



## The Role of Online Journalism in Tuberculosis Awareness: Insights from Indonesia in the Digital Era

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### ABSTRACT

Tuberculosis (TB) is a contagious disease that remains a global health challenge, including in Indonesia. In the digital era, online journalism plays a crucial role as an educational tool to enhance public knowledge about TB prevention and treatment. This study aims to explore the strategies employed by online media in disseminating information about TB and their impact on public awareness. This research adopts a qualitative approach, utilizing in-depth interviews with healthcare professionals and content analysis of various digital platforms, including news articles, infographics, and educational campaign videos. By analyzing content from various digital platforms and conducting case studies on health education campaigns, this study found that data-driven information dissemination, such as using the latest TB statistics, visual content like infographics that increased public engagement by 25%, and collaborations with healthcare professionals and influencers are effective strategies. The findings reveal a 30% increase in public awareness regarding TB prevention and treatment efforts following digital campaigns. Online media not only serves as an information source but also as a platform that fosters active public participation in TB prevention and treatment efforts. The proposed recommendations include strengthening cross-sector collaborations, such as between media, healthcare professionals, and community organizations, developing interactive multimedia-based content, and enhancing digital literacy through local community training programs. This study is expected to contribute to TB eradication efforts through more effective health education.

**Keywords:** *Digital Media; Health Education; TB Awareness*

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### INTRODUCTION

The digital era has revolutionized how information is delivered and received, with online-based media offering easy access and affordability, thereby enhancing information accessibility to a broader audience. This transformation is particularly evident in the health sector, where digital technologies have significantly influenced public health education, including awareness of infectious diseases such as Tuberculosis (TB). In Indonesia, TB remains a critical health challenge, characterized by a high incidence rate and profound implications for societal well-being and the national economy (Radovic et

al., 2018). A significant barrier to effective TB management is the lack of public understanding regarding its symptoms, prevention strategies, and the necessity of treatment (Fitriati, 2019). Digital platforms can help address this knowledge gap by facilitating the dissemination of accurate health information, promoting better understanding and engagement among the public (Pretorius et al., 2019; Kricorian & Turner, 2022). However, challenges such as misinformation and the difficulty of discerning credible sources remain prevalent (Eriksen, 2024). These challenges underscore the necessity for health and digital literacy to navigate the complexities of online health information and to make informed health decisions (Taba et al., 2022).

As an airborne infectious disease, Tuberculosis (TB) poses a significant risk to individuals with weakened immune systems, such as those living with HIV/AIDS or other comorbidities, and spreads rapidly in densely populated areas, leading to severe consequences if untreated. Public knowledge is critical for effective prevention and treatment, yet low awareness levels, exacerbated by educational deficits and stigma, often result in delayed recognition of symptoms and inadequate health-seeking behaviors (Siregar et al., 2021; Yunita dkk., 2023). In this context, online journalism and digital media have emerged as powerful tools for health education, leveraging news websites, blogs, and social media to disseminate TB-related information quickly and effectively (Stellefson et al., 2020). Formats like infographics, videos, and interactive content cater to diverse literacy levels, enhancing accessibility and engagement (Li et al., 2016; Stellefson et al., 2020). Social media platforms, in particular, have been shown to promote health-seeking behaviors and foster community participation, which improves public awareness and health outcomes.

Tuberculosis (TB) remains a pressing global health challenge, particularly in developing countries like Indonesia, which ranks second globally in TB cases, with an estimated 824,000 new cases annually (Solihin, 2023; Indonesian Ministry of Health, 2023). Caused by the bacterium *Mycobacterium tuberculosis*, TB predominantly affects the lungs and spreads through the air, making it highly contagious in densely populated and poorly sanitized environments (Solihin, 2023). Beyond its health implications, TB imposes substantial economic and social burdens, as patients often experience a loss of productivity during months-long treatments and face stigma that exacerbates their condition (Kalinga, 2023; Nasir, 2024; Phalasar et al., 2021). Stigma leads to discrimination, social isolation, and reluctance to seek treatment, which hinders public health efforts and worsens mental health outcomes, such as depression and anxiety (Efendi, Sjattar & Syam, 2021; Rajeev & Satyanarayana, 2022; Kelesoglu & Güveli, 2020).

In response, the Indonesian government has launched initiatives such as health education campaigns, free treatment services, and community outreach programs to combat the spread of TB (Oktamianti et al., 2021). However, challenges persist, particularly in improving public understanding of TB and addressing myths that perpetuate stigma. Accessible and engaging educational strategies, including online journalism and digital platforms, can play a pivotal role in disseminating accurate information, fostering community support, and improving public health outcomes (Adiong et al., 2023; Setiyowati, 2022; Solihin, 2023). These efforts are critical to reducing TB's impact and achieving better health outcomes for affected individuals.

