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## Implementation of Risk Communication Initiatives of A Rural Government Radio Station In the Philippines

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# **Implementation of Risk Communication Initiatives Of a Rural Government Radio Station In the Philippines**

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## **Abstract**

This paper, anchored on the health belief model, evaluates the effectiveness of risk communication initiatives of a government radio station in the Philippines during the COVID-19 pandemic. It investigates measures such as media use and consumption, the influence of radio announcers, COVID-19 airtime, radio broadcast factors, knowledge and awareness, and perception to determine the impact of the radio station's communication efforts. It also examines the effect of integrating digital platforms on audience knowledge, awareness, perception, and compliance with preventive measures. This study applied a mixed-methodology approach involving 350 surveyed respondents and 14 interviewees to gauge their understanding, attitudes, and actions toward the pandemic. The data were subjected to inferential tests, descriptive statistics, and thematic analysis. Results revealed that the audience and listener reacted positively to the station's efforts and attributed their improved awareness and compliance with protective measures to its programs. Correlation analysis detected the impact of information dissemination in framing perception and action and established that radio hosts and broadcast timing played a determining role. Convergence of the online platforms rendered them good knowledge awareness, perception, and action compliance facilitators requiring tailored communication solutions and audience relations. Radio and internet-based media exerted a diffuse impact on attitude and behavior, illustrating the effectiveness of useful, informative programming and trustworthy radio announcers. This work recognizes the potential for media to bring social change and the necessity for evidence-based processes in optimizing the use of digital media.

**Keywords:** risk communication, digital platform integration, compliance behavior

## **Mise en œuvre des initiatives de communication sur les risques d'une station de radio gouvernementale rurale aux Philippines**

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### **Résumé**

Cet article, ancré sur le modèle de croyance en matière de santé, évalue l'efficacité des initiatives de communication sur les risques d'une station de radio gouvernementale aux Philippines pendant la pandémie de COVID-19. Il étudie des mesures telles que l'utilisation et la consommation des médias, l'influence des annonceurs radio, le temps d'antenne de la COVID-19, les facteurs de diffusion radio, les connaissances et la sensibilisation, ainsi que la perception, afin de déterminer l'impact des efforts de communication de la station de radio. Il examine également l'effet de l'intégration des plateformes numériques sur la connaissance, la sensibilisation, la perception et le respect des mesures préventives du public. Cette étude a appliqué une approche méthodologique mixte impliquant 350 personnes interrogées et 14 personnes interviewées pour évaluer leur compréhension, leurs attitudes et leurs actions face à la pandémie. Les données ont été soumises à des tests d'inférence, à des statistiques descriptives et à une analyse thématique. Les résultats ont révélé que le public et les auditeurs ont réagi positivement aux efforts de la station et ont attribué une meilleure sensibilisation et un meilleur respect des mesures de protection à ses programmes. L'analyse de corrélation a détecté l'impact de la diffusion de l'information sur l'encadrement de la perception et de l'action et a établi que les animateurs de radio et le calendrier de diffusion jouaient un rôle déterminant. La convergence des plateformes en ligne a fait d'elles de bons facilitateurs de la connaissance, de la perception et de la conformité à l'action, ce qui nécessite des solutions de communication et des relations avec le public sur mesure. La radio et les médias basés sur Internet ont exercé un impact diffus sur l'attitude et le comportement, illustrant l'efficacité d'une programmation utile et informative et d'annonceurs radio dignes de confiance. Ce travail reconnaît le potentiel des médias à apporter un changement social et la nécessité de processus fondés sur des preuves pour optimiser l'utilisation des médias numériques.

**Mots-clés** : communication sur les risques, intégration de plateformes numériques, comportement en matière de conformité

## 1.0 Introduction

Risk communication is imperative to spread information, raise awareness, and build public behavior in crises and emergencies (Zhang et al., 2020). The COVID-19 virus outbreak has highlighted the vital role of coordinated and sound communication strategies to reduce its impacts on communities and individuals (Panneer et al., 2024). Within this context, media consumption, especially radio, has become an effective tool for disseminating information because of its capacity to directly communicate, transcend spatial boundaries, and engage listeners (Gani et al., 2019).

Despite being most immediately affected by the health emergency, professionals in the media have remained faithful to educating and making the populace sensitive through creativity (Mondol & Paul, 2021). The changing trends of media consumption and audience participation need changing and innovating to ensure its relevance in the future (Azim, 2022; Gani et al., 2019). The COVID-19 pandemic has caused an inevitable increase in digital technology usage due to nationwide lockdowns and social distancing norms (De' et al., 2020). In order to adapt to the rapid development of new media, exacerbated by the COVID-19 pandemic, radio must transition to the digital era and embrace the digital shift to continue its service to the people (Ismandianto et al., 2022). Central to the radio community's survival strategy relies on programs that address community needs while incorporating digital broadcasting technologies (Ummah, 2021).

