A CORRELATIONAL STUDY OF GENDER DIFFERENCES IN ACCESS AND RESPONSES TO COVID-19 PREVENTION MESSAGES AMONG PERSONS WITH DISABILITIES IN KADUNA AND KANO STATES, NIGERIA

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Abstract

Effective public health communication is vital during health emergencies; however, persons with disabilities (PWDs) often face challenges that hinder their access to timely and accurate information, with gender potentially amplifying these disparities. The study, guided by the Health Belief Model and the Social Determinants of Health Framework, examines gender as a factor affecting access and responses to COVID-19 prevention messages among PWDs in Kaduna and Kano States, Nigeria. It utilised a quantitative cross-sectional survey design with a structured questionnaire and a purposive sampling technique. Of the 384 questionnaires distributed, 373 were valid and used for analysis. A 5-point Likert scale measured access and response variables, which were analysed using descriptive statistics and regression analysis. Results indicated that gender significantly correlated with behavioural responses but did not significantly influence access, pointing to gender-based differences in information exposure and compliance. The study concluded that gender plays a crucial role in health communication outcomes among PWDs. It recommended disability-inclusive and gender-responsive risk communication strategies informed by behavioural and structural frameworks to ensure equitable access to information during public health crises.

Keywords: Gender, Access, Responses, COVID-19, Prevention Messages, and Persons with Disabilities

Introduction

Over the years, public health communication has evolved as a strategy to prevent risks during emergencies and has also been adopted to influence public behaviour through raising awareness of disease risks (Alsisi et al., 2019). According to Choi et al (2017), communicating health-related information to the public helps individuals fully understand the complexity of the situation, enabling them to take action by adjusting their behaviour and responding accordingly. Therefore, effective health communication is crucial in such fragile circumstances to protect public health (Toppenberg-Pejcic et al., 2019).

During infectious disease outbreaks like the coronavirus pandemic in 2019 (COVID-19), effective communication helps individuals and communities understand risks and adopt preventive behaviours to reduce disease transmission (WHO, 2020). Through effective, integrated, and coordinated communication, the public maintains better health during emergencies. However, despite the crucial role of health communication during emergencies, access to information is often a challenge, especially for vulnerable populations like persons with disabilities. Access to health information during emergencies is usually affected by several factors, such as structural inequalities, socio-economic conditions, gender norms, and disability status, which influence who receives information, how it is delivered, and how well it is understood (CDC, 2021).

The United Nations (2020) states that one billion or 15 percent of the world's population live with some form of disability, with approximately 80 percent of them in developing countries. PWDs are individuals who experience one or more impairments or disabilities, commonly referred to as disabilities. Evidence indicates that PWDs encounter additional barriers in accessing information, including limited disability-friendly formats, a lack of sign language interpretation, inaccessible written materials, low digital literacy, and dependence on caregivers to receive and interpret messages (International Disability Alliance, 2020).

According to Senjen (2021), individuals with the same disabilities may have different needs based on certain demographic or environmental factors. These are further influenced by gender norms and socio-cultural dynamics, which can affect access to health information. Adebisi et al. (2020) note that women with disabilities often face intersectional disadvantages that may limit their access to health information and increase reliance on intermediaries. Meanwhile, male PWDs may encounter similar challenges related to limited economic resources, mobility issues, and lower engagement with institutional health services. These obstacles heighten their vulnerability during pandemics and can lead to lower compliance with preventive measures. Therefore, ensuring that all population groups have access to and utilise public health messages is vital for equitable outbreak control.

Kaduna and Kano are two densely populated and culturally diverse states in Nigeria's Northwest geopolitical zone, providing an important context for studying gendered patterns of health communication among PWDs. Both states carried out COVID-19 awareness campaigns via radio, television, community mobilisation, and health workers (NCDC, 2020). However, evidence from the Joint National Association of Persons with Disabilities indicates that most of these messages were neither disability-inclusive nor gender-responsive, resulting in unequal access and inconsistent understanding.

