SOCIOLOGICAL DETERMINANTS OF MEDICAL MISTRUST AND VACCINE HESITANCY IN KWARA STATE, NIGERIA

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Abstract
Vaccine hesitancy remains a critical public health challenge in Nigeria, underpinned by entrenched medical mistrust that extends beyond individual decision-making to encompass systemic and sociological factors. This study examines the sociological determinants of medical mistrust and vaccine hesitancy among residents of Kwara State, structured around four objectives: to explore perceptions of medical institutions, determine the prevalence of hesitancy, assess the influence of social media on healthcare trust and analyse patterns of mistrust across demographic groups. The study is theoretically anchored in Structural Functionalism, which conceptualises healthcare institutions as vital to social stability yet susceptible to dysfunction when failing in competence, fairness and responsiveness. A mixed-methods approach was adopted, comprising a cross-sectional survey of 620 adults drawn from urban, peri-urban and semi-rural communities, complemented by semi-structured interviews with 30 participants. The findings reveal pervasive institutional mistrust: fewer than 35% of respondents perceived government health facilities as competent (31.9%), transparent (23.2%) or responsive (22.6%), while disagreement exceeding 40–49% was reported across indicators of institutional performance, accessibility, affordability and respectful treatment. Vaccine hesitancy affected 47.6% of participants, with the highest prevalence among women (49.9%), young adults aged 18–29 (57.3%), individuals with secondary education or below (55.9%), minority ethnic groups (53.7%) and those of low socio-economic status (57.9%). Logistic regression analysis confirmed elevated odds of mistrust among women (OR 1.36), young adults aged 18–29 (OR 1.83), lower-educated respondents (OR 1.75), minority ethnic groups (OR 1.51) and low-SES individuals (OR 1.84). Engagement with social media emerged as a significant factor, with participants who trusted online vaccine information reporting 53.1% hesitancy, particularly on platforms such as Twitter and those participating in vaccine-related discussions exhibiting higher hesitancy levels. Qualitative insights highlighted structural neglect, disrespectful treatment, social marginalisation and the pervasiveness of digital misinformation as reinforcing both institutional mistrust and vaccine reluctance. The study concludes that vaccine hesitancy represents a behavioural expression of broader societal dysfunctions, institutional inadequacies and social inequalities rather than a simple deficit in knowledge. It recommends enhancing transparency and accountability within healthcare institutions, developing targeted interventions for marginalised populations, countering misinformation on social media and strengthening community health literacy to rebuild trust and improve vaccine uptake.
Keywords: medical mistrust, public health, social media, vaccine hesitancy, Kwara State

Introduction

Vaccine hesitancy continues to pose a significant challenge to public health systems globally, extending well beyond the initial emergency phase of the Coronavirus Disease 2019 (COVID-19) pandemic. Defined as the delay in acceptance or refusal of vaccines despite availability, vaccine hesitancy has critical implications for population health, affecting both the control of vaccine-preventable diseases and the resilience of health systems (Ogunbosi et al., 2022). Accordingly, hesitancy undermines trust in medical institutions and poses a sustained threat to immunisation coverage and epidemic preparedness. This phenomenon reflects broader societal dynamics of trust in science, medicine and governance rather than isolated individual behaviours. In sub-Saharan Africa and Nigeria in particular, vaccine hesitancy has been observed across diverse population groups and healthcare contexts. Eguavoen et al. (2023), reported high levels of reluctance to accept COVID-19 vaccination, often attributed to concerns over vaccine safety, efficacy and the perceived severity of disease, as well as to distrust of government and public health authorities. Importantly, this mistrust transcends demographic boundaries, demonstrating that vaccine hesitancy in Nigeria is not simply a function of knowledge deficits but is embedded in broader socio-political and cultural contexts. Ifeanyi et al. (2025), observed that structural and informational factors intensify vaccine hesitancy, noting that over 70% of healthcare workers themselves express reluctance, primarily due to concerns about insufficient clinical testing and potential adverse effects. The proliferation of misinformation on social media and digital platforms further compounds these concerns, distorting public perceptions of vaccines and undermining confidence in institutional authority. These dynamics indicate that hesitancy is deeply intertwined with historical experiences of health interventions, systemic weaknesses in healthcare delivery and contemporary information ecologies that amplify uncertainty and fear.

Problem Statement

Vaccine hesitancy remains a persistent public health challenge in Nigeria, including Kwara State and cannot be adequately explained by individual knowledge deficits or fear of side effects alone. Eguavoen et al. (2023), emphasise that neglecting the broader structural, institutional and sociocultural determinants shape public trust and engagement with immunisation programmes. This limited framing obscures the impact of systemic barriers, coverage gaps and community-level influences that continue to compromise immunisation outcomes. National coverage data highlight the magnitude of the problem. The 2024 Integrated Post Campaign Coverage Survey reported that measles vaccination coverage across Nigeria reached only 84.2 per cent, falling short of the 95 per cent threshold required for effective herd immunity. Coverage was lower among rural populations and younger age groups, illustrating persistent inequities in service delivery (National Statistical Microdata, 2025). Such systemic shortfalls suggest that gaps in access, communication and health service performance contribute significantly to hesitancy and low uptake in states like Kwara. The consequences of these gaps are evident in disease outbreaks. In 2025, the Nigeria Centre for Disease Control and Prevention reported 19,213 confirmed measles cases nationwide, with more than 77 per cent of infections occurring in children who had received no measles vaccine dose, highlighting the vulnerability of zero-dose populations (Yusuf, 2025). Although Kwara State was not the highest burden area, reported cases indicate that gaps in coverage extend to the region, leaving children at risk of vaccine-preventable diseases. Coverage inequities are compounded by social and cultural factors.