Research has indicated that the convergence of broadcast media with digital media has raised viewership, users, loyalty, and interaction amid the pandemic (Geni et al., 2021; Musfialdy et al., 2022). Factors behind the contributions are the availability of broadcast content, the quality of the broadcast program, the language employed, and the content of the message (Ismandianto et al., 2022; Priana & Nurjuman, 2022; Arliadini & Yuliati, 2022). Although these forces have been central to the digital revolution of radio programming, little is known about how the public views the radio personalities that spread vital health information. Even though they have played an exemplary role in public welfare during the health crisis, there is a broad difference in their perception of their likely impact and effectiveness in motivating the public to adopt necessary mitigation strategies. Other variables, such as the timing of information dissemination and the extent to which the strategy influences the emotional well-being of listeners, deserve critical examination. It is vastly important to analyze whether the undertaking of the radio stations influences people's behavior, such as conformity to mitigation guidelines, since it will further articulate how effective the radio stations have been in shifting individuals' mindsets and activities during the pandemic.

As part of public service media, government-owned radio stations must provide the public with correct information regarding the virus, preventive measures, government regulations, and vital services. This study examines the success of the COVID-19 pandemic risk communication programs of a rural radio station in the Philippines regarding the production process, public awareness, knowledge, adherence to recommended preventive measures, and factors that have led to attitudinal changes. An analysis of the impact of the radio station's strategies on public awareness and conduct will enable an understanding of traditional media's role in getting vital information out during a health crisis. Findings provide insights into the risk communication dynamics in a crisis, especially when using traditional media outlets. The findings also provide practical recommendations for enhancing future radio broadcast strategies in case of a health emergency.

## 2.0 Theoretical and Conceptual Framework

This study anchored the health belief model (HBM) conceptualized by social psychologists Hochbaum, Rosenstock, and Kegels in the 1950s because it has been useful in understanding and evaluating the success of risk communication programs during the COVID-19 pandemic (Hochbaum et al., 1952) (see Figure 1). This model offers a broad framework to understand the interaction between risk communication interventions and individuals' decisions to follow COVID-19 prevention guidelines (Guo et al., 2022). Despite its historical roots in the 1950s, HBM remains a basic model within public health and health psychology (Alyafei & Easton-Carr, 2024). The evidence for the durability of the HBM is documented through its widespread use in recent health behavior research and intervention planning (Alyafei & Easton-Carr, 2024). The fundamental constructs of the model—like perceived susceptibility and perceived barriers—are equally useful today in predicting personal health behavior across a range of contexts, from chronic disease care to infectious disease prevention (Janz & Becker, 1984; Jones et al., 2015). The applicability of this model was witnessed when the COVID-19 pandemic hit. Various studies have utilized the HBM to explain predictors of vaccine take-up and adherence to public health advice (Shmueli, 2021; Wong et al., 2021). Such recent uses validate the plasticity and adaptability of the HBM and reiterate its continued validity decades after its inception.

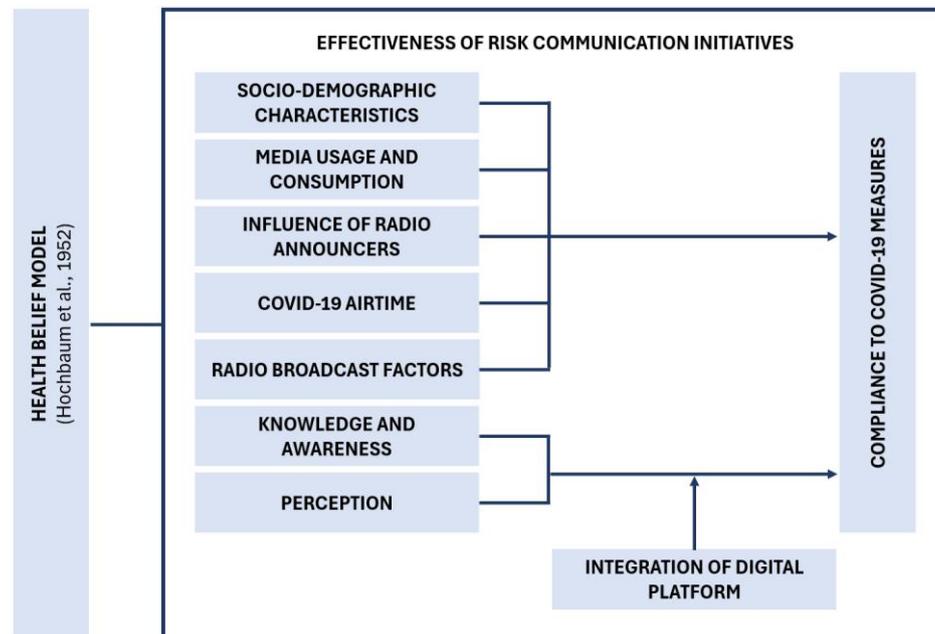
The HBM postulates that certain factors can influence a person's health-related behaviors and choices (Rosenstock et al., 1988; Tsai et al., 2021). These elements, such as perceived susceptibility, perceived severity, and perceived benefits, offer an organized framework to analyze the influence of radio stations COVID-19 pandemic risk communication efforts in measuring their effectiveness. This research endeavors to ascertain whether socio-demographic characteristics, media usage, and consumption, the influence of radio announcers, COVID-19 airtime, radio broadcast factors, knowledge and awareness, perception, and integration of digital platforms are contributing factors to the effectiveness of a radio station's COVID-19 risk communication efforts in terms of fostering compliance with recommended preventive measures.

