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Core Competencies and Training Needs of Global Health Communication Professionals

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TABLE OF CONTENTS

Executive Summary v

Introduction 1

Part One: Existing Frameworks of Health 3

- Overview of Six Frameworks 4
  - Translational Science Framework 4
  - Science Communication Framework 5
  - Public Health Framework 7
  - Dissemination and Implementation (D&I) Framework 13
  - Health Communication and Education Framework 14
  - World Health Organization (WHO) Strategic Communication Framework 15
- Analysis and Synthesis of Existing Frameworks 17

Part Two: Landscape Mapping and Analysis of Competencies Training 20

- Design and Methodology 20
  - Scoping Review Methodology 20
    - Academic Literature Review 21
    - Gray Literature Review 22
    - Coding of Scoping Review Materials 23
  - Content Analysis Methodology 23
    - Job Ads Analysis 23
    - University Training Programs Material Analysis 24
  - Key Informant Interviews Methodology 25
- Findings 26
  - Insights from Scoping Review of Academic Literature and Gray Literature 26
    - Academic Literature Insights 26
    - Gray Literature Insights 30
      - Overview and Analysis of Training Resources Published in Gray Literature 31

        - Perspectives of Trainers and Trainees as Published in Gray Literature 33
      - Combined Insights from Scoping Review of Academic and Gray Literature 36
  - Insights from Content Analysis of Job Ads and University Training Program Materials 39
    - Job Ads Insights 39
    - University Training Program Materials Insights 41
      - Communication Competencies Emphasized in Existing Health Communication Courses 41
  - Insights from Interviews with Key Informants 42
    - Key Informants' Reflections Organized by Theme 43
      - Reflections on Necessary Competencies of Global Health Communication Professionals 43
      - Reflections on Training Opportunities for Global Health Communication Professionals 45
      - Reflections on Quality Control and Accreditation for Global Health Communication Training 46
      - Reflections on Challenges for Global Health Communication 46

Discussion and Recommendations 48

- Key Takeaways 48
- Proposal for Operationalizing Global Health Communication Training 51
- Cross-Cutting Themes 52
- Conclusion 53

Recommendations for Rutgers 55

References 56

Appendix 1: Academic and Gray Literature Reviewed (Full Bibliography) 61

Appendix 2: Knowledge Domains and Communication-Dependent Competencies Addressed in the Academic, Peer-Reviewed Literature Analyzed 66

Appendix 3: Knowledge Domains and Communication-Dependent Competencies Addressed in the Gray Literature Analyzed 74

In recent years, health communication has emerged as a critical aspect of global health and international development. The rising frequency of epidemics and intense climate-related disasters as well as the persistence of health disparities increasingly require a workforce equipped with the skills to design and implement evidence-informed health communication strategies. Leading organizations like the World Health Organization (WHO) and UNICEF have recognized this need, but there is still a significant gap in comprehensive training programs tailored to equip professionals with necessary skills. A recent initiative launched at Rutgers University aims to establish a global health communication training program that addresses the evolving demands for competencies in this vital area.

Key Aims

The initial phase of this project aims to identify core and advanced competencies of global health communication professionals via an overview and analysis of existing health communication frameworks, a scoping review of relevant academic and gray literature across disciplines and fields, and analysis of job advertisements for global health communication positions. In addition, the project involves mapping and analysis of the current landscape of university training programs that cater to global health communication professionals, coupled with key-informant interviews with global health communication leaders, to identify potentially effective models as well as gaps in available training opportunities. The intended outcome of the project is a guiding framework for implementing a robust training program at Rutgers University that leverages existing curricula and expertise across units and is designed to be responsive to needs of diverse audiences and support different levels of professionalization.

Significant Takeaways

The evaluation of various public health and global health communication frameworks reveals a shift in focus from mere dissemination of health information to a more integrated approach emphasizing community and stakeholder engagement. As articulated by the key informants interviewed, health communication professionals today must not only convey health messages effectively but also engage various stakeholders in meaningful dialogue. This expectation is summarized in the observation “health communication is a team sport,” highlighting the collaborative nature of the profession.

A significant takeaway from the study is that, whereas existing training programs focus on equipping health communication professionals with foundational skills related to effective communication of health information, the skills needed now extend to competencies related to data literacy, effective team collaboration, stakeholder engagement, and community mobilization. The experts interviewed highlighted, in addition, the necessity for professionals to design, implement, and evaluate health communication programs using both qualitative and quantitative research methods. This echoes the sentiment that grounding communication practices in solid evidence-based methodologies is essential for effectively addressing global health and public health challenges.

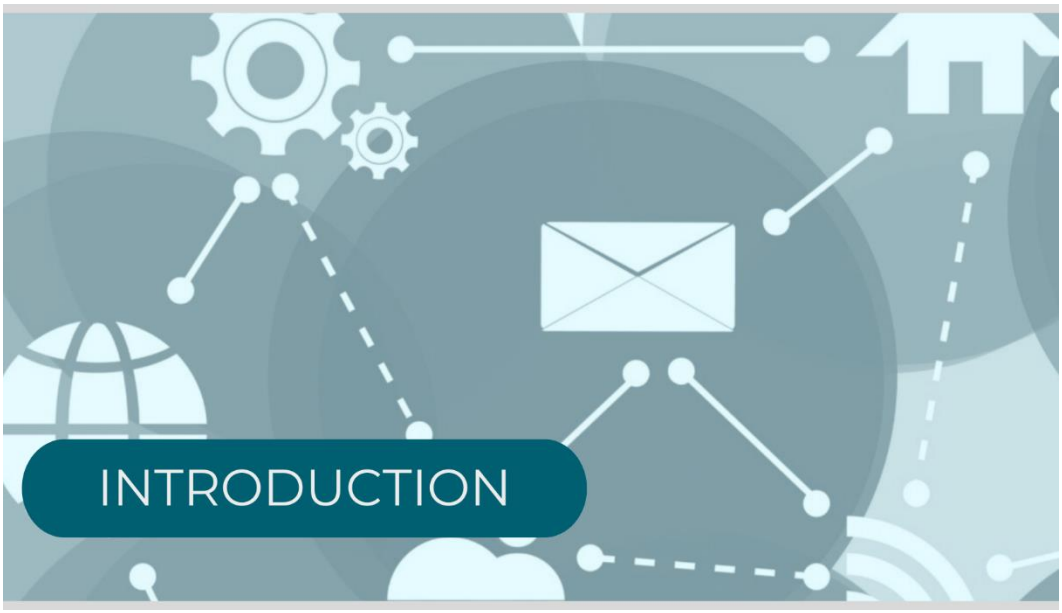
Furthermore, as misinformation continues to proliferate through social media and other channels, health communication experts are expected to develop competencies in monitoring and correcting misleading information. This requires not just counter-messaging communication skills but also application of advanced information surveillance tools to detect and address misinformation in real time.

While job advertisements typically call for competencies that go beyond strategic communication, such as leadership, strategic planning, and project management, the analysis of existing university-based training offerings revealed critical gaps between the competencies desired by employers and those provided by available training programs. Many programs focus narrowly on practice-oriented skills without sufficiently addressing the broader competencies required for effective community engagement and leadership roles.

The findings of this research project also underscore the importance of tailoring global health communication training programs to meet the diverse needs of professionals at various career stages, from entry-level positions to senior leadership roles. Discussing the viability of delivering training at scale, experts suggested that experiential learning opportunities, such as internships and simulations, could substantially enhance skill acquisition and application in real-world scenarios.

Implications and Actionable Recommendations

The establishment of a global health communication training program at Rutgers University has significant potential to address unmet training needs and empower a new generation of global health communicators. By addressing current gaps in competencies and focusing on a collaborative and evidence-based approach, this initiative could redefine health communication training to meet pressing global health challenges and ensure that health communication professionals can successfully adapt to increasingly complex and dynamic global health challenges. The proposed framework for developing and implementing such a training initiative at Rutgers University is meant to stimulate a collaborative venture that leverages existing capacities and expertise across units and synergizes efforts to innovate and institutionalize a high-quality and impactful training program that prepares global health communication professionals and leaders to meet future challenges successfully.



Health communication is an essential component of global health and international development. Over the past two decades, health communication capacity has been institutionalized in a variety of global health organizations such as the World Health Organization (who.int/about/communications), UNICEF (unicef.org/esa/communication-for-development), and the European Center for Disease Prevention and Control (ecdc.europa.eu/en/about-us/what-we-do/health-communication-activities). However, recent epidemics and climate-related disasters have created a need for a diverse global health workforce capable of implementing evidence-informed principles, strategies, and planning of health communication interventions (Schiavo, 2016). The skills and competencies needed to perform this work now go well beyond the design and dissemination of effective health messaging, which has been the focus of traditional health communication training programs, to include competencies and skills related to community and stakeholder engagement, building and sustaining effective partnerships, and using data and research to inform strategic and operational decisions. Without possessing such critical skills, global health communication professionals are not fully equipped to respond quickly, efficiently, and effectively to a growing number of global health challenges, including the spread of misinformation and over-burdened healthcare systems.

An interdisciplinary and interprofessional program capable of delivering 21st century health communication training at scale is not yet available, but capacity to develop and deliver this training at scale already exists in the field. The goal of this project is to lay the foundation for establishing and institutionalizing a global health communication training program at institutions of higher education.

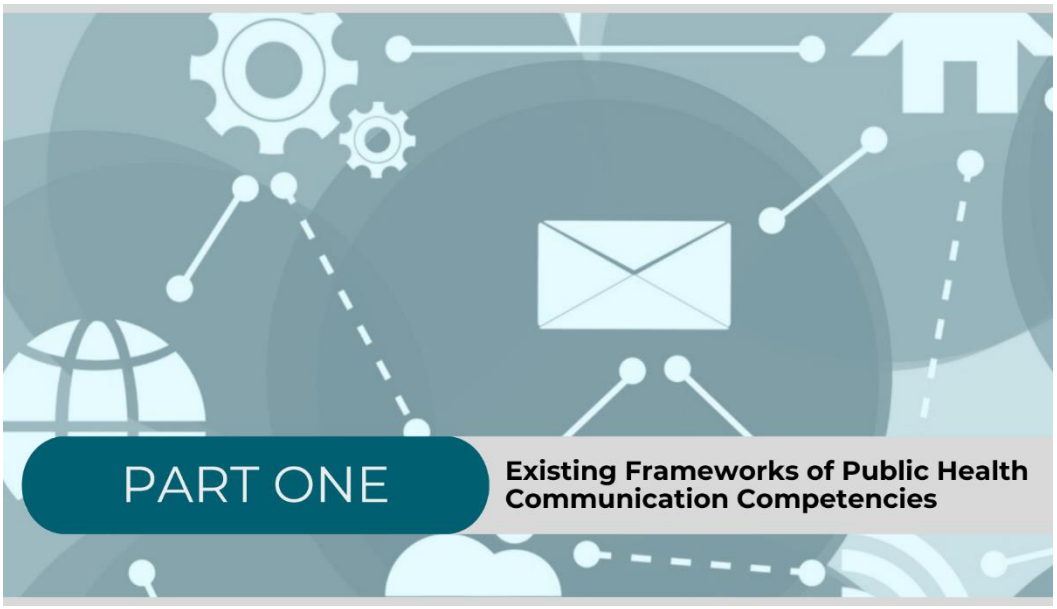
The specific aims of the project are:

(1) Identify, analyze, and compare existing public health communication frameworks to extract an initial list of basic and advanced health communication competencies and skills;

(2) Conduct a scoping review of the public health and global health communication literature; a content analysis of health communication job ads and university training program materials; and a series of key-informant interviews with global health communication leaders and professionals to augment and further delineate critical communication, information, engagement, analytical, and leadership competencies needed to communicate health information effectively to diverse audiences and promote greater health equity and systems-change in the global health context;

(3) Propose a framework for guiding delivery of differentiated, scaffolded, and competency-based training in global health communication to diverse audiences (university students, global health professionals, and leaders/administrators); and

(4) Identify near- and long-term opportunities for offering robust global health communication training at Rutgers and next steps.



Virtually all health-related fields and subfields recognize effective health communication as a critical component of health education, prevention, and treatment. However, there is considerable variation in the approach or frame of reference that different fields adopt regarding the centrality of health communication competencies to effective practice and the types of competencies emphasized.

In general, some health-related fields conceive health communication as integral to practice and, therefore, build a health communication component into formal training and preparation of health professionals; whereas other fields treat health communication more as an afterthought, and thus typically seek to externally source relevant health communication expertise.

Because health communication professionals train and work in such diverse settings, it is useful to compare competencies across various frameworks to probe degrees of convergence on a core set of health communication competencies as well as more specialized competencies that may be specific to fields or sub-fields and, therefore, require more specialized training.

From a foundation of both research we conducted on this topic (see Part Two) and our extensive professional experience with research and training in health communication, we identified six primary fields or sub-fields that routinely involve health communication specialists: translational science, science communication, public health, dissemination and implementation (D&I), health education, and strategic health communication (also known as behavior and social change communication). We offer a brief overview of how each field conceives health communication and the key competencies emphasized, and then we offer a synthesis across frameworks.

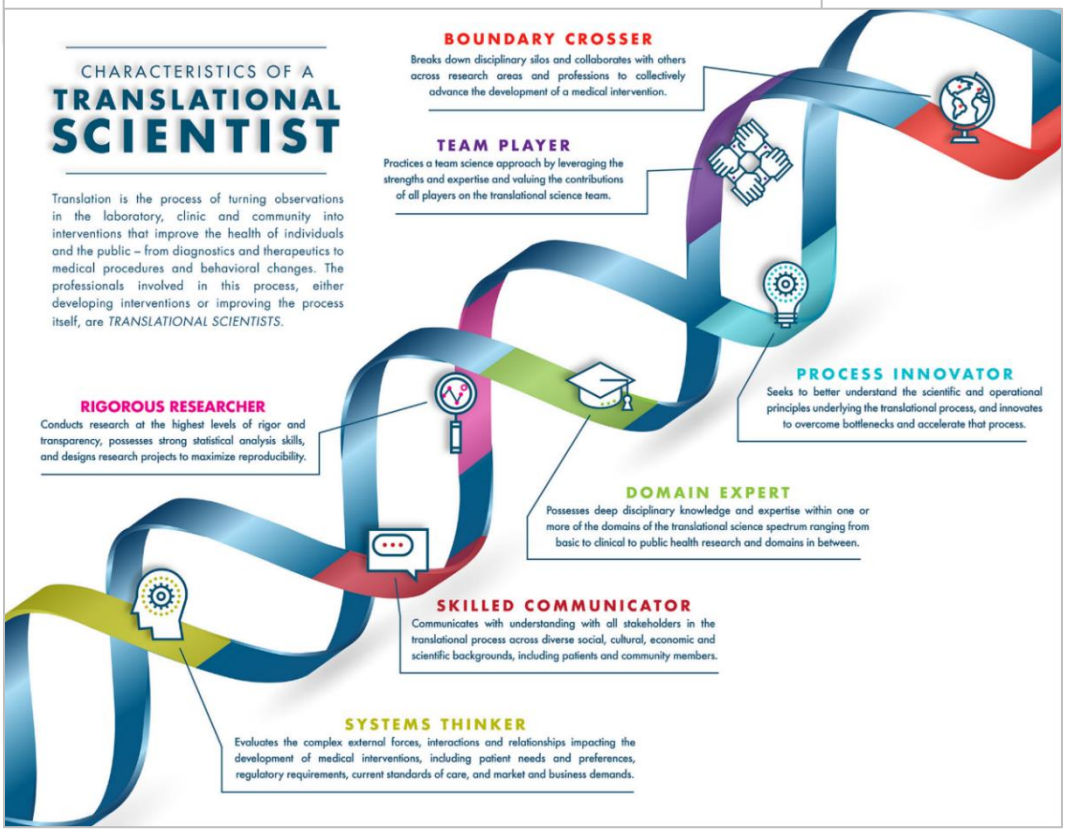
Overview of Six Frameworks

Translational Science Framework

According to Gilliland et al (2019), the fundamental characteristics and attributes required to be a successful translational scientist go beyond the competencies of existing individual disciplines and include a broad understanding of the translational spectrum, adherence to a team science approach to research, and a focus on developing innovative solutions to persistent problems in translation. Skilled communicator is one of the seven fundamental character traits of a translational scientist in this framework, which has been adopted by the national consortium of the Clinical and Translational Science Awards (CTSA) Program (see Figure 1).

