Quality in Primary Care
ISSN: 1479-1064

Open Access Research Article

Empirical Analysis of Medical Social Support in Dealing with COVID-19: A Communication-Based Approach

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ABSTRACT

The present study examines the implementation of a communication-based approach in the empirical analysis of medical social support for individuals managing COVID-19. It employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine data obtained from frontline health workers in the six geopolitical zones of Nigeria. The study population comprised all strata of health workers in Nigeria, using a multistage and simple random sampling technique to select 500 respondents (health workers) across each of the six geopolitical zones in Nigeria. Data were retrieved through a questionnaire designed with a 5-point Likert scale to gather responses from the selected health workers. The questionnaire focused on assessing communication among frontline health workers as the dependent variable, with cultural and contextual factors as independent variables, and government communication strategies as another independent variable. The study revealed a notable and favorable correlation between Government Communication Strategies (GCS) and the effectiveness of communication by FHW (Federal Health Workers). Efficient government communication techniques are significant in assisting frontline healthcare professionals during times of crises, such as the COVID-19 pandemic.

Keywords: Communication; COVID-19; Empirical analysis; Health workers; Medical social support; Nigeria

INTRODUCTION

The outbreak of the COVID-19 pandemic has brought about significant challenges globally, affecting various aspects of society, including healthcare, social interactions, and economic activities. In Nigeria, like many other countries, the pandemic has highlighted the importance of medical social support in addressing not only the physical health implications of the virus but also the mental health and social well-being of individuals facing unprecedented stressors. The need for effective communication-based approaches in providing support during such crises has become increasingly evident. The older population in Nigeria, as in many parts of the world, has been particularly vulnerable to the adverse effects of the pandemic. Studies have shown that older individuals face unique medical, psychological, and social challenges during this time [1]. The stress induced by the pandemic has been linked to the development of psychopathological disorders such as anxiety, asthenia, and cognitive dysfunction among older adults [2]. Understanding

Received:	05-April-2024	**Manuscript No:**	IPQPC-24-19457
Editor assigned:	07-April-2024	**PreQC No:**	IPQPC-24-19457 (PQ)
Reviewed:	21-April-2024	**QC No:**	IPQPC-24-19457
Revised:	17-February-2025	**Manuscript No:**	IPQPC-24-19457 (R)
Published:	24-February-2025	**DOI:**	10.36648/1479-1064.33.1.49

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Citation: Akeredolu-Ale BI, Osisanwo A, Chinaguh E (2025) Empirical Analysis of Medical Social Support in Dealing with COVID-19: A Communication-Based Approach. Qual Prim Care. 33.49.

the specific needs of this demographic group and exploring effective communication strategies to provide them with adequate support is crucial. Furthermore, the mass media industry in Nigeria has also faced significant challenges due to the pandemic-induced disruptions in economic activities and societal functioning [3].

The current state of medical social support in Nigeria during the COVID-19 pandemic reflects a multifaceted landscape influenced by various factors. The challenges faced by older individuals in Nigeria during the pandemic have underscored the critical need for medical, social, and psychological support tailored to their unique needs [4]. Studies such as Reshetova, et al., have highlighted the increased prevalence of psychopathological disorders such as anxiety, asthenia, and cognitive dysfunction among older adults, emphasizing the necessity for targeted support mechanisms. Moreover, the mass media industry in Nigeria has encountered significant disruptions due to the pandemic-induced economic downturn, containment measures and its potential havoc on all facets of human endeavors [5]. The fragile state of the media environment pre-pandemic has been exacerbated, posing threats to the survival of this essential industry. Strategies aimed at sustaining the mass media sector post-COVID-19 have become imperative, focusing on information dissemination, industry worker support, community engagement, and trust-building initiatives [6]. In addition, patient narratives shared on social media platforms have provided valuable insights into the experiences and challenges faced by individuals directly affected by COVID-19 in Nigeria [7]. These narratives serve as a digital window into the realities of patients in COVID-19 wards, offering firsthand accounts that highlight the importance of emotional and informational support during hospitalization.

The survival strategies adopted by the mass media sector post-COVID-19 have become essential for its continued operation and relevance in disseminating information to the public. Analyzing these surviving strategies within the context of communication theories can provide valuable insights into sustaining this vital industry. Moreover, patient narratives shared on social media platforms during the pandemic have offered a unique perspective on the experiences and challenges faced by individuals directly affected by COVID-19 [8]. These narratives not only serve as sources of firsthand information but also highlight the importance of digital communication in connecting individuals and providing emotional support during times of crisis. In light of these challenges and observations, this empirical analysis aims to investigate medical social support practices in Nigeria concerning COVID-19 and other life stressors from a communication-based approach. By examining the role of communication strategies in facilitating support systems for different demographic groups, including older adults and media industry workers, this study seeks to contribute valuable insights to enhance social support mechanisms during crises.

