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## **DISCUSSION**

The discussion section of this thesis aims to interpret and provide insights into the results presented in Tables 8 to 25 and the associations found in Table 25. These results shed light on various aspects related to the COVID-19 pandemic, information-seeking behaviors, the impact of information, and the ability to discern between true and false information.

### **Demographic Characteristics:**

The study included a diverse sample of 1070 subjects, encompassing various demographic factors, including gender, field of work, professional roles (residents and faculty), and years of experience. These demographic characteristics offer valuable insights into the composition of the study population, which can, in turn, help contextualize and interpret the research findings.

One noteworthy aspect highlighted in the study population characteristics is the significant gender imbalance among the study participants, with 63.9% being male and 36.1% female. Gender plays a crucial role in influencing how individuals perceive and respond to health-related information, including information about the COVID-19 pandemic. Men and women may have different risk perceptions, information-seeking behaviors, and healthcare utilization. This gender imbalance suggests that the research should consider potential variations in information-seeking and response behaviors based on gender.

Another important demographic aspect is the distribution of participants across different fields of work. The majority (73.6%) of participants were in the dental field, while 26.4% were in the medical field. The choice of field can significantly influence individuals' exposure to health-related information and their level of expertise in evaluating medical content. Dental professionals may have distinct perspectives and information needs compared to their medical counterparts. This demographic breakdown highlights the need to assess and compare information-seeking behaviors and perceptions between these two groups.

The inclusion of both residents (28.4%) and faculty (71.6%) among the study participants is also relevant. Different professional roles within the healthcare sector may lead to variations in the level of experience, access to information sources, and

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the degree of responsibility in disseminating health information. Residents, who are still in training, might have different information-seeking behaviors compared to faculty members who have more experience and responsibilities.

The mean years of experience among participants were  $9.46 \pm 8.48$ , with a wide range from 0 to 37 years. This wide range in years of experience underscores the heterogeneity of the study population. Experience can significantly impact individuals' information-seeking behaviors and their ability to critically evaluate health-related information. More experienced individuals may have developed greater information literacy skills over time, while those with less experience may rely on different sources or exhibit different behaviors.

These demographic characteristics are relevant to the study's focus on the COVID-19 infodemic. The infodemic refers to the excessive amount of accurate and false information surrounding the pandemic. Understanding how different demographic groups engage with and respond to COVID-19 information is crucial for effectively tailoring communication strategies, educational interventions, and public health campaigns. For example, targeting specific information sources or formats may be more effective for certain gender or professional groups.

These demographic factors can significantly influence how individuals navigate and make sense of the overwhelming information landscape during public health crises.

### **Information Sources:**

The survey revealed that a significant portion of the participants (55%) sought updates on the COVID-19 pandemic on a daily basis. This indicates a high level of engagement and interest in staying informed about the evolving situation. Daily information-seeking behavior is characteristic of a population that is actively monitoring the pandemic, potentially to make informed decisions or adapt to changing circumstances.

Among the various media platforms available, social media emerged as the overwhelmingly preferred source of information, with 99.06% of participants using it. This was followed by television (66.2%) and newspapers (62.15%). These findings underscore the changing landscape of information consumption, with digital and online platforms, particularly social media, dominating as primary sources of

information during the pandemic. The emphasis on information sources is crucial because it sheds light on where individuals turn to for news and updates during public health crises. In the context of the COVID-19 pandemic, where rapid and accurate information dissemination is vital, understanding the preferred channels is essential for effective communication. In the early days of the pandemic, social media platforms focused on managing the visibility of COVID-19 misinformation through subjective policies and practices, often avoiding direct intervention. This approach may inadvertently give credibility to false claims, contradicting public health expert guidance. Social media can significantly influence attitudes, beliefs, norms, and behaviors, potentially undermining public health. It can enable risky behaviors and the transmission of diseases, as well as enhance real-time disease surveillance. Social media can disseminate health-promoting information to encourage preventive measures and positively influence health behaviors. Social media can guide users on when and where to seek care and how to be treated when ill. It also has the potential to combat health misinformation through educational content, but this requires coordination by governments and health organizations.