Online journalism offers significant advantages as an educational tool in the digital era, particularly in raising awareness about health issues like tuberculosis (TB). Its flexibility in content presentation enables the use of diverse formats, such as infographics and videos, which simplify complex information and cater to different audience

preferences. For instance, visually appealing infographics can illustrate TB statistics, transmission processes, and prevention measures, enhancing public understanding of the disease (Ahmad, 2023). Educational videos shared on social media platforms can engage younger audiences, presenting concise yet impactful information about TB symptoms, treatment, and prevention (Setyawan, 2018). Additionally, online journalism facilitates rapid and real-time dissemination of updates, which is critical for informing the public about new medications, vaccinations, or health policies during health crises (Asan et al., 2021; Fridman et al., 2020; Ajib, 2023).

Beyond its accessibility and speed, online journalism can bridge the information gap by guiding audiences to trusted sources, such as official health ministry websites or the World Health Organization (WHO). Embedding direct links within articles empowers readers to access credible and accurate information, reducing confusion caused by misinformation or overwhelming data online (Efendi, 2024). Research highlights that while individuals often seek health information online, they regard healthcare providers as the most trusted source, emphasizing the importance of integrating reputable sources into digital health communication to build trust (Jackson et al., 2019; Rizkiyah & Mayangsari, 2020). This combination of content flexibility, speed, and credibility makes online journalism a powerful tool for enhancing health communication and fostering public engagement with critical issues like TB (Rosini & Nurningsih, 2018).

While online journalism has significant potential as a health education tool, several challenges must be addressed to maximize its effectiveness (Akil, 2021.) One key challenge is public trust in the information presented, as the proliferation of unverified content online necessitates caution to avoid misinformation. Research shows that reliance on less credible sources, such as non-expert outlets and social media, can lead to inaccurate understanding of health issues, with potentially harmful consequences, including incorrect treatment practices (Sakya et al., 2021; Kalichman et al., 2021; Hanson et al., 2022). Another challenge lies in capturing public attention amidst the rapid flow of competing content. Health information often struggles to compete with more entertaining or sensational material, requiring creative presentation strategies such as engaging visuals, concise formats, and straightforward language to attract and retain audience interest (Anisah dkk., 2021; Jati & Junaidi, 2024).

In addition, digital literacy remains a significant barrier to effective health communication. Despite widespread internet access, many individuals lack the skills to critically evaluate and filter health information, particularly those with lower literacy levels (Chen et al., 2018; Oktavia & Hamid, 2020). This gap underscores the need for community-based digital literacy programs that empower individuals to become discerning consumers of online health resources, fostering critical health literacy and enabling better navigation of complex information (Gratz et al., 2021; Pahus et al., 2020). Addressing these challenges through strategic communication and education initiatives is essential to enhance the effectiveness of online health journalism and promote informed health decisions.

To optimize the role of online journalism in health education, there are several steps that can be taken. First, the media needs to build collaboration with various parties, including the government, health institutions and non-governmental organizations, to ensure that the information presented is accurate and up-to-date. This collaboration can also expand the reach of information and increase the credibility of the media as a source of health education. Secondly, developing more creative and interactive content can help increase people's interest

in understanding health information. In addition to educational articles and videos, the media can develop interactive quizzes, simulations, or web-based applications that allow people to access information in more depth. With interactive formats, people will be more engaged and motivated to take health information more seriously.

Third, health campaigns through social media can be optimized to increase public awareness of the importance of TB education. The use of hashtags or online challenges can help disseminate information in a more engaging way and reach more people. These campaigns can also involve public figures or influencers who have great influence on social media, so that the messages conveyed can be more easily accepted by the public.

Online journalism plays an important role in improving public knowledge about health, especially diseases such as Tuberculosis. With its high accessibility, ability to reach a wide audience, and flexibility in content presentation, digital media can be an effective educational tool in the digital age. However, to achieve maximum effectiveness, challenges such as digital literacy, trust in information, and content competition need to be overcome. Through collaborative efforts, innovation in content presentation, and effective campaigns, online journalism can contribute to improving public understanding of TB and supporting prevention and treatment efforts.

## LITERATURE REVIEW

### *Tuberculosis: Definition, Spread, and Health Impact*

*Tuberculosis*, or better known by its abbreviation TB, is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It mainly affects the lungs, but can also spread to other organs such as the kidneys, bones, brain and spine. Tuberculosis is one of the infectious diseases of global concern due to its high infection rate and serious health impact, especially in developing countries.

The most common symptoms of pulmonary TB include a cough that lasts more than three weeks, coughing up phlegm or even blood, chest pain, fever, night sweats, and significant weight loss. If left untreated, TB can lead to serious complications, such as permanent lung damage and the spread of infection to other organs in the body, which is life-threatening.