Research Questions

- How do government utilize communications strategies for medical social support during the COVID-19 pandemic and other life stressors? (UGC)
- What role does the communication of the frontline health workers play in enhancing the efficacy of medical-social support systems in addressing mental health challenges amidst crises like COVID-19? (FHWC)
- How do cultural and contextual factors influence the utilization of communications in navigating social support networks during times of heightened stress? (CCF)

Statement of the Problem

COVID-19 pandemic has brought about a unique period of public health difficulties on a global scale. These challenges extend beyond the physical consequences of the virus and have significant implications for mental well-being. In Nigeria, like numerous other countries, the diverse ramifications of the epidemic give rise to apprehensions regarding the sufficiency of current support systems, specifically within the medical domain. The examination of the effectiveness of medical social support networks and their communication dynamics is crucial as individuals grapple with the emotional burden of the pandemic and other simultaneous life stressors [9].

The significance of social support in addressing mental health difficulties is widely acknowledged. However, there exists a noticeable dearth of empirical studies that specifically examine the provision of medical social care within the Nigerian environment during the COVID-19 pandemic. The existing body of knowledge lacks a comprehensive comprehension of the communication-based strategies utilized in medical environments to effectively meet the mental health requirements of persons who are confronted with the simultaneous challenges posed by the pandemic and other stresses. In healthcare settings, medical social support plays a crucial role in promoting the holistic well-being of patients by providing emotional, informational, and instrumental aid. Nevertheless, the distinct obstacles encountered by Nigeria, characterized by its distinctive cultural, social, and economic environment, necessitate a focused examination of the efficacy and constraints of current medical-social support systems.

Mental Illness, Language and Social Media

Many studies have examined how language affects mental disease therapy. These studies focused on diagnosing mental illness with emphasis on language use and social media detection. Extant studies on these two subject areas are assessed, and convergence and divergence are detected to identify knowledge gaps that this research effort intends to fill.

Mental illness detection through language: Speaking language was examined by Roark et al., to diagnose mild cognitive impairment. The study uses Natural Language Processing (NLP) to automatically measure geriatric speech

and complexity to distinguish between healthy and MCI patients. Early clinical stages of dementia are considered mild cognitive impairment. Neuropsychological exams collected clinically elicited data. Linguistic signals like pause frequency and duration and linguistic complexity are identified in the study, along with automatic syntactic annotation and forced alignment in speech-based measures to accurately classify speech and pause regions. The results show that spoken language metrics help automatically detect MCI, however, this work simply diagnoses mental illness, unlike the suggested research, which takes a more holistic approach to mental health.

Ahmed, et al., examined connected speech to track Alzheimer's disease progression in autopsy-proven patients. The authors emphasize that Alzheimer's neurological profile includes verbal and cognitive problems, as well as episodic memory. The paper sought related speech elements to profile illness impairment. Speech samples from elderly and dementia patients diagnosed with Alzheimer's while alive and confirmed post-mortem was collected [10]. The samples were then analyzed using syntactic complexity, lexical content, speech production, fluency, and semantic content. Analysis of individual demonstrated minor language alterations during the prodromal stages of the disease, and two-thirds showed significant connected speech changes. The study also found linear trends in syntactic complexity, lexicon, and semantics. The study found that syntactic complexity, lexical, and semantic measurements show language disruption in the prodromal stages. The paper adds to mental illness diagnosis literature by monitoring disease progression through language. However, mental illness prevention is ignored.

Gernbacher, Morson and Grace review autism language. Developmental disorder autism causes inappropriate social interaction and communication. Pronoun reversal, echolalia, and production-comprehension lag were tested empirically for autism. They questioned past statements that these events are autism diagnostics. The American psychiatric association's diagnostic and statistical manual of mental disorders III requires substantial language abnormalities for infantile autism, according to the study. Later versions removed echolalia as a language problem and only regarded it as one of several constrained and repeated behaviors. The diagnostic criteria later omitted pronoun reversal, which is using you instead of I [11]. This communication behavior is also seen in adults with aphasia and apraxia. The paper also discusses the third requirement, production-comprehension, noting that expressive language has always lagged behind receptive language. According to the study, language development in autism follows, thus an anomalous lag should not be considered a diagnosis. The research finds that psychoanalytical and behaviorist interpretations of pronoun reversal/echolalia and clinical assumption of production-comprehension lag identify these three autism-specific communication phenomena. This paper contributes to earlier works that discuss language's potential as a diagnostic criterion for mental discomfort, but it neglects the preventive aspect, which is vital to mental health.