The high usage of social media (99.06%) as a primary source of information highlights a significant shift toward digital platforms for information consumption. This shift can be attributed to the real-time updates, accessibility, and user-generated content available on social media platforms. People are not only passive consumers of information but also active participants in discussions and sharing of information related to the pandemic. Historically, platforms like Facebook, Twitter, and YouTube have avoided taking sides and positioned themselves as non-interventionist mediators. They rely on a cyberlibertarian approach where individual users are responsible for discerning truth and ideas through competition in the "marketplace of ideas." A significant portion of those receiving inaccurate information named WhatsApp as the main source, possibly due to its widespread user base. Older adults are more likely to share fake news articles on social media due to potential digital literacy challenges. The prevalence of warning labels on social media platforms may lead users to expect that stories with misinformation will be detected and labeled, potentially making stories without warnings seem more accurate.

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Platforms like YouTube have human review teams that assess content flagged by automated systems. Additionally, they use user flags to detect false or misleading information. YouTube introduced a "trusted flagger" program to give certain users more influence in identifying misinformation. Both Facebook and Twitter add warning labels to posts deemed false by fact-checkers. Social media platforms like Facebook provide pop-up messages to inform users when an article is old to prevent the circulation of outdated information. Disinformation labeling by platforms to improve machine learning algorithms is not a public good and may not align with independent research standards. Properly used, social media can be valuable for crisis communication, tracking disease outbreaks, improving knowledge, awareness, compliance, and positive behaviors during infectious disease pandemics.

These findings have important implications for policymakers and health organizations. The dominance of social media as an information source indicates the need for these entities to have a strong online presence and engage with the public through digital channels. Effective communication strategies should consider the nature of online platforms, where information can spread rapidly and misinformation can proliferate. Health campaigns and interventions should be tailored to fit the digital landscape, including the use of visual content, infographics, and interactive tools to engage with the audience effectively.

Understanding the preferred sources of information can help in targeting public health campaigns and interventions more effectively. For example, if social media is the primary source for a majority of the population, health organizations can use social media platforms to disseminate accurate and timely information. They can also collaborate with influencers and online communities to amplify public health messages.

To summarize, the findings regarding information sources in your dissertation highlight the significance of digital platforms, especially social media, in shaping how individuals access information during the COVID-19 pandemic. These insights underscore the need for adaptable and targeted communication strategies that can effectively engage with the public in the online information landscape. The dynamic nature of information dissemination in the digital age requires public health

organizations and policymakers to stay agile in their efforts to combat the infodemic and ensure the availability of accurate and reliable information to the public.

### **Awareness of the COVID-19 Infodemic**

The present study revealed that a substantial proportion of participants, specifically 45%, were not aware of the existence of a COVID-19-related infodemic. Additionally, 37.9% of participants were unsure about its existence. These findings collectively indicate a notable lack of awareness and clarity among the surveyed population regarding the concept of an infodemic during the pandemic.

The importance of awareness about the infodemic cannot be overstated. An infodemic is characterized by the rapid spread of both accurate and false information, which can contribute to confusion, panic, and the dissemination of misinformation. Public understanding of this concept is crucial because it shapes individuals' perceptions of the information environment and their ability to critically evaluate the information they encounter.

The lack of awareness about the infodemic raises concerns about the potential consequences of misinformation and the inability to discern reliable information sources. When individuals are not aware of the existence of an infodemic, they may not recognize the prevalence of false or misleading information, leading to the unintentional spread of inaccurate content. This can have severe consequences for public health, as misinformation can undermine trust in public health measures and guidelines, and even lead to harmful behaviors.

It is essential to address this awareness gap through targeted public health communication and education campaigns. These campaigns should not only focus on disseminating accurate information but also on explaining the concept of an infodemic, its implications, and the importance of verifying information from credible sources. Clarity and transparency in communication are key to ensuring that the public understands the challenges posed by the infodemic and is equipped to navigate the information landscape effectively.