Socio-demographic factors, including factors such as age, gender, and educational level, have been found to greatly influence the extent to which one feels vulnerable to the virus and how severe the disease they would acquire if they fall ill. Platforms like radio stations in rural areas play an important part in disseminating key health information, media consumption, and use, which are powerful cues to action that easily fit into the HBM. Another essential issue in the study is the influence of radio announcers. As opinion leaders, radio announcers have the potential to make individuals change their attitudes toward the COVID-19 menace and the benefits of adopting protective measures. They can do this by portraying themselves as credible, an important element of the HBM.

Meanwhile, COVID-19 airtime—the volume of broadcast coverage afforded to COVID-19 content—is a significant factor in informing individuals about the disease. These factors are integral to the HBM because exposure to COVID-19 news is consistently associated with increased ratings of the vulnerability and seriousness of the virus. However, radio broadcasting considerations, such as the tone used in messages, message clarity, and the mention of personal narratives, have critical influences on what people think regarding the disease, their vulnerability, and the benefits of adopting recommended preventive actions. Awareness and information are directly concerned with HBM constructs, influencing how individuals perceive risks and motivating the adoption of prevention measures. The perception measure, which is the critical component in suggesting how individuals perceive the risks and consequences associated

with COVID-19, is closely associated with the main constructs of perceived susceptibility and severity of the HBM.

Figure 1: *Health belief model framework for COVID-19 risk communication evaluation.*



In addition, the utilization of digital platforms provides an added element of modernity that may extend the audience for messages and interventions of a radio station. This innovation may enhance the effectiveness of risk communication campaigns by enhancing audience self-efficacy and cues to action. COVID-19 compliance is of utmost significance in this study since it directly relates to HBM's self-efficacy construct. The variable explains peoples' belief in complying with health recommendations. It is a significant factor in measuring the success of attempts by a radio station to encourage compliance with recommended pandemic preventive measures. All these factors are linked in terms of how they influence people's perceptions of COVID-19 (susceptibility and severity) and motivation for engaging in preventive measures (perceived benefits and cues to action), both key aspects of the health belief model. Collectively, they provide a comprehensive framework for explaining how risk communication efforts drive people's pandemic health-related behaviors.

### 3.0 Literature Review

#### 3.1 Implementation of Risk Communication Initiatives Among Radio Stations During the Pandemic

Risk communication plays an important role in efficiently controlling the pandemic by providing timely, reliable, and available information (Wang et al., 2021). Since radio is one of the established means of mass communication, it is necessary to broadcast information related to risks during pandemic infections (Ojeka-John et al., 2023). The COVID-19 pandemic and lockdowns that ensued nationwide have highlighted the increased relevance of community radio broadcasts (Laskar & Bhattacharyya, 2021). Radio has become a critical platform for information dissemination and unifying communities in recognition of their communal identity take center stage (Crider, 2022). Moreover, media

such as FM radio and newsletters are necessary for community resilience and solidarity, particularly during emergencies (Emke, 2016).

Several studies have revealed how radio stations use adaptive strategies to maintain public service amid the pandemic, often in line with the government's efforts to combat the COVID-19 crisis (Rowland, 2023; Laskar & Bhattacharyya, 2021; Bethy et al., 2023). Moreover, radio communities demonstrate their ability to handle broadcasting challenges, especially in exploring pandemic communication strategies (Ummah, 2021). The radio community's survival strategy is enhancing the ability of radio managers and broadcasters through capacity building, accompanied by an inclusive strategy (Seyoum, 2024). This strategy includes creating programs tailored to address community needs, supplemented by digital broadcasting technologies (Prahmana et al., 2021). Also, Laskar and Bhattacharyya (2021) discovered that Indian community radio stations utilized customized programming and participatory communication as the production reactions of the radio stations to COVID-19. The radio stations have been central in fact-checking information, employing personal stories, applying conventional media, and incorporating local volunteers for COVID-19.