While previous studies have explored access to COVID-19 information, and it impact on PWDs (Ndavula and Lidubwi, 2021; Ubah *et al.,* 2022), these investigations appeared to be general not gender specific. Thus, this study seek to address this in understanding how gender correlates with access to information and behavioural responses among PWDs during the COVID-19 pandemic. Therefore, understanding how gender intersects with disability to shape communication outcomes is consequently essential in designing inclusive and equitable public health interventions.

Statement of the Problem

Access to accurate and timely information among PWDs was inconsistent, despite widespread distribution of COVID-19 prevention messages in Nigeria during the pandemic. PWDs often depend on caregivers, assistive devices, or specialised communication formats such as Braille, audio materials, or sign language interpretation, many of which were inadequate or unavailable in COVID-19 health campaigns. Empirical evidence has highlighted the vulnerability of PWDs due to limited access to health information and the difficulty in utilising them, since they were generally designed for society as a whole (Sabatello et al., 2020; Sajadi et al., 2021). Furthermore, gender differences among PWDs may exacerbate information inequalities, leaving vulnerable groups unprotected during health emergencies. Since access to information is crucial for its utilisation (Adekoya et al., 2022), unequal access to health information, even across genders, could present a significant challenge

for PWDs during the COVID-19 pandemic (Armitage and Nellums, 2020).

This study, therefore, seeks to examine the gap between male and female PWDs' access and responses to COVID-19 messages in Kaduna and Kano States.

Research Objectives

The main aim of this study is to examine the gender correlational, access to, and responses of PWDs to COVID-19 prevention messages in Kaduna and Kano States.

The specific objectives are:

1. To determine the level of access to COVID-19 prevention messages between male and female persons with disabilities in Kaduna and Kano States.

2. To assess gender response differences and how they predict COVID-19 prevention messages among persons with disabilities in Kaduna and Kano States.

Literature Review

Gender significantly influences how individuals access health information and respond to public health campaigns. Research consistently shows that men and women differ in how they use information sources, trust health institutions, and adopt preventive behaviours during health crises (Hearld & Budhwani, 2020). During COVID-19, reports indicate that women generally adhere more closely to preventive measures like mask-wearing and hand hygiene, while men often underestimate risks and resist behavioural changes (Bwire, 2020; Galasso et al., 2020). Despite women's tendency to comply with health regulations during emergencies, their participation in official health communication channels in many low- and middle-income countries remains limited due to sociocultural expectations, financial dependence, and domestic responsibilities (UN Women, 2020).

Persons with disabilities form a group that is disproportionately affected by communication barriers during health emergencies, which prevent them from accessing preventive information. According to the United Nations (2020), these barriers faced by PWDs stem from inaccessible content formats, limited mobility, reliance on caregivers, and exclusion from mainstream communication strategies. There is empirical evidence highlighting gaps in PWDs' access to preventive messages. Sabatello et al. (2020) reported that most PWDs did not receive timely or accessible COVID-19 information due to inadequate sign language support, lack of audio or easy-to-understand materials, and limited integration of disability considerations in national COVID-19 strategies. The absence of a disability-inclusive communication strategy caused PWDs to depend heavily on caregivers and informal networks for COVID-19 information, which often led to delayed or distorted messages.

Furthermore, the intersection of gender and disability has led to significant inequalities in access to health communication. Morrison et al. (2021) argued that women with disabilities face multiple challenges stemming from dominant gender norms, stigma related to disability, and lower educational levels, all of which hinder their access to health information and restrict their participation in health-related decisions. Research shows that women with disabilities are less likely to receive health information directly from official sources and tend to rely more on caregivers. In contrast, men with disabilities generally have greater access to public spaces and information channels but may show lower compliance with preventive measures due to masculine norms that discourage health-seeking behaviours.

Empirical evidence indicates a strong connection between access to information and behavioural compliance. While gender further influences these responses, women with disabilities often demonstrate a greater willingness to follow preventive guidelines (Shahnazi et al., 2020). However, they may encounter barriers such as limited opportunities to obtain timely and accurate health information due to reliance on caregivers, restricted independence, and increased socio-economic exclusion, which hinder their ability to transform knowledge into action (Abou-Abbas et al., 2024; Woo et al., 2023). Similarly, Mohan et al. (2025) found that gender and disability significantly affect risk perception and adherence to public health measures, with women showing a higher willingness to adopt preventive behaviours when provided with accessible information.