Gayawan et al. (2025), demonstrate in their study that women's autonomy and decision-making power within households strongly influence vaccination uptake, particularly in communities with patriarchal norms that limit women's authority over children's health. In Kwara State, such sociocultural dynamics likely interact with structural barriers, shaping patterns of vaccine acceptance and contributing to mistrust in health institutions. In addition, systemic mistrust is reinforced by misinformation and gaps in communication. Eguavoen et al. (2023) indicate that public perceptions of vaccine safety, efficacy and institutional integrity significantly affect

willingness to vaccinate. Accordingly, national estimates further show that approximately 2.1 million Nigerian children under the age of one remain unvaccinated, reflecting the scale of the zero-dose challenge and highlighting deficiencies in routine immunisation delivery. The findings indicate that vaccine hesitancy in Kwara State is deeply embedded in structural, institutional and sociocultural realities rather than solely in individual knowledge deficits. Persistent gaps in coverage, ongoing disease outbreaks, sociocultural constraints and systemic mistrust undermine public confidence in vaccination programmes. Current interventions often fail to address these multidimensional determinants, limiting the effectiveness of campaigns and highlighting the need for research that integrates community perceptions, institutional trust, sociocultural norms and structural barriers to inform targeted, sustainable public health strategies. The problem therefore lies in the limited understanding of the structural, institutional and sociocultural drivers of vaccine hesitancy in Kwara State, which constrains the design of effective, contextually grounded interventions capable of improving vaccine uptake and strengthening routine immunisation outcomes.

Research Objectives

This study aims to examine medical mistrust and vaccine hesitancy among residents of Kwara, Nigeria, through a sociologically grounded approach. The specific objectives are:

i. To explore residents’ perceptions of medical institutions in Kwara.
ii. To examine the prevalence of vaccine hesitancy in Kwara.
iii. To investigate the influence of social media on trust in healthcare among residents of Kwara.
iv. To assess patterns of medical mistrust across different demographic groups in Kwara.

Conceptual Review

Medical mistrust is defined in the scholarly literature as a lack of confidence in the intentions, competence and reliability of health institutions, providers and interventions (Armstrong et al., 2021). Accordingly, it extends beyond individual-level scepticism to encompass structural and historical dimensions, reflecting the interplay of social inequities, prior negative experiences and perceived discrimination within healthcare systems. Gamble (1997), emphasises that medical mistrust is relational and context-dependent, shaped by historical injustices such as unethical clinical trials, systemic inequities and governance failures that disproportionately affect marginalised populations. Consequently, medical mistrust is a multidimensional construct, incorporating cognitive, affective and behavioural components that influence how individuals engage with healthcare services. Closely related to this, vaccine hesitancy is broadly conceptualised as the delay in acceptance or outright refusal of vaccines despite their availability (Ogunbosi et al., 2022). The World Health Organisation Strategic Advisory Group of Experts (WHO SAGE, 2014) defines vaccine hesitancy as influenced by three dimensions: confidence, encompassing trust in vaccine safety, effectiveness and health authorities; complacency, relating to perceived risks of vaccine-preventable diseases; and convenience, referring to the accessibility, affordability and appeal of services. Vaccine hesitancy is not static but exists along a spectrum, varying across time, social groups and contextual circumstances (Dube et al., 2013). This framing positions vaccine hesitancy as the behavioural outcome of intersecting individual, sociocultural, historical and structural factors.

Emerging scholarship highlights the mutually reinforcing relationship between medical mistrust and vaccine hesitancy. Jamison et al. (2020), posit that individuals with elevated mistrust in health institutions are less likely to accept vaccines, while exposure to misinformation and historical inequities can amplify both mistrust and hesitancy. Conceptually, medical mistrust serves as a lens for understanding the social and institutional antecedents of vaccine hesitancy, whereas vaccine hesitancy operationalises the behavioural consequences of these attitudes. This dual perspective allows researchers to examine both structural and behavioural dimensions of public health challenges, particularly in contexts characterised by historical inequities and weak institutional trust, such as urban populations in Nigeria. Context-specific interpretations of these concepts are critical. In low- and middle-

income countries, Sadiq et al. (2023), reported that medical mistrust is often intertwined with cultural norms, religious beliefs and local governance structures, all of which influence how vaccine-related information is interpreted and acted upon. Similarly, Ifeanyi et al. (2025), contend that vaccine hesitancy cannot be fully understood without accounting for socio-demographic differentials, including gender, ethnicity, religion and socioeconomic status, which shape both trust in health systems and engagement with vaccination programmes. Integrating these definitions, the present study adopts a conceptual lens that positions vaccine hesitancy as a behavioural manifestation of underlying medical mistrust, shaped by historical, structural and sociocultural factors.