Figure 1

Characteristics of Translational Scientist



Source: Gilliland et al, 2019.

Included for illustrative purposes; see pubs.acs.org/doi/10.1021/acsptsci.9b00022 for source image.

A skilled communicator communicates clearly with all stakeholders in the translational process across diverse social, cultural, economic, and scientific backgrounds, including patients and community members. Particularly, a skilled communicator in the translational process is someone who can linguistically communicate their science so that it is comprehensible to stakeholders with a range of scientific and nonscientific backgrounds. Being a skilled communicator also requires listening with understanding to the needs, desires, and aspirations of the audience.

Key communication competencies highlighted include: (1) communicating clinical and translational research findings to different groups of individuals, including colleagues, students, the lay public, and the media; (2) translating the implications of clinical and translational research findings for clinical practice, advocacy, and governmental groups; and (3) translating clinical research findings into national health strategies or guidelines for use by the public. Also referenced as important competencies are adherence to cultural competency and cultural sensitivity principles and ability to appraise the role of community engagement as a strategy for identifying community health issues and translating health research to communities.

Science Communication Framework

Whereas the translation science framework understands skilled health communication more as an art form than a learned practice (i.e., some individuals are better communicators than others), a science communication framework, in contrast, aims to derive key competencies from communication science, specifically, theory and research regarding effective communication of factual health information (National Academies of Sciences, Engineering, and Medicine, 2017).

Key competencies of effective communicators in this framework include identifying appropriate communication or engagement goals and objectives; adapting to a communication landscape and audience; messaging; narrative; language; visual design; nonverbal communication; writing style; and providing space for dialogue (listening/empathy/audience engagement) (Aurbach et al., 2019). Each of these skills can be further subdivided into different elements, which are outlined in the table (see Table 1).

Table 1

Foundational Skills for Science Communication

Foundational Science Communication Skill	Key Elements
Setting Goals and Objectives	• Visioning success (desired/intended outcomes) • Goal identification and alignment with audiences' needs • Communication objective segmentation by sub-audiences
Adapting to a Communication Landscape and Audience	• Choice of target audience • Logistical consideration (e.g., size and reach) • Audience's knowledge or expertise • Audience's values and core beliefs • Understanding historical contexts and inequities • Audience's sources of information • Audience's goals and motivations
Messaging	• Message prioritization and distillation • Grouping similar ideas; supporting key messages
Language	• Recognizing "science language" including jargon; using plain language • Literary or linguistic tools (e.g., analogies, metaphors, exemplars)
Narrative	• Organizing information (logical sequencing of information) • Compelling storytelling elements
Design	• Design principles • Graphical storytelling • Representing data (visualization)
Nonverbal Communication	• Posture; gesture • Expression; vocal dynamics
Writing	• Grammar; voice and tense; sentence structure • Clarity; tone and formality
Creating Space for Dialogue: Listening, Empathy, and Audience Engagement	• Recognizing historical inequities that have previously excluded audiences • Listening • Demonstrating openness and warmth • Cultural relevance and humility • Promoting dialogue • Recognizing audience attention as it ebbs and flows

Source: Aurbach et al., 2019.

Another useful suggestion emerging from the science communication literature is to organize competencies according to threshold concepts, or concepts/ideas that support transformative learning and serve as prerequisites to the acquisition of more advanced (scaffolded) and specialized knowledge (Lewenstein & Baram-Tsabari, 2022). Examples of threshold concepts in science communication include audience-centered communication, co-production, and trust.

Such threshold concepts differ by degree of professionalization or practice, for example, differences between occasional science communicators, active science communicators, and professional science communicators (Lewenstein & Baram-Tsabari, 2022). Occasional science communicators can be expected to possess audience-centered communication competencies including identifying and segmenting target audiences; assessing audiences' knowledge, predispositions, interests, and needs; and using such insights to craft relevant and specific messages and "package" them (e.g., using appeals, frames, storytelling, etc.) to facilitate audiences' attention, comprehension, and engagement with the information communicated. At a higher level, active and professional science communicators can be expected to also possess relevant strategic, analytical, planning, and evaluation competencies of the type used to devise and implement large-scale strategic communication interventions or programs. These competencies can be taught in a single workshop, a short course, a full course, or a comprehensive curriculum (e.g., professional master's degree), depending on the number and complexity of competencies required for a particular professional role.

Public Health Framework

The public health framework represents a set of knowledge and skills that public health practitioners need (Council on Linkages Between Academia and Public Health Practice, 2021). These core competencies are organized into eight domains representing skill areas within public health. Each domain contains between four and 13 competencies. In addition, core competencies correspond to three tiers (see Box 1) according to different types of responsibilities within public health organizations. The tiers are used to organize sub-competencies, which reflect more detailed knowledge and skills that individuals must possess depending on their level (or tier) of responsibility.

The communication skills included in the public health framework (see Domain 3 in Table 2) focus on effective communication of health information (including tailoring of information to diverse audiences), combating misinformation and disinformation, soliciting and using community input, and building trust with communities.

Box 1

Tiers of Public Health Professionals

Tier 1: Front Line and Program Support Responsibilities
These may include responsibilities such as collecting and analyzing data, conducting restaurant inspections, assessing environmental hazards, providing health education, building community relationships, providing customer service, delivering services, coordinating meetings, organizing records, supporting programs, and providing technical expertise.
Tier 2: Program Management and Supervisory Responsibilities
These may include responsibilities such as developing, implementing, evaluating, and improving programs; supervising and mentoring staff; establishing and maintaining community partnerships; recruiting a diverse workforce; managing timelines, work plans, and budgets; advocating for program resources; making policy recommendations; and providing subject matter expertise.
Tier 3: Senior Management and Executive Leadership Responsibilities
These may include responsibilities such as overseeing major programs or operations of the organization, setting a strategy and vision for the organization, building an equitable and inclusive organization, creating a culture of quality within the organization, collaborating with policymakers and politicians, advocating for organizational resources, partnering with community leadership, and leading organizational efforts to achieve health equity and social and environmental justice.

Source: Council on Linkages Between Academia and Public Health Practice, 2021.

Table 2

Communication Skills of Public Health Professionals

Domain 3: Communication Skills		
3.1. Determines communication strategies		
Tier 1 Subcompetencies:	*Tier 2 Subcompetencies:*	*Tier 3 Subcompetencies:*
T1: 3.1.1. Identifies purposes and goals for disseminating public health data and information	T2: 3.1.1. Determines purposes and goals for disseminating public health data and information	T3: 3.1.1. Determines purposes and goals for disseminating public health data and information
T1: 3.1.2. Identifies public health data and information that need to be disseminated	T2: 3.1.2. Determines public health data and information that need to be disseminated	T3: 3.1.2. Determines public health data and information that need to be disseminated
T1: 3.1.3. Identifies audiences for public health data and information	T2: 3.1.3. Determines audiences for public health data and information	T3: 3.1.3. Determines audiences for public health data and information

T1: 3.1.4. Assesses the literacy of internal and external audiences (e.g., reading level; ability to obtain, interpret, and use health and other information; social media literacy; numeracy)	T2: 3.1.4. Assesses the literacy of internal and external audiences (e.g., reading level; ability to obtain, interpret, and use health and other information; social media literacy; numeracy)	T3: 3.1.4. Ensures the literacy of internal and external audiences is assessed (e.g., reading level; ability to obtain, interpret, and use health and other information; social media literacy; numeracy)
T1: 3.1.5. Assesses the communication needs and preferences of internal and external audiences (e.g., language, culture, values and beliefs, fears and concerns, previous experiences)	T2: 3.1.5. Assesses the communication needs and preferences of internal and external audiences (e.g., language, culture, values and beliefs, fears and concerns, previous experiences)	T3: 3.1.5. Ensures the communication needs and preferences of internal and external audiences are assessed (e.g., language, culture, values and beliefs, fears and concerns, previous experiences)
T1: 3.1.6. Develops messaging for disseminating public health data and information	T2: 3.1.6. Develops messaging for disseminating public health data and information	T3: 3.1.6. Develops messaging for disseminating public health data and information
T1: 3.1.7. Suggests approaches for disseminating public health data and information (e.g., email, letters, stories, press releases, infographics, social media/networks, peer-to-peer networks, news and entertainment outlets, newsletters, journals, town hall meetings, neighborhood gatherings, websites, webinars, podcasts, presentations, conferences, reports, data repositories)	T2: 3.1.7. Selects approaches for disseminating public health data and information (e.g., email, letters, stories, press releases, infographics, social media/networks, peer-to-peer networks, news and entertainment outlets, newsletters, journals, town hall meetings, neighborhood gatherings, websites, webinars, podcasts, presentations, conferences, reports, data repositories)	T3: 3.1.7. Selects approaches for disseminating public health data and information (e.g., email, letters, stories, press releases, infographics, social media/networks, peer-to-peer networks, news and entertainment outlets, newsletters, journals, town hall meetings, neighborhood gatherings, websites, webinars, podcasts, presentations, conferences, reports, data repositories)

T1: 3.1.8. Suggests messengers for disseminating public health data and information (e.g., public health professionals, scientists, healthcare workers, journalists, social influencers, celebrities, faith leaders, community health workers)	T2: 3.1.8. Selects messengers for disseminating public health data and information (e.g., public health professionals, scientists, healthcare workers, journalists, social influencers, celebrities, faith leaders, community health workers)	T3: 3.1.8. Selects messengers for disseminating public health data and information (e.g., public health professionals, scientists, healthcare workers, journalists, social influencers, celebrities, faith leaders, community health workers)
3.2. Communicates with internal and external audiences (e.g., staff, elected officials, students, volunteers, community-based organizations, healthcare professionals, the public)		
Tier 1 Subcompetencies:	*Tier 2 Subcompetencies:*	*Tier 3 Subcompetencies:*
T1: 3.2.1. Communicates with linguistic and cultural proficiency (e.g., tailoring messages for different audiences, using age-appropriate materials, incorporating images, using plain language, implementing CLAS Standards, ensuring accessibility for people with disabilities, engaging interpreters and translators)	T2: 3.2.1. Communicates with linguistic and cultural proficiency (e.g., tailoring messages for different audiences, using age-appropriate materials, incorporating images, using plain language, implementing CLAS Standards, ensuring accessibility for people with disabilities, engaging interpreters and translators)	T3: 3.2.1. Communicates with linguistic and cultural proficiency (e.g., tailoring messages for different audiences, using age-appropriate materials, incorporating images, using plain language, implementing CLAS Standards, ensuring accessibility for people with disabilities, engaging interpreters and translators)
T1: 3.2.2. Engages in active listening	T2: 3.2.2. Engages in active listening	T3: 3.2.2. Engages in active listening
T1: 3.2.3. Seeks input from internal and external audiences (e.g., populations served, coworkers, chambers of commerce, faith-based organizations, schools, social services organizations, hospitals, politicians, policymakers, government, community-based organizations, environmental agencies and organizations, businesses)	T2: 3.2.3. Seeks input from internal and external audiences (e.g., populations served, coworkers, chambers of commerce, faith-based organizations, schools, social services organizations, hospitals, politicians, policymakers, government, community-based organizations, businesses)	T3: 3.2.3. Seeks input from internal and external audiences (e.g., populations served, coworkers, chambers of commerce, faith-based organizations, schools, social services organizations, hospitals, politicians, policymakers, government, community-based organizations, environmental agencies and organizations, businesses)

T1: 3.2.4. Communicates the impact of environmental factors, social factors, and individual actions on health (e.g., climate change, air and water quality, racism, smoking, littering, getting vaccinated, poverty, homelessness)	T2: 3.2.4. Communicates the impact of environmental factors, social factors, and individual actions on health (e.g., climate change, air and water quality, racism, smoking, littering, getting vaccinated, poverty, homelessness)	T3: 3.2.4. Communicates the impact of environmental factors, social factors, and individual actions on health (e.g., climate change, air and water quality, racism, smoking, littering, getting vaccinated, poverty, homelessness)
T1: 3.2.5. Engages in risk communication	T2: 3.2.5. Engages in risk communication	T3: 3.2.5. Engages in risk communication
T1: 3.2.6. Communicates information to influence behavior and improve health (e.g., promoting mask use, encouraging vaccinations, preparing for emergencies, discouraging tobacco use)	T2: 3.2.6. Communicates information to influence behavior and improve health (e.g., promoting mask use, encouraging vaccinations, preparing for emergencies, discouraging tobacco use)	T3: 3.2.6. Communicates information to influence behavior and improve health (e.g., promoting mask use, encouraging vaccinations, preparing for emergencies, discouraging tobacco use)
T1: 3.2.7. Communicates the roles and responsibilities of governmental public health, healthcare, and other partners in improving the health of a community	T2: 3.2.7. Communicates the roles and responsibilities of governmental public health, healthcare, and other partners in improving the health of a community	T3: 3.2.7. Communicates the roles and responsibilities of governmental public health, healthcare, and other partners in improving the health of a community
3.3. Responds to information, misinformation, and disinformation (e.g., through social media, town hall meetings, commentaries, letters to the editor)		
Tier 1 Subcompetencies:	*Tier 2 Subcompetencies:*	*Tier 3 Subcompetencies:*
T1: 3.3.1. Monitors information sources	T2: 3.3.1. Monitors information sources	T3: 3.3.1. Monitors information sources
T1: 3.3.2. Identifies opportunities for responding to information, misinformation, and disinformation	T2: 3.3.2. Ensures monitoring of information sources	T3: 3.3.2. Ensures monitoring of information sources
T1: 3.3.3. Suggests approaches for responding to information, misinformation, and disinformation	T2: 3.3.3. Determines opportunities for responding to information, misinformation, and disinformation	T3: 3.3.3. Determines opportunities for responding to information, misinformation, and disinformation

T1: 3.3.4. Suggests messengers for responding to information, misinformation, and disinformation	T2: 3.3.4. Selects approaches for responding to information, misinformation, and disinformation	T3: 3.3.4. Selects approaches for responding to information, misinformation, and disinformation
T1: 3.3.5. Develops messaging for responding to information, misinformation, and disinformation	T2: 3.3.5. Selects messengers for responding to information, misinformation, and disinformation	T3: 3.3.5. Selects messengers for responding to information, misinformation, and disinformation
T1: 3.3.6. Disseminates messages in response to information, misinformation, and disinformation	T2: 3.3.6. Develops messaging for responding to information, misinformation, and disinformation	T3: 3.3.6. Develops messaging for responding to information, misinformation, and disinformation
	T2: 3.3.7. Disseminates messages in response to information, misinformation, and disinformation	T3: 3.3.7. Disseminates messages in response to information, misinformation, and disinformation
	T2: 3.3.8. Ensures dissemination of messages in response to information, misinformation, and disinformation	T3: 3.3.8. Ensures dissemination of messages in response to information, misinformation, and disinformation
3.4. Facilitates communication among individuals, groups, and organizations		
Tier 1 Subcompetencies:	*Tier 2 Subcompetencies:*	*Tier 3 Subcompetencies:*
T1: 3.4.1. Identifies opportunities to facilitate communication	T2: 3.4.1. Identifies opportunities to facilitate communication	T3: 3.4.1. Identifies opportunities to facilitate communication
T1: 3.4.2. Fosters communication (e.g., building trust, engaging in active listening, conducting in-person and virtual meetings, considering language and accessibility needs, being clear and transparent)	T2: 3.4.2. Fosters communication (e.g., building trust, engaging in active listening, conducting in-person and virtual meetings, considering language and accessibility needs, being clear and transparent)	T3: 3.4.2. Fosters communication (e.g., building trust, engaging in active listening, conducting in-person and virtual meetings, considering language and accessibility needs, being clear and transparent)

Source: Council on Linkages Between Academia and Public Health Practice, 2021.