Mental illness manifestation on social media: Social media can provide “truly unforced, natural language”, therefore this part analyzed three studies on mental suffering on social media. Coppersmith et al., categorize Twitter users with mental illness by tweet language. Twitter users with ten mental illnesses are classified. These conditions include ADHD, generalized anxiety disorder, bipolar disorder, borderline personality disorder, depression, eating disorders, PTSD, schizophrenia, OCD, and seasonal affective disorder. Twitter posts with actual self-reported diagnoses were used to differentiate users by quantifiable signals for each mental health issue using language learning models. Hierarchical clustering between pairs and clusters of conditions shows Twitter users' language similarities and disparities. The results reveal that language use subcategories may reflect mental illness, and comparison of language use across different illnesses produces consistent groupings with other works. Coppersmith et al. concluded that language-based mental illness research promotes mental health research. The study only addresses diagnosis, not prevention or therapy of mental diseases.

Seitz also researched language use and mental health. Language is qualitative yet measurable, which helps automatically detect mental health conditions, according to the study. NLP quantifies language features such as subject change, pronoun use, lengthy pauses between words, and use scenarios. The study was inspired by language's ability to model and interpret text and chat using machine learning and how it can quantify mental wellness on social media. Seitz's social media language preference was influenced by the study it naturally reflects our cognitive state. The study also examined Twitter users' language and the ten mental health problems listed in Coppersmith et al. The study's data was validated by geo-locating pulled tweets in four regions: High and low deploy military and urban and rural civilian. Language models and sentiment analysis identify linguistic and modal elements in lexicons with psychological meaning, pronouns, emotions, and functional words. The study found that language models explain more mental disease signals, lexicons were linked to trauma, and depressed patients used the singular personal pronoun “I” more than controls [12]. Like Coppersmith, et al., this study examines how language and hybrid human-machine learning systems help diagnose mental illness on social media, excluding other aspects of mental healthcare.

Similarly, Gkotsis, et al. study examines mental illness vocabulary patterns on Reddit for fifteen diseases, including debilitating alcoholism, suicide, and self-harm. It targets Reddit users seeking mental health care online. To assess the kind and degree of mental distress communication, the language was examined for lexical and syntactic structures, unique vocabularies, and text complexity and classification. The study collected posts and comments from topic-specific Reddit subreddits and found sadness had the greatest communication set and bipolar the smallest. The focus on linguistic aspects is because mental illness can influence language and patient communication. Bipolar has more first-person pronouns and definite articles, and its sentences are

longer and have more subordinating conjunctions, according to the study. The findings suggest that vocabulary is largely discriminative, however some illnesses, such as opiate and addiction, share some subjects, and negative sentiment is practically everywhere [13]. Like the other two in this chapter, this study focuses on social media language, but solely on mental health. These studies, like the proposed research, focus on mental health diagnosis but ignore preventive and curative components; including facework that aids mental distress diagnosis.

Conceptual framework for the study: The conceptual framework presented in **Figure 1** represents the chosen framework for the study, featuring the intersection of "Cultural and contextual factors" and "Government Communication Strategies (GCS)". This statement elucidates the influence of the social and cultural context on the delivery and perception of medical social support in Nigeria. It may include elements such as cultural norms and beliefs, socioeconomic status, stigma related to mental health, and language and communication preferences. Government Communication Strategies (GCS) pertains to the communication endeavours undertaken by the Nigerian government to foster awareness of mental health and provide social assistance within the healthcare system. The potential components encompass public health campaigns, healthcare professional training, and the establishment of mental health services. Frontline Health Workers Communications (FHWC) encompasses the communication strategies employed by healthcare professionals who engage in direct interactions with patients [14]. This aspect would be linked to the "government communication strategies" segment of the triangle, illustrating the practical implementation of national directives and training in the healthcare system.

This link implies that the design and implementation of government communication initiatives are influenced by cultural and contextual factors. The provision of effective medical social assistance necessitates the customization of communication strategies to cater to the distinct requirements and inclinations of the Nigerian populace. Through an analysis of the intricate relationship among these variables, this research endeavour aims to enhance comprehension of the optimization of communication strategies to provide efficient medical social care within the Nigerian setting.

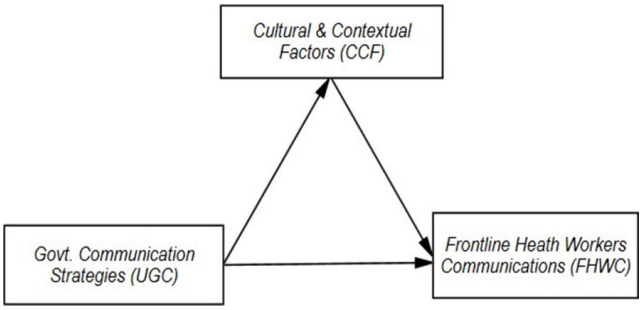

Figure 1: Conceptual Framework adopted for the study.