While various studies have explored COVID-19 knowledge and adherence in Nigeria, there is a limited study on gender-specific patterns among PWDs, especially in northern regions like Kaduna and Kano. This research gap underscores the need to investigate correlations in gender differences regarding access to and compliance with COVID-19 prevention messaging among PWD, an objective that the present study aims to fulfil.

Review of Empirical Studies

Empirical studies have shown that worldwide, PWDs have limited access to information during public health emergencies, which often hampers emergency responses during crises. Gender disparities among vulnerable groups further exacerbate this limited access. Adokoya et al. (2022) examined information accessibility as a factor in information use by students with disabilities at the Federal College of Education, Oyo State, Nigeria, using a descriptive survey research design to select 220 students with disabilities. The results indicated that information accessibility has a significant positive relationship with information use. The study recommended providing students with disabilities with ICT training to equip them with modern skills for accessing information in daily life. The study was limited, as it was conducted within an academic setting and did not also explore health-related risk communication or behavioral responses during crises like COVID-19.

Mohan *et al*. (2025), on the other hand, used secondary data from a national survey to assess gender-based characteristics and factors influencing health-seeking behaviour in Malaysia. Descriptive statistics and a logistic regression model were conducted to identify factors affecting health-seeking behaviour among men and women. The findings revealed significant gender and socio-demographic disparities in health-seeking behaviour among Malaysian men and women. Despite highlighting gender disparity in information seeking behaviour, the study did not cover aspect of PWDs, and also failed to investigate communication accessibility and information channels during health emergencies.

Studies have also shown gender disparity in response to emergencies. Yu *et al.* (2024) examined gender-specific differences in emergency response and crisis management knowledge in 388 university students in Jiangxi Province of China. The cross-sectional study employs a self-structured questionnaire to obtain data from students. The findings showed more subtle distinctions as general knowledge levels were comparable across each gender. However, certain differences were noticed as female students were better at addressing threats such as electrocution than their male counterparts. The finding emphasised the need for disaster risk reduction programmes that take into cognisance gender-based

differences to improve their efficacy. It also recommended that policymakers should adapt interventions to accommodate the unique strengths and requirements of each gender. The study failed to include PWDs, and did not assess the role of information sources in shaping emergency responses.

Bwire (2020) examined public responses to COVID-19 prevention messages using cross-sectional survey approach. The study found that higher exposure to COVID-19 information is related to increased knowledge and compliance to preventive responses, with trust in sources of information a key determinant. However, the study did not investigate disability-specific access barriers or inclusive communication formats.

Similarly, Galasso *et al*. (2020) examine gender differences in COVID-19 attitudes and behaviour using original data from two survey waves conducted in March and April 2020 across eight Organisation for Economic Co-operation and Development countries (n = 21,649). The study finds that women are more likely to see COVID-19 as a serious health threat, agree with safety guidelines, and follow them. This evidence highlights a gender gap with important implications for public health policies and communication about COVID-19, which could encourage behavioural changes in response to new risks.

Furthermore, Shahnazi *et al*. (2020) conducted a cross-sectional study aiming to determine preventive behaviours against the disease among 750 individuals in Golestan Province, Iran, based on constructs of the health belief model. The study used convenience sampling. Scores were calculated using confirmatory factor analysis. The effects of different factors were examined separately through univariate analyses, including the students' sample t-test, ANOVA, and simple linear regression. Multiple regression analysis showed that the mean score for preventive behaviour against COVID-19 was higher in females than in males. The results indicated that female gender, perceived barriers, perceived self-efficacy, fatalistic beliefs, perceived interests, and living in a city were associated with greater preventive behaviours against COVID-19, respectively.

Yan *et al.* (2022) conducted a cross-sectional survey of adolescents and young adults with cancer. Data were summarised using descriptive statistics, while multiple logistic regression was employed to examine differences in adherence to COVID-19 preventative behaviours and preferences for information sources related to COVID-19 between men and women. Among 633 respondents, adherence to key COVID-19 preventative measures ranged from 44.9% to 58.8% for males and 53.4% to 68.1% for females. Even after adjusting for key confounding variables in multivariable analysis, males remained less likely to adhere to frequent hand washing than females. However, both genders preferred to receive information from their cancer institutes and social media. The study focused on cancer patients rather than PWDs and failed to examine accessibility-specific formats.