Dissemination and Implementation (D&I) Framework

The field of dissemination and implementation (D&I) research has grown significantly over the past 15 years, but despite this growth, structured training programs in D&I are limited, and no standard D&I curriculum exists (Padek et al., 2015). Many of those seeking D&I science training are individuals who already hold advanced degrees or training (MD and PhD, primarily) and need additional training in D&I research to supplement their current skill set. Basic core elements of training typically include D&I theory, design, and measurement, but increasingly also stakeholder engagement and research-based collaborations (Moore & Khan, 2020).

Relevant skills include strategies for building and maintaining shared understanding among collaborators and stakeholders, developing and maintaining trusting relationships, practicing active listening, and encouraging dialogue and new ideas—all of which are centered on the principle of solving problems of implementation and practice by engaging with relevant evidence (Schultes et al., 2021). Communication, therefore, is important in terms of both information exchange (including translation) and supporting collaborations. Accordingly, from a D&I perspective, there are six critical communication competencies (Metz et al., 2020) indicated in Box 2.

Box 2

Critical Communication Competencies from a Dissemination and Implementation Perspective

Communication – Key Activities

The key activities which implementation support practitioners conduct, relating to the Communication competency, include:

- Work with stakeholders to develop communication protocols designed to:
    - intentionally engage stakeholders
    - communicate progress and celebrate implementation success
    - report systemic barriers that are preventing or hindering implementation
    - report on actions taken to resolve or address implementation challenges
    - revisit past decisions and agreements periodically to ensure that solutions are still appropriate.
- Support the development of different communication protocols for different target groups, which specify communication goals, the method and frequency of communication, who needs to communicate, how effectiveness of communication will be measured, and how communication will consistently be improved.
- Recognize and respond to differences in communication needs across different stakeholders involved, e.g. due to different organizational roles, implementation expectations, involvement and responsibilities.

- Help implementation stakeholders to recognize and respond to differences in communication needs among focus populations through the implementation. These differences may be due to, for example, varying levels of language proficiency and literacy, different gender-, education-, or culture-based norms and preferences etc.
- Encourage stakeholders to regularly communicate with and gather feedback from actors within and outside the implementing system to understand how implementation processes are perceived. As part of this process:
    - Support effective communication and feedback loops among practice, supervision, management, and leadership levels of the system (i.e., vertical feedback loops that support communication up and down a system).
    - Support effective communication and feedback loops among service partners, advocacy groups, training networks, representatives from the focus population, and other collaborators (i.e., horizontal feedback loops that support communication across system sectors).
- Help to identify local communication barriers or complications and work with relevant implementation stakeholders to resolve these challenges.

Source: Metz et al., 2020

Health Communication and Education Framework

Health communication is a multidisciplinary field of study and practice focused on the systematic application of communication theories, evidence, and strategies to promote behaviors, practices, and policies that advance the health and well-being of people and populations. A major thrust of academic scholarship in the field is the study of how health information is translated, presented, and disseminated most effectively and efficiently to engage diverse audiences and promote action. Health communication fundamentals are taught at many colleges and universities both at the undergraduate and graduate levels using a fairly standard curriculum, and educators and practitioners have been working toward establishing a competency model to guide health communication education in institutes of higher education.

Park et al. (2021) recently surveyed 74 health communication educators and 68 practitioners to identify competencies for health communication specialists with master's degrees. They identified five foundational knowledge domains that are universally important to all health communication specialists (intercultural communication, health behavior research, patient/public orientation, social marketing, and public health fundamentals) and five more specialized knowledge domains (crisis and risk communication, public opinion and media, healthcare communication, accessible design, and global health). Their analysis also points to three health communication skillset groups: communication essentials (teamwork, interpersonal and group communication, and expository writing), media and journalism practice (social media proficiency, journalism and public relation writing, data visualization, and web design), and research and reporting (scientific writing,

quantitative and qualitative data analysis skills). Of the five groups of competencies identified, two groups—communicate with diverse audiences and health communication program/campaign—were determined to be foundational, whereas the remaining three groups—public health administration, health service delivery, and market health-related products and services—were determined to be relevant to some sub-specialties.

Accordingly, key competencies of health communication specialists appear to be those relevant to the process of developing, implementing, and evaluating health communication programs and interventions, including:

- Competent personal communication (oral, written, and technology-mediated) to effectively engage diverse audiences with relevant health information in conversations, presentations, and demonstrations appropriate to their needs and abilities.
- Information landscape mapping and analysis to identify communication gaps or opportunities to engage target audiences with health information.
- Strategic planning and implementation: define end-goals and develop a systematic path to achieve them.
- Audience analysis and segmentation: analyze the characteristics, qualities, needs, and perceptions of receivers to inform successful public health communication and marketing efforts and the strategies such as segmenting, targeting, and tailoring.
- Message development and testing: preparation of public health communication and marketing messages, including the content, source, delivery channel, and strategies.
- Channel identification and selection: find the appropriate means of disseminating the message to the audience.
- Use of communication tools and techniques to facilitate discussions and interactions and work with stakeholders to achieve a common goal.
- Monitoring and evaluation (quantitative and qualitative) of implementation (process evaluation) and outcomes of health communication programs or interventions.

World Health Organization (WHO) Strategic Communication Framework

Effective, integrated, and coordinated communications are integral to WHO's mission. The WHO Strategic Communication Framework (who.int/about/communications) outlines a strategic approach for effectively communicating WHO information, advice, and guidance across a broad range of health issues and to diverse audiences. It proposes key principles and tactics for communicating actionable, accessible, relevant, timely, understandable, and credible information. The framework includes

tactics and planning questions. Specific communication competencies and tasks are attached to each key principle as summarized in Table 3.

Table 3

Communication Competencies in WHO Strategic Communication Framework

Key Principle	Goals of Communication	Competencies
Accessible	Communicators should identify all channels that are available and map their capacities to reach priority audiences. Using the right mix of channels helps empower audiences with the information they need to make informed decisions.	• Identify effective and appropriate channels. • Make information available online. • Ensure people with disabilities can find and use information they need.
Actionable	Understanding the relevant knowledge level, attitudes, and current behaviors of the target audience increases the success of communication materials and messages. Messages should address barriers and encourage decision-makers to take the recommended steps.	• Move audiences to action. • Design behavior change campaigns. • Encourage action during a health emergency.
Credible	WHO communicators must use every opportunity to reinforce WHO's trustworthiness so that its health information and activities become the basis for decisions.	• Ensure technical accuracy. • Be transparent. • Coordinate with partners. • Speak as "One WHO". • Use and reinforce the WHO brand.
Relevant	To be relevant, communications must help audiences see the health information, advice or guidance as applicable to them, their families, or others they care about.	• Know the audience. • Listen to the audience. • Tailor the message. • Motivate the audience.

Timely	Across all health issues, WHO must make information, advice and guidance available in a timely way, so audiences have the information they need when they need it to make appropriate health decisions.	• Communicate what WHO knows early. • Communicate at the right time. • Build the conversation.
Understandable	WHO communicates with a wide variety of decision-makers. Some have backgrounds in medicine and public health and rely on WHO for technical information. However, many key audiences are not technical experts. Communicators must provide information that is easy to understand so decision-makers comprehend health risks and take appropriate actions.	• Use plain language. • Tell real stories. • Make it visual. • Use multiple languages.

Source: WHO Strategic Communications Framework for Effective Communications.

Analysis and Synthesis of Existing Frameworks

There are considerable similarities, but also important differences, in health communication competencies included in the frameworks reviewed. On the most basic level, health communication professionals are expected to demonstrate competencies needed to develop, test, and disseminate health information effectively, including audience identification and analysis, message design and pretesting, selection of credible and trusted messengers, and choice of communication channels.

This basic conception of competencies emerges from frameworks that reflect a functional approach to health communication as instruments of translation and dissemination of health information (e.g., translational science, science communication, and WHO strategic communication frameworks). Frameworks that are focused, in addition, on stakeholder engagement (e.g., the D&I and public health frameworks) emphasize competencies related to facilitation of dialogue, coordination, and collaboration among stakeholders as well as active listening. Some frameworks (most notably, the health communication and education framework) include application of theory and data analytic skills as core competencies required for planning, implementation, and evaluation of health communication programs. Lastly, while not always explicitly stated, most frameworks view ethical conduct, intellectual humility, cultural sensitivity, and commitment to health equity as core competencies of health communication professionals.

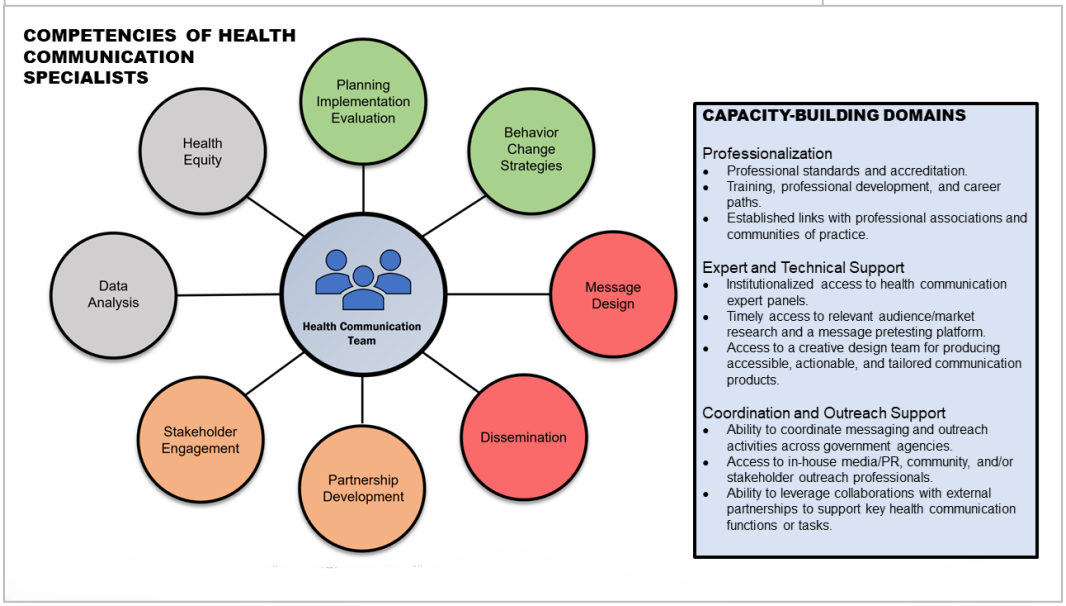
Considering this, and the rapidly evolving information and communication environment, it is unrealistic to expect a health communication professional to possess all core competencies listed above. A more realistic proposition is to constitute teams of health communication professionals with complementary competencies (National Academies of Sciences, Engineering, and Medicine, 2023), as

shown below (Figure 3). This approach may work well for building health communication capacity in large organizations and systems (e.g., CDC, WHO, CTSAs, etc.) but may not be feasible or necessary to adopt in other circumstances.

A more realistic, cost-effective approach to building a trained global health communication workforce is to distinguish different tiers of training and align core competencies accordingly (like the tiered approach in the public health framework). As noted above, health communication is inherently a multidisciplinary field of study and practice, and health communication professionals come into the field from multiple backgrounds and sectors with different levels of preparation. Furthermore, the careers they choose, the positions they hold, and the specific tasks they are asked to perform likely require a diverse set of competencies, professional development needs, technical assistance, and communities of practice. Thus, it seems sensible to tailor a competencies-based education and training accordingly.

Figure 3

Competencies of Health Communication Specialists



Source: National Academies of Sciences, Engineering, and Medicine (2023).
Included for illustrative purposes; see doi.org/10.17226/27210 for source image.

A key advantage of a tiered approach to tailored health communication training is that it allows for scaffolding: empowering professionals to build upon their existing knowledge base to gradually acquire more complex knowledge and additional relevant skills that expand and diversify their competencies as a function of position, job responsibilities, and/or tasks. A tiered approach also allows for targeted, just-in-time acquisition of relevant competencies and potentially aligns with career trajectories of health communication professionals.

A question of interest is how best to structure and differentiate tiers of competencies to be most responsive to the education and training needs of diverse health communication professionals. The public health framework, for example, distinguishes among three tiers of competencies (frontline specialists, program managers/supervisors, and senior managers/leaders) as a function of position and responsibilities. The D&I framework organizes health communication competencies by tasks or use cases (e.g., translation vs. facilitation), whereas the science communication framework distinguishes sets of competencies by degree of professionalization (i.e., occasional, active, or professional communicators). The health communication and education framework, in contrast, identifies core competencies relative to the processes of developing, implementing, and evaluating communication interventions and, therefore, has the potential advantage of decoupling competencies from specific roles, positions, and tasks of health communication professionals.

A combination of two or more of the approaches reviewed may offer the best match to training needs of diverse professionals and provide a template for moving toward the standardization and institutionalization of health communication competencies training.