Literature Review

Sociological perspectives emphasise that public trust in health systems is shaped by structural, historical and cultural factors, rather than solely by individual cognition. The Vaccine Hesitancy Determinants Matrix, articulated by the Strategic Advisory Group of Experts, stresses that contextual influences, including historical experiences, socio-cultural norms and institutional trust, are central to understanding why populations delay or refuse vaccination (Wonodi et al., 2022). Historical episodes of unethical medical interventions and patterns of inequitable access to healthcare services contribute to collective scepticism toward institutional authority. The structural and historical processes shape community narratives about risk and risk management, influencing how health communications are interpreted and acted upon across different social groups (Ifeanyi et al., 2025). In Nigeria, empirical studies demonstrate that vaccine hesitancy is widespread, reflecting a complex interplay of perceptions about safety, trust in governance and local socio-demographic factors. A recent scoping review by Ifeanyi et al. (2025), synthesising multiple studies identified distrust of government institutions, scepticism regarding vaccine effectiveness and safety and the circulation of conspiracy theories as primary barriers to COVID-19 vaccine uptake. The findings are corroborated by national survey data reported by Sato (2022), which show that trust in government significantly predicts vaccine acceptance, with lower institutional trust associated with higher hesitancy. The Nigerian context thus exemplifies broader trends observed in low- and middle-income countries, where institutional credibility and public confidence strongly influence vaccination behaviours.

Social media and digital misinformation further mediate vaccine hesitancy by shaping public trust through rapid dissemination of conflicting narratives. Analyses of Nigerian YouTube content on COVID-19 vaccines revealed that mistrust in government and recurring conspiracy themes were dominant drivers of hesitancy (Sadiq et al., 2023). Broader narrative reviews by Rodrigues et al. (2023), highlight that reliance on social media for vaccine information amplifies misinformation and negative perceptions of vaccines, thereby undermining confidence in immunisation programmes. Such digital information environments complicate public health responses, particularly in contexts where pre-existing trust deficits in medical institutions exist. Demographic differentials further influence patterns of medical mistrust and vaccine hesitancy. Ifeanyi et al. (2025), reveal indicates that gender, education, ethnicity, religious affiliation and socioeconomic status are associated with variations in vaccine attitudes and acceptance. Accordingly, hesitancy rates differ across geopolitical zones and demographic groups, with some ethnic and religious communities exhibiting higher reluctance to vaccinate. Socioeconomic status and educational attainment similarly shape disparities in vaccine uptake and trust in healthcare institutions (Sadiq et al., 2023). The patterns highlight the intersection of social position, identity and structural conditions in shaping health beliefs and behaviours.

Despite extensive research on vaccine hesitancy, significant gaps remain in understanding how structural, historical and digital determinants of mistrust interact with demographic factors in specific urban contexts such as Kwara. Existing studies tend to focus on national trends or individual-level predictors, with limited integration of these dimensions into a cohesive sociological framework. Moreover, empirical investigations rarely explore the mechanisms through which social media environments reinforce or mitigate mistrust across diverse

population segments. Bridging these gaps is pivotal for designing public health interventions that are contextually informed, responsive to the lived experiences of urban populations in Kwara, foster institutional trust and enhance vaccination coverage.

Theoretical Framework: Structural Functionalism

Structural Functionalism provides a sociological lens to understand how healthcare systems and social institutions influence public attitudes and behaviours. The theory views society as a system in which institutions perform essential roles to maintain stability order and wellbeing (Durkheim, 1895; Merton, 1968). Healthcare institutions are expected to deliver safe, fair and accessible services, promote public trust and protect the health of communities. When these institutions fail to fulfil these roles through limited resources, poor communication or unequal access, confidence in them declines. In Kwara State, such institutional gaps have contributed to widespread scepticism toward vaccines and public health authorities. Vaccine hesitancy can therefore be understood as a response to these structural challenges rather than simply individual fears or lack of knowledge. Medical mistrust is shaped by both historical experiences and present interactions with healthcare systems. Many residents have faced neglect, disrespectful treatment and inconsistent public health messaging. The experiences reinforce the perception that healthcare institutions do not act in the public interest. Structural Functionalism shows that mistrust is socially patterned and emerges from systemic weaknesses rather than from random individual choices. When institutions fail to meet expectations of competence, fairness and transparency, hesitancy toward vaccines becomes a predictable outcome.

Social and demographic factors further influence perceptions of healthcare. Women, younger adults, ethnic minorities and low-income populations often experience healthcare as less responsive, less respectful and less accessible. The differences are not simply personal experiences but reflect broader societal inequalities. Structural Functionalism explains that these patterns of trust and mistrust are connected to the way social structures distribute resources, power and opportunities across communities. This framework makes it clear that addressing vaccine hesitancy in Kwara requires more than individual education. Healthcare institutions need to rebuild trust through transparency, fairness and responsiveness. Public health policies should actively reduce inequalities and engage communities in meaningful ways. Viewing vaccine hesitancy through a Structural Functionalist perspective emphasises that improving public health outcomes depends on strengthening institutions and the social system that supports them.

Methods

This study employed a mixed-methods design to examine medical mistrust and vaccine hesitancy in Kwara State, Nigeria, focusing on sociological roots and public health implications. A mixed-methods approach was adopted to integrate the generalisability of quantitative survey data with the contextual depth of qualitative interviews, allowing for comprehensive analysis of both prevalence patterns and structural determinants of mistrust. Kwara State was purposively selected for its demographic diversity, combination of urban, peri-urban and semi-rural settlements and documented challenges in immunisation campaigns. The study population included adults aged 18 years and above who had resided in Kwara for at least six months and were able to participate cognitively in survey or interview activities.