Building public trust in authoritative sources of information is also critical in addressing this awareness gap. When individuals are aware of the infodemic and trust established sources, they are more likely to seek information from reliable channels

and critically evaluate the information they encounter. Trust in public health authorities, healthcare institutions, and scientific experts can serve as a buffer against the spread of misinformation.

The findings regarding awareness of the COVID-19 infodemic underscore the need for proactive communication and educational efforts to ensure that the public is well-informed about the challenges posed by misinformation during a pandemic. Public health campaigns should not only focus on disseminating accurate information but also on raising awareness about the infodemic concept itself. Clarity, transparency, and trust-building measures are essential to empower individuals to make informed decisions and protect public health.

### **Perceptions of False Information**

The survey results indicate that a significant majority of participants, specifically 56.9%, believed that false information related to COVID-19 was being spread for political or economic gains or to target specific classes of society. This perception reflects a high level of concern and skepticism among the surveyed individuals regarding the credibility of information related to the pandemic.

The perception that false information was being spread for political or economic gains underscores the skepticism that many participants had about the motives behind the information they encountered. During times of crisis, such as a global pandemic, trust in information sources becomes crucial. Individuals rely on accurate and trustworthy information to make informed decisions about their health and safety. This finding highlights the critical role that authorities and healthcare institutions play in addressing the infodemic. It underscores the need for these entities to communicate transparently, provide credible information, and be proactive in debunking false claims and conspiracy theories. Fostering trust in these institutions is essential to combat the spread of misinformation and to ensure that the public has access to reliable guidance and recommendations.

The high level of concern among participants regarding the credibility of information suggests that public health authorities should not only focus on providing accurate information but also on addressing the underlying concerns and doubts of the public. This can be achieved through clear and transparent communication, sharing the

scientific basis for recommendations, and acknowledging uncertainties when they exist. Authorities should also engage with the public, answer questions, and actively combat false information when it arises.

Skepticism about the credibility of information can influence individuals' behaviors and decision-making. Some may become hesitant to follow recommended guidelines or vaccination efforts if they doubt the motives or accuracy of the information provided. It is, therefore, imperative for authorities to bridge the trust gap and ensure that accurate information is readily accessible to all segments of the population. The findings regarding perceptions of false information highlight the need for a robust and transparent communication strategy during public health crises like the COVID-19 pandemic. Skepticism and concerns about misinformation can erode public trust and hinder efforts to manage the crisis effectively. Public health authorities and healthcare institutions must prioritize building and maintaining trust, addressing concerns, and consistently providing accurate information to combat the spread of misinformation and ensure public safety.

#### **Awareness of Government Measures**

According to the survey results, only 31.2% of participants were aware of the measures taken by the government to counter false information during the COVID-19 pandemic. This relatively low level of awareness indicates that a significant portion of the surveyed population may not have been informed about the steps taken by the government to address misinformation.

The limited awareness of government measures (31.2%) suggests that communication efforts aimed at informing the public about these actions may need improvement. In times of crisis, it is essential for governments to take proactive steps to combat misinformation and disinformation. However, for these efforts to be effective, they must be widely publicized, transparently explained, and easily accessible to the public. These findings emphasize the importance of not only implementing measures to counter misinformation but also effectively communicating these actions to the public. When people are aware of the government's efforts to combat false information, they are more likely to trust official information sources. This trust is crucial for ensuring that the public adheres to recommended health guidelines and follows official guidance during a crisis.

The lack of awareness (31.2%) regarding government actions to counter misinformation can lead to mistrust in official information sources. Mistrust, in turn, can result in individuals seeking information from less credible or unofficial essential for governments to bridge the awareness gap and actively engage with the public to build trust. To enhance awareness and trust, governments should engage with the public through various communication channels, including press releases, official websites, social media, and public briefings. They should also provide clear and transparent information about the measures being taken, the rationale behind them, and how individuals can contribute to combating misinformation.