Meanwhile, Priana and Nurjuman (2022) underscore the proactive role of radio stations during the pandemic in Indonesia. Public service advertisements are how the radio contributes to public information outreach (Elareshi et al., 2024). These advertisements are delivered by announcers in ad-lib format or are pre-produced, which demonstrates the versatility of the methods of broadcasting on the radio. Moreover, Crider (2022), who examined and documented the programming strategies of four local talk radio stations in the USA, including the contributions of the announcers to the public's welfare during the outset of COVID-19, disclosed these stations utilize things that are familiar with the community, like local symbols and culture, along with understanding and care, to tell people about what leaders are doing during the pandemic. These strategies improved the people's sense of well-being and security and provided a platform to share their stories.

### ***3.2 Impact of Risk Communication Strategies in the Management of COVID-19***

Proper understanding, the right perception of information, and compliance with the rules are essential for effective risk communication (Kunguma et al., 2021). Good risk communication strategies with adherence to government regulations had a great impact on public compliance and effectively regulated risk-related behaviors during the COVID-19 pandemic (Kunguma et al., 2021). In addition, an absence of transparency, science-based communication, and inaction on differential risk perceptions can lead to misinformation and public fear during the pandemic (Zhang et al., 2020).

Successful risk communication involves engaging citizens and observing how various groups perceive and understand risks (Loss et al., 2021). Risk communication is not a one-way process but is associated with how people perceive risks (Heydari et al., 2021). When risk communication is aimed at improving public awareness and encouraging protective behaviors, it can motivate individuals to take necessary actions during health emergencies (WHO, 2020). For risk communication to be effective, actionable steps must be emphasized to reduce risks and encourage active engagement with the information provided (WHO, 2020). Moreover, appropriate risk communication shall include all stakeholders and community members in the overall public health messages (Abrams & Greenhawt, 2020). Government, experts, and the

public must work together during crises, as this guarantees coordinated action, efficient risk communication, and effective protective measures (Hyland-Wood et al., 2021).

Finding effective ways to share information with the public should be a continuous and practical effort involving multiple stakeholders to manage crises better and respond (Zhang et al., 2020). In the case of broadcast radio, a community language radio station has successfully promoted the listeners' well-being by serving as a channel for vital information about COVID-19 (Hasnain et al., 2022). Similarly, relaxing entertainment and companionship are also motivating factors behind radio listenership during the COVID-19 pandemic in India (Menon, 2024). The multifarious roles played by radio stations in the distribution of critical information, emotional sustenance, and social companionship amidst the COVID-19 pandemic project their prominence within the larger backdrop of crisis mitigation and communal resilience.

## 4.0 Methodology

### 4.1 Research Design and Sample

This study used a mixed-methods design (Creswell & Clark, 2017) that incorporated both quantitative survey and qualitative interview data to offer an integrated understanding of the effectiveness of a radio station's COVID-19 pandemic risk communication campaign. Meanwhile, the target population was the listeners of a rural radio station in the Philippines providing services on air and online. This research interviewed 350 respondents across different demographic segments in the broadcast region of the radio station through a random sampling method. Further, 14 participants were chosen for in-depth interviews (Table 1) to complement the quantitative findings.

Table 1. *Interviewee's descriptive profile*

Participant ID	Age	Gender	Occupation
1	27	Female	Local government worker
2	41	Male	Security inspector
3	22	Female	Unemployed
4	27	Male	Teacher
5	28	Male	Military personnel
6	28	Male	Military personnel
7	33	Female	Teacher
8	46	Female	Local government worker
9	28	Male	Teacher
10	32	Female	Part-time worker
11	37	Male	Self-employed
12	53	Female	Part-time worker
13	25	Male	Military personnel
14	60	Female	Restaurant owner

## **4.2 Instrument**

The data collection tool includes a survey questionnaire and an interview guide for efficient evaluation of the impact of the COVID-19 communication efforts of the radio station and the identification of factors influencing public compliance with preventive measures. The survey questionnaire assesses the efficiency of a rural radio station's COVID-19 risk communication efforts. It includes sections on demographics, media usage, awareness, knowledge, attitudes, the influence of radio announcers, factors in radio broadcasts, compliance with preventive measures, and space for additional feedback. The interview guide accompanies the survey, leading in-depth interviews of respondents to collect qualitative data on their experiences with initiatives from the radio station and their recommendations. The tools went through validation processes to guarantee the reliability of the information collected. The survey instrument got a Cronbach alpha that ranges from 0.836 to 0.924, which falls within acceptable levels.

## **4.3 Data Collection Method and Analysis**

Quantitative data was collected through survey questionnaires to determine public awareness, knowledge of COVID-19, adherence to preventive measures, and demographics. The researcher used online and paper-based survey platforms to collect data from the respondents. In addition, descriptive statistics and inferential tests were used for the quantitative data of this study, investigating associations and predictors of public awareness, knowledge, and adherence. Meanwhile, a detailed interview with a smaller group of participants was conducted face-to-face or online to achieve in-depth insights. Consequently, thematic analysis explored the dominant themes of attitudinal changes, behavior change drivers, and perceived influence of radio programs. The researchers also ensured voluntary participation and the anonymity of participants, and the case of the government station was also noted throughout the study.