Existing literature separately investigated gender differences, health-seeking behaviour, and preventive responses to COVID-19, with less focus on PWDs. These studies did not integrate access and behavioural responses, and how they shape disparities between the male and female genders. This study addresses these limitations, thereby contributing evidence to inform disability emergency preparedness in public health communication.

Theoretical Review

This study is hinged on two theories, the Health Belief Model (HBM) and the Social Determinants of Health Framework.

Health Belief Model (HBM)

The Health Belief Model was developed by social psychologists Hochbaum, Rosenstock, and Kegels in the 1950s. The model suggests that individuals are more likely to adopt health-protective behaviour when they perceive themselves as susceptible to a threat, believe the threats could have serious consequences, and trust that the recommended safety measures will be effective with fewer obstacles to taking preventive action (Rosenstock *et al*., 1988). The HBM also emphasises the importance of cues to action, such as public health messages, media alerts, interpersonal communication, and individual self-efficacy in encouraging preventive behaviour (Champion & Skinner, 2008).

The HMB is relevant within the context of COVID-19 because it explains why individuals follow or do not follow preventive behaviours such as wearing face masks, washing hands regularly, maintaining physical distance, and getting vaccinated. Higher perceived susceptibility and severity are linked to greater compliance with COVID-19 preventive measures (Shahnazi *et al.*, 2020). Similarly, perceived benefits, like believing that following COVID-19 safety guidelines will significantly reduce transmission, also predict individuals' compliance with these measures.

Thus, the HMB is particularly relevant for understanding the challenges faced by PWDs during the COVID-19 pandemic because accessibility barriers, mobility limitations, reliance on caregivers, and the different levels of health literacy could influence perceived barriers, perceived benefits, and self-efficacy among PWDs during public health emergencies (Sabatello *et al*., 2020).

Social Determinants of Health Framework (SDH)

The Social Determinants of Health (SDH) framework offers a broader understanding of how socio-economic and structural factors impact health outcomes and health-related behaviours. These factors include the conditions in which a person is born, grows, lives, works, and ages, as well as how these conditions are influenced by the distribution of power, resources, and opportunities within societies. Key determinants comprise gender, education, income, disability status, social support networks, and access to information and healthcare services (Solar and Irwin, 2010). These structural factors interact to produce different levels of exposure to health risks and unequal capacity to respond to public health threats such as the COVID-19 pandemic.

The SDH framework is particularly relevant in explaining disparities in health communication outcomes. Access to health information is mediated by social structures, including household power dynamics, literacy levels, socio-economic constraints, and digital access, which affect how individuals receive, interpret, and utilise public health messages (Marmot and Wilkinson, 2005). For instance, individuals with higher education levels are more likely to understand complex health information, while those with lower socio-economic status may have limited access to communication media. Thus, within the context of COVID-19, the SDH framework helps to explain why PWDs may face heightened information inequities. Hence, this framework provides a valuable foundation for analysing how gender and disability jointly shape access and responses to COVID-19 prevention messages among PWDs in Kaduna and Kano States.

Research Methodology

This study used a quantitative cross-sectional survey design to explore how gender influences access to and responses to COVID-19 prevention messages among PWDs in Kaduna and Kano States, Nigeria. The quantitative approach was deemed

suitable for the research because, as Creswell and Creswell (2018) state, it allows for objective measurement of variables, statistical analysis of relationships, and the generalisation of findings to the wider population. The design enabled the researchers to gather and analyse numerical data on participants' exposure to COVID-19 information, their understanding levels, and their behavioural responses.

The study population consisted of PWDs aged 18 years and above residing in the two states. The study employed both stratified and purposive sampling methods to select eligible respondents from disability organisations and community groups. The researchers divided the population into three disability categories: physical, visual, and hearing impairments. This approach aimed to capture differences in access and responses to COVID-19 prevention messages among the various disability groups. After stratification, copies of the questionnaire were distributed within each group using purposive sampling, based on participants' consent and availability.