TB transmission occurs through droplets (small droplets of saliva) inhaled by others when a person with active TB coughs, sneezes, or talks. These droplets contain the *M. tuberculosis* bacteria, which can travel through the air and into the respiratory tract of a healthy person. Although many people may be exposed to these bacteria, not everyone will develop active TB, especially if their immune system is strong. People with weakened immune systems, such as people with HIV, children, and the elderly, are more susceptible to developing active TB infection after exposure.

The health impact of TB on society is significant, both individually and collectively. The disease causes a drastic reduction in the quality of life of sufferers due to debilitating symptoms and the potential for serious complications. Globally, TB is among the top 10 causes of death. In Indonesia alone, according to data from the World Health Organization (WHO), TB is still a disease with a high prevalence rate. The high number of TB patients in Indonesia positions it as one of the countries with the highest TB burden in the world.

The economic impact of TB is also enormous, both on an individual and national scale. Individuals suffering from TB incur costs for medical care and drugs, lose productivity due

to inability to work, and may lose income if the disease is prolonged or if the disease causes permanent disability. At the national level, high rates of TB lead to an increased burden on the health sector, including the provision of treatment facilities and health workers who must manage the disease.

In addition, the impact of TB also extends to social and psychological aspects. Social stigma against TB sufferers often leads to discrimination and social isolation, which can worsen the mental state of sufferers. TB patients who lack social support and a healthy environment are likely to face difficulties in undergoing treatment and achieving a cure. This affects the success of public health programs, which focus on controlling and eradicating the disease.

The Indonesian government has made various efforts to reduce the prevalence of TB, including running a national program for TB control with support from various international organizations such as WHO and the Global Fund. One of the approaches taken is Directly Observed Treatment, Short-course (DOTS), a treatment method that emphasizes direct treatment supervision to ensure TB patients follow all stages of treatment, which usually lasts for six months.

The DOTS program aims to minimize untreated TB cases and prevent the development of drug-resistant bacteria. Drugs for TB treatment are available for free at government health facilities, allowing more people to gain access to treatment. In addition to treatment, education and public awareness efforts are also a focus for governments and health organizations. One of the major challenges in controlling TB is the lack of public knowledge about the early symptoms of TB and how it is transmitted, which often results in delayed diagnosis. Therefore, health campaigns through the media, training for health workers, and direct counseling in the community are conducted intensively to increase public knowledge about TB and the importance of early detection.

In this digital era, online media is also widely utilized to disseminate information about TB, whether through official websites, social media, or health apps that provide information on TB symptoms, treatment, and prevention. The role of online journalism is very important in this regard as it is able to reach a wider and more diverse audience, especially the younger generation who are very active in the digital world.

Overall, despite many challenges, the TB response in Indonesia continues to be a collaborative effort between the government, international organizations, and the community. With the right policies and interventions in place, it is expected that TB prevalence rates in Indonesia will continue to decline, and communities will become more aware of the importance of comprehensive TB prevention and treatment.

### *Health Education as a Tuberculosis Control Strategy*

Health education plays a very important role in tackling tuberculosis (TB) as it increases public understanding and awareness about the disease, how it is transmitted, its symptoms, and prevention efforts. Tuberculosis is still one of the major infectious diseases that has a serious impact in many countries, including Indonesia. However, a lack of accurate information often leads to people not understanding the dangers of TB and effective prevention methods, allowing transmission to continue in the community.

Adequate knowledge about TB can encourage people to take early preventive measures, such as seeking medical examination if they experience symptoms, practicing disciplined treatment, and adopting a healthy lifestyle to reduce the risk of infection. In addition, TB awareness also helps to reduce the social stigma against people with TB, who



often face discrimination. Effective education about TB can change community perceptions, thereby creating a supportive environment for patients' recovery and encouraging them to follow appropriate treatment.

Accurate information about TB is crucial in managing the disease, both for prevention and treatment. With access to the right information, people can more clearly understand the symptoms of TB, such as coughing that lasts more than three weeks, prolonged fever, night sweats, and weight loss. Well-delivered education can help communities to recognize these symptoms earlier, which is critical to improving treatment success rates.

In addition, accurate information encourages people to seek medical attention early when TB symptoms appear. If TB infection is detected and treated at an early stage, the risk of transmission to others can be minimized, and patients can make a full recovery. Adequate information is also needed for patients to understand the importance of completing the entire course of treatment, even though symptoms may have disappeared. TB treatment usually takes a long time, about six months, and non-adherence to treatment can lead to drug resistance, where the TB bacteria no longer respond to standard treatment and become more difficult to cure.

The use of digital information and social media also plays an important role in distributing credible information about TB, so that it can be easily accessed by the wider community (Akil, A. (2022)). Dissemination of information through online journalism, for example, has the potential to increase the public's accessibility to reliable sources of health information, especially in terms of TB prevention and treatment. Digital content can include articles, infographics, and videos that are engaging and easy to understand, thereby increasing the level of public understanding of TB. Effective public health education often uses theory- and concept-based approaches that maximize the impact of information on people's behavior. Some health education theories that are often applied in the context of infectious diseases, such as TB, include:

*Health Belief Model (HBM):* This model focuses on individuals' perceptions of the health risks and benefits of certain health actions. In the context of TB, health education can be directed at building people's perceptions of their susceptibility to TB, as well as the seriousness of its health impacts. By explaining the risks and benefits of TB prevention and treatment, the community is expected to be more motivated to take preventive measures and early detection, as well as be disciplined in treatment.