## **5.0 Results**

### **5.1 Respondents' Socio-Demographic Characteristics, Media Usage and Consumption**

The majority of the respondents were males (76.00%), with more than half (52.86%) of them filling in the 25–34-year-old age range and having at least a bachelor's degree (52.86%). Most respondents' employment status predominantly consisted of employed individuals (88.00%). While random sampling was utilized, these demographic distributions can be traced to the characteristics of the online forums through which data collection took place, where these groups might have been more accessible or attractive to participate. These groups might also have been more available or responsive during data collection.

Concerning media consumption, social media was the most popular platform among the respondents (80.57%), followed by radio, with a large percentage (50.29%) mentioning daily or weekly listening to radio. On the other hand, 46.29% of the survey respondents reported that they used media only occasionally. Of these, the majority of them were men (76.98%), in the 25–34 age range (53.96%), educated up to a bachelor level (61.87%), and employed (86.33%). Several factors, including work commitments, individual preferences, information overload, and critical appraisals of content, explain why some—including many who hold degrees—consume less mainstream media and turn to

alternatives such as word-of-mouth or direct announcements. These factors accentuate the need for specific communication strategies to effectively access less-engaged segments of society.

Table 2. *Description of the Respondent's Socio-Demographic and Media Usage and Consumption Features*

<b>Socio-demographic and media usage and consumption features</b>	<b>Frequency n=350</b>	<b>Percentage</b>
<b>Gender</b>		
Male	266	76.00
Female	84	24.00
<b>Age</b>		
18-24 years old	52	14.86
25-34 years old	185	52.86
35-44 years old	85	24.29
45-54 years old	22	6.29
55-64 years old	6	1.70
<b>Educational level</b>		
High school level	12	3.43
High school graduate	59	16.86
College level or associate degree	81	23.14
Bachelor's degree	185	52.86
Postgraduate degree	13	3.71
<b>Employment status</b>		
Employed	308	88.00
Self-employed	3	0.89
Unemployed	17	4.86
Student	21	6.00
Retired	1	0.25
<b>Media usage</b>		
Daily	87	24.86
Weekly	89	25.43
Rarely	162	46.29
Never	12	3.42
<b>Media consumption</b>		
Television	56	16.00
Social media	282	80.57
Government website	12	3.43

### 5.2 Effectiveness of the COVID-19 Pandemic Risk Communication Initiatives

Table 3 indicates that the respondents view the rural radio station's COVID-19 pandemic risk communication efforts in the Philippines as effective. Knowledge awareness, attitude, perception, radio announcer influence, COVID-19 airtime, and radio broadcast factors variables all received mean scores reflecting effectiveness. These findings suggest that the radio station initiative has provided educational content, created positive perceptions and attitudes, and interacted with the listeners.

Table 3. *Perceived Effectiveness of the COVID-19 Pandemic Risk Communication Initiatives of a Rural Radio Station in the Philippines*

Variables	Mean	Std. Deviation	Description
Knowledge awareness	4.064	.918	Effective
Attitude	4.032	.945	Effective
Perception	4.076	.877	Effective
Influence of radio announcers	4.087	.905	Effective
COVID-19 airtime	4.064	.859	Effective
Factors in radio broadcast	4.081	.873	Effective

*Note:* 1.00-1.79-not effective; 1.80-2.59-slightly effective; 2.60-3.39-moderately effective; 3.40-4.19-effective; 4.20-5.00-very effective.

Interview participants indicated that listening to the radio station effectively informed their actions toward safety protocols during the pandemic. The station programs, newflash or educational, are the main sources for promoting COVID-19 awareness. They give new updates and guidance on various channels, such as their Facebook page, to deliver authentic content. This finding can be noticed in the following response of the interviewee, “They launched programs about COVID-19, not just news but also programs that can enhance our understanding or provide additional information about COVID” (P7, personal communication).

Moreover, another participant, who is a teacher, disclosed his realization of the effectiveness of listening to the radio station, “I myself discovered how effective listening to radio station can be. It influenced my actions to prioritize safety during the COVID-19 period” (P4, personal communication).

### 5.3 Correlations Analysis Among the Variables

The correlation matrix in Table 4 showed gender was strongly related to various influential variables, such as knowledge and awareness ( $r=.143$ ,  $p<0.01$ ), attitude ( $r=.134$ ,  $p<0.05$ ), perception ( $r=.161$ ,  $p<0.05$ ), the influence of the announcers ( $r=.149$ ,  $p<0.01$ ), and COVID-19 airtime ( $r=.121$ ,  $p<0.05$ ). This finding suggests that gender might substantially contribute to explaining how people are experiencing and responding under the terms of this research. These results underscore the need to view differences found for gender when examining the results, in that these correlations may represent underlying social, cultural, or behavioral traits that differently affect the use of media and information sources by groups. Clarifying these relationships provides a better understanding of the underlying factors, which allows for creating more effective and focused interventions or communication efforts. Interestingly, education was strongly correlated with perception ( $r=.122$ ,  $p < 0.05$ ), indicating

that those who are more educated are likely to perceive that the efforts have positively impacted their knowledge, perception, and judgment about information and issues related to COVID-19.

