

Transcending automation: Human agency in AI-assisted public health podcast production at local radio

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ABSTRACT

Public health communication in local media is increasingly shaped by digital technologies, including artificial intelligence (AI). Yet less is known about how AI is used in the everyday production of health-related content, particularly in local broadcasting. This study explores how AI was incorporated into public health podcast production at Radio Kepulauan Seribu (RKS) in Jakarta, Indonesia. An interpretivist qualitative approach was used through a single embedded case study. Data came from in-depth interviews, participatory observation, and document analysis involving 11 participants, including broadcasters, radio operators, public service personnel, and listeners. The analysis showed that AI was used mainly during content preparation. At RKS, NotebookLM helped broadcasters organize health information, prepare summaries and outlines, and develop supporting materials before programs were produced. The production process itself remained dependent on broadcasters and other human actors. Health professionals and public institutions contributed expertise, while broadcasters assessed information, adapted it to the communication context, and made decisions about the content presented to audiences. AI was therefore used as a practical resource within an existing broadcasting workflow rather than as an independent producer of health messages. The case also shows how AI use is developing alongside the expansion of radio content into podcasts and other digital platforms. For local public health broadcasting, the experience of RKS suggests that the usefulness of AI depends on how it is incorporated into existing professional practices and how human judgment remains involved in the preparation and communication of health information.

Keywords: *artificial intelligence, public health communication, podcast production, human-AI collaboration, human agency*

INTRODUCTION

Public health communication helps individuals and communities obtain, understand, and use health information in everyday life. Its effectiveness depends on the ability to develop messages that are accurate, accessible, and relevant to specific audiences (Griffith et al., 2024; Fatsena, 2022). Communication is also shaped by the relationships among communicators, audiences, and the media through which information is conveyed (DeFleur & Ball-Rokeach, 1975; Holmes, 2005; Baumgartner et al., 2021). As health information moves across increasingly diverse media channels, digital technologies have expanded opportunities for communication between institutions and communities (Abbas et al., 2021; Bielecka et al., 2025). These changes require communication practitioners to consider how health messages are developed as well as how they are delivered.

The expansion of digital media has transformed how health information is created, distributed, and consumed. During and after the COVID-19 pandemic, digital platforms became important channels for disseminating health information and supporting communication between institutions and communities (Abbas et al., 2021; Obi-Ani et al., 2020). Social media and other digital platforms have also been used to support health campaigns, public engagement, and access to health information (Ittefaq, 2024; Ralph et al., 2022). However, technology alone does not ensure effective health communication. Message quality, source credibility, audience characteristics, and communication context remain important in shaping how health information is received and understood (Nissen & Meuter, 2025; Kim & Wallander, 2024). Previous studies have likewise highlighted the importance of appropriate media and audience-oriented health messages, including the use of visual and educational media (Sumartono & Astuti, 2018; Febriawati et al., 2022; Triutomo & Borut, 2021).

One emerging development in these processes is the increasing integration of artificial intelligence (AI) into information production. AI technologies offer capabilities that can assist with activities involving cognitive tasks, including information organization, summarization, natural language processing, and content development. Although AI applications have received substantial attention in healthcare services, clinical decision support, and digital health platforms, their role in assisting communication practitioners in developing health information remains relatively underexplored. Previous studies have shown that AI can facilitate creative and educational content production (Novian et al., 2024; Mehta et al., 2025), while recent work has also demonstrated the use of NotebookLM in developing podcast-based materials and other information-intensive tasks (Dihan et al., 2025). Other research has emphasized the importance of human supervision, ethical considerations, and organizational readiness in AI implementation (Madhini et al., 2024; Hutson et al., 2024). This body of research points to the need to examine AI not simply as an automated content generator but as a technology that operates in conjunction with human knowledge and professional judgment.