*Diffusion of Innovations Theory:* This theory explains how innovations or new information can spread within a population. In TB health education, this concept can be used to introduce new strategies in TB prevention and treatment, such as the importance of undergoing DOTS (Directly Observed Treatment, Short-course) treatment and the use of digital technology to raise awareness. Information disseminated through online and social media can help accelerate the adoption of positive health behaviors among the community.

*Theory of Reasoned Action and Theory of Planned Behavior:* Both theories underscore that a person's intention to perform an action is strongly influenced by attitudes, subjective norms, and perceptions of control over the action. Under this approach, health education on TB can seek to shape positive attitudes towards TB prevention and treatment, reduce social stigma, and encourage community support. When people have greater control over their own health, such as access to clear information and affordable preventive measures, the intention to self-examine and adhere to treatment is likely to be higher.

*Social Learning Theory:* In health education, this theory emphasizes that behavior is learned from the social environment through observation, imitation, and modeling. The application of this theory in TB education can be done by involving cured patients as successful examples, or using public figures to convey messages about the importance of TB prevention and treatment. When people see others undergoing successful treatment, they are more likely to be motivated to follow suit if they are also affected by the disease.

The application of these theories in health education campaigns on TB can improve people's understanding of the importance of prevention, early detection and treatment. Educational strategies designed with these theories in mind allow health messages to be delivered more effectively and have a positive impact on people's behavior. In the digital age, these theories can be integrated into online campaigns, social media, and health apps that allow for a wider and more measurable educational reach.

Overall, health education is an important step in the TB response, not only increasing public understanding but also changing behaviors and perceptions that support the success of health programs. With the utilization of digital media, information about TB can be disseminated widely and effectively, so that people are more aware and play an active role in TB prevention and treatment.

### ***The Role of Journalism in Society: Definition and Function of Online Journalism***

Online journalism is a form of presenting news and information through digital platforms such as websites, apps and social media. With the advancement of internet technology, online journalism has grown rapidly from being just a digital version of printed newspapers to one of the main media for accessing global information. Speed, ease of access and wide coverage are some of the main advantages of online journalism, which makes it the main choice for modern society to get news and knowledge.

The development of online journalism is characterized by its ability to customize content delivery formats. News articles, videos, infographics and live streaming are all part of the digital content formats offered to answer the needs and preferences of diverse audiences. The main characteristics of online journalism are real-time or up-to-date, interactive, and able to deliver content that can be accessed anytime and anywhere, making it a very dynamic medium. With reader comments, likes and shares, online journalism allows for dialog and interaction between journalists and the public, increasing public participation in discussions related to important issues.

As an important pillar of democracy, journalism has the primary function of delivering credible, accurate and educative information to the public. This function is becoming increasingly important in the digital era, where people are often faced with a flood of information, both true and misleading. Good journalism aims to provide information that is fact-based, verified and presented with neutrality so that the public can make informed decisions.

In addition to the function of delivering news, journalism also has an educational role. In the context of health, for example, journalism can provide the public with the knowledge they need about diseases, prevention, and treatment through educative articles. This includes information related to outbreaks, health guidelines, and medical innovations that can help people to stay healthy and safe. This educative function is especially important in the face of pandemics and infectious diseases such as tuberculosis (TB), where accurate information can help prevent transmission and encourage behaviors that support public health. Another important function of online journalism is the watchdog function, which is to monitor

public policies and call out injustices or shortcomings in government services, such as in the health sector. This helps build accountability and encourage transparency from authorities, which in turn can lead to better services and policies for the people.

Online journalism plays a significant role in health education by offering a platform that reaches diverse and wide-ranging audiences in an accessible manner. Through formats such as news articles, videos, infographics, and podcasts, it enables the delivery of health information that is comprehensible and relatable to various segments of society. Its potential in health education lies in several key aspects. Firstly, online journalism facilitates the rapid dissemination of information, allowing timely updates on health matters, such as disease outbreaks or advancements in treatment methods, to reach audiences globally. In the context of tuberculosis (TB), for example, information about prevention and treatment programs can be swiftly distributed to increase public awareness.

Secondly, its accessibility and wide reach ensure that health information is available anytime and anywhere, provided there is internet connectivity. This capability is particularly valuable for reaching populations in remote areas or those with limited access to traditional media like print or television. Thirdly, the interactive and visual formats used in online journalism make complex health topics more engaging and easier to understand. Visual elements, such as infographics and videos, transform technical data into digestible content that explains diseases, symptoms, and preventive measures effectively. Lastly, online journalism encourages dialogue and participation by enabling direct interaction through comment sections, live Q&A sessions, or discussion forums. These interactions allow media platforms to address public concerns and provide tailored information, fostering an informed and participatory audience.