Recognizing that different segments of the population may have varying information needs and preferences, governments should tailor their communication strategies to reach diverse audiences effectively. This includes addressing language barriers, using accessible formats, and leveraging trusted community leaders and influencers to disseminate accurate information. The findings regarding awareness of government measures to tackle false information in the present study highlight the importance of robust and transparent communication during a public health crisis. Government actions need to be effectively communicated and widely publicized to ensure that the public is informed, engaged, and trusts official information sources. Bridging the awareness gap can contribute to the overall effectiveness of efforts to combat misinformation and protect public health during emergencies.

#### **Ability to Distinguish True Information**

A concerning finding is that 79.8% of the participants reported being unable to distinguish between myths and true information circulating online. This indicates a significant deficiency in participants' digital literacy and critical thinking skills when it comes to assessing the credibility of online information sources. The finding of such a high percentage of individuals unable to distinguish between accurate and false information online highlights an urgent need for educational programs focused on digital literacy and media literacy. These programs should be designed to equip individuals with the necessary skills to critically evaluate information encountered on the internet. Without these skills, individuals are at a higher risk of falling victim to misinformation and contributing to its spread.



The COVID-19 infodemic has demonstrated the complexity of the information landscape during a public health crisis. Myths, rumors, and false information can spread rapidly online, often masquerading as legitimate sources. The ability to discern accurate information from misinformation is critical for making informed decisions about one's health and safety. Health literacy programs can play a crucial role in helping individuals understand and navigate the vast amount of health-related information available online. These programs can teach individuals how to critically evaluate the credibility of sources, identify trustworthy information, and recognize common misinformation tactics.

Addressing infodemics necessitates a comprehensive interdisciplinary approach, and this position paper serves as a rallying call for fostering such cross-disciplinary research on the subject of infodemics. To underscore the significance of interdisciplinary cooperation in this domain, the following viewpoints must be considered:

1. *Computer Science and Information Systems Perspective:* The centrality of information accessibility to individuals is emphasized in this view. The manner in which information disseminates within a society is profoundly impacted by the algorithms utilized for information dissemination and the alignment of information provision with individual interests.
2. *Cognitive Psychology Perspective:* This viewpoint places its focus on evaluating how the availability of information, influenced by algorithms and personalization, as well as language signals, shapes the perception of pandemics and policies, and how these factors influence individual behavior.
3. *Business and Economics Perspective:* While the Cognitive Psychology perspective primarily concentrates on the individual level, the viewpoint of Business and Economics facilitates the integration of the aforementioned perspectives into the broader context of economic systems.

Media literacy programs, on the other hand, can focus on developing individuals' skills in analyzing and interpreting media messages. This includes understanding bias, recognizing sensationalism, and identifying credible news sources. Given the significant influence of social media and digital platforms on information.

dissemination, media literacy is essential for navigating the modern information landscape. Equipping individuals with digital literacy and critical thinking skills is not only about protecting themselves from misinformation but also about preventing the inadvertent spread of false information to others. The study's findings highlight the collective responsibility to ensure that individuals have the tools to be responsible digital citizens and information gatekeepers.

The findings of the present study regarding participants' inability to distinguish between myths and true information online emphasize the pressing need for comprehensive educational programs. These programs should be designed to enhance digital literacy and critical thinking skills, empowering individuals to navigate the complex information landscape during crises like the COVID-19 pandemic. By addressing these educational gaps, society can take proactive steps to reduce the spread of misinformation and promote the responsible consumption and sharing of accurate information.

#### **Cross-Checking Information:**

The survey results reveal that almost half of the participants (47.9%) reported sometimes cross-checking information that had an impact on them, while an additional 36.8% rarely engaged in such fact-checking practices. This suggests that there is considerable room for improvement when it comes to promoting and encouraging fact-checking behaviors among the general population.

The discovery that only a minority of participants engage in regular fact-checking highlights the importance of actively promoting and incentivizing such behaviors.

Fact-checking is a critical strategy to mitigate the spread of misinformation, as individuals who verify information before sharing it are less likely to contribute to the dissemination of false or misleading content. The finding underscores the need for information campaigns and educational initiatives that prioritize fact-checking behaviors. Public health authorities, educational institutions, and media organizations can play a pivotal role in promoting fact-checking as a responsible information consumption habit. These campaigns should emphasize the significance of verifying information from credible sources before accepting and sharing it.