Audio-based digital communication, particularly podcasting, provides a useful context for examining this relationship. Podcasts allow audiences to access information flexibly and repeatedly according to their individual preferences. Previous studies have established podcasting as an important digital communication format with distinctive narrative and audience engagement characteristics (Hardey & James, 2022; Sharon, 2023). Recent research has also examined podcasting in relation to popular culture and audience experiences, highlighting the broader communicative possibilities of the format (Watson, 2025). In health communication, podcasts have been used to provide educational information and support public understanding of health issues (Clements et al., 2023). The use of podcasting for health education can also be seen in more practice-oriented broadcasting initiatives, including programs addressing health prevention and education through radio media (Handrean et al., 2024). Health communication through media is not limited to the transmission of information but may also involve interaction among communicators, institutions, and other actors involved in developing and delivering messages (Fornander et al., 2024). However, existing research has largely examined podcasts as communication channels, with less attention to the processes through which emerging technologies such as AI are incorporated into the production of health-related podcast content. Understanding these production processes is particularly relevant as AI becomes increasingly accessible to communication practitioners.

Local broadcasting institutions provide an important setting for examining AI-assisted health communication practices. Although digital platforms have expanded communication opportunities, local radio continues to serve communities by providing information that is trusted and contextually appropriate (Watson, 2024; Heywood & Ivey, 2022). Research on radio convergence in Indonesia has likewise shown how radio organizations adapt their practices to changing digital environments while maintaining their broadcasting functions (Lathifah & Ismandianto, 2021). Radio and other media can also function as spaces in which communication is connected to community relationships and local audience experiences (Heywood & Ivey, 2022). In health-related contexts, communication by hospitals and health institutions similarly requires attention to public awareness and the characteristics of the communities being addressed (Anisa et al., 2024). Examining local radio thus makes it possible to look beyond technological transformation and consider how communication practitioners incorporate AI into established processes of health message development. Radio Kepulauan Seribu (RKS), a local public broadcasting institution in Jakarta, Indonesia, provides a relevant case for examining this process. Through its production of podcasts addressing health-related topics, RKS offers an opportunity to investigate how AI is incorporated into the preparation and development of public health communication content while the institution continues to perform its public communication function.

Despite growing interest in AI and digital communication, several gaps remain in the literature. First, research on AI in health has predominantly focused on clinical applications, healthcare services, and patient-oriented technologies, with comparatively limited attention to AI-assisted health message production. Second, studies of podcasting have mainly addressed audience engagement, narrative characteristics, and digital media practices rather than the role of AI in content preparation and production. Third, empirical evidence remains limited on how communication practitioners negotiate the relationship between AI capabilities and human editorial judgment when developing public health communication. These gaps point to the need for empirical research that examines AI within the actual organizational and communicative processes through which health messages are produced.

To address these gaps, this study examines how AI supports public health communication through podcast production practices at RKS. Guided by Media Convergence Theory, the study conceptualizes AI not simply as a technological innovation but as a supportive element within evolving communication practices. It addresses two research questions: (1) How is artificial intelligence integrated into the preparation and production of public health podcast content? and (2) How do communication practitioners maintain human agency and editorial responsibility within AI-assisted content development processes? By examining these questions in a local broadcasting context, this study contributes to public health communication scholarship by explaining the emerging role of AI in health message production and providing empirical insight into human-AI collaboration in local media environments.

METHOD

This study adopted an interpretivist qualitative approach and an exploratory single embedded case study design (Yin, 2014). The design was chosen to understand how communication practitioners make sense of and incorporate artificial intelligence (AI)

into the preparation of public health communication content. The study did not approach AI use simply as a form of organizational or technological transformation. Instead, attention was given to the everyday practices, considerations, and decisions that shaped the production of AI-assisted health podcast content within a local broadcasting setting. The research process, covering the selection of participants, data collection, analysis, and procedures for establishing trustworthiness, is summarized in Figure 1.