MATERIALS AND METHODS

The study employed a survey research design to investigate the empirical analysis of medical social support in dealing with COVID-19 and other life stressors in Nigeria. This design allowed for the collection of data from a large sample of health workers across the six geopolitical zones in Nigeria. The population of the study comprised all strata of health workers in Nigeria. A multistage and simple random sampling technique was adopted to select 500 respondents (health workers) across each of the six geopolitical zones in Nigeria. This sampling strategy ensured representation from diverse regions of the country [15]. The primary source of data collection was a questionnaire designed with a 5-point Likert scale to gather responses from the selected health workers. The questionnaire focused on assessing communication among frontline health workers as the dependent variable, with cultural and contextual factors as independent variables, and government communication strategies as another independent variable.

The Partial Least Squares Structural Equation Modeling (PLS-SEM) technique was utilized for data analysis. The SmartPLS 4 software was employed to conduct the analytical procedures. PLS- SEM is a robust statistical method suitable for analyzing complex relationships between variables in structural equation modelling. By employing this methodology, the study aimed to comprehensively investigate the impact of cultural and contextual factors, government communication strategies, and other variables on frontline health workers' communication within the medical social support framework during the COVID-19 pandemic in Nigeria [16].

RESULTS AND DISCUSSION

Demographic Distribution of the Respondents

The demographic distribution of the respondents in the study is presented in **Table 1**. **Table 1** provides a breakdown of respondents based on region, gender, profession, highest qualification, marital status, and employment status. The data is summarized in terms of frequency and percentage for each category. The majority of respondents were from the North-West region, accounting for 38.30% of the total sample, followed by the South-East and South-South regions with 13.48% and 12.29%, respectively. In terms of gender, there was a slightly higher representation of males (52.48%) compared to females (47.52%). Nurses constituted the largest professional group among the respondents at 39.24%, followed by medical lab scientists at 17.02%. Regarding the highest qualification, the majority of respondents held an HND/RN/B.Sc./Equivalent degree (64.30%), while a smaller percentage had PGD/M.Sc qualifications (17.49%). In the marital status category, married individuals made up the largest proportion at 68.79%, with single individuals accounting for 29.79% of the sample. In terms of employment status, permanent employees constituted the highest percentage at 64.61%, followed by temporary/locum workers at 26.60%. This demographic distribution provides valuable

insights into the characteristics of the respondents in the study, offering a comprehensive overview of the regional representation, gender balance, professional diversity, educational qualifications, marital status, and employment status among the participants.

Table 1: Demographic distribution of the respondents.

Region	Freq.	Percentage
North-Central	50	11.82%
North-East	51	12.06%
North-West	162	38.30%
South-East	57	13.48%
South-South	52	12.29%
South-West	51	12.06%
Total	423	100.00%
Gender		
Female	201	47.52%
Male	222	52.48%
Total	423	100.00%
Profession		
Clinical Psychologist	21	4.96%
Doctor	71	16.78%
Med. Social Worker	21	4.96%
Medical Lab. Scientist	72	17.02%
Nurse	166	39.24%
Others	6	1.42%
Pharmacists	66	15.60%
Total	423	100.00%
Highest qualification		
HND/RN/B.Sc./Equivalent	272	64.30%
OND/RM/Equivalent	32	7.57%
PGD/M.Sc	74	17.49%
PhD	21	4.96%
School Cert/Trade Test	24	5.67%
Total	423	100.00%
Marital status		
Married	291	68.79%
Separated	4	0.95%
Single	126	29.79%

Widow/Widower	2	0.47%
Total	423	100.00%
Employment status		
Casual	27	6.41%
Others	10	2.38%
Permanent	272	64.61%
Temporary/Locum	112	26.60%
Total	421	100.00%

Training levels of the respondents: The chart in Figure 2 presents the distribution of training levels of the respondents (Intermediate, High, Beginner, None) for two different principles: "Principles of psychological first aid" and "communication skills for managing epidemics." The results indicate that a significant proportion of respondents have received training at the intermediate and high levels in the principles of psychological first aid, with 36.73% and 33.18% respectively. A smaller percentage of respondents are at the Beginner level (18.10%), while 12.09% reported receiving no training in this area. For communication skills for managing epidemics, a higher percentage of respondents have received training at the intermediate level (42.42%) compared to the high level (30.81%). A smaller proportion of respondents are at the beginner level (17.54%), and the lowest percentage reported receiving no training in this area (9.24%).

Overall, the results suggest that a considerable number of respondents have received training in both principles of psychological first aid and communication skills for managing epidemics, with varying levels of proficiency. The majority fall into the intermediate level for both principles, indicating a significant focus on training at this level.