Research that maps the current landscape of demand for and supply of health communication education and training programs can produce valuable insights toward the standardization and institutionalization of health communication competencies training. We move next to describe and present the findings of our landscape mapping study.

Design and Methodology

Three complementary research activities were employed in this study: (1) a scoping review of the public and global health communication literature, which included academic, peer-reviewed publications and gray literature materials; (2) content analysis of job ads for recruiting global health communication professionals and of publicly available online materials (e.g., descriptions, summaries, syllabi, and marketing products) retrieved from university training programs in health communication; and, finally, (3) interviews with key informants who are leading global health communication experts and practitioners.

All research activities were reviewed and approved by Rutgers University's Institutional Review Board (IRB protocol #Pro2023000877).

Scoping Review Methodology

The scoping review was completed first to identify, extract, and classify a common set of core and advanced competencies of health communication professionals that emerge from the academic literature and gray literature on the topic.

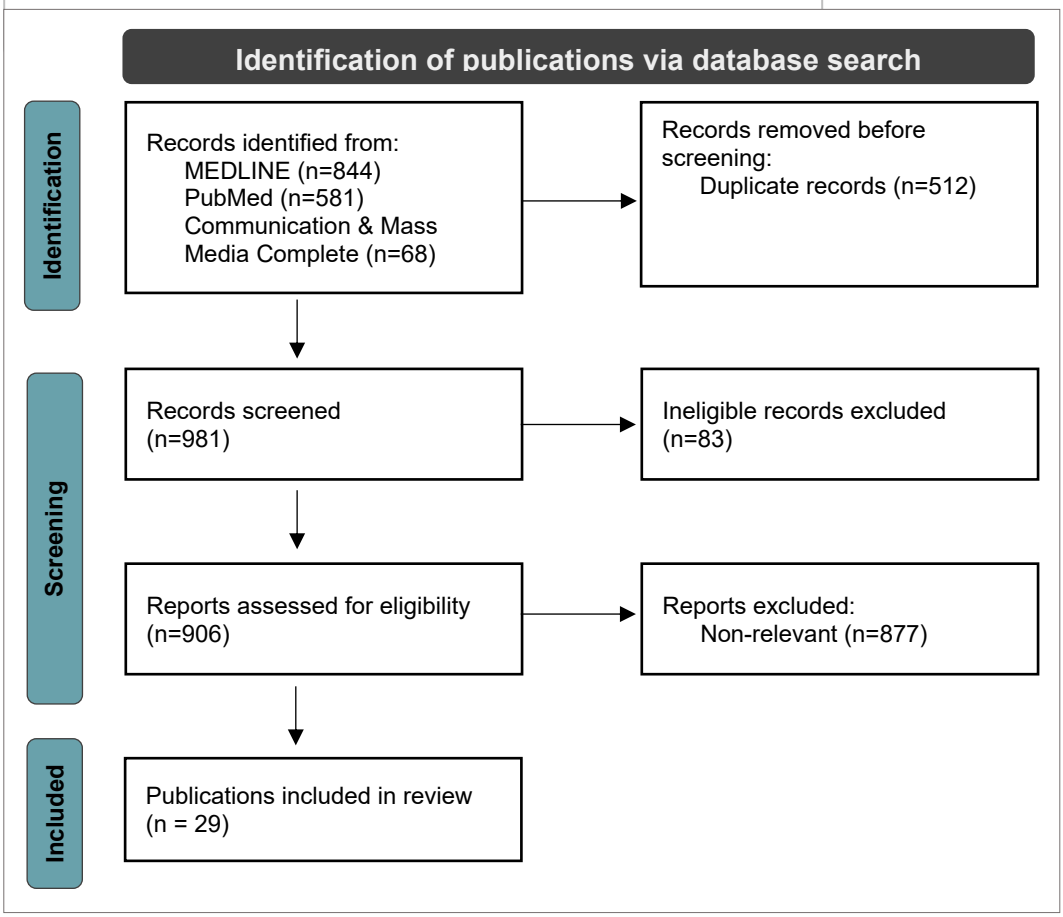
Academic Literature Review

The scoping review was conducted in accordance with PRISMA-ScR guidelines (Tricco et al., 2018). An academic literature search was conducted in March-April 2024 to retrieve all relevant peer-reviewed publications published in the past decade, 2010-2023. The search queries we initially experimented with—e.g., "global health communication," "global health communication AND training," and "global health AND communication AND training"—were purposefully broad to minimize potential systematic omissions of relevant publications but were low on precision. After initial testing, and to improve the precision of search results, we included additional keywords extracted from relevant publications and limited the search to English language full-text publications. We used a refined search query ["health communication" AND global AND (education or training or preparation or competencies or skills)] to search MEDLINE (EBSCO), PubMed, and Communication & Mass Media Complete—three major databases of published health communication research.

After eliminating duplicate records and ineligible items (i.e., records for which an English language version and/or full text of the document was not available), the titles and abstracts of all remaining records retrieved by the search were manually screened for relevance to public health and whether they met the primary eligibility criterion of health communication competencies being a primary focus of the document. For example, publications focused on communication competencies of medical professionals or those related to patient-centered communication in clinical settings were excluded because they did not have a public health focus, resulting in a final pool of 29 publications included in the scoping review of academic literature (for details, see the PRISMA flowchart in Figure 4). A complete list of the peer-reviewed journal articles included in the scoping review is available in Appendix 1.

Figure 4

Scoping Review Flowchart Applying PRISMA-ScR Guidelines



Note: The figure refers to the process applied to include/exclude academic, peer-reviewed sources. Sources from the gray literature were added later, increasing the total number of publications reviewed to 41.

Gray Literature Review

To augment the search for relevant materials, we included sources considered gray literature, or materials such as reports and white papers that are not published in academic journals but are publicly accessible otherwise. We used the same search query to search six gray literature databases (Defense Technical Information Center, Greylit.org, Open Grey, Policy File Index, Digital Education Resource Archive, and Eldis) and manually searched the websites of nine prominent global health organizations (World Health Organization, World Health Organization Europe, European Centre for Disease Control and Prevention, U.S. Centers for Disease Control and Prevention, Organization for Economic Co-operation and Development, World Bank, Red Cross, International Committee of the Red Cross, and United States Agency for International Development). After screening results for relevance and eligibility, we identified 12 additional relevant sources, including training kits, documents describing the development and implementation of training, and global health

communication strategies/guidelines developed through training programs. A complete list of these resources included in the review is available in Appendix 1.

Coding of Scoping Review Materials

All materials included in the review (*N*=41) were coded using a data abstraction instrument developed for the purposes of this study. The instrument was designed to extract information regarding (a) knowledge domain (e.g., risk communication, health education, etc.); (b) training or learning goals (e.g., effective communication practices, working with news media, etc.); (c) specific skills or competencies referenced; (d) target audience(s) for training; (e) geographical area or region (if applicable); and (f) training module and/or materials.

The gray literature artifacts, specifically, were also coded to capture design-related and learning outcome-related variables. These variables included creator; artifact type (interview, overview, report, training manual, or other); health topic; country/regional context; training or learning goals; communication competencies/skills referenced; delivery module; topics covered; intended audience; level (e.g., basic or advanced training) and prerequisites (if applicable); evidence of efficacy and/or effectiveness; cost to trainees; resources/materials provided; and use of hands-on or experiential learning components.

Coding was completed by two independent coders, and all coding-related ambiguities were resolved through discussion.

Content Analysis Methodology

Subsequent to the scoping review of academic and gray literature, the research team completed a complementary content analysis of competencies included in job ads and in materials for university-based global health communication training programs to triangulate and augment the findings of the scoping review. This content analysis also served to identify discrepancies between health communication competencies emphasized in the literature and those that are valued in practice as well as potential gaps in current training offerings.

Job Ads Analysis

A typical job ad specifies a minimum set of competencies expected of applicants and the primary job responsibilities of those hired; therefore, a job ad can provide valuable insights regarding core competencies and level of preparation (e.g., experience) employers expect of global health communication professionals.

To retrieve a sample of relevant job ads for the purpose of content analysis, we searched job listings on three popular job seeking platforms—LinkedIn, USA Jobs, and Zippia—over a period of one week (February 2-8, 2024), using the following keywords: “health communication,” “public health advisor,” “health promotion specialist,” and “global health.” The initial query was designed to capture a comprehensive set of job listings, and it returned 5,314 listings for “health

communication;" 3,556 for "public health advisor;" 1,472 for "health promotion specialist;" and 2,099 for "global health;" there were 12,441 total listings, ensuring a wide coverage of potential job opportunities within the health communication field other than academic positions.

The next step involved filtering results to remove any duplicate listings across platforms due to multiple postings and to ensure each job listing was unique. All announcements retrieved by the search across the three databases were imported into Zotero (zotero.org), a free and open-source reference management software. Using Zotero's duplicate search feature, we automatically detected and removed duplicate listings (*n*=8,709 results). The remaining job listings were screened manually by two members of the research team, and an additional 637 job listings were removed due to dead or expired links. Each of the remaining 3,095 job listings was subsequently reviewed for fit with the inclusion criteria (i.e., health communication-specific position as opposed to marketing/PR, health education, or a content creation position; listed qualifications and/or responsibilities that explicitly reference relevant communication training or experience; and not an academic nor a medical/clinical communication position). Following this procedure, 2,801 additional listings were excluded because they did not meet the inclusion criteria, and 271 additional listings were excluded due to insufficient information regarding health communication-related qualifications and responsibilities.

A total of 23 job listings met all inclusion criteria and were retained for analysis. Each job listing was reviewed to extract the following information: (a) employer type (government agencies, non-governmental organizations, private companies, or research institutions); (b) job level (entry-level or specialists, mid-level, senior, or executive positions); and (c) health communication focus (e.g., health education, behavior change, strategic communication, policy advocacy, etc.). Additionally, each job listing was coded for references to specific health communication competencies using the classification developed by Park et al. (2021). This was done to assess the degree of match between competencies identified in the literature on the topic and those that are valued by employers.

University Training Program Materials Analysis

Information regarding global health communication competencies and skills may also be gleaned from studying descriptions and materials (e.g., course syllabi) provided online by university-based master's degree-level and graduate certificate health communication training programs. To identify and compile a list of relevant university training programs, we utilized two comprehensive online databases: (1) a list of master's programs in health communication and global communication compiled by Master's in Communications,[1] an organization affiliated with all major professional communication associations in the U.S., and (2) programs listed on the Society for Health Communication's website.[2]

[1] Master's in Communications, mastersincommunications.com/specializations/health-communication
[2] Society for Health Communication, societyforhealthcommunication.org/degrees-and-certificates

Using these platforms, we were able to identify and access information from 15 graduate certificate programs and 65 master's programs (*N*=80). Two trained coders subsequently extracted the following categories of information regarding each program: (a) number of required credits; (b) core and elective courses; (c) program delivery format (in-person, online, hybrid); and (d) the degree to which courses and other training opportunities listed have a central global health focus. When copies of course syllabi were available, coders were asked to review the listed learning objectives for references to specific health communication competencies or skills.

Key Informant Interviews Methodology

The final phase of this study involved a series of semi-structured interviews with a diverse group of leading global health communication experts and practitioners to assess and contextualize the findings of the scoping review and content analysis, generate additional insights, and develop an actionable agenda for further building and improving global health communication workforce development capacity.

Key informant interviews were conducted with a purposive sample (*N*=8) of global health communication experts—3 women and 5 men—from academic institutions and intergovernmental organizations (e.g., WHO, USAID) and who have extensive knowledge and experience on the topic. Interview candidates were initially identified through the authors' professional networks and authors of publications included in the scoping review and next via snowball sampling based on recommendations of interviewees.

A total of 10 interview candidates were contacted via email and invited to participate in the study. The eight who accepted the invitation received and signed a consent form prior to the interviews. Interviews lasted approximately 60 minutes and were conducted virtually using Zoom. All interviews were audio-recorded with the consent of interviewees.

The semi-structured interviews covered a range of topics, including: (a) personal experience with global health communication; (b) views regarding core competencies of global health communication specialists and additional competencies for professionals in management and leadership roles; (c) reflections on gaps or mismatches between the competencies needed and those provided via current training opportunities; (d) suggestions or recommendations regarding models for providing training at scale; and (e) useful benchmarks for assessing quality of global health communication training programs.

All interviews were transcribed and then subjected to thematic analysis (Braun & Clarke, 2012). Each of the authors independently reviewed the transcripts of each interview to get familiarized with the data, and then they developed an initial list of codes along with individual analytic memos. They subsequently convened to share those memos, develop a common list of codes, and then extract major themes. A second round of coding the interviews according to themes was implemented to refine findings.

Findings

The scoping review of academic and gray literature, content analysis of job ads and university training program materials, and key informant interviews revealed numerous insights about the intersection of communication and global health with respect to core competencies and training needs. Here we present in narrative form, supplemented by data visualizations, a summary of the themes and findings that emerged from this work.

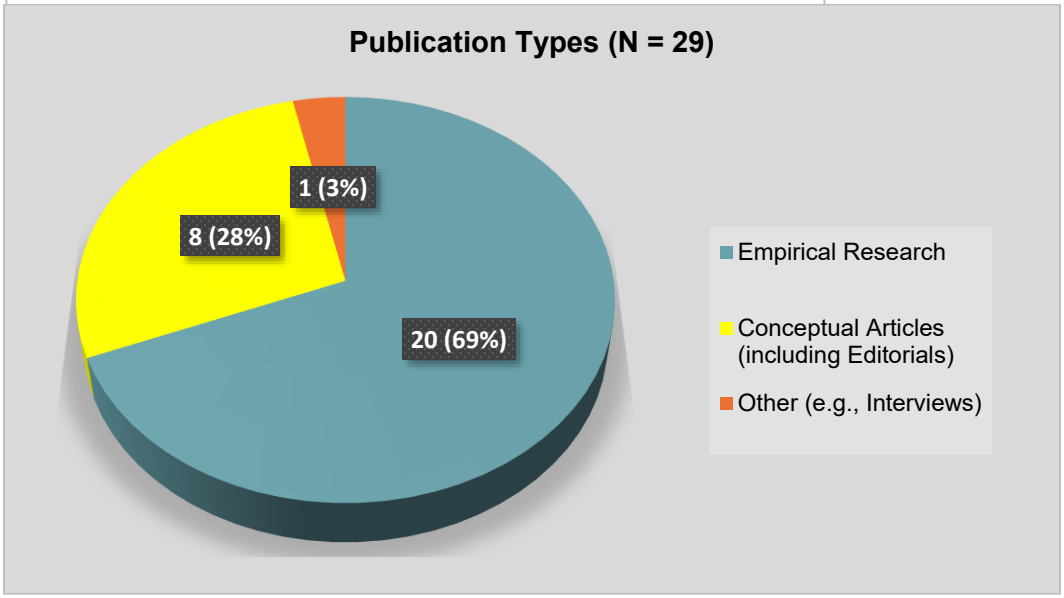
Insights from Scoping Review of Academic Literature and Gray Literature

Academic Literature Insights

Key characteristics of the 29 academic, peer-reviewed publications included in the scoping review are summarized in Appendix 2, and Figure 5 organizes these publications by type.