Human psychology often involves a cognitive bias known as confirmation bias, where individuals tend to accept information that aligns with their preexisting beliefs and values. Fact-checking can help individuals overcome confirmation bias by encouraging them to critically assess information rather than accepting it at face value. This is particularly important during public health crises when accurate information can be a matter of life and death.

Fact-checking should be integrated into broader digital media literacy programs. These programs can teach individuals not only how to verify information but also how to recognize the signs of credible sources and the red flags of misinformation. Developing media literacy skills can empower individuals to navigate the information landscape effectively. Collaboration with technology companies and social media platforms is also crucial. These platforms can implement features and algorithms that encourage users to fact-check information before sharing it. Providing users with easy access to fact-checking tools can help curb the rapid spread of false information.

The findings regarding participants' fact-checking behaviors highlight the need for proactive measures to encourage responsible information consumption. Promoting fact-checking as a regular practice can significantly reduce the impact of misinformation during public health crises and beyond. Educational campaigns, media literacy programs, and collaboration with tech companies are essential components of a comprehensive strategy to promote fact-checking behaviors and ensure the dissemination of accurate information.

#### **Emotional Impact of the Infodemic:**

The survey results indicate that a majority of participants reported experiencing negative emotions after consuming COVID-19-related information. Specifically, fear (66.63%), anxiety (83.45%), and panic (71.4%) were the most commonly reported emotional responses. These high prevalence rates demonstrate the profound impact that misleading, sensationalized, or false information can have on individuals' emotional well-being. The findings underscore the potential harm caused by misinformation and sensationalized content during public health crises. When individuals are exposed to exaggerated or false information, it can evoke intense feelings of fear and anxiety, leading to panic and distress. This emotional distress not

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only affects individuals' mental health but can also influence their behavior and decision-making.

The high emotional distress reported by participants emphasizes the critical role of public health campaigns in providing accurate, balanced, and responsible information. Public health authorities, media organizations, and communication experts must prioritize the dissemination of reliable information to the public. By doing so, they can help alleviate unnecessary emotional distress and promote informed decision-making. Public health campaigns should aim to strike a delicate balance between transparency and sensationalism. While it is essential to convey the severity of a public health crisis, doing so without sensationalizing information is crucial. Providing clear, evidence-based information can help individuals understand the risks and take appropriate precautions without inducing undue fear and anxiety.

Building trust in official information sources is paramount. When individuals trust the sources of information they rely on, they are more likely to approach information with a sense of confidence and reduced emotional distress. Establishing trust requires consistent, transparent communication and a commitment to accuracy. Media literacy programs can also play a role in helping individuals critically evaluate the information they encounter. These programs can teach individuals to recognize sensationalized or false content, identify reliable sources, and manage emotional responses to information. Media literacy empowers individuals to navigate the digital information landscape effectively. The findings regarding the emotional impact of COVID-19-related information consumption underscore the importance of responsible communication during public health crises. Sensationalized or false information can lead to significant emotional distress among the public. Public health campaigns should prioritize the dissemination of accurate, balanced, and transparent information to mitigate these emotional harms and promote informed decision-making.

#### **Role of Trusted Sources:**

The sources of information were categorized into two main groups: formal and informal. This division arises from the recognition that while each type of source complements the other, it does not typically serve as a direct substitute.

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Within the formal sources, a significant portion of our study population predominantly favored official government websites. Notably, the response from official government information platforms has been swift, consistently providing accurate and up-to-date information. Nationally, various official government portals, notably led by the Ministry of Health and Family Welfare, Government of India, have been instrumental in disseminating current information through their websites and social media channels. On an international scale, credible information is being offered by various portals led by organizations like the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC). Hernandez-García et al. conducted a study on the same subject, where they identified that the overarching themes of the stories could be roughly classified into four categories: social isolation, economic repercussions, direct health impacts, and significant exaggeration.