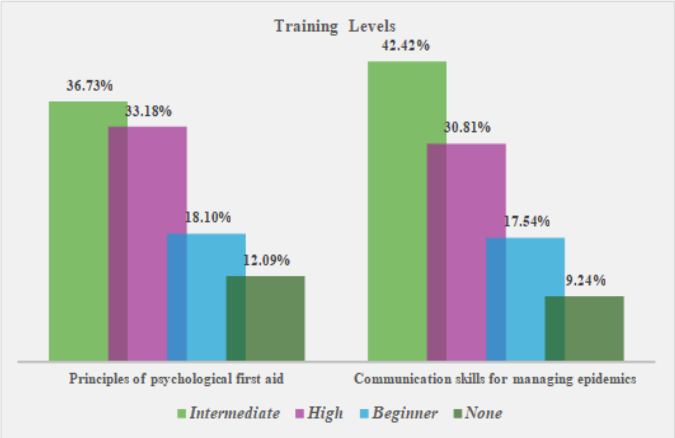

Figure 2: Respondents training levels.

Government Communications Strategies for Medical Social Support During the COVID-19 Pandemic and Other Life Stressors

The perspectives of healthcare personnel about the implementation of communication tactics for medical social support during the COVID-19 pandemic and other life stressors by the Nigerian government are presented in Table 2. The table employs a 5-point Likert scale that spans from "Without" (1) to "Extremely" (5). A considerable proportion of participants (69.98%) indicated the presence of guidelines about psychological first aid and psychosocial support for individuals affected by COVID-19, as evidenced by the combined percentages of "high extent" and "greater extent". However, a notable subset (21.51% and 19.39%) reported that these guidelines were either completely unavailable or only partially accessible. Comparable patterns can be identified concerning the presence of a policy directive aimed at fostering mental well-being (15.84% of respondents indicated a lack of such guidance or a limited extent thereof) and the availability of essential resources for addressing the virus (12.83% reported a lack of such provision or a limited extent). There was a little less favorable perception among individuals about government incentives for frontline healthcare personnel, as indicated by 24.82% of respondents who reported that these incentives were provided to a "low extent" or "not at all". Nevertheless, a significant proportion (63.59%) of respondents continued to regard them as being accessible to a "high extent" or "greater extent". A consistent pattern is observed across all tactics in general. While a significant proportion of participants acknowledged the presence of a communication plan, a noteworthy number said that these strategies were either restricted or completely lacking.

Table 2: Government communications strategies.

	Greater extent	High extent	Low extent	Small extent	Not at all	Total
Availability of guidelines on	10.64%	59.34%	7.09%	1.42%	21.51%	100.00%

psychological first aid						
Other guidelines for providing psychosocial supports	12.77%	56.50%	9.22%	2.13%	19.39%	100.00%
Policy guideline on promoting mental health	13.48%	56.74%	11.82%	2.13%	15.84%	100.00%
Government provision of necessary equipment	14.01%	53.92%	14.73%	4.51%	12.83%	100.00%
Government incentives for frontline health workers	14.89%	48.70%	16.55%	8.27%	11.58%	100.00%
Regular issuance of guidelines for health workers	13.98%	58.53%	11.85%	2.13%	13.51%	100.00%

Moreover, numerous researches underscore the pivotal significance of governmental communication in fostering mental well-being and social assistance amidst the COVID-19 pandemic. An investigation conducted by Adebayo, et al., revealed that healthcare professionals in Nigeria encountered notable mental health difficulties during the pandemic [3]. This highlights the necessity of implementing strong communication methods in order to deliver efficient social assistance inside the hospital system. In a similar vein, the significance of comprehensive mental health action plans in tackling the growing global prevalence of mental disease is underscored in a review conducted by the World Health Organization in 2014. This perspective is supported by Brooks, et al. The inclusion of effective communication tactics is a crucial element within these programs.

Impact of Government Communication Strategies (GCS) on the Effective Communication of Frontline Healthworks (FHEC) in Addressing Mental Health Issues during Crises

The results of a regression analysis investigating the correlation between government Communication Strategies (GCS) and the efficacy of Frontline Health Workers' Communication (FHEC) in addressing mental health concerns during crises are presented in **Table 3 and Figure 3**. The consistent issuance of guidelines is strongly correlated with effective communication, as indicated by a standardized coefficient of 0.284 and a p-value of 0.003. These findings indicate that when the government issues guidelines more frequently, it leads to enhanced communication among frontline health workers. The policy guidelines on promoting mental health have a favorable trajectory, as indicated by a standardized coefficient of 0.167 and a p-value of 0.118. However, it is worth noting that the p-value somewhat exceeds the conventional alpha threshold of significance, which is set at 0.05. This suggests a tendency towards a favorable correlation, although additional information may be required to reach a conclusive determination. Additional coefficients: The coefficients associated with the remaining communication strategies, namely incentives, guidance on psychological first aid, other psychosocial support guidelines, and provision of equipment, exhibit p-values over 0.05. Although there may be a correlation between successful communication and these factors, the statistical significance of these interactions is not observed in the current model.