Figure 5

Types of Academic, Peer-Reviewed Publications Reviewed



Of note, much of the scholarly literature on the topic of health communication competencies has been motivated by assessments and reflections regarding public health response to global health emergencies such as the HIV/AIDS pandemic in the 1990s, the SARS outbreak in 2002-2003, the Ebola virus outbreak in West Africa between 2014-2016 and Zika in 2016-2017, and more recently the COVID-19 pandemic. Beyond disease outbreaks, studies have also focused on the context of natural disasters, such as public health communication preparedness and response to Hurricane Katrina (Vanderford, 2015). Given this, it is not surprising that

reflections on critical health communication competencies center on communication challenges associated with outbreak response, primarily those required to effectively communicate risks to diverse audiences, both locally and globally (e.g., Odugleh-Kolev, 2014; Schiavo, 2016), but also competencies related to coordinating media relations, mobilizing social media, and launching health campaigns (e.g., Vanderford, 2015). Some, like Odugleh-Kolev (2014), take a broader view of the role of communication in outbreak response, recognizing that communication touches on "every aspect of technical, managerial, and operational activities" (p. 242). This in turn underscores the need for public health communication professionals to acquire and implement evidence-based interpersonal, team, and organizational communication practices to support these additional functions (Odugleh-Kolev, 2014).

Whereas identifying and closing communication-related gaps in public health response to global health emergencies is both sensible and practical, it is equally important and valuable to consider competencies relevant to effective health communication in the context of routine or non-emergency situations. Work that considers effective health communication in the context of routine disease treatment and prevention commonly emphasizes competencies related to translation of complex health information, strategic or behavior change communication, and dissemination (Bardosh et al., 2020; Schiavo, 2016). Some of this work also highlights intercultural communication competencies such as cultural sensitivity as particularly relevant in the global public health context. For example, Walker et al. (2019) discusses the cultural adaptation of a health communication intervention in a Muslim country to expand access to maternal, newborn, and child health, as well as related challenges. A key component of the intervention involved working closely with local faith leaders and healthcare providers to produce and disseminate culturally appropriate messaging.

By comparison, there has been less attention paid to communication competencies related to effective community engagement and participation, health advocacy, resilience, and entrepreneurship (Bardosh et al., 2020; Hoffman & Silverberg, 2015; Odugleh-Kolev, 2014; Schiavo, 2014; Vanderford, 2015), as well as those competencies relevant to building and sustaining partnerships among public health stakeholders (Bartlett et al., 2017; McHenry et al., 2021) and addressing inequities (McHenry et al., 2021; Ridde & Capelle, 2011). Ridde and Capelle (2011), for instance, identify communication difficulties, lack of transparency, and general power asymmetry as common obstacles to effective collaborations between researchers and stakeholders in the Global North and Global South. Communication competencies related to managing conflicts/tensions, fostering a productive dialogue, and promoting agreement among stakeholders with diverging interests are needed to overcome such barriers.

In the aftermath of the lacking public health response to the COVID-19 pandemic, there is also growing attention to the importance of having a robust communication infrastructure in place to address disruptions to effective communication and improve coordination across public health agencies. For some, this highlights the

need in competencies related to leveraging information and communication technologies. McHenry et al. (2021), for instance, analyzed the impact of the COVID-19 pandemic on the global health partnerships of U.S. and international academic institutions that provide medical training. They found that the pandemic produced or accentuated power imbalances in decision making within partnerships, limited communication among partners across borders, and increased worry about whether the partnerships were resilient enough to bounce back after the pandemic. Although technology at the time the pandemic began was not used extensively to support these global health partnerships, many of the study's participants expressed interest in exploring the possibility of stronger virtual engagement in the future.

Next, a handful of the publications reviewed reflected on current and emerging communication training needs of a global health workforce (Cherniak et al., 2019; Keralis et al., 2018; Schiavo, 2016). Cherniak et al. (2019) surveyed graduates from selected Master of Arts degree programs in global health in the United States and noted a mismatch between global health training provided, graduate aspirations, and job availability. With respect to communication, in particular, the findings from this study showed that many of the graduate students interviewed identified inadequate training in communication skills as a critical gap in their training and preparation for careers in the global health sector. In a study that analyzed global health job vacancies, Keralis et al. (2018) confirmed that skills in program operations, design and planning, communication, and management are highly sought after by employers but are not adequately covered by current training programs. Others (e.g., Hawcroft et al., 2023; Kalbarczyk et al., 2022; Togami et al., 2021) propose that the ability to communicate effectively across disciplines and fields is critical to supporting effective leadership, networking, negotiation, and coordination in global public health, as is training in effective health advocacy.

In summary, the available academic literature regarding communication competencies of global health communication professionals appears to converge on core competencies of global health communication professionals being those relevant to translation, transmission, and dissemination of health information (see McNabb et al., 2021; Odugleh-Kolev, 2014; Tartaglia et al., 2020). Although not always stated explicitly, such core competencies include "soft" communication skills (e.g., presentation, writing, public speaking, etc.); designing tailored messaging for diverse audiences (e.g., risk communication); employing a range of promotional strategies and dissemination channels to reach and engage audiences (e.g., campaigns, advertising, public relations, events, social media, etc.); utilizing trusted messengers to communicate information; and working with journalists/media to amplify messages. Additional commonly referenced competencies include those related to strategic planning and implementation of health communication interventions including problem, situation, and audience analysis; knowledge and application of behavior change theories to guide targeted and/or tailored interventions; use of research evidence or data to guide strategic, tactical, and operational decisions; and tracking and supporting implementation of plans. Program evaluation-related competencies may be added to this list, although they may be relevant to advanced

global health communication professionals such as managers, directors, or other leadership roles. Largely overlooked in the current literature on the topic are competencies related to the social or relational functions of communication in the global health context, including competencies relevant to community and stakeholder engagement; intra- and inter-agency collaboration and coordination; formation and maintenance of robust partnerships and networks; and public health policy advocacy.

Figure 6 describes the health communication knowledge domains referenced in the academic, peer-reviewed literature reviewed, while Figure 7 summarizes the communication and communication-dependent competencies.

Figure 6

Health Communication Knowledge Domains in Academic, Peer-Reviewed Literature

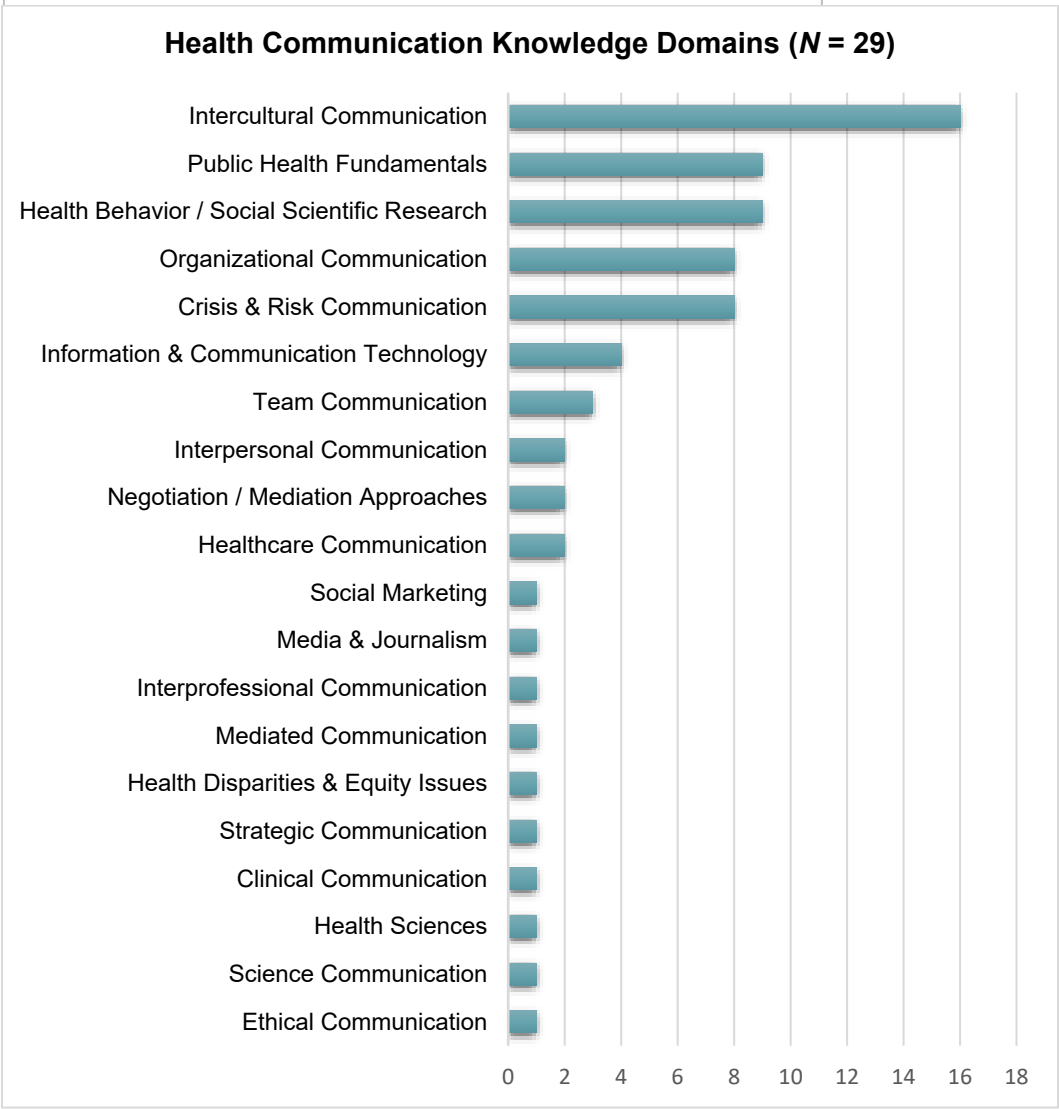
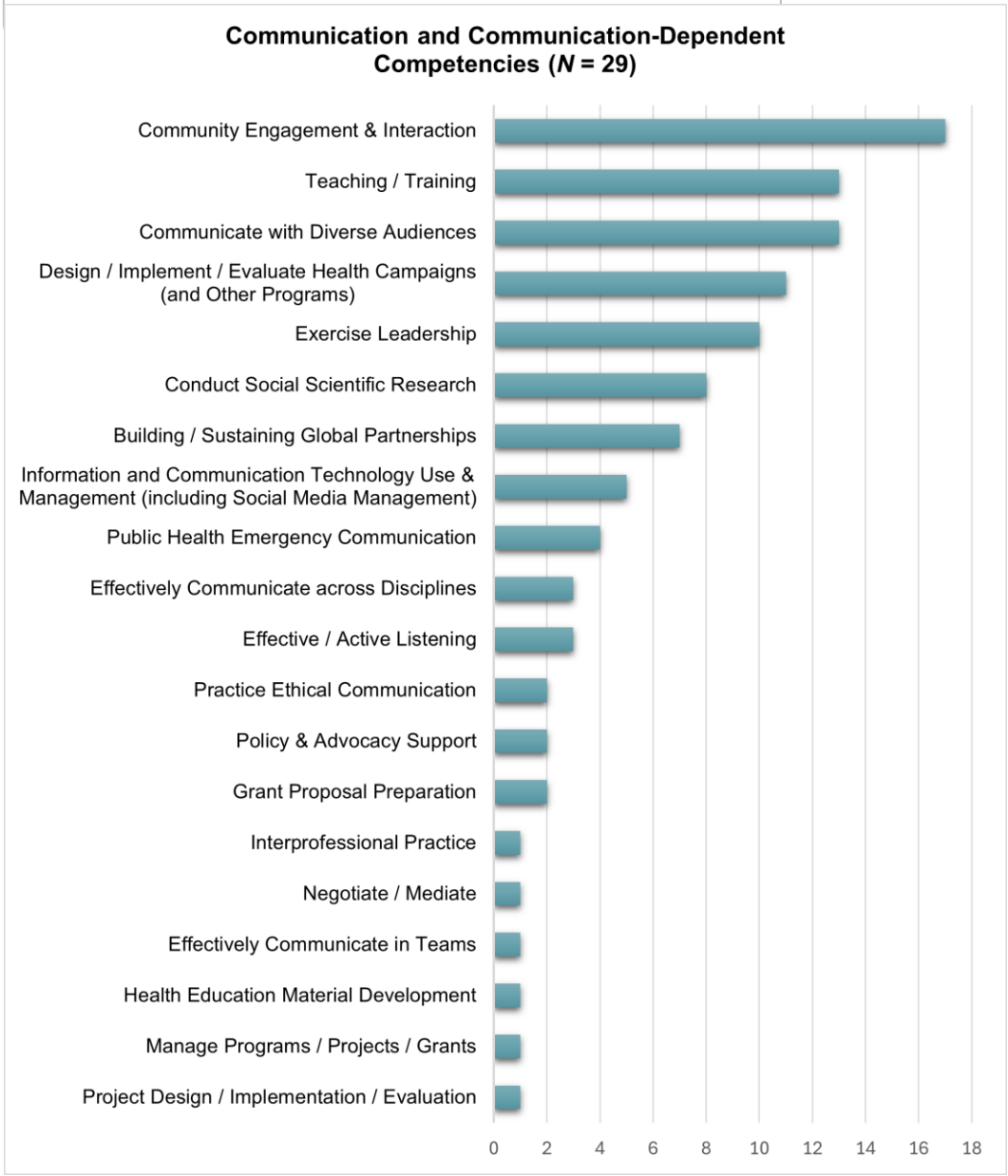


Figure 7

Communication and Communication-Dependent Competencies in Academic, Peer-Reviewed Literature



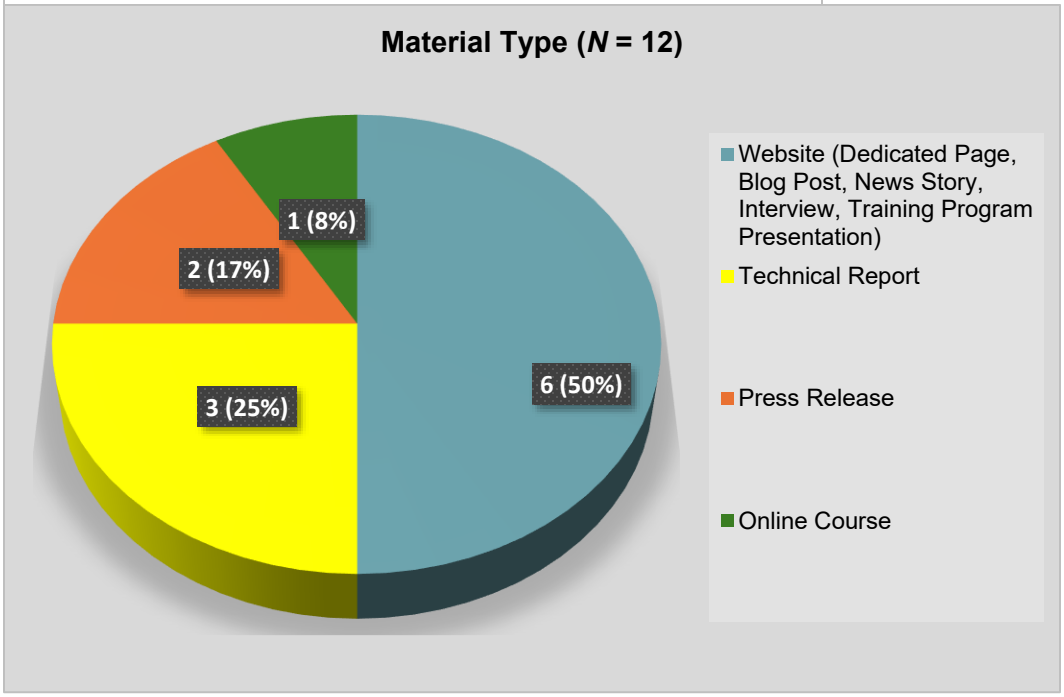
Gray Literature Insights

Our gray literature search retrieved 12 publicly available resources that met the inclusion criteria. Four of these pieces were training reports/manuals, including the materials that were part of one actual training program on "communication during global emergencies" offered by Emory University over the Coursera platform; one was a video reviewing the outcomes of a global health communication training; and seven were web articles that either provided an overview of emergency health risk

communication training or reported on an interview with a training participant. Key characteristics of the 12 gray literature materials included in the scoping review are summarized in Appendix 3, and Figure 8 organizes these materials by type.