Conversely, the result also shows that the dissemination of information can influence public attitudes and perceptions. This result is corroborated by high positive correlation levels between knowledge/awareness and attitude ( $r=.829$ ,  $p<0.01$ ), knowledge/awareness and perception ( $r=.774$ ,  $p<0.01$ ), as well as between attitude and perception ( $r=.772$ ,  $p<0.01$ ). Such correlations imply that people with more knowledge and positive attitudes will also positively view the subject in question. One of the participants testified, “Because of their consistent explanations to the people, we now grasp what actions need to be taken, should the situation truly affect us” (P14, personal communication).

Another respondent also identified the significant influence the radio station had on their understanding of COVID-19, as seen from his answer, “The radio station has significantly contributed to my knowledge and understanding of COVID-19. Thanks to them, I understand the importance of social distancing, wearing masks, and regular handwashing” (P6, personal communication).

Furthermore, findings showed a strong positive correlation ( $r=.873$ ,  $p < 0.01$ ) between radio announcer influence and COVID-19 airtime, an indicator that radio announcers have considerable responsibility in the transmission of COVID-19 information and proving the potential that traditional media has to influence people's attitude and action during health emergencies. Indeed, when asked about the considerations from the initiatives of the radio station that have shaped his compliance with preventive actions, one participant mentioned the trustworthiness of the government radio station in presenting information as an important consideration, “I believed with the information because it came from the government. The radio station is also reliable” (P11, personal communication).

Similarly, when asked about their feelings regarding the radio station's efforts to increase public awareness about COVID-19, a participant pointed out the efficiency of the news reporters, who ensured that listeners received timely and up-to-date information, “We are proud and happy about our local radio station's COVID-19 awareness initiatives. It keeps us informed about the news concerning our city. We are never delayed in receiving the news because the reporters are quick” (P7, personal communication).

Another participant also expressed that she is proud of the radio station's efficient employees for promptly sharing their knowledge about COVID-19 to keep people informed and safe, “I am proud of the employees in the station who are actively sharing their knowledge about COVID-19 with the constituents, making them aware of how to prevent the spread of the virus or get ill” (P14, personal communication).

Concurrently, the study discovered a statistically significant positive relationship between adhering to preventive actions and using digital platforms ( $r=.857$ ,  $p < 0.01$ ), indicating individuals more engaged in digital platforms are also more inclined to engage in preventive actions. Utilization of the station's social media channels, particularly its Facebook Page, was a significant source, according to several respondents, especially those who work and likely have restricted access to radio broadcasts. According to one of them, “Ever since I started following your station, I have always been keeping track of its news” (P14, personal communication).

Another participant expressed that he became more aware and learned how to avoid diseases, especially the COVID-19, “Yes, I am more aware and learn how to prevent different illnesses, especially COVID-19” (P5, personal communication).