Table 3: Regression results impact of Government Communication Strategies (GCS) on the Effective Communication of Frontline Health workers (FHEC) in addressing mental health issues during crises.

	Unstandardized coefficients	Standardized coefficients	SE	T-Value	P-value
Policy guideline on promoting mental health	0.134	0.167	0.085	1.579	0.118

Incentives for frontline health workers	0.062	0.104	0.072	0.864	0.39
Regular issuance of guidelines for health workers	0.216	0.284	0.071	3.063	0.003
Guidelines on psychological first aid	0.066	0.098	0.091	0.725	0.47
Other guidelines for psychosocial supports	0.126	0.181	0.1	1.262	0.21
Provision of necessary equipment	0.055	0.082	0.085	0.649	0.518
Intercept	1.141	0	0.295	3.871	0
F-Statistics	14.077				0
R-square	0.481				
R-square Adj.	0.447				
Durbin-Watson Test	2.229				

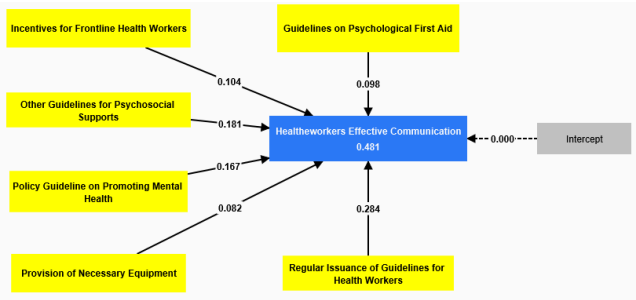

Figure 3: Path diagram of the regression result.

The F-statistic (14.077) demonstrates statistical significance (p-value=0.000), suggesting that there exists a statistically significant association between at least one of the independent variables (government communication techniques) and the dependent variable (effective communication of frontline health workers). The coefficient of determination (R-square) of 0.481 indicates that the model accounts for approximately 48% of the variability observed in the successful communication of frontline health workers. Nevertheless, the modified R-square (0.447) offers a more precise approximation, suggesting that the model accounts for roughly 45% of the variability after accounting for the number of independent variables. The results of this study indicate that the frequency and clarity of government communication play a significant role in determining the efficacy of frontline health workers in addressing mental health concerns during times of crisis. Government communication strategies should prioritize the establishment of a well-defined policy guideline for improving mental health and the regular dissemination of updated recommendations for health workers.

Typically, there is limited research that specifically investigates the connection between government communication tactics and the communication of frontline health workers in treating mental health issues during emergencies. Nevertheless, scholarly research emphasizes the significance of proficient communication inside this framework. Nilsen et al., underscore the importance of effective and coherent communication by governing bodies to effectively address the mental health consequences associated with pandemics. The study revealed that healthcare professionals who had access to precise and up-to-date information exhibited higher levels of confidence when attending to the mental health requirements of their patients. Furthermore, Yang, et al., conducted a comprehensive analysis to investigate the communication encounters of healthcare professionals during the COVID-19 epidemic. A notable requirement for enhanced communication from leadership on protocols, resource accessibility, and mental health assistance for healthcare professionals was highlighted. The results of this study are consistent with previous research, indicating that the implementation of clear, frequent, and comprehensive communication techniques by the government can enhance the ability of frontline health workers to effectively communicate while addressing mental health concerns in times of crisis.

To Investigate the Mediating Effect of Cultural and Contextual Factors between Government Communication Strategies and the Effectiveness of Frontline Health Workers' Communications in

Navigating Social Support Networks During Times of Heightened Stress (CCF)

Measurement model assessment: Measurement in Partial Least Squares Structural Equation Modeling (PLS-SEM) pertains to the evaluation of the extent to which the observed variables (indicators) accurately depict the latent constructs (theoretical concepts) within the model. A measuring model that is clearly defined assures that the indicators effectively capture the intended constructs, hence enabling a dependable and valid study of the structural relationships among them.

Prior to analyzing the associations among constructs within a structural model, it is imperative to confirm the accuracy of the measurements taken for each construct. This practice guarantees that any reported associations within the structural model are not attributable to constructs that have been inadequately assessed. This study used a PLS-SEM approach to examine the associations between cultural and Contextual Factors (CCF), Government Communication Strategies (GCS), and Effective Frontline Health Worker Communication (EFHW). The measurement model assessment is presented in **Table 4**.