Figure 8

Types of Gray Literature Materials Reviewed



The majority of the artifacts analyzed focused on emergency preparedness and management (Briseño, 2016; CDC, 2018; WHO, n.d.; WHO, 2018a; WHO/Europe, 2021) as well as risk communication (ECDC, 2022; ECDC, 2023). The training provided was relevant to responding to natural disasters, such as floods and earthquakes, or disease outbreaks, such as Ebola, polio, cholera (WHO, 2018a; WHO, 2018b) and COVID-19 (WHO/Europe, 2021; WHO/Europe, 2023a; WHO/Europe, 2023b). The training programs represented were housed in in Georgia, Greece, Kazakhstan, Kenya, and Tunisia and target healthcare professionals (e.g., physicians and nurses) and/or public health workers (e.g., epidemiologists) employed in government agencies (e.g., Ministries of Health) or intergovernmental organizations (e.g., WHO, as well as its local and regional offices).

Overview and Analysis of Training Resources Published in Gray Literature

The U.S. Centers for Disease Control and Prevention (CDC) developed "Crisis and Emergency Risk Communication" (CERC), webinar-based and in-person training informed by psychological and communication sciences research, but also management-focused scholarship and lessons learned from prior emergency responses (CDC, 2018). CERC's training modules cover issues ranging from the psychology of a crisis, messages and audiences, and community engagement, to

developing crisis communication plans, selecting and also acting as the appropriate spokesperson to address aspects of a crisis, and working with the media and through social media (CDC, 2018). In collaboration with the CDC, Emory University also offers a version of the CERC training on the Coursera platform, under the title Communicating During Global Emergencies (Evans & Smith-Easley, 2024). The course leading to a certificate includes three modules: (a) an overview of crisis and emergency risk communications, (b) crisis communication planning, and (c) international health regulations' risk communication components.

The World Health Organization (WHO) offers similar "Emergency Communications Network Training" (ECN), which the organization describes as its "flagship emergency communication training." It is designed to build "a cohort of tested and trusted communication officers in WHO, Ministries of Health, and partners" (WHO, n.d.). The ECN shares several of the CERC's learning objectives. Its emphasis on storytelling (and using multiple media forms for storytelling), however, distinguishes it from CERC. Through the program, "participants learn and practice communication tips for effectively communicating health risks and advice on a range of health issues, from chronic health issues to new and emerging risks and diseases" (WHO, n.d.). The WHO ran its sixth ECN training in 2018 in collaboration with the U.S. CDC.

In 2018, the WHO's European Regional Office developed emergency risk communication workshops "tailored to each country's communication needs" (WHO/Europe, 2018). Differently from other programs, this training program explicitly covers "emergency risk communication theory" in addition to "techniques and tools, a common language and practice to enable" countries to: (a) communicate with transparency and in a timely fashion; (b) coordinate communication to target audiences so that they can make informed decisions; (c) engage with affected communities; and (d) effectively use appropriate channels to engage all relevant stakeholders in a crisis (WHO/Europe, 2018). A deeper dive into this program's training objectives also reveals an interest in helping participants develop several salient competencies, including: (a) conducting stakeholder analysis, (b) determining and addressing risk perceptions, (c) understanding how to manage rumors, (d) using community engagement and listening strategies to meet information needs, (e) developing effective health messages using risk communication capacity, and (f) describing methods of formative research and message testing (WHO/Europe, 2018).

The European Center for Disease Prevention and Control (ECDC), the European Union's equivalent of the U.S. CDC, has also developed a training workshop on risk communication (ECDC, 2022) as well as training to facilitate the rapid detection and assessment of public health threats, to articulate proposals to counter such threats, and to "efficiently communicate on related situations and decisions (ECDC, 2023). A characteristic feature of the ECDC's risk communication training program is its explicit focus on strategies for communicating uncertainty and addressing health misinformation, something that participants in the program identified as a key challenge in conjunction with lack of trust in public health authorities (ECDC, 2022). Similarly to the CERC and ECN training, the ECDC's program has also employed real case scenarios.

The COVID-19 pandemic prompted international health agencies to develop new training programs to address pressing needs. The WHO's Regional Office for Europe, for instance, developed new training to bolster healthcare professionals' communication competencies and support clinicians' efforts to talk to patients about vaccinations (WHO/Europe, 2021). As of 2023, WHO/Europe has conducted over 40 such trainings for healthcare professionals in 13 countries, reaching 3,000 general practitioners, medical specialists, nurses, and pharmacists (WHO/Europe, 2023b).

Overall, the type and range of competencies that emerge from analyzing these training resources are very similar to the core competencies identified in academic literature (see also, Park et al., 2021). However, it is notable that the focus of training is more on acquisition of explicit knowledge or prescribing best practices and principles of effective health communication (e.g., utilizing trusted sources, being honest and transparent, avoiding ambiguous or offensive language, etc.) and less on actual competencies (i.e., tacit knowledge).

Perspectives of Trainers and Trainees as Published in Gray Literature

To assess the utility of the training resources included in our review, we searched for publicly available accounts provided by trainers and participants in these programs. These accounts generally corroborate the insights emerging from analyzing the academic and gray literature on the topic and offer a bit more nuance regarding the learning experience and acquisition of competencies.

Several trainings modules included public health emergency replication exercises as methods to create a trained, trusted, and tested cohort of communicators educated in communication strategies to utilize during global public health threats. For example, many trainings underscored the need for public health professionals and emergency communication response teams that (a) can thoroughly and rapidly analyze diverse audiences (e.g., health workers, families, community stakeholders, etc.) in order to formulate messages and activities to effectively communicate during health emergencies; and (b) network with global communication experts (WHO/Europe, 2018; ECDC, 2022; ECDC, 2023). Simulation exercises and participant role-playing were common training tactics mentioned in all the articles of this category. Such exercises were intended to teach participants how to navigate through anticipated challenges they will most likely experience in a real-life emergency (WHO/Europe, 2018).

Briseño (2016) reflects on her experience as a CERC trainer who found herself teaching public health workers in Georgia when, unexpectedly, floods struck the country's capital, Tblisi. She reflected that it was such crisis situations that CERC prepared trainees for, that is, situations during which people "need understandable, trustworthy, and accurate information to act on." She added: "And they need it fast." Moreover, as illustrated during the floods that affected Tblisi, CERC underscores the importance of health communicators to connect with diverse populations, including those speaking languages that are spoken less, so that everyone affected can begin to return to a sense of "normal life." Additional lessons learned through the CERC

training included: (a) adjusting messaging to fit the information needs of diverse audiences; and (b) doing so while accounting for differences in information needs across specific phases of a crisis.

In a 2018 interview, Jessica Ilunga, reflected on her training experience in the WHO's ECN program, which took place in Nairobi, Kenya. It turned out to be very timely. Two weeks after she completed the training, Kenya declared an Ebola virus outbreak. In her account, Ilunga appreciated the ECN's use of emergency simulations so that participants could better grasp all the dimensions and challenges of a crisis: "time pressures, stress, physical and mental exhaustion, community resistance, hostility, and negotiation" (WHO, 2018a). In these simulations, trainees actively participate in the simulation and perform as mentors and facilitators, too (WHO, 2018b). Other participants and WHO leadership have also highlighted the use of simulations as a critical component of ECN training (WHO, 2018b). A 2013 ECN alumna and then trainer pointed out that a significant benefit of simulations is learning from your peers "by establishing bonds of trust and exchange in the midst of a compelling scenario" (WHO, 2018b).

In the aftermath of the COVID-19 pandemic, WHO Europe conducted an evaluation of its training program intended to address vaccine hesitancy. The evaluation was carried out in Greece in 2023, and it was the result of the collaboration between WHO Europe and the Greek Ministry of Health. Participants included physicians, nurses, and pharmacists (WHO/Europe, 2023a). A physician who participated in the program in Greece reflected that the training reminded him of "patient-centered care, and I have started to practice it." He added: "I used to talk as a doctor, repeating scientific data, while now I am trying to focus on the needs and the perceptions of each patient, using all the communication strategies we discussed in the training. In this way, I try to win the trust of patients more and make them realize I am mainly interested in their well-being" (WHO/Europe, 2023b). Participants and evaluation authors highlighted a key feature of this training program, which was its emphasis on building healthcare workers' confidence by developing salient communication competencies.

In summary, key insights gained from our scoping review of the gray literature reveal that available global health communication training resources focus heavily on public health emergency response and risk management communication. The range of communication competencies addressed is narrower than those frequently referenced in academic literature, with emphasis on relaying explicit knowledge (prescriptions regarding best-practices) than acquisition of competencies, although experiential learning components of these programs can facilitate acquisition of tacit knowledge. These resources likely fall short of addressing the needs of professionals working at different levels (e.g., in field specialist roles versus leadership positions), largely because they are designed for mass and time-bounded delivery of training given available resources.

Figure 9 captures the health communication knowledge domains referenced in the gray literature reviewed, while Figure 10 summarizes the communication and communication-dependent competencies.

Figure 9

Health Communication Knowledge Domains in Gray Literature Reviewed

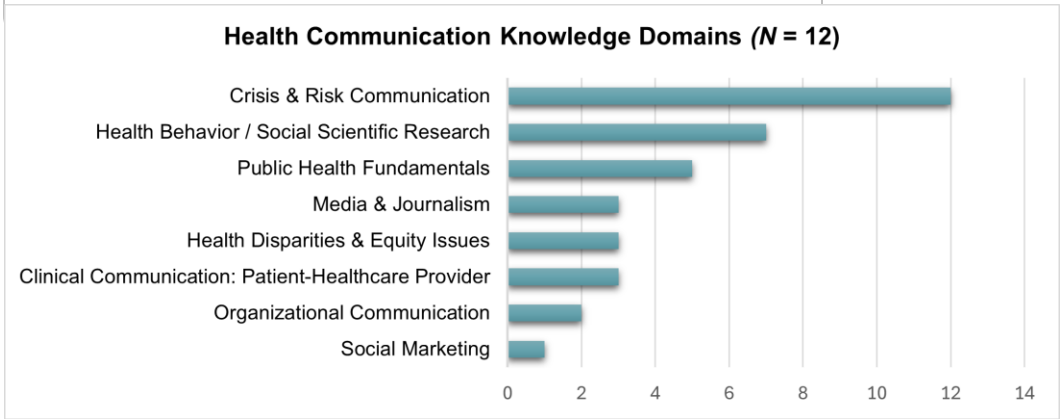
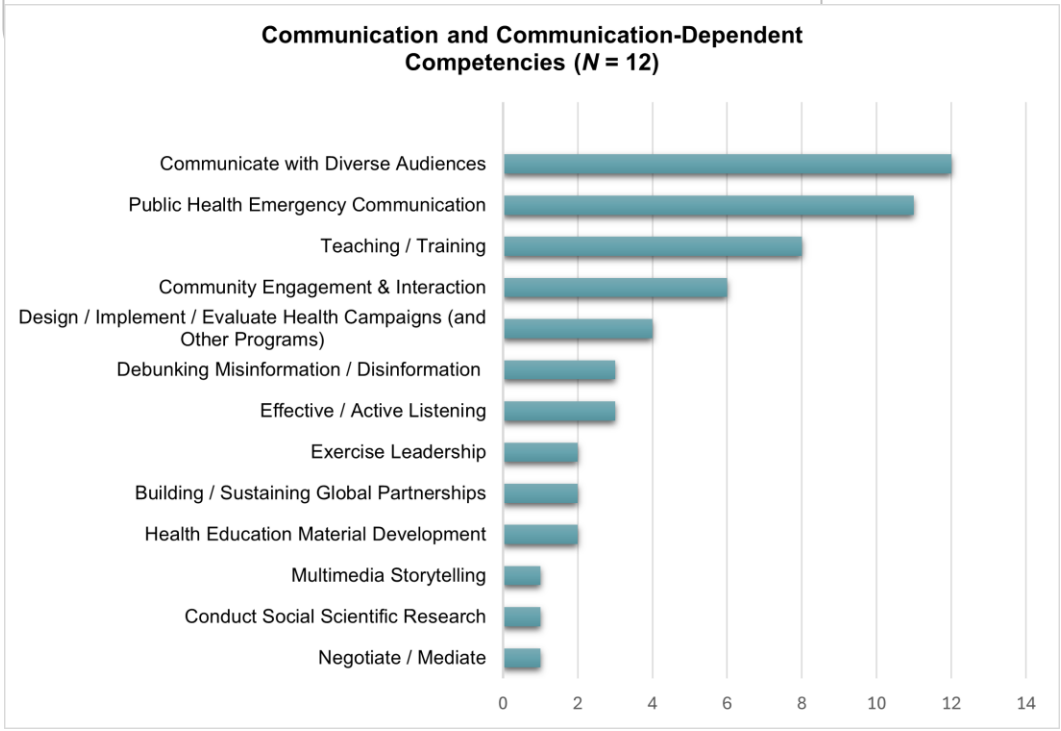


Figure 10

Communication and Communication-Dependent Competencies in Gray Literature Reviewed



Combined Insights from Scoping Review of Academic and Gray Literature

Finally, Figures 11-13 provide an overview of the total number of publications or materials analyzed by type (Figure 11), the health communication knowledge domains (Figure 12), and the communication and communication-dependent competencies referenced across all the publications and materials in the scoping review (Figure 13).