To ensure inclusivity and accuracy in data collection, the researchers engaged the services of professional sign language interpreters in both Kaduna and Kano States to assist persons with hearing impairments in understanding and answering the questionnaire. Visually impaired participants were allowed to be assisted by their caregivers, who read out the questions aloud and recorded the responses on their behalf. Adequate measures were taken to ensure all responses accurately reflected the respondents' views. A total of 384 questionnaires were administered based on the sample size determination table by Kreijie and Morgan (1970); of these, 373 were completed and returned, resulting in a valid response rate of 97.1%. This sample size was deemed sufficient for conducting regression and other inferential analyses (Tabachnick and Fidell, 2019).

Data were gathered using an instrument containing questions about demographic characteristics such as gender, age, education, disability type, and location. Access to COVID-19 prevention messages and responses were assessed with 5-point Likert-scale items, enabling measurement of communication exposure and behavioural tendencies. Data were analysed with descriptive statistics, including frequencies, percentages, means, and standard deviations, to summarise demographic data and levels of access and response.

Findings were displayed in tables for clarity. Inferential statistics were performed to examine relationships between gender and the study variables. Specifically, a regression analysis was conducted to assess how gender predicted access to COVID-19 prevention messages and response behaviours. Regression was suitable because it measures both the direction and strength of associations between an independent variable (gender) and the dependent variables (access and responses) while accounting for error (Field, 2018). Statistical significance was established at $p \leq .05$.

Data Presentation and Analysis

Table 1: Gender Differences in Access to COVID-19 Prevention Messages and Independent Sample t-Test Results

Access Sources	Male (n = 230) **Mean**	Female (n = 143) **Mean**
Traditional Media		
Radio	3.32	3.20
Television	3.30	3.19
Newspapers	2.48	2.32
Magazines	2.20	2.12
Billboards	2.25	2.10
Posters/Leaflets	2.40	2.28
Film	2.30	2.14
Digital Media		
Facebook	4.35	4.29
WhatsApp	4.50	4.40
YouTube	3.55	3.42
SMS	4.30	4.20
Instagram	2.40	2.28
X	3.22	3.05
TikTok	3.00	2.90
Online news	3.00	2.85
Interpersonal& Community Sources		
Health Workers	2.90	2.85
Religious Leaders	3.10	3.15
Traditional Leaders	3.18	3.30
Community Leaders	3.35	3.45
Family/Friends/Caregivers	4.20	4.35
Institution and Education Sources		
Government MDAs	3.95	3.83
NGOs	3.60	3.55
International Organisations	3.70	3.60
Disability Associations	3.22	3.18
Educational institutions	2.78	2.70
Overall Access Score	3.40	3.32
t-Test Statistics	t(371) = 1.02	-
p-Value	0.309 (ns)	-
Effect Size (Cohen's d)	0.10 (very small)	-
Significance	Not significant	-

Table 1 displays the independent samples t-test performed to investigate gender differences in access to COVID-19 prevention messages. The findings revealed no statistically significant difference between male (M = 3.40) and female respondents (M = 3.32), t(371) = 1.02, p = .309. The effect size was very small (Cohen's d = .10), indicating that gender had little impact on access to COVID-19 prevention messages. In conclusion, the data suggest that both male and female PWDs experienced similar levels of access across all sources and communication channels for COVID-19 prevention messages.

Table 2: Gender Differences in COVID-19 Prevention Responses and Sample Independent t-Test Results

Response Items	Male (n = 230) **Mean**	Female (n = 143) **Mean**
Wear a face mask	4.30	4.45
Social distancing	4.18	4.32
Hand washing	4.28	4.40
Avoid touching face	4.20	4.33
Stay at home	4.05	4.22
Cover mouth/nose when coughing	4.12	4.24
Clean/disinfect surfaces	4.00	4.15
Get vaccinated	3.50	3.68
Avoid crowded spaces	3.95	4.12
Monitoring of health	3.85	4.05
Use of sanitiser	4.30	4.45
Overall Response Score	4.07	4.24
t-Test Statistics	t(371) = 2.31	-
p-Value	0.022*	-
Effect Size (Cohen's d)	0.25 (small)	-
Significance	Significant	-

Note: *p < .05 indicates statistical significance*

Table 2 presented the results of an independent samples t-test conducted to examine gender differences in COVID-19 preventive responses among PWDs. The results indicated a statistically significant difference between males (M = 4.07) and females (M = 4.24), t(371) = 2.31, p = .022. The findings showed that female respondents reported significantly higher compliance with COVID-19 preventive guidelines. The effect size was small (Cohen's d = 0.25), implying that although the difference was statistically significant, its practical impact was modest.