Table 4: Measurement model assessment (factor loadings) of the indicators.

Indicators	Cultural and Contextual Factors (CCF)	Effective Frontline Health Workers (EFHW)	Govt. Communications Strategies (GCS)	Average Variance Extracted (AVE)
CCF7	0.952			0.329
CCF5	0.215			
CCF1	0.187			
FHW1		0.756		0.552
FHW10		0.734		
FHW11		0.729		
FHW14		0.671		
FHW2		0.777		
FHW3		0.786		
FHW4		0.669		
FHW6		0.724		
FHW7		0.821		
FHW8		0.728		
FHW9		0.76		
GCS1			0.79	0.582
GCS2			0.797	
GCS3			0.791	
GCS4			0.793	
GCS5			0.726	
GCS6			0.672	
R-square		0.115	0.52	
R-square Adj.		0.106	0.51	

Multiple indicators (variables) are listed in the first column to indicate each construct. The factor loadings, represented by the values for CCF, FHW, and GCS, serve as indicators of the degree of association between each indicator and its respective construct. For optimal convergent validity, loadings should exceed 0.7, indicating that the indicator effectively captures a substantial amount of the construct's variance. The Average Variance Extracted (AVE) is a statistical measure that quantifies the proportion of variance in the indicators that can be accounted for by the construct under investigation. For good convergent validity, the indicators should have a value above 0.5, indicating a strong shared core with the construct.

The values of R-square and Adjusted R-square indicate the extent to which the constructs account for the variance observed in the indicators. While they are typically not a primary emphasis in PLS-SEM, they can be considered in conjunction with factor loadings and AVE to provide a comprehensive evaluation.

All indicators within the Effective Frontline Health Worker Communication (FHW) construct exhibit factor loadings that surpass 0.67, indicating strong convergent validity. The Average Variance Extracted (AVE) exceeds 0.5, providing additional evidence for the assessment of the concept. Additionally, the Government Communication Strategies (GCS) was also Like the FHW, all indicators exhibit robust factor loadings and possess an Average Variance Extracted (AVE) over 0.5, hence signifying favorable measurement quality. The Cultural and Contextual Factors (CCF) have factor loadings that are notably low for two indicators, namely CCF5 and CCF1. Although CCF7 has a substantial loading, it may not adequately encompass the intricacy of this architecture. The Average Variance Extracted (AVE) for CCF is likewise lower than the threshold of 0.5. The results of this study indicate possible limitations in the assessment of cultural and environmental variables.

Contrary to expectations, prior research has underscored the need of employing efficient communication tactics within the healthcare industry within times of crisis. Although there has been some research on the impact of cultural and contextual factors on the effectiveness of communication, there is a lack of studies specifically exploring how these factors mediate the relationship between government communication strategies and the effectiveness of frontline health workers in navigating social support networks during periods of increased stress.

Structural model: The structural model utilized in Partial Least Squares Structural Equation Modeling (PLS-SEM) depicts the postulated associations among the latent components, which are theoretical concepts identified inside the investigation. Path coefficients are used to represent the links between constructs, providing information about the magnitude and direction of the impact that one construct has on another. The path coefficients of the structural model investigating the impact of Cultural and Contextual Factors (CCF), Government Communication Strategies (GCS), and Effective Frontline Health Worker Communication (FHWEC) are displayed in **Table 5 and Figure 4**. The latent constructs discovered in the measurement model (**Table 4**) are identical to the structures being referred to. The term "original sample" pertains to the dataset utilized for the study. Illustration The mean and standard deviation are statistical measures that indicate the average and variability of the scores of the latent construct in the sample. The importance of the path coefficient is evaluated using T-statistics and P-values. A statistically significant link is indicated by a high T-statistic and a low p-value, often below 0.05.

Table 5: Path coefficients of the structural model.

Constructs	Original sample	Sample mean	S.D	T-stats	P-value
CCF -> FHWEC	-0.053	-0.047	0.092	0.579	0.281
GCS -> CCF	-0.34	-0.355	0.084	4.058	0
GCS -> FHWEC	0.701	0.708	0.071	9.914	0
GCS -> CCF -> FHWEC	0.018	0.018	0.035	0.525	0.3

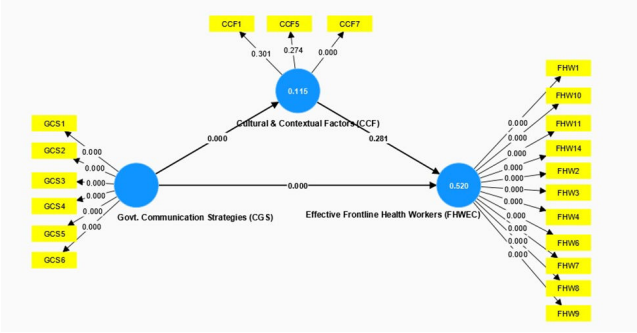

Figure 4: Path diagram of the structural model.