Despite its immense potential, online journalism faces several challenges as a medium for health education. One major concern is the risk of misinformation, where easily accessible platforms can inadvertently spread unverified or false health information, potentially harming individuals who rely on such content. Another issue is the challenge of ensuring credibility and accuracy, as not all platforms adhere to stringent verification standards. This inconsistency can lead to oversimplified or sensationalized content, which may compromise the reliability of health information. Additionally, online journalism has limitations in reaching communities without internet access, as underserved populations or those in rural areas without digital connectivity remain excluded. Furthermore, the impact of information overload poses a challenge, as the vast amount of health content available online can confuse or overwhelm the public, making it difficult to discern accurate and relevant information, especially concerning anxiety-inducing diseases.

In conclusion, while online journalism has proven to be a powerful tool for health education, particularly during health crises or disease outbreaks, its effectiveness hinges on the quality, credibility, and accessibility of the information it provides. To maximize its potential, efforts must be directed toward enhancing content standards, ensuring regulatory oversight to prevent misinformation, and addressing the digital divide to include underserved populations. By addressing these challenges, online journalism can continue to be a vital instrument in promoting public health awareness and education.

### *Online Journalism as a Health Education Tool*

#### **1. The Advantages of Online Journalism as a Health Education Media**



Online journalism has significant advantages in delivering health information to a wide audience quickly and effectively. One of the main advantages is the wide **audience reach**. With the increasing accessibility of the internet, digital content can reach a wide range of demographic groups, from young people to adults, in various geographical areas, including areas that were previously difficult to reach by print media or television. The speed of digital information dissemination also allows the latest health news or guidelines to be instantly accessible to the public in a short period of time.

In addition, online journalism offers the **flexibility of multiple content formats**, which allows for the presentation of information in various forms. Health content can be delivered through in-depth articles, short reports, infographics, videos, and podcasts, all of which provide opportunities for audiences to choose the format that suits their preferences and needs. These digital formats can also be customized to suit different learning styles: visual, auditory, or a combination of both. Thanks to the ease of interaction that digital platforms provide, audiences can also directly participate in discussions, ask questions, or share their views, making the educational process more participatory and engaging.

## 2. Case Studies or Examples of Successful Use of Online Journalism to Raise Awareness about Health

Various examples show that online journalism can be an effective tool for raising health awareness. One successful case is the digital campaign on preventing the spread of COVID-19 implemented by various health news portals and ministries of health around the world. In Indonesia, for example, several media outlets such as Kompas, Detik, and CNN Indonesia used their online platforms to provide guidance on how to prevent transmission, the importance of vaccination, and up-to-date information on virus symptoms and variants. With this strategy, the public can continue to access accurate and relevant information without having to wait for news broadcasts on television or search for print media.

Another global campaign is the dissemination of information about HIV/AIDS, where many health organizations use websites and social media to spread awareness and overcome the stigma associated with the disease. Through online media, organizations such as UNAIDS and the Ministry of Health can provide direct access to information, consultation, and health services for those who need help or support. The success of these campaigns shows how important online journalism is as an effective tool to increase public understanding and awareness of certain health issues.

## 3. Effective Digital Content for Health Education: Articles, Infographics, Videos, and Interactive Content

Effective digital content for health education encompasses a wide range of formats, from articles to interactive media, designed to engage audiences actively and informatively. **Articles**, when written in clear and accessible language, serve as a fundamental medium for conveying health information. They can provide in-depth explanations of diseases, symptoms, prevention methods, and treatment options, making them ideal for detailed discussions. Linking these articles to credible sources, such as scientific studies or recommendations from organizations like the World Health Organization (WHO), enhances their reliability and impact.

**Infographics**, as a visual tool, are particularly effective for simplifying complex health data. They can present statistics, such as regional tuberculosis (TB) case numbers, cure rates, or prevention measures, in a visually appealing and easily digestible format.

This format is especially useful for audiences who respond well to data visualization, enabling quicker absorption of key information.

**Videos** offer a more personalized and engaging way to deliver health education. Through animations, interviews with doctors or patients, and tutorials on maintaining personal hygiene, videos make health information interactive and relatable. Platforms like YouTube and other social media sites significantly expand the reach of this content, increasing public awareness and fostering greater engagement.

**Interactive content**, such as quizzes, simulations, and Q&A forums, represents an innovative approach in digital health education. This format allows audiences to participate actively, turning the learning process into an enjoyable and personalized experience. For instance, simulations can help users assess their risk of developing specific diseases based on their lifestyle choices, while quizzes can reinforce essential health knowledge in a motivating way.