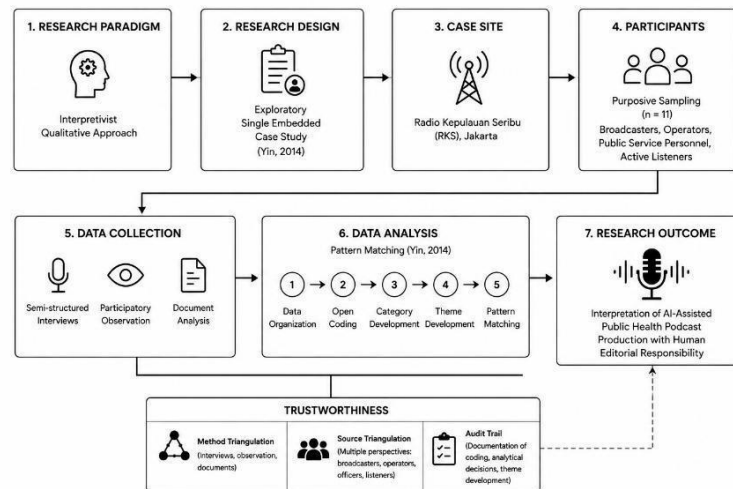


Figure 1. Research methodological framework.

RKS served as the case site. The station was selected because it produces health-related audio content through conventional radio broadcasts as well as podcast platforms, providing a relevant setting for examining the incorporation of AI into existing communication practices. The main unit of analysis was the process through which AI-assisted public health communication content was prepared. Different perspectives were obtained from broadcasters, radio operators, public service personnel, and listeners, allowing the production process and the reception of the resulting content to be considered together. In this way, AI use could be examined within an established local broadcasting environment and in relation to existing professional practices.

Participants were selected purposively according to their involvement in broadcasting activities, health communication, AI-assisted content preparation, or regular listening to RKS programs. Eleven participants were involved in the study, consisting of two radio operators, one RPTRA station manager, two broadcasters, one public service officer, and five listeners. Before the interviews and other research activities were conducted, all participants provided informed consent. Pseudonyms were used throughout the research records and reporting to maintain participant confidentiality.

Data were gathered from three sources: interviews, participatory observation, and document analysis. The interviews addressed how health messages were prepared, how AI was incorporated into the process, and how participants assessed the role of human judgment when developing content. Observation was conducted during podcast preparation and related broadcasting activities, with particular attention to situations in which AI was used. In addition, podcast materials, organizational

documents, and other relevant records were reviewed to provide contextual information and to compare documentary evidence with accounts obtained from participants.

The analysis followed Yin's (2014) pattern-matching approach. Interview transcripts, observation notes, and documentary materials were examined and coded according to issues emerging from the data, including the use of AI, preparation of health messages, evaluation of content, and the distribution of responsibility between human practitioners and technological tools. Codes that addressed related issues were subsequently brought together into broader themes. These themes were then examined in relation to the study's analytical propositions concerning media convergence and human-technology interaction.

Several procedures were applied to strengthen the trustworthiness of the findings. Triangulation was conducted by comparing information obtained from interviews, observations, and documents, while accounts from participants occupying different roles were examined for points of agreement and divergence. An audit trail was also maintained throughout the analysis to record coding procedures, analytical decisions, and the development of themes. These procedures provided a transparent basis for tracing how the empirical material was interpreted and how the findings were developed.

RESULTS AND DISCUSSION

The analysis of interview transcripts, observation notes, and documents revealed three interconnected themes concerning the integration of artificial intelligence (AI) into public health podcast production at RKS. The themes capture how AI was used to organize health information, support the preparation of podcast content, and reshape production practices through interaction between broadcasters and AI-supported tools. Across these processes, AI was incorporated into routine production activities, particularly during content planning, information preparation, and pre-production. Table 1 summarizes the themes, their analytical focus, and the main findings.