Regarding the specific impacts of GCS on FHWEC (0.701, p-value=0.000): This association is robust and optimistic. The findings indicate that Government Communication Strategies (GCS) exert a substantial and direct influence on the Efficacy of Communication among Frontline Health Workers (FHWEC). To clarify, there exists a positive correlation between the efficacy of government communication initiatives and the enhancement of communication among frontline health personnel. The difference between GCS and CCF is -0.340, with a p-value of 0.000. The observed connection exhibits a notable negative correlation. The findings indicate that Government Communication Strategies (GCS) could potentially influence Cultural and Contextual Factors (CCF) in a moderating manner. The presence of a negative coefficient suggests that enhanced government communication may mitigate the impact of cultural and contextual factors on communication among frontline health workers. However, it is necessary to conduct additional research to explore this relationship, particularly considering the non-significant interaction term. The CCF -> FHWEC ratio is -0.053, with a p-value of 0.579. This correlation is statistically insignificant and exhibits a weak negative association. The findings of this study indicate that there is no statistically significant direct impact of cultural and contextual factors on the effectiveness of communication among frontline health workers. Nevertheless, it is important to consider the insignificant interaction term with GCS when interpreting this result.

The analysis of the indirect effect of GCS -> CCF -> FHWEC (p-value=0.300) indicated that the observed indirect effect was not statistically significant. According to this model, although government communication strategies may have an impact on cultural and environmental elements, they do not have a substantial indirect effect on communication among frontline health workers. In summary, the findings indicate that government communication methods are of paramount importance in facilitating efficient communication among frontline health workers. Curiously, the study found that cultural and contextual elements do not directly impact government communication techniques. However, it is important to further investigate their possible interaction with these strategies.

CONCLUSION

The present study aimed to examine the implementation of a communication-based approach in the empirical analysis of medical social support for individuals managing COVID-19. It employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine data obtained from frontline health workers in the six geopolitical zones of Nigeria. The study revealed a notable and favorable correlation between Government Communication Strategies (GCS) and the effectiveness of communication by FHW (Federal Health Workers). Enhanced communication behaviors among frontline health professionals were found to relate to the implementation of effective government communication methods, such as the regular issue of guidelines and policy directives. The study did not uncover a statistically significant direct association between Cultural and Contextual Factors (CCF) and FHWEC, while identifying cultural and contextual factors as potential drivers of FHWEC. Nevertheless, it was seen that government communication techniques had a substantial effect on CCF, suggesting that GCS indirectly influences FHWEC through cultural and environmental factors. In addition, there is no significant mediation effect of Cultural and contextual factors (CCF) between generalized cognitive Functioning (GCS) and Family Health and Well-Being (FHWEC), which was unexpected. These findings indicate that the influence of government communication tactics on the cultural and contextual milieu in which frontline health workers function may have limited direct effects on FHWEC. The overall model fit was found to be adequate, as indicated by the satisfactory values of the goodness-of-fit indices. This suggests that the suggested connections between concepts sufficiently account for the observed patterns in the data.

Implications for practice and policy: The results highlight the significance of efficient government communication techniques in assisting frontline healthcare professionals during times of crises, such as the COVID-19 pandemic. The prioritization of clear and timely communication by policymakers and healthcare authorities is crucial to ensure that frontline health workers possess the necessary knowledge and skills to effectively navigate social support networks. Although cultural and contextual factors may not have a direct impact on frontline health workers' ability to navigate social support networks, addressing these factors through targeted interventions and organizational support systems has the potential to improve the overall effectiveness of communication strategies in healthcare settings. The study admits some limitations, such as potential biases in self-reported data and the cross-sectional nature of the study methodology. Subsequent investigations may go into longitudinal data and qualitative approaches to acquire a more profound understanding of the intricacies surrounding communication behaviors among frontline health personnel. Moreover, conducting additional research on distinct cultural and contextual elements that could potentially affect the efficacy of communication, together with examining the consequences of treatments aimed at addressing these elements, could yield significant knowledge for enhancing healthcare communication techniques.

In conclusion, this research enhances comprehension of the intricate dynamics among government communication tactics, cultural and contextual elements, and the efficacy of communication among frontline health workers in times of crisis. The findings of this study provide useful implications for policymakers, healthcare practitioners, and researchers who aim to improve communication techniques in healthcare settings. These implications arise from the identification of key variables and processes that influence communication practices.

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