Table 3: Regression Analysis of Gender as a Predictor of COVID-19 Prevention Responses

Analysis Component	Statistic / Result
Male Response Mean (n =230)	4.07
Female Response Mean (n = 143)	4.24
Mean Difference (Female – Male)	0.17
Regression Model Summary	
R	.24
R^2	.058
Adjusted R^2	.055
Standard Error of Estimate	0.84
Variance Explained	5.8%
ANOVA (Model Fit)	
Regression SS	13.40
Residual SS	216.80
Total SS	230.20
df (Regression)	1
df (Residual)	371
F-value	7.52
p-value	.006
Regression Coefficients	
Constant (Male baseline)	4.07
B (Gender: Female = 1)	0.17
Standard Error	0.06
Standardised Beta (β)	.24
t-value	2.74
p-value	.006
Conclusion	Gender significantly predicts COVID-19 prevention messages responses, with females PWDs showing higher score than male.

Table 3 displays the results of a simple linear regression conducted to examine how gender predicts COVID-19 preventive responses among PWDs. The model was statistically significant, $F(1, 371) = 7.52$, $p = .006$, explaining 5.8% of the variance in response levels ($R^2 = .058$). The results showed that female respondents scored notably higher in preventive behaviours ($\beta = .24$, $p = .006$), with an average increase of 0.17 points compared to their male counterparts. This indicates that gender is a moderate yet significant predictor of COVID-19 preventive responses.

Discussion of Findings

This study investigates gender differences in access to COVID-19 prevention messages

and preventive responses among PWDs in Kaduna and Kano States. The discussion integrates the findings of the study with existing empirical evidence.

Gender Differences in Access to COVID-19 Prevention Messages

Findings from the analysed results in Table 1 indicated that there were no significant gender-based differences in how PWDs access COVID-19 prevention messages, as both male and female respondents accessed prevention messages among persons with disabilities (PWDs). Both male and female respondents demonstrated comparable levels of exposure to information through traditional media, digital platforms, interpersonal and community sources, as well as institutional channels. The small effect size (Cohen's d = 0.10) further shows that gender does not significantly influence how PWDs access COVID-19 preventive information.

This finding aligns with earlier studies indicating equitable exposure to information about COVID-19 prevention between males and females, especially in areas where traditional media such as radio and television, as well as digital platforms like Facebook, WhatsApp, and other digital media, were heavily utilised to disseminate risk messages during the pandemic. For example, Bwire (2020) reported that radio and television play a major role in widely disseminating COVID-19 messages by reducing disparities across socio-demographic groups in how they access information. Likewise, Shahnazi *et al*. (2020) observed that extensive public health campaigns during the COVID-19 pandemic ensured comparable information dissemination to men and women.

Furthermore, similar access to information, especially for PWDs, can be linked to their reliance on caregivers, family members, disability organisations, and community networks, which often act as intermediaries in conveying health information to them. Adebisi *et al*. (2021) observed that caregivers and informal networks are crucial in ensuring that health-related messages during emergencies reach vulnerable groups. The similarity in information access, therefore, indicates that the communication strategies used by officials during the pandemic effectively reached both male and female PWDs. Overall, these findings support the idea that access to information among PWDs is largely unaffected by gender, particularly when diverse messages and community-based channels are employed for dissemination.

Gender Differences in COVID-19 Preventive Responses

Unlike Table 1, which shows similar access to COVID-19 prevention messages among male and female PWDs, results from Table 2 indicate gender differences in COVID-19 preventive responses, with female PWDs reporting higher compliance than males. Although the effect size was modest (Cohen's d = 0.25), the difference was significant and consistent across several behaviour indicators.