Table 1. Themes and Analytical Dimensions of AI-Assisted Public Health Podcast Production at RKS

Theme	Analytical Focus	Key Findings	Contribution
Theme 1	Organization of public health information.	AI supports broadcasters in organizing health information, preparing reference materials, and developing initial podcast content while remaining integrated within existing communication workflows.	AI became part of routine content preparation, particularly for organizing information and developing preliminary materials, while broadcasters retained responsibility for evaluating the material.
Theme 2	Collaborative development of AI-assisted public health podcast content.	AI-assisted content is refined through collaboration among broadcasters, health professionals, and public institutions to ensure accurate, relevant, and accessible public health messages.	Highlights collaboration as the mechanism that transforms AI-supported information into credible public health communication.
Theme 3	Human agency in AI-assisted public health podcast production.	AI supports information management and reduces some routine preparation work, while broadcasters retain responsibility for editorial verification, contextual adaptation, and final communication decisions.	Extends understanding of AI as an enabling technology that supports human expertise while preserving human agency in public health communication.

AI-Assisted Organization of Public Health Information

The first theme concerns the ways AI was used to organize and prepare public health information at RKS. AI did not operate as an independent producer of podcast content. Instead, broadcasters used it to handle information-intensive tasks, particularly during the early stages of production. The use of AI was closely related to practical conditions within the station, including limited personnel and the need to maintain a regular flow of programming. In this context, AI offered additional support for routine preparation while broadcasters continued to determine how information should be interpreted, developed, and communicated. This pattern provides an answer to the first research question by showing how AI became part of the preparation process within a local broadcasting organization.

Four related dimensions emerged from the analysis: the organizational reasons for adopting AI, the development of AI literacy through practice, the use of AI to organize information, and the role of broadcasters in verifying AI-generated material. These dimensions point to a particular pattern of AI use at RKS. The technology was most useful when it reduced the time and effort required to manage information, but the resulting material still required human assessment before it could be incorporated into a public health message. The use of technology for organizing and preparing communication materials is also consistent with broader practices in health communication, where the selection and preparation of information remain important parts of developing messages for specific audiences (Arindra, 2022; Harahap & Putra, 2020).

The first dimension relates to the organizational circumstances surrounding AI adoption. Participants described difficulties associated with the limited number of personnel available to plan and produce programs while maintaining regular broadcasting activities. AI was therefore introduced in response to a practical production problem rather than as an attempt to pursue technological innovation for its own sake. One participant described the situation as follows:

“We are very open to input from various parties regarding the development of radio media. We understand that staff limitations hinder us in planning and creating program content. During our meeting with the academics, we were advised to use AI. We initially thought AI was only for answering short questions, but it turned out to be much more. AI can provide us with ease in creating content.” (HB, informant, May 2025).

The account illustrates how the meaning of AI changed as broadcasters encountered the technology in their own work. At first, AI was understood mainly as a tool for obtaining answers to specific questions. Its usefulness became more apparent when it was applied to the practical demands of content preparation. In this sense, adoption was driven less by interest in AI itself than by the need to manage existing production constraints. The technology provided additional capacity for routine preparation, while decisions about what information was appropriate for a particular audience remained with the broadcasters.

A second dimension emerged from the broadcasters' growing familiarity with AI. Participants explained that their initial understanding of AI was relatively narrow. Continued use, however, exposed them to a wider range of applications. At RKS, NotebookLM was identified as the main AI application introduced into broadcasting

activities. A broadcaster explained:

“The AI introduced to us is NotebookLM. NotebookLM is used to generate content, such as summaries, guidelines, timelines, general Q and A, learning guides, and audio. However, NotebookLM must be used properly and clearly to ensure the content produced is engaging.” (AG, broadcaster, May 2025).

The account suggests that AI literacy was developed through direct experience with the technology. Rather than learning its functions solely through formal instruction, broadcasters discovered its potential by applying it to specific production tasks. NotebookLM was used to produce summaries, timelines, learning materials, discussion points, and other reference materials that could be used during subsequent stages of podcast preparation. These outputs were not treated as finished communication products. They served as working materials that broadcasters could examine, modify, and adapt to the purpose of the program and the characteristics of its intended audience. Recent work on NotebookLM has likewise documented its use for generating and organizing information in specialized content and educational contexts (Mehta et al., 2025; Dihan et al., 2025).