Table 4. Correlation Matrix Among the Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age	-													
2. Gender	-.038 <sup>ns</sup>	-												
3. Educational attainment	.085 <sup>ns</sup>	.184 <sup>**</sup>	-											
4. Employment status	-.256 <sup>**</sup>	.372 <sup>**</sup>	-.095 <sup>ns</sup>	-										
5. Media usage	.048 <sup>ns</sup>	.008 <sup>ns</sup>	.073 <sup>ns</sup>	-.046 <sup>ns</sup>	-									
6. Media consumption	-.103 <sup>ns</sup>	.002 <sup>ns</sup>	.084 <sup>ns</sup>	-.022 <sup>ns</sup>	.049 <sup>ns</sup>	-								
7. Knowledge and awareness	.000 <sup>ns</sup>	.143 <sup>**</sup>	.089 <sup>ns</sup>	.098 <sup>ns</sup>	-.250 <sup>**</sup>	.026 <sup>ns</sup>	-							
8. Attitude	.035 <sup>ns</sup>	.134 <sup>*</sup>	.064 <sup>ns</sup>	.124 <sup>*</sup>	-.252 <sup>**</sup>	.026 <sup>ns</sup>	.829 <sup>**</sup>	-						
9. Perception	.015 <sup>ns</sup>	.161 <sup>*</sup>	.122 <sup>*</sup>	.136 <sup>*</sup>	-.303 <sup>**</sup>	.006 <sup>ns</sup>	.774 <sup>**</sup>	.772 <sup>**</sup>	-					
10. Influence of radio announcers	.051 <sup>ns</sup>	.149 <sup>**</sup>	.076 <sup>ns</sup>	.074 <sup>ns</sup>	-.251 <sup>**</sup>	.038 <sup>ns</sup>	.792 <sup>**</sup>	.823 <sup>**</sup>	.824 <sup>**</sup>	-				
11. COVID-19 airtime	-.013 <sup>ns</sup>	.121 <sup>*</sup>	.065 <sup>ns</sup>	.146 <sup>**</sup>	-.270 <sup>**</sup>	.002 <sup>ns</sup>	.767 <sup>**</sup>	.779 <sup>**</sup>	.870 <sup>**</sup>	.873 <sup>**</sup>	-			
12. Factors in radio broadcast	-.044 <sup>ns</sup>	.073 <sup>ns</sup>	.064 <sup>ns</sup>	.094 <sup>ns</sup>	-.263 <sup>**</sup>	.023 <sup>ns</sup>	.778 <sup>**</sup>	.728 <sup>**</sup>	.806 <sup>**</sup>	.772 <sup>**</sup>	.854 <sup>**</sup>	-		
13. Compliance with preventive measures	-.059 <sup>ns</sup>	.100 <sup>ns</sup>	.034 <sup>ns</sup>	.144 <sup>**</sup>	-.252 <sup>**</sup>	.016 <sup>ns</sup>	.754 <sup>**</sup>	.719 <sup>**</sup>	.817 <sup>**</sup>	.757 <sup>**</sup>	.860 <sup>**</sup>	.834 <sup>**</sup>	-	
14. Integration of digital platform	.011 <sup>ns</sup>	.137 <sup>**</sup>	.091 <sup>ns</sup>	.135 <sup>*</sup>	-.254 <sup>**</sup>	.051 <sup>ns</sup>	.754 <sup>**</sup>	.715 <sup>**</sup>	.811 <sup>**</sup>	.742 <sup>**</sup>	.832 <sup>**</sup>	.805 <sup>**</sup>	.857 <sup>**</sup>	-

Note: \*p< 0.05; \*\*p< 0.01; ns not significant

#### 5.4 Mediation Analysis on the Relationship Between Knowledge and Awareness, Perception, and Compliance to COVID-19 Measures Using the Integration of Digital Platform as Mediating Variable

Table 5 presents the significant moderating effect of digital platform integration on the association between knowledge/awareness and adherence to preventive interventions. The direct and indirect effects, which account for 46.4% and 53.6% of the total mediation, respectively, are statistically significant. This finding suggests that digital platform integration affects individuals' compliance with preventive interventions indirectly and directly through impacts on knowledge and awareness. Concurrently, combining digital platforms mediates the effect of perception on prevention compliance (see Table 6). The direct and indirect effects of the total mediation account for 49.5% and 50.5%, respectively, and both are statistically significant. Digital platform integration can directly shape people's perceptions and indirectly shift people's compliance with preventive measures by influencing perceptions.

Both findings in Tables 5 and 6 show that an increased application of digital platforms can enhance people's knowledge, awareness, and favorable and correct impression of COVID-19, enhancing adherence to recommended preventive actions. On being questioned about what aspects of the radio station's initiatives have informed his willingness to follow preventive practices, one respondent perceived the radio station's emphasis on how grave the virus is and that it is essential to heed due to its extensive influence on health as an aspect “This emphasizes that the virus is serious and deserves our full attention, as it significantly affects our health” (P3, personal communication).

Table 5. Mediation Estimates Caused by the Integration of Digital Platform on the Knowledge and Awareness and Compliance with the Preventive Measures

<i>Effects</i>	<i>B</i>	<i>SE</i>	<i>z-value</i>	<i>p-value</i>	<i>% Mediation</i>
Direct	.134	.040	3.377	<.001	46.4
Indirect	.155	.027	5.845	<.001	53.6
Total	.289	.044	6.613	<.001	100.0

Table 6. Mediation Estimates Caused by the Integration of Digital Platform on the Perception and Compliance with the Preventive Measures

<i>Effects</i>	<i>B</i>	<i>SE</i>	<i>z-value</i>	<i>p-value</i>	<i>% Mediation</i>
Direct	.287	.047	6.172	<.001	49.5
Indirect	.292	.035	8.368	<.001	50.5
Total	.580	.046	12.677	<.001	100.0

Meanwhile, the path estimates in Table 7 indicate strong relationships between digital platform integration, knowledge and awareness, perception, and compliance behavior. The table illustrates how digital platforms influence public reactions to COVID-19 risk communication efforts. The table further shows a strong positive direct effect of combining digital platforms on adherence to preventive measures ( $B = .522$ ,  $p < .001$ ). This result suggests that more integration and use of digital platforms are positively related to the adherence level to prescribed preventive activities.

The findings further show that compliance with preventive practices is positively affected by knowledge/awareness ( $B = .134, p < .001$ ) and perception ( $B = .287, p < .001$ ), both of which contribute positively directly. This finding means those with better perceptions and higher knowledge and information will likely comply with preventive practices. In addition, the research indicates that the integration of digital platforms has a very positive direct effect on perception ( $B = .560, p < .001$ ) and knowledge/awareness ( $B = .297, p < .001$ ). Accordingly, increased use and integration of digital platforms can enhance individuals' knowledge, awareness, and perceptions regarding COVID-19.