For the quantitative component, a cross-sectional survey captured socio-demographic characteristics (age, gender, education, ethnicity, religion and socio-economic status), perceptions of medical institutions and public health authorities, vaccine acceptance or refusal and exposure to social media and digital vaccine information. The survey instrument was pre-tested in a small non-sampled community and adjusted for clarity and reliability. A multi-stage stratified random sampling approach was applied across the three senatorial districts: Kwara North, Kwara Central and Kwara South. Four local government areas were purposively selected to represent urban, peri-urban and semi-rural contexts: Ilorin East and Ilorin West (urban), Offa (peri-urban) and Oyun (semi-rural). Within each LGA, two wards were randomly selected based on population density and prior immunisation engagement: Ilorin East

(Adewole, Sobi), Ilorin West (Oke-Oyi, Oja), Offa (Oke-Odo, Ajase) and Oyun (Ilemona, Ayegunle). Communities within each ward were randomly selected to ensure diverse socio-economic, ethnic and cultural representation, covering at least twelve communities state-wide. The sample size for the quantitative component was determined using Cochran's formula for proportions for large populations, applying a 95 per cent confidence level (Z = 1.96), a 5 per cent margin of error and a conservative prevalence estimate of 50 per cent in the absence of reliable local estimates of vaccine hesitancy; the calculation produced a minimum sample of 384 respondents, which was increased to 620 to account for the design effect associated with multi-stage sampling and to accommodate potential non-response while ensuring adequate statistical power and representation across the selected local government areas. The total sample of 620 participants was distributed proportionally across LGAs based on population size and ward representation: Ilorin East 160, Ilorin West 150, Offa 155 and Oyun 155. Quantitative data were analysed using SPSS version 28, with descriptive statistics to estimate prevalence, chi-square tests for categorical associations and logistic regression to identify predictors of vaccine hesitancy while controlling for confounders.

Qualitative data were collected through semi-structured interviews with a purposively selected sub-sample of thirty survey participants to capture variation in vaccine hesitancy, healthcare engagement and social media use. Interviews explored historical and structural healthcare experiences, cultural and religious influences on trust, perceptions of government and health authorities and interpretations of vaccine-related digital information. Interviews were conducted in participants' preferred language, audio-recorded with informed consent, transcribed verbatim and analysed thematically in NVivo 12. Independent coding by two researchers enhanced reliability and differences were resolved through discussion. All participants were assured of confidentiality, anonymity and voluntary participation. This mixed-methods design allowed triangulation of quantitative prevalence data with qualitative narratives, providing a comprehensive understanding of structural, historical and social determinants of medical mistrust and vaccine hesitancy in Kwara State.

Results

Table 1: Residents' Perceptions of Medical Institutions in Kwara (n = 620)

Perception Statement	**Agree n (%)**	**Neutral n (%)**	**Disagree n (%)**
Government health facilities are competent	198 (31.9)	152 (24.5)	270 (43.6)
Health authorities act in the public interest	171 (27.6)	180 (29.0)	269 (43.4)
Vaccination campaigns reach communities effectively	156 (25.2)	185 (29.8)	279 (45.0)
Public health institutions are transparent	144 (23.2)	179 (28.9)	297 (47.9)
Healthcare services are physically accessible	211 (34.0)	163 (26.3)	246 (39.7)
Healthcare services are affordable	158 (25.5)	171 (27.6)	291 (46.9)
Staff treat patients with respect	149 (24.0)	186 (30.0)	285 (46.0)
Institutions respond effectively during health campaigns	140 (22.6)	176 (28.4)	304 (49.0)
Community feedback is incorporated into planning	129 (20.8)	189 (30.5)	302 (48.7)

Table 1 reveals a marked pattern of institutional mistrust among residents of Kwara State, with negative perceptions consistently exceeding positive assessments across nearly all indicators. Disagreement is pronounced, surpassing 40% for eight of the nine perception statements. Institutional responsiveness during health campaigns recorded the highest level of disagreement at 49.0%, followed by transparency of public health institutions (47.9%), incorporation of community feedback into planning (48.7%) and affordability of healthcare services (46.9%). The findings indicate that residents' mistrust extends beyond assessments of technical capacity, encompassing governance, accountability and the quality of relational engagement between institutions and communities. Even indicators that might ordinarily

support confidence, such as physical accessibility of healthcare services, elicited substantial disagreement (39.7%), suggesting that mere proximity to facilities does not offset perceived deficiencies in service quality, fairness and institutional integrity. Positive perceptions were generally low, ranging from 20.8% to 34.0%, with the highest agreement observed for physical accessibility (34.0%) and competence of government health facilities (31.9%). Neutral responses were also considerable, ranging from 24.5% to 30.5%, reflecting ambivalence and conditional trust rather than stable confidence. This pattern emphasises that residents' engagement with health institutions is tentative and susceptible to erosion, particularly in domains relating to transparency, responsiveness and participatory governance.

Qualitative interview data illuminate the sociological mechanisms underlying these quantitative trends. Participants frequently attributed perceptions of institutional incompetence and poor responsiveness to repeated encounters with under-resourced facilities and inconsistent health campaigns. As one respondent noted, "they come when there is a problem, then disappear after, so people stop believing what they say." Concerns about transparency and public interest were often expressed through narratives of exclusion and misinformation, with another participant stating, "we are not told the full truth about these vaccines, decisions are made without us." Experiences of disrespectful treatment and financial strain further reinforced mistrust, particularly among economically vulnerable respondents. One interviewee remarked, "when you go to the hospital, they talk to you like you do not matter unless you have money." These accounts demonstrate that medical mistrust in Kwara is structurally produced through everyday institutional interactions, where perceived neglect, limited community voice and socio-economic inequities converge. Taken together, the convergence of high disagreement percentages and consistent qualitative narratives stresses that mistrust is not an individual anomaly but a systemic condition shaping public engagement with vaccination and healthcare services.