The survey results indicate that more than half of the participants (54.39%) reported receiving information from trusted sources, including colleagues, faculty, or hospitals. This finding underscores the tendency of individuals to seek information from sources they perceive as reliable and credible. During a pandemic, where the need for accurate information is critical, relying on trusted channels becomes essential. Trusted sources, such as colleagues, faculty, and hospitals, are instrumental in providing verified facts and credible information to the public. This role is crucial in combating the spread of misinformation and ensuring that individuals have access to accurate information about COVID-19. It also demonstrates the responsibility that trusted institutions and professionals have in disseminating reliable information to the public.

In addition to providing verified facts, trusted sources also offer emotional support and reassurance. This holistic approach acknowledges the emotional impact of a public health crisis on individuals. It goes beyond merely conveying information to address individuals' fears, concerns, and anxieties. This approach can contribute to a more balanced and supportive information environment. Leveraging trusted channels for information dissemination can enhance public trust in information sources. When individuals receive information from sources they trust, they are more likely to believe and act upon that information. This trust can lead to better compliance with public health guidelines, increased vaccination rates, and a more informed and engaged public.

Healthcare professionals, including faculty and hospital staff, can play a pivotal role in public health communication. Their expertise, credibility, and ability to convey information in a relatable manner make them valuable assets in disseminating accurate information. Collaborative efforts between healthcare professionals and public health authorities can amplify the impact of information campaigns. While the majority of participants received information from trusted sources, it's essential to ensure that information gaps are addressed comprehensively. Trusted sources should continuously provide updates, answer questions, and address emerging concerns to maintain their credibility.

Findings from the present study underscore the importance of trusted sources in providing a balanced, reliable, and supportive information environment during the COVID-19 pandemic. Relying on trusted channels for information dissemination is a key strategy in combating the infodemic and ensuring that individuals have access to accurate information, emotional support, and reassurance. Public health authorities and healthcare professionals should continue to prioritize the dissemination of reliable information to build and maintain public trust.

### **Government and WHO Websites**

The findings concerning the perceived reliability of official WHO, government, and health ministry websites/apps in the present study highlight the significance of authoritative sources in combating misinformation and providing the public with trustworthy information. The survey results revealed that a majority of participants (63.5%) held a positive perception of official sources, including WHO, government, and health ministry websites/apps. This positive perception reflects the public's trust in these authoritative sources during the COVID-19 pandemic.

The positive perception of official sources underscores the crucial role that authoritative information providers play during a public health crisis. These sources are recognized for their expertise, access to reliable data, and commitment to evidence-based information. As such, they are vital in countering the spread of misinformation and ensuring that individuals have access to accurate and up-to-date information. The finding that a majority of participants found official sources to be helpful in providing reliable information (63.5%) suggests that these platforms have

been effective in disseminating accurate information to the public. This effectiveness can be attributed to the transparency, credibility, and accessibility of official sources.

Trust in official sources is pivotal in building public trust in information sources. When individuals trust authoritative organizations such as the WHO and government health ministries, they are more likely to rely on and follow the guidance provided. This trust is a valuable asset in public health communication efforts. Authoritative sources act as a counterbalance to misinformation and conspiracy theories. Their commitment to evidence-based information helps dispel myths, correct false information, and provide individuals with a reliable reference point for COVID-19-related matters.

To maintain and strengthen public trust, official sources should continue to engage in transparent and consistent communication. Providing regular updates, addressing emerging concerns, and delivering information in an understandable and accessible manner are essential strategies. Collaborative efforts between authoritative sources and healthcare professionals, as well as academic institutions, can further enhance the credibility and impact of information dissemination. Healthcare professionals can serve as ambassadors of accurate information, reinforcing the messages from official sources.

These findings highlight the pivotal role of authoritative sources, such as WHO, government, and health ministry websites/apps, in providing reliable information during the COVID-19 pandemic. Their positive perception among the public demonstrates the effectiveness of these platforms in countering misinformation and ensuring that individuals have access to credible guidance. Building and maintaining trust in authoritative sources should remain a priority in public health communication efforts.

