate social protection increased exposure to the virus and worsened health outcomes among disadvantaged groups (Farmer, Nizeye, Stulac, & Keshavjee, 2006). This approach aligns with medical sociology's emphasis on linking individual health experiences to broader social structures. The framework is particularly useful for analyzing how state policies and institutional responses influenced the distribution of COVID-19 risks and resources (Farmer, Nizeye, Stulac, & Keshavjee, 2006).. Lockdown measures, vaccination strategies, and healthcare funding are examined as political decisions that produced uneven consequences across social classes and communities. By applying the political economy of health perspective, this study interrogates whose lives were protected and whose were rendered more vulnerable during the pandemic, thereby revealing the role of power, governance, and resource allocation in shaping health outcomes (Farmer, Nizeye, Stulac, & Keshavjee, 2006)..

Furthermore, the political economy of health perspective allows this study to situate COVID-19-related health inequalities within long-standing structural conditions rather than viewing them as temporary or exceptional (Farmer, Nizeye, Stulac, & Keshavjee, 2006). It demonstrates that the pandemic exposed and intensified pre-existing social and economic inequalities, particularly among low-income populations, informal workers, and marginalized communities. Through this lens, COVID-19 is understood not as an equalizing force but as a crisis that reinforced existing patterns of disadvantage (Farmer, Nizeye, Stulac, & Keshavjee, 2006). Finally, the use of the political economy of health perspective contributes to the study's broader sociological objective of informing policy and social change. By identifying the structural drivers of health inequality during the pandemic, the framework supports recommendations that go beyond individual behavior change to include redistributive policies, strengthened public health systems, and social protection measures. In this way, the political economy of health perspective not only enhances theoretical understanding but also provides a critical foundation for addressing health inequalities in the post-COVID-19 era (Farmer, Nizeye, Stulac, & Keshavjee, 2006).

3. Methodology

The study adopted an exploratory qualitative design to capture rich, contextualized data on pandemic experiences. Gusau Metropolis is the administrative capital of Zamfara State, characterized by rapid urbanization, high poverty levels, predominantly informal employment and limited healthcare infrastructure among several other factors. A total of 35 participants were recruited; 20 community residents, 10 healthcare workers and 5 community and religious leaders. Purposive and snowball sampling was used and ensured representation across gender, age, and socioeconomic status. In-depth interviews focus group discussions and general observation method was employed for data collection processes. Interviews were conducted in English and Hausa. Thematic analysis was used to analyzed data collected using six stages; familiarization, initial coding, theme development, theme review, defining themes and interpretation

4. Findings

Theme one: Poverty, Informality, and Exposure Risk

Participants emphasized that economic necessity override health concerns. Informal workers continued daily activities despite awareness of infection risk. Interview with residents of the community informed that:

> We know corona is real, but hunger is also real. I believe corona took time to kill but I assured you that hunger can kill within shortest possible time compare to corona. We are very much aware of the pandemic but you cannot wait to die for something that is not even around to for something that is waiting for a slightest chance to attack. So despite the believed of the existence of corona, hunger is also very real than corona. Therefore, it cannot stop us from going out to look for food for us to be able to feed our family.

Another respondent reveals that:

> Despite the warning we continue with our daily activities because we operate informally. It is necessities that make us to go out daily to work and bring something to our families. You know very well about the danger of the pandemic but we have no any option than to continue with our daily routine activities. This is what left us with no option.

A female respondent averred that:

> We lost our husband and we have orphan children to take care, so there is no warning of what so ever gravity that can stop us from doing our daily works because it is through it that we can survive. There is constant awareness about the pandemic the need for people to about contact with each other but because we survive on what we earn on daily basis. That is to say we don't have the reserved or something in excess that we use the next day. This is one of the reasons for us to go out every day not because we like to go out despite the warning. It is just because we don't have any alternative.

During the general tour and observation this study found out that:

> There is massive turnout of people going to their respective working places. Their reason behind their movement is poverty and lack of basic services that they require to live. There is no food, the children is hungry, we need to pay for rent. Though the school is close but the

children remains at home. This in another way increases their demand to increase because they are around all the time.