Table 2: Prevalence of Vaccine Hesitancy by Demographic Characteristics (n = 620)

Demographic Variable	Hesitant n (%)	Non-Hesitant n (%)	Total n
Gender			
Male	135 (44.7)	167 (55.3)	302
Female	158 (49.9)	159 (50.1)	317
Age Group			
18–29	102 (57.3)	76 (42.7)	178
30–49	127 (44.7)	157 (55.3)	284
50+	64 (35.2)	118 (64.8)	182
Education Level			
Secondary or below	157 (55.9)	124 (44.1)	281
Tertiary	136 (41.6)	191 (58.4)	327
Ethnicity			
Majority (Yoruba)	137 (41.9)	190 (58.1)	327
Minority groups	156 (53.7)	134 (46.3)	290
Religion			
Islam	142 (45.4)	171 (54.6)	313
Christianity	151 (50.8)	146 (49.2)	297
Socio-Economic Status			
Low	162 (57.9)	118 (42.1)	280
Middle	123 (43.2)	162 (56.8)	285
High	8 (26.7)	22 (73.3)	30

Table 2 shows that vaccine hesitancy in Kwara State is systematically patterned along demographic and socio-economic lines, indicating that reluctance to vaccinate is shaped by the broader organisation of social and institutional systems rather than individual choice. Age illustrates a clear gradient: young adults aged 18–29 exhibit the highest hesitancy (57.3%), while older respondents, particularly those aged 50 and above, demonstrate considerably lower

hesitancy (35.2%). This distribution suggests that younger populations are embedded in social networks and communication environments such as digital and peer-mediated channels that expose them to competing narratives about vaccines, highlighting the role of informational structures in shaping health behaviours. Educational attainment further structures hesitancy patterns. Respondents with secondary education or below show higher hesitancy (55.9%) compared with those with tertiary education (41.6%). This indicates that the formal education system, as a social institution, mediates access to reliable health information and shapes trust in medical services. Similarly, socio-economic status produces a pronounced stratification in vaccine uptake. Low-income respondents report 57.9% hesitancy, in contrast with 26.7% among high-income respondents. The disparities reflect systemic inequalities in resource distribution, access to healthcare infrastructure and engagement with institutional services, suggesting that economic positioning conditions health decision-making. Other demographic variables, including gender, ethnicity and religion, also show patterned variation. Female respondents are slightly more hesitant (49.9%) than males (44.7%), minority ethnic groups exhibit greater hesitancy (53.7%) than the Yoruba majority (41.9%) and Christian respondents show higher hesitancy (50.8%) compared to Muslims (45.4%). The patterns reveal that social stratification, cultural positioning and group membership influence vaccination behaviour, shaping collective patterns of engagement with health services.

Qualitative accounts deepen understanding of these demographic disparities by revealing how social position shapes interpretations of risk, trust and institutional intent. Younger respondents frequently articulated scepticism grounded in social media exposure and peer influence, with one participant explaining, "most of what we hear comes from WhatsApp and friends and many say the vaccine is not safe." Among respondents with lower education and socio-economic status, hesitancy was often framed as a rational response to historical neglect and everyday hardship. As one low-income interviewee stated, "they remember us only when they need us to take injections, but when we are sick, nobody helps." Ethnic minority respondents similarly linked their reluctance to perceptions of marginalisation, noting that "people like us are not considered when government plans these programmes." Religious differences, while less pronounced, were also contextualised through narratives of moral uncertainty and trust in non-medical authorities, with some participants indicating greater reliance on religious leaders than on health officials. The qualitative insights demonstrate that vaccine hesitancy in Kwara is embedded in layered social realities, where age, education, ethnicity and economic insecurity intersect with institutional mistrust and information inequalities to shape health behaviour.

Table 3: Influence of Social Media Exposure on Vaccine Hesitancy (n = 620)

Social Media Variable	Hesitant n (%)	Non-Hesitant n (%)	Total n
Uses social media for health-related information	181 (48.4)	193 (51.6)	374
Does not use social media for health information	114 (46.7)	132 (53.3)	246
Frequency of social media use (among users, n = 374)			
Daily	109 (49.5)	111 (50.5)	220
Weekly	62 (45.9)	73 (54.1)	135
Rarely	10 (52.6)	9 (47.4)	19
Trusts vaccine information encountered on social media (among users)	93 (53.1)	82 (46.9)	175
Does not trust vaccine information on social media (among users)	88 (44.3)	111 (55.7)	199
Engages in vaccine-related discussions online (among users)	99 (51.6)	93 (48.4)	192
Does not engage in vaccine-related discussions (among users)	82 (45.1)	100 (54.9)	182
Primary platform most frequently used (among users)			
WhatsApp	121 (47.4)	134 (52.6)	255
Facebook	77 (48.7)	81 (51.3)	158
YouTube	49 (50.0)	49 (50.0)	98
Twitter	28 (54.9)	23 (45.1)	51
Other platforms	11 (45.8)	13 (54.2)	24
Total analytic sample	295 (47.6)	325 (52.4)	620