### **Health Literacy Training**

The survey results reveal that a significant proportion of participants (62.2%) reported undergoing health literacy training programs. This high level of participation is encouraging and reflects a proactive approach toward equipping individuals with the skills needed to navigate the information landscape effectively.

Health literacy training programs empower individuals by providing them with the knowledge and skills necessary to critically assess the credibility of information sources. During a public health crisis like the COVID-19 pandemic, where misinformation and false information abound, these skills are invaluable. Participants who have undergone such training are better equipped to make informed decisions regarding their health and well-being.

Health literacy training programs contribute to information resilience, which is the ability to discern accurate information from misinformation and make informed choices. This is particularly relevant in the context of the infodemic, where false information can lead to harmful consequences. Individuals who have undergone health literacy training are less susceptible to misinformation and are more likely to seek and trust credible sources. The significance of health literacy training becomes even more evident when considering the potential lifesaving implications. During a pandemic, individuals may need to make critical decisions about their health, such as whether to get vaccinated or follow public health guidelines. Having the ability to distinguish between true and false information can have a direct impact on public health outcomes.

The high participation rate in health literacy training programs should serve as a model for public health authorities and educational institutions. Promoting information resilience through such programs should be a priority in public health strategies, as it not only protects individuals from misinformation but also contributes to overall public health goals. While the high participation rate is encouraging, it's essential to emphasize the importance of continuous education and ongoing training. Information landscapes evolve, and new challenges may arise. Therefore, individuals should have access to updated training to adapt to changing information environments.

Overall, these findings highlight the positive impact of health literacy training programs in empowering individuals to critically assess information sources during the COVID-19 pandemic. Such programs contribute to information resilience and have potential lifesaving implications. Promoting and expanding these programs should be a key component of public health and education strategies to combat the infodemic effectively.



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**Role in Information Dissemination**

The survey results indicate that a noteworthy portion of participants (37%) reported actively playing a part in updating others with valid information about the pandemic situation. This demonstrates a proactive approach by these individuals in sharing accurate and reliable information within their communities. The finding that 37% of participants engaged in sharing valid information is a positive sign of active involvement in combating misinformation. These individuals act as information ambassadors, helping to counter the spread of false information and ensuring that credible information reaches a wider audience.

Encouraging individuals to share reliable information responsibly contributes to the development of a more informed and resilient community. In a pandemic, community resilience is crucial for effective public health management. When accurate information is shared and amplified within communities, it reduces the impact of misinformation and promotes adherence to public health guidelines.

Individuals who actively disseminate valid information often amplify messages from authoritative sources such as health agencies, government departments, and medical professionals. This amplification enhances the reach and impact of credible sources, reinforcing the importance of authoritative guidance. Information dissemination can help address information gaps and uncertainties within communities. It provides a channel for individuals to seek clarification, share updates, and connect with reliable sources of information. This can lead to a more well-informed and interconnected community.

While the 37% engagement rate is encouraging, it also highlights the opportunity for further engagement efforts. Encouraging more individuals to actively participate in information dissemination can have a cascading effect, leading to a more informed society. Public health authorities and organizations can play a pivotal role in promoting responsible information sharing. Educational campaigns that emphasize the importance of fact-checking, verifying sources, and sharing information from credible sources can empower individuals to play a more active role in information dissemination.

Active information dissemination is closely linked to trust in information sources. When individuals trust the information they receive, they are more likely to share it within their networks. Building and maintaining trust in reliable sources is essential for effective information dissemination. Encouraging information sharing should be part of a community-centered approach to pandemic communication. Communities should be actively engaged, and their concerns and questions addressed promptly.

These findings highlight the importance of individuals' roles in information dissemination during the COVID-19 pandemic. While a significant portion of participants actively shared valid information, there is room for further engagement. Encouraging responsible information sharing should be a key component of public health communication strategies to combat misinformation and promote community resilience.