Theme two: Housing Inequality and Overcrowding

Overcrowded housing made isolation impossible, particularly in low-income neighborhoods. A member from this community stated that:

> How can you expect someone with five children plus me and their mother to isolate themselves just to avoid corona? We are just continuing as we used to before, because we don't have any other alternative. There is no way for us to separate because we lack enough space to do so. We have been told about the danger of being overcrowded and the need for spacing but there is nothing we can do about.

Another member from the community informed that:

> Where is the space for isolation? Can't you see the nature of this place? Look at the number of children in this surrounding and compare it with the size of our building and think if what you are talking about is possible. I can't say it is not possible but is something that I can say is very difficult.

An interview with health worker reveals that:

> You know the larger percentage of people is from low income category. So there is a serious concern about their spacing as part of the measures to avoid covid. The issue is that you know those kind of people are among the one moving around without restriction claiming they have to move around in search of food for them to survive. So they are the one in need of this separation because of their contact with other people but they are also the category of people that the issue of isolation is almost impossible for them looking at the crowded nature of the houses with limited number of rooms and larger family size.

A general tour and observation method carryout by this study found out that:

> Most of the areas occupied by low income earners are crowded. The number of rooms in most of the household are not sufficiently enough for them to apply spacing criteria for corona protection. Even before corona those areas are places that are more prone to diseases and easiest center for the spread of communicable and infectious diseases. The type of life they enjoy there are characterized by hazardous and unhealthy environment, block drainage and water way system. The life there is very difficult and dangerous because it is a place that you can catch up with various communicable diseases that are very easy in transmission. Spacing or isolation in this category of households most of them low income earners will be difficult if not impossible.

Theme three: Healthcare Access and Systemic Barriers

Interview with member of the community says that:

> High cost of care is the reason for our lack of access to healthcare. People like us are struggling to have what we eat on daily basis we can't afford having the high cost of health. It is not affordable to us struggling to survive every day. Unless if the government can come in to subsidized the cost, if not people like us can't afford it.

Another respondent informed that:

> Our income is not enough for us access healthcare. Sometime we manage our illnesses using local or traditional means. Unless if it is serious than we seek for assistant from those that are financially capable and ready to assist. It is only through this channel of assistance from wealthy individuals or organizations that we access healthcare services.

Another respondent stated that:

> Fear of stigma is barrier for our access to healthcare. Someone is not feeling okay for him to be diagnosing with corona. So the fear of being stigmatized is the reason for our lack of access to healthcare. You know many people will run away from you including those that are close to you.

Interview with health personnel reveals that:

> Inadequate facilities are one of the barriers for access to healthcare. The facilities available are not enough to cater for teeming need of the population. You know corona required long hospitalization. So people stay long for treatment and observation with limited facilities and there are so many other waiting without having the space.

Other health personnel informed that:

> Limited testing capacity is one of the reasons behind lack of access to healthcare. Because of high demand we don't have the testing capacity to accommodate the large request. You know there is a lot of pressure, we are receiving this issue and cases almost frequently. This frequent request and demand superseded our capacity of testing.

5. Discussion

The findings confirm that COVID-19 in Gusau was fundamentally shaped by structural inequality. Individual behaviors often labeled as non-compliance were in fact rational responses to structural constraints. The pandemic exposed contradictions between public health expectations and socioeconomic realities. Medical sociology helps illuminate these contradictions by shifting focus from individual blame to structural causation. The findings has implications for Policy and Practice which include equity driven health policy, strengthened primary healthcare, social protection mechanisms, community centered health communication and pandemic preparedness with a social lens.

6. Conclusion and Recommendations

COVID-19 revealed that health outcomes are inseparable from social structures. In Gusau Metropolis, structural inequality shaped exposure, access, and survival. Addressing future health crises requires integrating medical sociology into public health planning and prioritizing social justice as a core health strategy.

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