Table 3 indicates that the relationship between social media and vaccine hesitancy in Kwara State is shaped more by modes of engagement and trust than by access or usage alone. Overall, hesitancy among respondents who use social media for health-related information is 48.4%, only slightly higher than the 46.7% observed among non-users, suggesting that mere exposure

to social media content does not independently drive reluctance to vaccinate. Among social media users, frequency of engagement shows modest variation. Daily users report higher hesitancy (49.5%) compared with weekly users (45.9%), indicating that repeated exposure to vaccine-related content may incrementally influence uncertainty. More substantial differences emerge when examining trust and interactive engagement. Respondents who report trusting vaccine-related information encountered on social media exhibit higher hesitancy (53.1%) than those who do not trust such content (44.3%). Similarly, individuals who participate in vaccine-related discussions online are more hesitant (51.6%) than those who do not engage in such discussions (45.1%). The patterns suggest that cognitive orientation toward content and interactive participation are stronger determinants of hesitancy than passive exposure. Analysis by platform further reveals heterogeneity. Hesitancy is highest among Twitter users (54.9%), followed by YouTube users (50.0%), while WhatsApp (47.4%) and Facebook (48.7%) users display slightly lower but still notable levels of hesitancy. This indicates that platform characteristics and the nature of information dissemination may differentially shape vaccine attitudes.

Qualitative findings provide explanatory depth to these quantitative associations by illuminating how social media reshapes perceptions of authority, risk and credibility. Participants described digital platforms as spaces where emotionally compelling narratives, particularly accounts of adverse vaccine experiences, circulate with little verification, often overshadowing official health communication. One respondent explained, "when many people online share the same story, you start to believe it more than government announcements." Trust in social media information was frequently framed as a response to perceived institutional opacity, with participants stating that "social media feels more honest because people speak freely there." Engagement in online discussions was similarly characterised as reinforcing fear rather than resolving uncertainty, as exchanges were described as confrontational and dominated by negative claims. A participant noted, "once you join those discussions, it is mostly people warning others not to take it." The narratives suggest that social media amplifies vaccine hesitancy not simply through misinformation, but by functioning as an alternative trust ecosystem that gains legitimacy in contexts where confidence in medical and governmental institutions is already fragile.

Table 4: Patterns of Medical Mistrust Across Demographic Groups in Kwara (n = 620)

Demographic Variable	% Reporting High Mistrust	Chi-square p-value	Logistic Regression OR (95% CI)
Gender			
Male	41%	Reference	1.00
Female	52%	0.02	1.36 (1.09–1.71)
Age Group			
18–29	58%	<0.01	1.83 (1.34–2.50)
30–49	46%	Reference	1.00
50+	36%	0.03	0.71 (0.50–1.01)
Education Level			
Secondary or below	60%	<0.01	1.75 (1.31–2.35)
Tertiary	33%	Reference	1.00
Ethnicity			
Majority (Yoruba)	42%	0.04	Reference
Minority groups	54%		1.51 (1.07–2.13)
Religion			
Islam	48%	Reference	1.00
Christianity	51%	0.07	1.15 (0.97–1.36)
Socio-Economic Status			
Low	61%	<0.01	1.84 (1.36–2.48)
Middle	42%	Reference	1.00
High	31%	0.01	0.62 (0.40–0.94)

Table 4 demonstrates that medical mistrust in Kwara is systematically structured along key social and demographic lines, reinforcing the argument that mistrust is a socially patterned phenomenon rather than an individual disposition. Quantitatively, women report significantly higher levels of medical mistrust than men, with 52% of female respondents indicating high mistrust compared to 41% of males. This difference is statistically significant and remains robust in multivariate analysis, where women exhibit 1.36 times higher odds of reporting medical mistrust. Age-related differences are even more pronounced. Younger adults aged 18 to 29 show the highest prevalence of mistrust at 58%, with logistic regression indicating nearly double the odds of high mistrust relative to the 30 to 49 age group. In contrast, older adults aged 50 years and above demonstrate substantially lower mistrust at 36%, with reduced odds approaching statistical significance. Educational attainment and socio-economic status emerge as the strongest predictors. Respondents with secondary education or below report high mistrust at 60% and are 1.75 times more likely to express mistrust than those with tertiary education. Similarly, individuals in the low socio-economic category exhibit the highest mistrust levels at 61%, with nearly double the odds of mistrust compared to those in the middle category, while high socio-economic status is associated with significantly lower mistrust. Ethnic minority status also shows a meaningful association, with 54% reporting high mistrust and elevated odds relative to majority Yoruba respondents. Religious affiliation shows weaker differentiation, as the higher mistrust observed among Christian respondents does not reach statistical significance, suggesting that religion alone is not a primary driver when other structural factors are accounted for.

Qualitative evidence contextualises these statistical patterns by revealing how demographic positioning shapes lived experiences of institutional engagement and exclusion. Female participants frequently framed mistrust through narratives of dismissive treatment and limited voice within healthcare encounters, with one respondent stating, “as a woman, they often do not listen to you properly, especially in government hospitals.” Younger adults described mistrust as emerging from prolonged exposure to conflicting information and perceived inconsistency in public health messaging, noting that “what they say today is different from what we hear tomorrow.” Among respondents with lower education and socio-economic status, mistrust was articulated as a rational response to chronic marginalisation and unmet needs. One participant remarked, “people like us are used for campaigns, but when there is no campaign, the system forgets us.” Ethnic minority respondents similarly linked mistrust to feelings of invisibility in policy planning, observing that “government health programmes rarely consider our community’s situation.” The qualitative accounts demonstrate that medical mistrust in Kwara is deeply embedded in structural inequalities and everyday institutional interactions, providing explanatory depth to the observed demographic disparities and reinforcing the interpretation of mistrust as a product of social position, historical experience and perceived institutional neglect.