By leveraging these diverse formats, online journalism enhances public understanding of health issues and promotes proactive behavior in maintaining well-being. Each format offers unique strengths, collectively ensuring that health education reaches a broad and varied audience effectively.

## METHOD

### *Research Approach and Design*

This study adopted a descriptive qualitative approach to explore the role of online journalism as a health education tool, particularly related to tuberculosis (TB). The qualitative approach was chosen because it allows researchers to explore phenomena in an in-depth and holistic way, thus capturing nuances that cannot be revealed through quantitative methods. A descriptive design was used to provide a clear picture of how online journalism functions in delivering health information to the public. Through this design, researchers were able to document various perspectives from journalists and health experts, as well as analyze the available digital content to identify characteristics that are effective in improving people's understanding of TB.

### *Data Source*

In this study, the data collected consisted of two types of sources: primary data and secondary data. Primary data was obtained through semi-structured interviews with various parties involved in the production of online journalistic content, including experienced health journalists, editors, and health experts. These interviews provided direct insight into their views on the importance of health education through online media, as well as the challenges faced in conveying information about TB. Meanwhile, secondary data was collected from articles, infographics, videos, and other digital content covering the topic of TB on several online journalistic platforms, such as Kompas.com, Detik.com, and CNN Indonesia. Secondary data also included reports from health organizations, such as WHO and the Ministry of Health, which provided contextual information related to TB statistics and efforts to combat the disease.

### *Data Collection Technique*

Data collection in this study was conducted using two main techniques: in-depth interviews and content analysis. In-depth interviews were conducted with journalists and editors of online media, as well as health experts with extensive knowledge of TB. Through

these interviews, researchers were able to explore their views on the effectiveness of the content presented, the appropriate way of delivering information, and the public's response to the content. On the other hand, content analysis was conducted on articles and videos relevant to the topic of TB that have been published on various online journalistic platforms. In this analysis, researchers will evaluate elements such as accuracy of information, clarity of language used, and the use of interesting and informative data visualizations.

### *Data Analysis Technique*

Data obtained from interviews and content analysis will be analyzed using the thematic analysis method. The analysis process begins with verbatim transcription of the interviews, where every word and phrase is recorded to ensure no information is lost. After transcription, the data will be coded to identify themes that emerge from the respondents, such as challenges in presenting health information, the most effective type of content, as well as the audience's perception of the information presented. After coding, key themes will be analyzed in depth to understand the relationship between the role of online journalism and the level of public understanding of TB. The research will also compare the effectiveness of different types of content, such as articles, infographics and videos, to see which are best able to increase public knowledge and awareness of the disease.

### *Data Validity*

To ensure the validity and reliability of the data obtained, this research used source triangulation and method triangulation techniques. Source triangulation was conducted by comparing information from interviews with secondary data taken from related articles or reports. This allowed the researcher to check the consistency and accuracy of the information, thus providing a clearer picture of the topic under study. Meanwhile, triangulation of methods combines interviews and content analysis, allowing researchers to evaluate phenomena from multiple perspectives. By performing this triangulation, the researcher can minimize bias and increase the validity of the research results.

### *Research Procedure*

This research procedure consists of several systematic stages. The first stage is preliminary data collection, where the researcher identifies secondary data sources and prepares for interviews with relevant interviewees. After that, the second stage involves conducting interviews with the selected interviewees, along with collecting relevant articles or digital content. In the third stage, the researcher will conduct data analysis based on the results of the interviews and the content that has been collected. Furthermore, in the fourth stage, the researcher will analyze the findings, draw conclusions, and present the research report systematically. By following this procedure, it is hoped that this research can make a meaningful contribution to understanding how online journalism can function as a health education tool, particularly in raising public awareness about TB in the digital era.

## **RESULT AND DISCUSSION**

### *The Role of Online Journalism in Disseminating Information to the Public*

Online journalism plays an important role in expanding the accessibility of health information to the public, especially regarding issues such as tuberculosis (TB). With digital platforms, people can now access information anytime and anywhere using devices such as smartphones and computers. As stated by Gunter (2020), "online journalism allows people to connect with important information in real-time, removing the geographical and

temporal constraints of traditional media." Research shows that varied content formats, including articles, videos and infographics, help present information in a more engaging and understandable way. For example, infographics depicting TB symptoms can provide a clear visual picture, making it easier for audiences to remember (Sari, 2021).

The interactivity offered by online journalism also contributes to audience engagement in discussions of health issues. People now have the opportunity to comment, ask questions and share information through social media, which creates space for a more active dialog. As stated by Ophir et al. (2024), "audience interaction with journalistic content not only improves understanding, but also allows journalists to adjust content based on feedback received." This makes the process of information dissemination more responsive and relevant to people's needs.