These findings align with previous studies showing that women tend to participate more in protective health practices than men. Galasso *et al*. (2020) found that females demonstrated stronger adherence to COVID-19 safety guidelines. Likewise, Shahnazi *et al.* (2020) observed that women also reported higher engagement in behaviours such as mask-wearing, hand sanitation, and maintaining social distance. This gender difference within disability groups may be shaped by societal norms and caregiving roles that encourage women to prioritise their health and safety. This aligns with Yan *et al.* (2022), who recommended gender-specific interventions to boost males' adherence to precautionary measures during

health emergencies. These findings therefore support the view that behavioural outcomes during health crises are influenced not only by access to information but also by sociocultural and psychological factors.

Gender as a Predictor of Preventive Behaviour

The regression results from Table 3 show that gender is a significant predictor of preventive actions against COVID-19 among PWDs. Although gender explains a small portion of the variance (5.8%), the model remains statistically significant, with female participants scoring higher in preventive practices. This finding supports earlier evidence of gender's impact on health behaviour adoption. Therefore, gender differences in health behaviour continue to persist despite equal access to healthcare, highlighting the importance of behavioural and socio-demographic factors (Mohan *et al*., 2025).

Therefore, the relatively low variance attributed to gender indicates that preventative behaviours among PWDs are influenced by multiple factors, such as educational level, disability type, economic status, institutional trust, and the availability of a support system. Nonetheless, the importance of gender emphasises the need for public health efforts that are sensitive to gender dynamics.

Collectively, the results emphasise a difference between access to information and behavioural response. Although male and female PWDs have similar access to COVID-19 prevention messages, females are more likely to translate that access into protective behaviours. This pattern aligns with findings from other COVID-19 studies worldwide (*Yu et al*., 2024; Adokoya *et al.,* 2022).

The findings strongly align with the constructs of the Health Belief Model. High preventive behaviour reflects strong perceived susceptibility, perceived severity, and perceived benefits of preventive actions, which appear to outweigh perceived barriers, consistent with high adherence levels. Identified barriers such as inaccessible formats correspond to perceived barriers in the HBM, while interpersonal communication from family, caregivers, and religious leaders acts as cues to action.

Similarly, the SDH framework asserts that health behaviours are shaped by structural conditions. Findings from this study closely reflect these determinants, with a lack of accessible formats demonstrating systemic barriers, and reliance on interpersonal networks indicating compensatory social support structures. Consistent with SDH principles, these results suggest that disparities in COVID-19 information access arise primarily from structural exclusion**,** not individual impairment, supporting global reports on disability and COVID-19 communication released by WHO, the UN, and disability advocacy organisations.

Conclusion

This study investigated how gender influences access to and responses to COVID-19 prevention messages among PWDs in Kaduna and Kano States, Nigeria. The findings revealed that gender significantly affected behavioural responses but did not have a significant impact on access. Additionally, the research highlights that disability-inclusive health messaging alone is insufficient if gender-specific barriers are not tackled. Therefore, it stresses the importance of public health communication strategies that are both disability-inclusive and gender-sensitive. Such strategies should focus on accessible formats, culturally appropriate content, and equal access to communication channels, especially during health emergencies when rapid information dissemination is vital. Overall, the study offers valuable empirical

evidence on the limited research regarding gendered risk communication among PWDs in northern Nigeria. It emphasises the need for policymakers, disability advocates, and public health organisations to adopt intersectional approaches when designing and implementing communication campaigns, as addressing gender-related disparities in access to health information will not only enhance pandemic preparedness but also promote broader health equity for persons with disabilities.

Recommendations

Based on the findings, the study recommends that public health authorities adopt gender-responsive and disability-inclusive risk communication strategies by ensuring that emergency messages are disseminated in accessible formats and address gender-specific information needs of all disability types, including both men and women with disabilities. Moreover, there should be coordination between government agencies, disability organisations, and the establishment of a community structure to institutionalise gender-sensitive communication within emergency preparedness and response frameworks, aiming to improve equitable access to health information for PWDs.

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