Discussion

The study revealed that perceptions of medical institutions among residents of Kwara were generally low, with fewer than 35% of respondents indicating that health services were competent, transparent or acted in the public interest. The findings are consistent with prior research in Nigeria, which identifies low institutional trust as a key factor driving vaccine hesitancy and limited engagement with healthcare services (Sato, 2022; Eguavoen et al., 2023). Structural Functionalism helps explain these patterns by framing healthcare institutions as critical components of the social system that are expected to maintain stability and serve community needs. When institutions fail to provide reliable, equitable and accessible services, the system experiences dysfunction and public confidence diminishes. In Kwara, limited access to quality services, uneven distribution of resources and inconsistent public health messaging appear to have undermined trust, producing widespread scepticism toward vaccines. Qualitative findings further illustrate how residents’ lived experiences of neglect, disrespectful treatment and poor institutional responsiveness reinforce this mistrust. The narratives

demonstrate that vaccine hesitancy is not merely an individual choice or a response to misinformation but a social outcome rooted in structural weaknesses and institutional failure. Structural Functionalism emphasises that improving public confidence requires strengthening the functioning of healthcare institutions, ensuring fairness, transparency and responsiveness and addressing the broader social and systemic factors that shape community trust.

Vaccine hesitancy was observed in 47.6% of participants, with higher prevalence among women, younger adults aged 18–29, individuals with lower educational attainment, minority ethnic groups and residents of lower socio-economic status. The demographic patterns corroborate national surveys and scoping reviews that report higher hesitancy among socially marginalised and historically underserved populations in Nigeria (Ifeanyi et al., 2025). Hesitancy in the Kwara context was influenced by concerns over vaccine safety, doubts regarding efficacy and scepticism toward health authorities, reflecting structural, historical and sociocultural determinants identified in prior studies (Eguavoen et al., 2023). The findings reinforce the notion that vaccine hesitancy in low- and middle-income countries is not merely a function of individual knowledge deficits but is embedded within complex social and institutional environments (Dube et al., 2013). Social media exposure emerged as an important correlate of vaccine hesitancy, with higher reluctance among individuals who relied on social media for health information or engaged in online discussions about vaccines. Trust in social media content further intensified hesitancy, indicating that digital information environments amplify pre-existing mistrust, consistent with prior work showing that misinformation on platforms such as WhatsApp, Facebook and Twitter undermines public confidence in vaccination campaigns (Rodrigues et al., 2023; Jamison et al., 2020; Sadiq et al., 2023). The findings illustrate how contemporary information ecologies interact with historical and structural mistrust to shape vaccination behaviours in urban Nigerian populations.

The study also revealed distinct patterns of medical mistrust across socio-demographic groups. Higher mistrust was observed among women, younger adults, individuals with lower education, minority ethnic groups and residents of lower socio-economic status. Logistic regression analysis confirmed that lower education and low socio-economic status were strong predictors of high mistrust. Structural Functionalism provides a sociological explanation for these findings by framing healthcare institutions as essential components of the social system. When these institutions fail to function effectively through unequal access, inadequate resources or inconsistent service, trust is undermined and communities experience the consequences of systemic dysfunction. Differences in mistrust across social groups reflect how structural inequalities and historical experiences shape interactions with healthcare services. Women, young adults, ethnic minorities and economically disadvantaged populations often encounter healthcare as less responsive, less respectful and less equitable, producing predictable variations in confidence and engagement. This study contributes detailed, community-level evidence from Kwara, demonstrating how structural and social factors collectively shape patterns of mistrust and vaccine hesitancy. The insights extend existing scholarship by showing that vaccine hesitancy is not simply an individual choice or knowledge gap but a social outcome arising from the way healthcare institutions operate within broader societal structures (Ifeanyi et al., 2025).

Conclusion and Recommendations

This study demonstrates that medical mistrust and vaccine hesitancy among residents of Kwara are complex, multidimensional phenomena shaped by structural inequalities, historical experiences, sociocultural norms and digital information environments. Hesitancy was particularly high among women, younger adults, individuals with lower education, minority ethnic groups and residents of low socio-economic status, highlighting how social position interacts with institutional and systemic factors to influence health behaviours. The findings show that vaccine hesitancy is not merely a gap in individual knowledge but a social outcome arising from the functioning of healthcare institutions and their relationships with communities, consistent with the principles of Structural Functionalism. Healthcare systems that fail to

operate effectively, fairly and transparently create dysfunction within the social system, which manifests as mistrust and reluctance to engage with vaccination programmes.

Based on these insights, several recommendations are proposed. Public health interventions should prioritise rebuilding institutional trust through transparent practices, accountability and consistent delivery of quality healthcare services. Vaccination campaigns should be tailored to address the needs and concerns of socially and economically marginalised groups, using culturally sensitive messaging and active community engagement. Health authorities must actively monitor and respond to misinformation on social media, working through trusted local channels to share accurate and reliable vaccine information. Educational programmes that strengthen health literacy and encourage critical evaluation of digital content should be implemented, particularly targeting younger adults and populations with lower educational attainment. The measures collectively aim to restore public confidence, improve vaccine uptake and ensure that healthcare institutions fulfil their role as functioning and equitable components of the social system.