Table 7. Path Estimates Among the Variables

Paths	<i>B</i>	<i>SE</i>	<i>t</i> -value	<i>p</i> -value
Integration of digital platform → Compliance with preventive measures	.522	.045	11.480	<.001
Knowledge and awareness → Compliance with preventive measures	.134	.040	3.377	<.001
Perception → Compliance with preventive measures	.287	.047	6.172	<.001
Knowledge and awareness → Integration of digital platform	.297	.044	6.791	<.001
Perception → Integration of digital platform	.560	.046	12.223	<.001

## 6.0 Discussion

Drawing on the empirical evidence of this research, we make key observations to offer an overall insight into effective risk communication implementation for rural radio stations.

First, the overdependence on social media as the main media platform suggests a possibility of effective information dissemination through this medium. The substantial radio consumption, particularly daily or weekly, highlights its continued relevance as a news and information source, especially for this target audience. The sustained high rates of daily listening to online on-demand radio demonstrate that radio remains a relevant and influential medium in the digital age (Laor, 2022; Ajisafe & Dada, 2023). Radio continues to provide live, inexpensive information and entertainment to the broader community, such as marginalized internet users (Sujoko et al., 2023; Krause & Fletcher, 2023). Radio's adaptability to spread to digital media and combine with on-demand watching ensures it remains in touch with modern audiences' evolving needs and listening habits (Wahyunto et al., 2025). Such findings highlight social media and radio platforms in developing communication programs targeting working young adults.

Second, a twofold media strategy among young working professionals must be implemented. The common tendency towards social media reflects its power to spread information to quickly, and the constant use of radio indicates that it is still an effective means of reaching this audience. Radio broadcasting and social media shall be supplementary as a double-edged tactic since using the strengths of both can help organizations target more varied masses via both newer and older media (Rachmawati & Afifi, 2022). The strategy maximizes message

coverage and engagement, tapping the immediacy and interactivity of social media with the credibility and routine audience of the radio (Magnaye & Tarusan, 2023). With both platforms being utilized appropriately, communications campaigns can achieve maximum reach, interaction, and impact on such a target audience.

Thirdly, information dissemination greatly influences people's attitudes and perceptions, where outcomes indicate that higher knowledge and awareness correlate with higher positive attitudes and perceptions toward public health interventions. Well-educated individuals are more likely to change for the good in times of crisis (Montesi, 2021). Notably, radio personalities also influence people's behavior and opinion, as evidenced by the strong positive relationship between their influence and the time of the COVID-19 issue. This result aligns with the literature accentuating radio personalities' opinion leadership and information authorities within respective communities (Kim & Yang, 2019). Their familiarity and reliability maximize message recall and behavioral effects (Shabazz, 2024). Besides, including online spaces positively correlated with compliance with preventive measures, which means uniting traditional radio with online dialogue maximizes the exposure and influence of messages. Using social media in communication programs can boost responsiveness from the audience (Harizi & Trebicka, 2023).

Lastly, this paper also emphasizes the distinct role of digital platforms in driving public health outcomes. Digital platforms significantly mediate the connection between knowledge, perception, and practice compliance to prevention and are discovered to amplify the effectiveness of health communications interventions (Fitzpatrick, 2023). The results show that increased integration on online platforms can effectively stimulate public awareness, enhance more positive health risk attitudes, and enhance compliance with recommended preventive processes (Li & Liu, 2020). Overall, effective digital communication is necessary to moderate public health issues.

## **7.0 Conclusions and Recommendations**

This research evaluated the effectiveness of implementing risk communication initiatives by a Philippine government radio station during the COVID-19 pandemic. The outcomes proved the station's effectiveness in instilling positive attitudes and behaviors among the listeners and spreading significant information. The respondents acknowledged the station's contribution as crucial in imparting obedience to precautionary measures amid the pandemic and appreciated its effort. The research also indicated the level of online websites complementing mass radio news reporting. Though radio was the most frequent resource, for most respondents, increasing utilization of social media websites demonstrated the importance of a multi-modal communication approach. Online media facilitated wider dissemination and utilization, particularly among young people and individuals with the lowest access to mass broadcasting on radio.

On this basis, the radio station can reinforce its function by joining forces with local government and health administrators, developing a more powerful online presence through interactivity and content based upon targeted audiences, and training staff in communication and online skills to enhance public health reporting. Meanwhile, the findings of this study are limited by reliance on self-reported data collected simultaneously and by overrepresentation of certain demographic groups due to random, uncontrolled responses of the target population. In this regard, future research must utilize longitudinal designs and more representative samples to improve the assessment of the long-term effects of digital integration and engagement efforts.

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