Figure 11

Types of Publications and Materials Reviewed (Total)

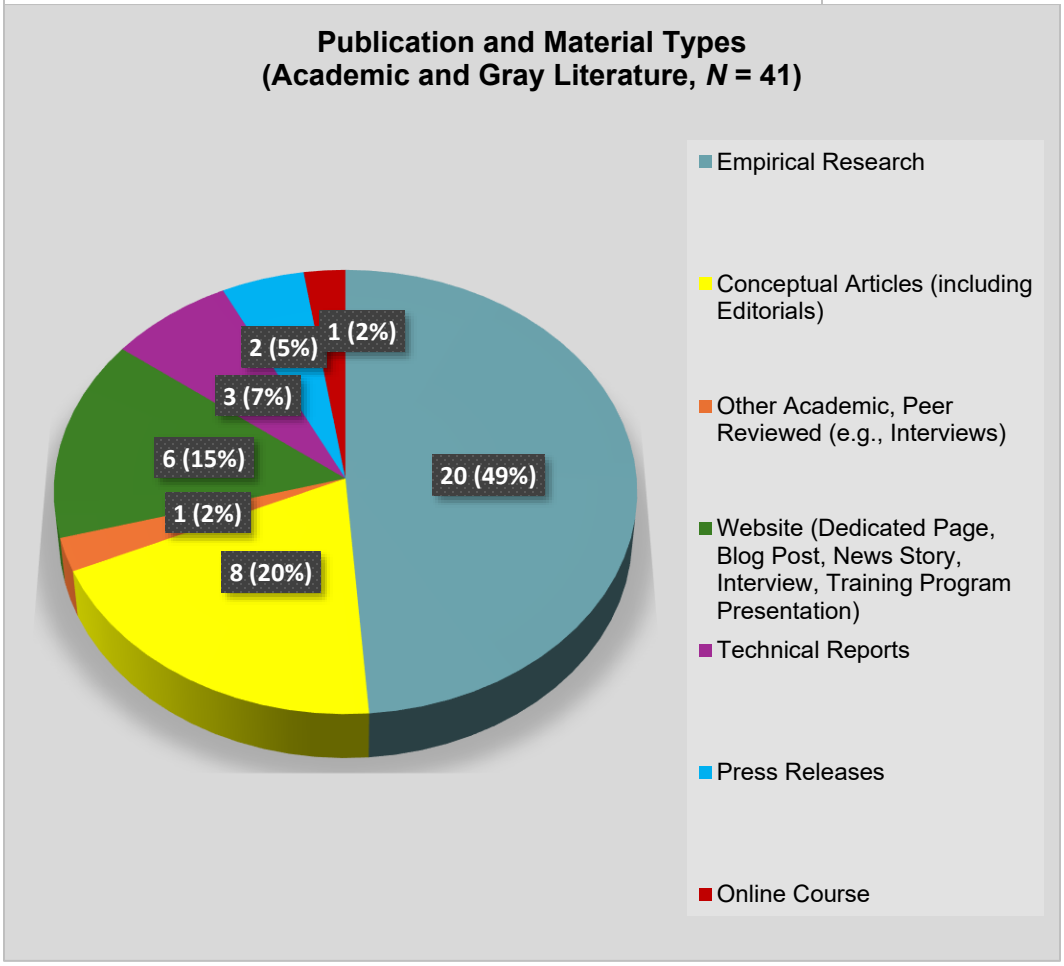


Figure 12

Health Communication Knowledge Domains in All Publications and Materials Reviewed

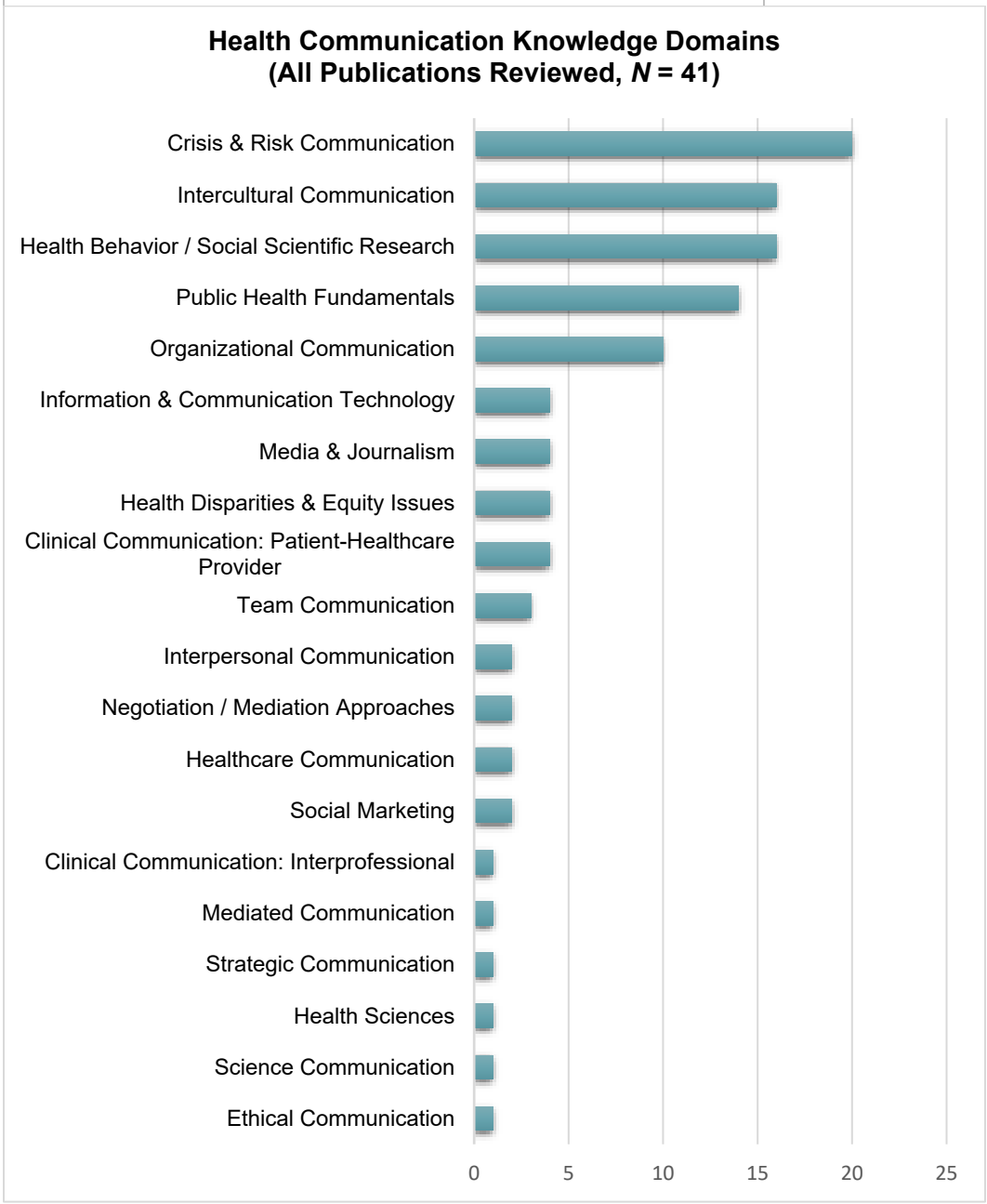
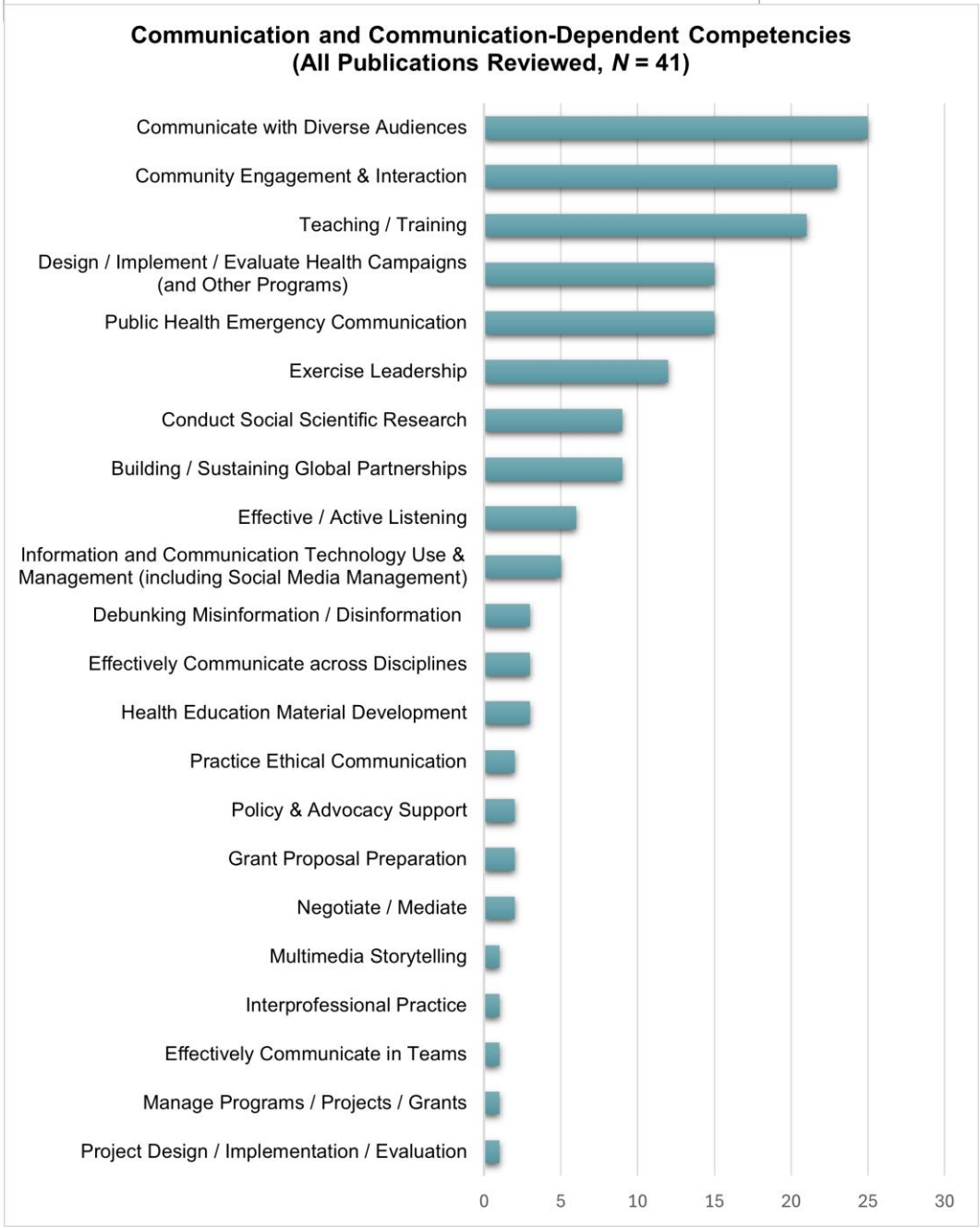


Figure 13

Communication and Communication-Dependent Competencies in All Publications and Materials Reviewed



Insights from Content Analysis of Job Ads and University Training Program Materials

Job Ads Insights

The job ads reviewed (*N*=23) span a broad range of positions from health communication specialists to leadership roles in intergovernmental organizations. The employers represented range widely from the United Nations Foundation to non-profits like the Campaign for Tobacco-Free Kids and healthcare giants like Mount Sinai. Each type of employer has a distinct operational scope and set of strategic goals, both of which impact the types of positions they offer and the qualifications they seek. Geographically, while many of the jobs we examined were based in the United States, their focus was invariably global, addressing worldwide health issues like malaria or global health security.

Typical responsibilities referenced in the job ads analyzed include communication and outreach-related activities, such as designing digital and printed materials, developing public service announcements and ad campaigns, organizing public events, and working with journalists and news media to create and share news stories. In addition, project and program management responsibilities are frequently referenced, including managing budgets, leading teams, and overseeing implementation of health communication and outreach programs. As for qualifications, virtually all job ads reviewed reference a college or a graduate degree (commonly MA) in public health, international relations, or related fields. Experience requirements vary widely, from entry-level positions demanding a few years of relevant experience to executive roles requiring seasoned professionals with years of strategic experience in global health contexts. Excellent written and oral communication skills, including use of digital and social media, are frequently referenced. Of note, advertising jobs in nonprofits often seek professionals who are adept in social marketing and advocacy, whereas intergovernmental organizations look for candidates with a robust background in health diplomacy and policy influence and who are capable of navigating complex regulatory and cultural landscapes.

As can be expected, the job ads reviewed reveal significant variations in responsibilities and qualifications required of entry-level, mid-to-senior, and executive roles. Entry-level positions often serve as the operational backbone of projects and campaigns. These roles, such as a Communications Associate or Junior Analyst, typically require foundational knowledge in health communication practices but are focused more on the execution rather than the strategic planning of communication initiatives. For instance, individuals in these positions may be responsible for drafting content for communication materials, managing social media accounts, or assisting in the coordination of health campaigns. The competencies required at this level include strong writing and verbal communication skills, basic project management abilities, a solid understanding of health communication platforms and tools, and ability to work effectively within a team.

Mid-to-senior level positions, such as a Communications Manager or Project Director, call for deeper knowledge and relevant experience with strategic health communication. Those hired to fill such roles are expected to manage mission-critical aspects of programs or projects, lead teams, and make decisions that will affect strategy. Competencies required at this level include advanced project management skills, leadership abilities, and a strong knowledge of strategic communication planning. These professionals are also expected to evaluate the effectiveness of communication strategies and adjust tactics appropriately. Analytical skills become crucial, as these roles often require interpreting data to inform communication strategies and assessing the impact of initiatives.

At the executive level, positions such as a Director of Communications or Chief of Public Health Strategies require competent leadership and strategic oversight. These roles involve setting the central communication policies and goals for organizations and overseeing progress on achieving these goals. Competencies required of applicants include organizational management skills, considerable experience with stakeholder engagement, and a proven record of policy advocacy. Executives are expected to possess a comprehensive understanding of global health issues, policy environments, and cross-cultural communication. Their job is to secure funding, interact with high-level stakeholders, and represent their organizations at international forums.

Across levels, it is possible to observe a shift from tactical execution to strategic planning and leadership. As professionals progress in their careers, the focus expands from local implementation to global impact, and the competencies required progress from basic communication tasks to complex problem-solving and strategic management. This progression also reflects an elevated need for understanding diverse cultural contexts and integrating ethical considerations into communication strategies, especially as the reach of their influence expands at higher job levels.

In summary, competencies required of global health communication professionals employed in the field go beyond those needed to perform communication and outreach tasks to include strategic planning, program management, and teamwork. Many employers expect job seekers to possess foundational knowledge of public health at the population and system levels, including deep understanding of social determinants of health and health inequities. As global health actors expand their digital footprint, competencies in social media management, content creation, and digital analytics are increasingly in demand. Lastly, our analysis also points to differences in expectations and requirements by type of employer (e.g., nonprofits, government agencies, and private firms). Each sector exhibits distinct preferences for qualifications and competencies, reflecting unique operational goals and the audiences it serves. For instance, nonprofits often value experience in grassroots campaigning and volunteer management, while private sector roles may prioritize strategic communication and branding expertise.