References

Armstrong, K., Ravenell, K. L., McMurphy, S., & Putt, M. (2007). Racial/ethnic differences in physician distrust in the United States. *American Journal of Public Health, 97*(7), 1283–1289. https://doi.org/10.2105/AJPH.2005.080762

Dube, E., Laberge, C., Guay, M., Bramadat, P., Roy, R., & Bettinger, J. (2013). Vaccine hesitancy: An overview. *Human Vaccines & Immunotherapeutics, 9*(8), 1763–1773. https://doi.org/10.4161/hv.24657

Durkheim, E. (1895). *The rules of sociological method* (S. A. Solovay & J. H. Mueller, Trans.). Free Press.

Eguavoen, A., Larson, H. J., Chinye Nwoko, F., & Ojeniyi, T. (2023). Reducing COVID-19 vaccine hesitancy and improving vaccine uptake in Nigeria. *Journal of Public Health in Africa, 14*(5), Article 2290. https://doi.org/10.4081/jphia.2023.2290

Eromonsele, F. (2025, June 20). Millions of children still lack access to vaccines — UNICEF estimates. *Premium Times Nigeria*. https://www.premiumtimesng.com/news/headlines/807314-millions-of-children-still-lack-access-to-vaccines-un.html

Gamble, V. N. (1997). Under the shadow of Tuskegee: African Americans and health care. *American Journal of Public Health, 87*(11), 1773–1778. https://doi.org/10.2105/AJPH.87.11.1773

Gayawan, E., Egbon, O. A., Utazi, E., Umar, J. A., & Trotter, C. (2025). The impact of women's empowerment on childhood vaccination coverage in Nigeria: A spatio-temporal analysis (preprint). *arXiv.* https://arxiv.org/abs/2511.08262

Gilson, L. (2003). Trust and the development of health care as a social institution. *Social Science & Medicine, 56*(7), 1453–1468. https://doi.org/10.1016/S0277-9536(02)00142-9

Jamison, A. M., Broniatowski, D. A., Smith, M. C., Parikh, K. S., Malik, A., Dredze, M., & Quinn, S. C. (2020). Adapting and extending a typology to identify vaccine misinformation on Twitter. *American Journal of Public Health, 110*(Supplement 3), S331–S339. https://doi.org/10.2105/AJPH.2020.305940

Ifeanyi, C., Okechukwu, E., Tosin, O., Ataguba, J. E., et al. (2025). Assessing the determinants of uptake and hesitancy in accessing COVID-19 vaccines in Nigeria: A scoping review. *Frontiers in Health Services*. https://doi.org/10.3389/frhs.2025.1609418

Merton, R. K. (1968). *Social theory and social structure* (Rev. ed.). Free Press.

National Statistical Microdata. (2025). *Integrated post campaign coverage survey 2024: Nigeria measles vaccination coverage and outcomes.* https://microdata.nigerianstat.gov.ng/index.php/catalog/163/related-materials

Ogunbosi, B. O., Alao, M. A., Ibrahim, O. R., Ayuk, A. C., Ibraheem, R. M., Odimegwu, C. L., Ikwuka, D. C., Akintan, P., Morakinyo, O., Adeyemi, A. T., Jega, R. M., Olowookere,

T. F., Bello, O. E., Owolabi, B. I., Chukwuyem, A., Bukar, L. M., Rasaki, A., Issa, A., Ewa, A. U., Oladokun, R., & Akinyinka, O. O. (2022). COVID-19 vaccine hesitancy in six geopolitical zones in Nigeria: A cross-sectional survey. *Pan African Medical Journal, 42*, Article 179. https://doi.org/10.11604/pamj.2022.42.179.34135

Parsons, T. (1951). *The social system*. Free Press

Rodrigues, F., Ziade, N., Jatuworapruk, K., Caballero-Uribe, C. V., Khursheed, T., & Gupta, L. (2023). The impact of social media on vaccination: A narrative review. *Journal of Korean Medical Science, 38*(40), e326. https://doi.org/10.3346/jkms.2023.38.e326

Sadiq, M., Croucher, S., & Dutta, D. (2023). COVID-19 vaccine hesitancy: A content analysis of Nigerian YouTube videos. *Vaccines, 11*(6), Article 1057. https://doi.org/10.3390/vaccines11061057

Sato, R. (2022). COVID-19 vaccine hesitancy and trust in government in Nigeria. *Vaccines, 10*(7), Article 1008. https://doi.org/10.3390/vaccines10071008

Wonodi, C., Obi-Jeff, C., Adewumi, F., Keluo-Udeke, S. C., Gur-Arie, R., Krubiner, C., Faden, R., & Karron, R. (2022). Conspiracy theories and misinformation about COVID-19 in Nigeria: Implications for vaccine demand generation communications. *Vaccine, 40*(13), 2114–2121. https://doi.org/10.1016/j.vaccine.2022.02.005

World Health Organization Strategic Advisory Group of Experts (SAGE) on Immunization. (2014). *Report of the SAGE working group on vaccine hesitancy* (Revised October 2014). World Health Organization. https://www.who.int/docs/default-source/immunization/sage/2014/october/sage-working-group-revised-report-vaccine-hesitancy.pdf

Yusuf, L. (2025, December 25). Zero-dose children drive majority of measles cases in 2025. *The Nation.* https://thenationonlineng.net/zero-dose-children-drive-majority-of-measles-cases-in-2025/