Observation of podcast preparation provided further evidence of this pattern. AI was used mainly during pre-production, before the recording stage. Broadcasters used AI to organize information, prepare discussion materials, outline content, and compile supporting references. The material generated through these activities was then reviewed and adjusted by the broadcasters. Attention was given to factual accuracy, relevance to the local context, and consistency with the intended communication objectives. Thus, the practical value of AI was most visible in the preparation work that preceded production, rather than in the replacement of the broadcaster during the actual communication process. Similar uses of AI for supporting media production have been reported in studies of AI-assisted broadcasting and digital content production (Madhini et al., 2024; Novian et al., 2024).

Taken together, the evidence suggests that AI use at RKS developed as part of an organizational learning process. What initially appeared to be a response to staff limitations gradually became incorporated into routine content preparation. AI helped reduce some of the information-management and preparatory work involved in producing health content, but its use did not remove the need for professional judgment. Broadcasters continued to decide which information was relevant, how it should be presented, and whether the material was appropriate for the intended audience. AI therefore functioned as an additional resource within an established communication workflow rather than as a substitute for the communicator.

This pattern is consistent with Media Convergence Theory, which views digital transformation as extending beyond the coexistence of conventional and digital media to include changing relationships between communication technologies and professional practices (Watson, 2024; Tejkalova et al., 2023; Clements et al., 2023). The findings also correspond with studies examining the use of AI in media production and information organization (Novian et al., 2024; Madhini et al., 2024; Mehta et al., 2025; Tozuka et al., 2025). At the same time, the RKS case adds a more specific observation: the contribution of AI was not primarily associated with autonomous production of public health content. Its value emerged from its ability to help broadcasters manage and structure information, while the quality and appropriateness of the final message continued to depend on human verification,

contextual judgment, and, where necessary, consultation with health professionals.

Collaborative Development of AI-Assisted Public Health Podcast Content

The second finding emerged from the way RKS develops health podcast content through relationships with other actors in the local communication environment. AI is part of this process, but it does not operate independently of the people and institutions involved in producing and disseminating health information. The production process brings together broadcasters, health professionals, public institutions, and audiences, each of whom contributes to how health content is selected, prepared, delivered, and accessed. At the same time, the expansion of RKS into podcasting and other digital platforms reflects the station's response to changes in how audiences encounter media. AI-assisted production can therefore be understood as part of a wider adjustment in which existing broadcasting practices are combined with new technologies, institutional partnerships, and changing patterns of audience engagement.

One aspect of this adjustment can be seen in the station's response to the growing use of digital media. RKS has extended its content distribution beyond conventional radio through podcast and YouTube platforms. For the station, this expansion is not intended to make conventional broadcasting obsolete. Rather, digital platforms provide additional ways to maintain contact with audiences, particularly younger listeners who may be less dependent on scheduled radio programming. A broadcaster explained:

"For us, technological advances provide an opportunity for us to develop in the field of broadcasting. Our goal in using YouTube and podcasts is to adapt to technology in the digital age. We want to provide information and attract the interest of the younger generation to listen to our radio station. So, they don't just listen to live radio streaming but also YouTube." (AG, broadcaster, May 2025).

The account reflects a practical form of institutional adaptation. RKS continues to rely on its established radio function while using digital platforms to extend the reach and availability of its programs. Observation of the station's activities showed a similar pattern. Podcast production was incorporated into existing broadcasting routines, with selected programs made available beyond their original broadcast schedules. The shift was therefore not a complete move away from radio but an expansion of the ways in which the station could distribute its content.