#### **Association with Gender**

The Chi-square test revealed that gender was significantly associated with multiple variables, including:

- Awareness of the COVID-19-related infodemic
- Belief in the spread of false information for political or economic gains
- Frequency of cross-checking information

The finding that gender is associated with awareness of the COVID-19-related infodemic suggests that there may be variations in how men and women perceive and engage with information. It's possible that different information sources or communication channels are more effective in reaching one gender over the other. Understanding these differences is critical for ensuring that awareness campaigns are inclusive and reach all demographic groups. The association between gender and the belief in the spread of false information for political or economic gains highlights gender-specific variations in trust levels and skepticism regarding information sources. Women and men may have different thresholds for questioning the credibility of information, which can influence their decision-making and information-sharing behaviors. Addressing these variations is essential for building trust and promoting accurate information dissemination.

The association between gender and the frequency of cross-checking information indicates that men and women may have distinct approaches to verifying the accuracy of information. This finding suggests that gender-specific communication strategies should be employed to encourage fact-checking behaviors. For instance, tailored messaging may be necessary to motivate one gender to cross-check information more frequently. The significant associations underscore the importance of gender-sensitive communication strategies and interventions. It's crucial to recognize that one-size-fits-all approaches may not effectively address the unique needs, concerns, and information behaviors of different gender groups. Tailored messaging, educational programs, and awareness campaigns can better engage and resonate with specific genders.

Gender-specific differences in information-seeking behaviors and perceptions should not result in information inequities. Efforts should be made to ensure that all genders have equal access to accurate and timely information. This may involve diversifying communication channels, using culturally sensitive approaches, and promoting inclusivity in information campaigns. The associations found in this study emphasize the dynamic nature of information behaviors and perceptions. Continuous monitoring of these associations can help adapt communication strategies as the information landscape evolves.

The significant associations between gender and various variables highlight the need for gender-sensitive communication strategies and interventions during the COVID-19 pandemic. Recognizing and addressing gender-specific differences in information-seeking behaviors and perceptions is essential for promoting accurate information dissemination and ensuring that all demographic groups have access to reliable information.

**Limitations of the study:**

The study described in this dissertation, while contributing valuable insights into the understanding of the COVID-19 infodemic, has certain limitations that should be considered:

- The study primarily relied on data obtained from various digital databases and search engines. While these sources provide a wealth of information, the

study's findings are inherently limited by the data available from these sources. The completeness, accuracy, and timeliness of data retrieved from these platforms can vary and may not encompass the entire spectrum of information available during the pandemic.

- The study's geographic focus was limited to the doctors of Bharati Vidyapeeth hospitals in Mumbai, Pune, and Sangli. As such, the findings may not be representative of the broader population of healthcare professionals in other regions or countries. The specific characteristics of this geographic area, such as the healthcare infrastructure, demographic composition, and healthcare policies, could have unique influences on the study's results.
- The primary data collection method for this study involved the use of a self-structured questionnaire prepared using MS Word 2016. The questionnaire design and format may have influenced participant responses. Furthermore, the accuracy of responses relies on participants' self-reporting, which can introduce response bias and recall bias. Participants may not always provide entirely accurate or complete information, affecting the reliability of the collected data.
- The study employed a non-probability, purposive sampling method to select participants. While this approach may have been practical given the constraints of the study, it introduces the potential for selection bias. The sample may not be fully representative of all healthcare professionals, and the findings may not be generalizable to the entire population.
- The questionnaire used in the study underwent content and face validation by a panel of six subject experts. While this process enhances the questionnaire's validity, it cannot eliminate the possibility of question interpretation variability among respondents. The study's sample size was relatively small, consisting of 200 dental and medical professionals. A larger sample size would have increased the study's statistical power and the generalizability of the findings.
- The study employed a cross-sectional design, which only captures a snapshot of data at a single point in time. This design limitation prevents the establishment of causal relationships and the tracking of changes over time. The study used various qualitative and quantitative data analysis techniques,

including content analysis and statistical analysis. The appropriateness and accuracy of these techniques depend on the quality and nature of the data, which can introduce subjectivity and errors into the analysis.

Despite these limitations, the findings of this study provide valuable insights into the infodemic during the COVID-19 pandemic and offer a foundation for future research and interventions in this critical area of public health.