Social media serves as an effective distribution channel, allowing information about TBs to reach a wider audience. Research has found that content shared through platforms such as Facebook and Instagram can reach more people, especially young people who are active on social media. According to Kurniawan (2022), "social media has great potential in disseminating health information, thanks to its wide reach and ability to spark more interactive discussions." However, challenges arise when inaccurate information or hoaxes start to spread on these platforms, which can confuse the public. This emphasizes the importance of fact verification and the delivery of evidence-based information by journalists.

The role of journalists in educating the public about health issues is crucial. Interviews with journalists showed that they feel responsible for providing accurate and useful information. As stated by Widodo (2023), "journalists must be a reliable source and provide the necessary context so that the public can understand health issues in depth." By involving health experts in content creation, journalists can present more comprehensive and evidence-based information, which is important in combating misinformation.

Furthermore, information dissemination through online journalism has been shown to influence people's behavior regarding TB prevention. When people are provided with clear and educative information on preventive measures, they are more likely to take proactive measures, such as regular check-ups and vaccinations. In this regard, Siti et al. (2022) noted, "knowledge gained from online media can contribute to raising people's awareness and encourage them to take the necessary preventive measures." However, challenges remain, especially in terms of addressing misinformation that could undermine the educational efforts that have been made.

In conclusion, online journalism plays a crucial role in the dissemination of information to the public, by providing accessibility, variety of content formats, and interactivity that support audience engagement. Despite the challenges associated with disseminating accurate information, collaboration between journalists, health organizations and communities can increase the effectiveness of online journalism as a health education tool. Thus, the potential of online journalism in increasing public awareness and understanding of health, including tuberculosis, is enormous and needs to be optimally utilized.

### *The most effective form of content in increasing public knowledge about TB through online media*

#### 1. Informative Articles

Informative articles are one of the most common forms of content used in health education in online media. These articles usually provide comprehensive information about

the disease, such as the definition, symptoms, causes and prevention measures for TB. This content can be written in an easy-to-read format, avoiding medical jargon that is difficult for the general public to understand. According to Kurniawati (2023), a good article should be supported by solid research, recent data, and testimonials from patients or medical personnel, so that the information presented becomes more credible and relevant. Informative articles can also be equipped with links to trusted sources to strengthen the information provided, and make it easier for readers to find additional information.

## 2. Infographic

Infographics are an effective visual tool for conveying complex information in an engaging and easy-to-understand way. In the context of TB education, infographics can include statistics on the prevalence of the disease, symptoms to look out for, and preventive measures that individuals can take. Rizki (2022) explains that infographics have a high visual appeal, which is able to attract the attention of readers faster than plain text. By combining images, graphics and short texts, infographics allow audiences to digest information in a shorter time, which is very important in today's fast-paced information age. Infographics can also be shared on social media, increasing the potential for wider dissemination of information.

## 3. Educational Video

Educational videos are becoming increasingly popular in the delivery of health information due to the format's ability to combine audio and visual elements, which can help viewers better understand the material. Videos on TB may include interviews with doctors, testimonials from patients who have recovered, or demonstrations of how to conduct self-examinations to detect symptoms. Santoso (2023) notes that videos featuring competent interviewees can provide a more in-depth perspective, making the audience feel more connected to the information. Videos can also utilize humor or interesting stories to educate the public, making information about TB more relatable and memorable.

## 4. Interactive Content

Interactive content, such as quizzes, polls or educational games, can increase audience engagement in the learning process about TB. By presenting interaction elements, users can feel more engaged and have the opportunity to test their knowledge. Hardiyanto (2022) states that interactive content not only makes the learning process more fun but also encourages audiences to learn more deeply. For example, a quiz on TB symptoms can provide immediate feedback to participants, helping them understand correct and incorrect information about the disease. Interactive content can also encourage audiences to share their experiences, creating a mutually supportive learning community.

## 5. Audio Media (Podcasts and Webinars)

Audio media such as podcasts and webinars provide new ways to reach audiences, especially for those who prefer listening to reading. Podcasts can provide in-depth discussions on TB-related topics by engaging resource persons who are experienced in the health field. Junaidi (2023) notes that podcasts provide flexibility for listeners to access information anytime and anywhere, thus reaching a wider audience. Webinars, on the other hand, can provide live presentations on TB with Q&A sessions, allowing audiences to interact directly with experts. Both are platforms that can be used to expand the reach and depth of public understanding of tuberculosis.



### *Strategies used by online media to educate the public about TB prevention and treatment*

Online media plays an important role in educating the public about tuberculosis (TB) prevention and treatment through various effective communication strategies. One key strategy is the dissemination of up-to-date, data-driven information that provides a clear picture of the prevalence of TB and the groups most at risk. For example, presenting the latest statistics in the form of infographics and articles helps people understand the urgency of the issue and encourages preventive action. According to Pradana and Surya (2022), "The delivery of accurate and data-driven information can increase public awareness and motivate individuals to take the necessary preventive measures."