The importance of this expansion becomes particularly visible in the production of health-related programs. Observation records showed that RKS produced content addressing a range of public health concerns, including stunting prevention, adolescent reproductive health, tuberculosis, diabetes, infectious diseases, stress management, and depression. In March 2025, for example, RKS worked with Kepulauan Seribu General Hospital on a podcast discussing stunting prevention and reduction. Later programs addressed adolescent reproductive health and other health-related issues. Once distributed through podcast platforms, these programs were no longer limited to the period in which they were broadcast on radio. The digital format consequently provided another means of keeping health information available to audiences after the scheduled broadcast had ended.

The participants' descriptions of health communication help explain why this

extended accessibility mattered. One informant described health communication as follows:

“Health communication is the process of exchanging information, ideas, and values related to health between individuals, groups, or organizations. The purpose of health communication is to increase awareness, knowledge, and behaviour among the public in maintaining and improving their health.” (HB, informant, May 2025).

The emphasis on awareness and understanding suggests that health communication at RKS was not viewed simply as the delivery of information. The content was expected to help audiences make sense of health issues and, where appropriate, become more aware of preventive practices. Podcasting added flexibility to this process because listeners could access health-related material outside the fixed schedule of live radio. The value of the format thus lies not only in technological novelty but also in the additional opportunities it creates for audiences to encounter health messages.

Another important part of the production process was the station’s relationship with health professionals and public institutions. Health content was not developed solely from materials available to broadcasters. RKS also involved speakers and institutions with relevant expertise. A broadcaster described the practice:

“Conducting two-way or more interactions. This means we always socialise about health issues by hosting talkshows or podcasts with competent speakers and collaborating with health authorities, such as the Health Department and hospitals.” (AG, broadcaster, May 2025).

Such collaboration provides a second layer of assurance in the development of health content. AI can help broadcasters locate, organize, summarize, and prepare information, but it cannot by itself establish whether a message is appropriate for a particular health context or audience. Interaction with health professionals and public institutions allows the material to be checked against professional knowledge and local circumstances before it is communicated to the public. The production process consequently involves more than a broadcaster and a technological tool; it is situated within a network of institutional and professional relationships.

The listener interviews add another dimension to this process. Radio and podcasts were not necessarily experienced as alternatives in which one medium displaced the other. Instead, listeners selected between them according to the type of information sought, personal interests, and the circumstances in which media were being used. One listener noted:

“As a millennial, I still listen to radio and podcasts. However, radio has more specific information. Choosing to live on an island means being prepared for various risks, such as natural disasters. Therefore, radio is a source of information, aside from social media, for finding out the latest news.” (RL, listener, May 2025).

For this listener, the continuing value of radio was associated with its connection to local information needs. Podcasts offered greater flexibility, but that flexibility did

not eliminate the perceived usefulness of local radio. The two formats consequently served somewhat different purposes within everyday media use. A similar pattern appeared in another listener's account:

"Apart from listening to the radio, I also listen to podcasts through the Spotify app. I usually listen to podcasts about entertainment. However, when listening to podcasts, if they are not paid, advertisements will appear. This is different from radio, which can be listened to for free with the help of the internet." (AR, listener, May 2025).

The comment points to practical considerations that influence podcast use, including content preferences and the experience of advertising. Another listener placed greater emphasis on music:

"I don't listen to podcasts very often because I prefer listening to music. So, I listen to RKS and the Spotify app more often to listen to music while working." (JD, listener, May 2025).

These accounts are important because they show that expanding RKS content onto digital platforms does not automatically translate into increased podcast use among all listeners. Audience practices remain diverse. Some listeners move between radio and podcasts, while others continue to favor radio or use digital platforms primarily for music and entertainment. The station therefore operates within a media environment in which different formats coexist and serve different purposes.

Viewed across these different accounts, the development of AI-assisted podcasts at RKS is better understood as part of an ongoing process of media convergence. Conventional radio remains central to the station's identity and local communication function, while podcasts and YouTube broaden the channels through which content can circulate. AI enters this process at the level of content preparation, adding another technological layer to an already changing communication environment. What emerges is not a simple movement from traditional broadcasting to digital media. Instead, older and newer forms of media are connected through production practices, institutional relationships, and audience choices.

This interpretation is broadly consistent with studies describing podcasting as an established form of digital communication that supports flexible patterns of content access and consumption (Hardey & James, 2022; Sharon, 2023). It also corresponds with research showing that radio continues to have a role within changing digital media environments (Lathifah & Ismandianto, 2021; Watson, 2024). The RKS case adds a local perspective to this discussion by showing that convergence involves more than the introduction of new distribution technologies. At the organizational level, it requires broadcasters to work across platforms; at the institutional level, it depends on relationships with health authorities and professional sources; and at the audience level, it accommodates different ways of accessing and using media.

The collaborative character of the production process also places a limit on what AI can reasonably be expected to contribute. AI may accelerate information management and help prepare preliminary materials, but the development of credible public health content still depends on human interaction and institutional expertise. The contribution of AI is therefore shaped by the communication environment in which it is used. At RKS, technological assistance becomes meaningful when it is

connected to the knowledge of broadcasters, the expertise of health professionals, the support of public institutions, and the varied needs of audiences.

Human Agency in AI-Assisted Public Health Podcast Production

The third finding concerns how responsibility was maintained during AI-assisted podcast production at RKS. The introduction of AI changed some of the preparation work, but it did not change the basic division of roles within the production process. Broadcasters still selected information, prepared programs, communicated with guests, and presented the content to listeners. AI was used mainly to help with information organization and the preparation of supporting materials. The technology was therefore incorporated into work that was already being carried out by the broadcasting team.

NotebookLM was used for several preparatory tasks, including generating summaries, guidelines, timelines, question-and-answer materials, learning guides, and audio resources. These functions were useful when broadcasters were dealing with a large amount of information or needed to prepare material within limited production time. The outputs were not treated as the final communication product. They became part of the material that broadcasters worked with before a program was produced. The use of AI in this way is consistent with recent studies describing NotebookLM as a tool for organizing and developing information rather than simply producing independent communication outputs (Mehta et al., 2025; Dihan et al., 2025; Tozuka et al., 2025).

The distinction between technological assistance and editorial responsibility was also apparent in the station's work with health professionals and public institutions. RKS involved hospitals, health authorities, and other competent speakers when producing health-related programs. Their involvement provided information and professional perspectives that were needed to discuss particular health issues. The broadcaster's role was then to bring this material into the program and communicate it through a format that could be followed by the intended audience. The use of AI did not remove this part of the production process. This collaborative approach is consistent with health communication practices in which the development and delivery of health information involve interaction among communicators, institutions, and sources of professional knowledge (Agustrijanto & Lobodally, 2022; Handrean et al., 2024).

This arrangement was particularly relevant because RKS distributed health information through several media formats. Radio, live streaming, YouTube, and podcasts were used for different forms of audience access. Choosing a format involved considerations that went beyond the technical ability to produce content. The station had to consider the nature of the program, the topic being discussed, and the audiences it wanted to reach. AI could help prepare information, but these decisions continued to be made within the broadcasting team.

The listener accounts presented in the previous finding also provide some indication of why human judgment remained necessary. Listeners did not use the available media in the same way. Some continued to rely on radio for local information, while others listened to podcasts selectively or used digital platforms mainly for entertainment and music. The existence of several platforms therefore did not produce a uniform audience response. Content had to be considered in relation to how people actually used each medium. The coexistence of radio and digital platforms

reflects the continuing adaptation of radio within changing media environments (Lathifah & Ismandianto, 2021; Mahendra & Thalib, 2025).

This becomes particularly important in public health communication. Health information needs to be accurate, but accuracy alone does not determine whether a message can be understood or used by an audience. At RKS, information from health professionals and other sources had to be incorporated into radio and podcast programs in a form appropriate for communication with listeners. The process involved choices about what to include, what to explain, and how to present the issue. These choices remained part of the work of the communicators. The importance of adapting health information to audiences is also emphasized in health communication research, particularly in relation to cultural sensitivity, audience characteristics, and the way messages are framed and communicated (Griffith et al., 2024; Dutta, 2024).