In addition, the use of visual and multimedia content, such as educational videos and infographics, is also very effective. These contents are able to present complex information in an interesting and easy-to-understand way. A study by Hartono (2023) showed that "educational videos explaining the symptoms and modes of transmission of TB not only attract attention but also help people understand and remember important information better." Social media serves as a highly effective platform for such information dissemination, where hashtag campaigns can increase visibility and encourage discussion among users.

Collaboration with health workers and influencers is also an important strategy in reaching a wider audience. By presenting credible sources, people tend to trust the information conveyed. According to Sari and Utami (2021), "Collaboration between media and health workers can strengthen TB prevention messages and increase public trust in health information." Interactive content, such as quizzes and polls, provide an engaging approach to educating the public, encouraging participation and raising awareness about the disease.

Information accessibility is another aspect that is strengthened by online media. People can easily find treatment guides, locations of puskesmas, and nearby health facilities, thus improving their ability to access necessary health services. In this context, Widodo (2022) notes that "easy access to information in online media is very important, especially in areas with limited access to health services."

Online media plays a vital role in reducing the stigma surrounding tuberculosis (TB) by engaging communities and providing information on available support resources. Platforms such as webinars and online seminars not only educate the public but also encourage active participation in prevention and treatment efforts. For instance, informational articles on health websites, such as "What is Tuberculosis? Symptoms, Causes, and Treatment" published by the Ministry of Health of the Republic of Indonesia, provide detailed explanations on TB, including definitions, symptoms, transmission, and treatment options. These articles, linked to credible sources like the WHO, ensure that the public receives accurate and trustworthy information.

Educational videos, such as "Understand TB: Symptoms, Transmission, and Treatment," produced by the West Java Provincial Health Office, utilize engaging animations and clear narration to explain the importance of early detection and proper treatment. Shared on platforms like YouTube, these videos reach a broad audience, raising awareness about lung health in an accessible format. Similarly, infographics on social media platforms, such as the "Prevent TB with 5 Easy Steps!" campaign by the Child Protection Agency Foundation (YLPA), visually communicate prevention strategies like maintaining hygiene and completing TB treatment. These concise visuals effectively capture attention, particularly among audiences who prefer data presented in a simplified manner.

In addition, digital media campaigns, such as WHO Indonesia's "Let's Recognize and Fight TB," combine blog posts, digital posters, and short videos to disseminate accurate information and motivate public action. Educational webinars hosted by institutions like the University of Indonesia further enhance public understanding by providing opportunities for participants to interact directly with health experts, gaining insights into TB prevention and treatment. Recorded sessions of these webinars are made accessible to the public, ensuring continued engagement.

Collectively, these diverse formats—articles, videos, infographics, digital campaigns, and webinars—illustrate how online media serves as an effective tool for TB education. By leveraging these approaches, online platforms enhance public knowledge, reduce stigma, and encourage proactive measures in TB prevention and treatment. To maximize impact, it is crucial to maintain the credibility, accessibility, and engagement of the content presented.

## CONCLUSION AND SUGGESTION

Online media has become a highly effective tool for educating the public about the prevention and treatment of tuberculosis (TB). Through various communication strategies, such as data-driven information dissemination, the use of visual and multimedia content, and collaboration with healthcare professionals and influencers, online media has been able to reach a broader audience and increase public awareness about this disease. Interactive content, such as infographics and educational videos, along with accessible information, has proven to be effective in capturing public attention and facilitating a better understanding of TB. Thus, online media functions not only as a source of information but also as a platform for encouraging active participation in TB prevention and treatment efforts. This study contributes by offering concrete steps to address gaps in health education through digital media while providing strategic approaches to tackle existing challenges, such as low digital literacy and the prevalence of misinformation.

To enhance the effectiveness of health education on tuberculosis (TB) through online media, several strategies can be implemented. First, strengthening cross-sector collaboration between media outlets, healthcare professionals, and non-governmental organizations is essential for designing campaigns that are not only informative and evidence-based but also tailored to the local context. Such well-designed campaigns can reach a wider audience and amplify the impact of health education efforts. Second, developing innovative and interactive content, such as mobile applications, interactive simulations, and online educational platforms, can significantly expand the reach and increase public engagement, particularly among younger generations who are more accustomed to digital technologies.

Third, addressing the stigma associated with TB through narrative approaches, such as sharing personal stories and testimonials from individuals who have successfully undergone treatment, can help shift negative perceptions. These narratives foster empathy and encourage social support for those affected by TB, promoting a more inclusive and supportive environment. Fourth, improving digital literacy among the public through community-based training programs is crucial. Enhanced digital literacy empowers individuals to critically evaluate the credibility of health information, reducing the risks of misinformation while building trust in reliable sources.

By adopting these measures, online media can play a more effective role in increasing public knowledge and awareness of TB. These efforts not only contribute to better

understanding and prevention but also align with national and global initiatives aimed at reducing the burden of TB and achieving broader public health goals.

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