The use of AI at RKS can thus be described as an addition to the production process rather than a transfer of production responsibility. Some of the work involved in finding, organizing, and preparing information became easier, but the people involved in the production continued to determine what the audience would ultimately hear. This distinction is relevant to the application of Media Convergence Theory because convergence at RKS involves changes not only in where content is distributed but also in how content is prepared. Radio, podcasts, YouTube, and AI-supported production now form part of the same media environment, while the communicative decisions remain situated within human practice. The relationship between established radio practices and digital forms of distribution has similarly been discussed in research on radio convergence and changing media environments (Lathifah & Ismandianto, 2021; Watson, 2024).

Previous studies have identified AI as a resource for media production and information organization (Madhini et al., 2024; Mehta et al., 2025; Tozuka et al., 2025). The RKS case shows how such use takes shape in a local public health broadcasting setting. AI was not introduced into a production process that had been designed around the technology. Instead, it was incorporated into an existing arrangement involving broadcasters, technical personnel, health professionals, public institutions, and audiences. Its practical contribution depended on how well it could be incorporated into that arrangement. This form of human-technology interaction is also consistent with research emphasizing the importance of human oversight and responsible use when AI becomes part of professional practice (Hutson et al., 2024; Madhini et al., 2024).

From a public health communication standpoint, the finding points to a relatively clear boundary between technological assistance and communicative responsibility. AI can reduce some of the routine work involved in preparing information, but it does not determine the meaning of a health message, the relevance of the information to a particular audience, or the way a broadcaster should communicate it. Those decisions continue to require professional judgment and interaction with other people involved in the communication process.

A strength of this study is its focus on AI use in an operating local broadcasting organization. The study did not examine AI in isolation from everyday production practices. Interviews with broadcasters, operators, public service personnel, and listeners were considered alongside participatory observations and documentary materials. This combination provided an opportunity to examine AI use from several positions within the communication process and to compare what participants described with what was observed in practice.

The study also has limitations. The research was conducted at a single local public broadcasting institution, so the findings may not apply in the same way to organizations with different staffing conditions, technological resources, or institutional arrangements. In addition, the study examined the preparation and production of AI-assisted content rather than its effects on audiences. No conclusions can therefore be drawn about whether AI-assisted podcasts improve health literacy, attitudes, engagement, or health behavior. Research involving several broadcasting organizations could provide a broader comparison of how AI is incorporated into different production environments. Future studies could also examine audience responses directly, particularly perceptions of credibility, trust, engagement, and the effectiveness of health messages produced through human-AI collaboration.

CONCLUSION

This study examined how artificial intelligence (AI) is used in the production of public health podcast content at a local public broadcasting institution. At RKS, AI was used mainly during the preparation of content, particularly for organizing information and developing preliminary materials. Its use became part of the existing production process rather than a replacement for it. Broadcasters continued to determine the content of programs and how health information was presented to listeners.

The production process also involved people and institutions beyond the broadcasting team. Health professionals and public institutions contributed expertise and information when particular health topics required additional authority or local relevance. Broadcasters then worked with these materials, including those prepared with AI assistance, before they were incorporated into programs. Verification, contextual adaptation, and editorial decisions remained with the people involved in production. In this setting, AI was useful for reducing some of the routine work of preparing information, while decisions about the message and its presentation remained a human responsibility.

The case of RKS also adds a local perspective to discussions of media convergence. Convergence in this setting involves more than the movement of radio content into podcasts and other digital platforms. It also involves changes in the way content is prepared and in the relationships among broadcasters, technology, health professionals, and public institutions. AI is one element within this changing production environment. Its contribution appears to depend less on replacing existing roles than on how it can be incorporated into established communication practices. For public health communication, this suggests that the use of AI is most useful when technological assistance is accompanied by professional judgment, verification, and attention to the needs of the intended audience.

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