University Training Program Materials Insights

Master of Science and Master of Arts degree programs in health communication are offered by a variety of institutions in the U.S., including several universities with a strong emphasis on research. These programs typically require students to complete 30 to 34 credits to graduate. The format of these programs varies, and they include courses offered in-person, online, and in hybrid modes, allowing for flexibility in how students engage with the curriculum. These programs focus on building a wide range of competencies among students, including strategic communication, health policy interpretation, campaign design, and research methods. The curricula are designed to provide a comprehensive understanding of health communication theory, research, and practice, thus equipping students for careers in public health advocacy, healthcare marketing, and policy analysis.

Master's programs offer a deeper and more comprehensive exploration of health communication, suitable for those seeking extensive knowledge and preparation for academic or advanced professional roles. However, they do require a very significant time investment and can be costly. Graduate certificate programs, such as those offered by Boston University and Columbia University, offer an alternative. They require fewer credits—ranging from 16 to 25—and can typically be completed in a year.

A range of health communication professionals are the intended target audience for the master's and graduate certificate-level programs, including those working in patient advocacy, healthcare marketing, public health, health policy, and digital health communication. Frequently, these professionals are interested in acquiring knowledge and skills related to health behavior change, strategic communication, advocacy, and use of digital media in health promotion.

Communication Competencies Emphasized in Existing Health Communication Courses

An online search of websites for the master's degree and graduate certificate programs included in our review and analysis (N=80) retrieved a total of 165 course titles, of which 139 were directly relevant to public health communication. Descriptions and/or learning goals specified for these courses most frequently listed competencies related to behavior and social change communication (including theories, strategies, and tools), digital health strategies, translation and interpretation of health information, and campaign design. Additional competencies typically referenced include health literacy, intercultural communication, and social marketing. These are very similar to the health communication courses and competencies offered at Rutgers University, in its School of Communication and Information and other schools.

Of the programs reviewed, only three were explicitly tailored to global health communication. Johns Hopkins University, for example, integrates global health communication into its master's program curriculum with a course on "Decoloniality and Global Health Communication," which applies insights from anti-colonialist texts to the field of global health communication. The College of New Jersey master's

program includes a course titled “Global Health Communication and Social Change,” which explores the role of “entertainment-education,” a strategy for promoting healthy behavior and reducing risk, primarily in developing countries. Finally, at Western Kentucky University, the graduate certificate program offers a course on "Health Communication Campaigns," which emphasizes the creation of effective communication strategies to address global health challenges.

Certificate programs are predominantly completed through coursework offered in a face-to-face format, though Boston University offers an online option, reflecting a growing trend toward more flexible learning environments. The coursework in these programs is intensely focused on health communication practice; the U.S. healthcare system; and specialized topics, such as communicating health risks and developing health communication strategies. Some certificates allow for elective coursework in areas like data visualization and storytelling, though the availability of electives varies significantly by institution. Columbia University's graduate certificate program offers an elective course titled “Contemporary Issues and Innovations in Global Health Communication.”

In summary, current university-based health communication training programs offer solid foundations for acquiring many of the core and advanced global health communication competencies identified in the literature and referenced in job ads. However, additional competencies may be needed for health communication professionals to adapt to the dynamic evolution of the global health communication and information ecosystem (including challenges posed by rapid diffusion of misinformation) and of audiences (in terms of diversity, selectivity, communication preferences, etc.), as well as to the increasing complexity of responding to global health challenges, which requires coordinated, multilevel, multi-actor, and cross-sector responses.

Insights from Interviews with Key Informants

We interviewed eight individuals (*n*=3 women, *n*=5 men), all with doctoral degrees and multiple years of work experience in global health communication and in a variety of contexts. All participants held in the past or were currently in academic positions at universities in North America, South America, and Europe. Moreover, three of the participants held or previously held leadership positions at governmental and intergovernmental organizations, including USAID and the CDC in the U.S., the World Health Organization, UNICEF, and Pan American Health Organization, and nongovernmental organizations such as the SABIN Foundation. One more of our participants previously held a leadership role in the private sector, in a pharmaceutical company.

Key Informants' Reflections Organized by Theme

Reflections on Necessary Competencies of Global Health Communication Professionals

Interviewees were first asked to reflect from their experience on critical competencies of global health communication professionals. The questions asked were informed by earlier research that intended to identify core competencies that health communication professionals must possess to be successful (Fowler et al., 1999; Maibach, 1994). However, our conversations with key informants focused more explicitly on global health communication. In their mapping of competencies required of health communication specialists, Park et al. (2021) adopted a knowledge, skills, and abilities approach, considering all three to be critical building blocks of competencies. They define global health communication as a domain of knowledge around "multicultural health, global health threats, world health communication systems and modalities" (p. 23). The perspective guiding our interviews was broader in that it considered competencies related to teamwork, organizational goals, stakeholder engagement, and the increasing complexity of navigating a rapidly changing information ecosystem—all of which are important contexts and settings of contemporary global health communication practice.

All interviewees recognized from the outset the importance of basic health communication competencies such as designing effective messaging, segmenting audiences, selecting optimal dissemination channels, and working with journalists and media outlets. Additional sets of competencies mentioned most frequently in the interviews were:

- **Design, implementation, and evaluation competencies:** Effective and informed use of social scientific data/research, both qualitative and quantitative, to guide decisions regarding design and implementation of health communication programs or interventions was noted as a foundational competency of health communication professionals. A rudimentary level of data literacy and basic research design, data collection, and data analysis skills are needed to conduct evaluations and to be able to collaborate with researchers effectively, as well as ability to search, identify, and use relevant research literature. More advanced research and evaluations skills may be required of program managers.
- **Teamwork and collaboration-related competencies:** Health communication professionals commonly collaborate in teams, both within and across units or agencies, and often with individuals from diverse professional backgrounds and expertise. Collaborations are often challenging, time consuming, and require considerable investments to sustain, particularly in the global health context. Examples of key competencies needed for effective collaborations include coordination, openness, moderation/facilitation, negotiation, and conflict resolution.
- **Stakeholder and community engagement:** Health communication professionals are expected to communicate information effectively to diverse

audiences, and increasingly they are required to engage effectively with communities and stakeholders. Effective engagement requires additional competencies such as active listening, needs assessment, trust and relationship building, power mapping, and lobbying/advocacy.

- **Monitoring and addressing mis- and disinformation:** The spread and rapid flow of health-related misinformation and disinformation via multiple channels is difficult to control and poses a real challenge to the ability of public health authorities to reach audiences with credible information, particularly members of socially vulnerable groups that have limited access to credible health information. As a result, it is increasingly necessary for health communication professionals to have competencies (including use of advanced information surveillance tools) to detect and correct misinformation quickly, ideally in real-time. This may require partnering with information/data scientists as well as local public health departments, community organizations, and influencers.
- **Leveraging new information and communication technologies (ICT):** As more people get their health information from search engines, social media, and online sources (including telehealth applications), it is critical for health communication professionals to acquire competencies for leveraging ICTs for reaching and engaging diverse audiences, including targeted and tailored dissemination of information, interactive tools for supporting two-way communication, use of data visualizations, and formation of online communities.
- **Cultural sensitivity and ethical conduct:** Intercultural communication has been long recognized as an important competency in the global health communication context but is increasingly critical for engaging effectively with immigrant communities and cultural groups while avoiding any potential harms or adverse effects of communication. Cultural sensitivity (the ability to recognize, understand, and respond to people from different cultural backgrounds), positionality (differences in social position and power), implicit bias consciousness, and adhering to ethical practices are examples of specific competencies global health communication professionals ought to possess.
- **Leadership, budgeting, and project management:** Funding for health communication programs remains very limited, particularly in the global health context. For this reason, program managers and those in leadership roles must possess sharp budgeting competencies (including cost-benefit analysis, prioritizing tasks and investments, reallocating resources, etc.) as well as the ability to seek and secure external funding (e.g., grant writing skills). Uncertainty and high turnover of trained health communication professionals are common in the global health context, and effective project management competencies, such as scheduling, time and task management, troubleshooting, and adapting/pivoting to take advantage of opportunities or address emerging

challenges, are necessary to ensure optimal functioning of health communication programs.

Virtually all interviewees also emphasized the importance of connecting training in behavior and social change communication to public health more broadly. Doing so includes, for example, providing training on how communication programs and interventions address complexities due to social and political determinants of health, systems, and structures that contribute to health disparities. Moreover, training should prepare professionals to tailor solutions to local contexts. Health communication programs are rarely detached from other efforts to improve health and wellness outcomes and are often expected to be fully integrated with other efforts to be effective. Adopting a broad perspective on change is needed for formulating and implementing a sound health communication strategy with significant potential for impact.

Reflections on Training Opportunities for Global Health Communication Professionals

Interviewees were asked next to reflect on current training opportunities for global health communication professionals. Two key questions posed were (a) whether training should be tailored to the required competencies and job responsibilities of health communication professionals at different levels (e.g., specialist, manager, director, etc.), and (b) if it would be preferable to design training opportunities that are focused on acquisition of general competencies (of the type identified earlier in this paper) or more specialized competencies under the assumption that most health communication professionals work in teams composed of professional with complementary expertise (e.g., community outreach, data analysis, public and policy advocacy, etc.)

Interviewees generally agreed that "health communication is a team sport," but saw considerable value in exposing trainees to a broad range of competencies and having them acquire as many relevant competencies as possible. The primary rationale for this is transferability, i.e., the ability of health communication professionals to more easily transition across jobs and settings and generate equal value to diverse employers. Frequently, employers have multiple health communication needs and may not have the budget to hire multiple health communication experts. Additionally, it was noted that job seekers will likely need to market themselves to a wide variety of possible employers and positions, and claiming a broad set of skills would serve them well. Still, interviewees saw value in designing and offering more specialized, just-in-time training opportunities to accommodate additional or advanced competencies needed by professionals in managerial and leadership roles.

Reflecting on the question of optimal training modules, interviewees readily recognized the value and rigor of health communication training offered by universities (degree or certificate programs) but noted a critical gap regarding experiential learning opportunities. Collectively, they strongly preferred the inclusion or integration of experiential learning opportunities such as internships, apprenticeships, and service learning into university training programs, as these

provide invaluable opportunities to hone problem-solving skills, enhance tacit knowledge, and learn how to collaborate in teams.

Asked whether it is possible to deliver such a learning experience at scale, some offered examples of problem-solving simulations (e.g., tabletop exercises) that can be used to this end. Others suggested modeling simulations after the use case template frequently used in medical education and the emergency preparedness field. Examples given of use cases that are particularly relevant to the global health context include infectious diseases, crises related to climate change, and wars, although one interviewee suggested that the context of managing chronic disease ought to be included as a use case given the impact of chronic disease globally.

Responding to a question regarding transferable competencies, several interviewees underscored the value of focusing training on the process of producing effective health communication strategies—e.g., problem and situation analysis, audience analysis, message design and testing, etc.—as opposed to discrete competencies or best practices, since good health communication practice is inherently reflexive and adaptive. Others suggested that application of relevant health communication theories and methods for collecting and analyzing data are also transferable competencies.

Reflections on Quality Control and Accreditation for Global Health Communication Training

One other topic that interviewees were asked to consider was the need in and value of formally accrediting health communication training programs in and outside of academia. In general, interviewees saw little need in accreditation of programs offered and managed by universities given that all have built-in quality control mechanisms and multiple tiers of approval and oversight, but they considered accreditation as potentially valuable for non-university programs. They recommended establishing consortia of academic programs in global health communication to articulate standard accreditation criteria (e.g., the Consortium of Universities for Global Health[3]), potentially in collaboration with professional associations (e.g., Society for Health Communication[4]). It was suggested that seeking accreditation via global intergovernmental organizations, such as the WHO, UNICEF, or the World Bank, or via government agencies, such as the CDC in the U.S., can be challenging given their emphasis on medicine and limited familiarity with the social sciences. In several interviews, interviewees also suggested that accreditation may not be a primary concern of prospective students who may be chiefly interested in acquiring knowledge and skills that they can use immediately.

Reflections on Challenges for Global Health Communication

- **Securing funding:** Funding for global health communication projects, programs, and by extension jobs is generally unstable, as it grows during times of crisis (e.g., natural disasters, pandemics, wars) and becomes scarcer as the

[3] Website: cugh.org
[4] Website: societyforhealthcommunication.org

urgency for action declines. The Centers for Disease Control and Prevention (CDC), U.S. Agency for International Development, the World Health Organization, the Pan American Health Organization, UNICEF, and the World Bank are among the most important government agencies and intergovernmental organizations that provide necessary funding. Funding for global health communication initiatives has also been provided via non-governmental organizations such as The Global Fund[5] and Gavi ("The Vaccine Alliance"[6]). Interviewees also mentioned that private sector organizations, for example from the mining and the agricultural sectors, have helped secure funding for global health communication projects. The fact that the availability of funding is frequently tied to crises has implications for the job market, making it difficult to create and sustain many or any positions for a long period of time. They see a need in coordinated and effective advocacy by the field for building professional health communication capacity at the local, national, and international levels.

- **Evidence-based practices:** Interviewees noted that, whereas many core health communication practices are evidence-based, some are not. As examples, they cited the lack of a robust evidence base regarding effective community engagement practices, facilitation, collaborations with intermediaries, and effective use of ICTs such as social media and data visualizations tools. Grounding training in evidence-based practice is critical to building a competent health communication workforce, and there is an urgent need in research that aims to close current gaps in the evidence base for effective health communication practices.

- **Access to Tools and Expertise:** Reflecting on their experiences, some interviewees highlighted the importance of supporting the work of health communication professionals, particularly those who operate in resource-poor environments. One way of building and improving health communication capacity is by investing in the development and broad dissemination of resources and tools, specifically, those related to implementation and evaluation (since many resources already exist for guiding the planning of health communication interventions), as well as less commonly taught competencies such as facilitation and conflict resolution. Another way of providing support and improving capacity for effective health communication is to establish networks of experts who could be reached for consultation or even collaboration. Many in the field already do this informally, but a formal mechanism is needed to sustain an active community of practice.

[5] Website: theglobalfund.org
[6] Website: gavi.org

The primary objective of this project was to lay the pedagogical and practical foundations for institutionalizing global health communication training at Rutgers University, where the authors are faculty. The specific aims guiding the project were to: (1) identify, analyze, and compare existing public health communication frameworks to extract an initial list of basic and advanced health communication competencies and skills; (2) conduct a scoping review of the public health and global health literature; a content analysis of health communication job ads and university training program materials; and a series of key-informant interviews with global health communication leaders and professionals to augment and further delineate critical competencies; (3) propose a framework for guiding delivery of differentiated, scaffolded, and competency-based training in global health communication to diverse audiences; and (4) identify near- and long-term opportunities for offering robust global health communication training at Rutgers.

The research activities pursued reflect a multimethod research design intended to minimize potential systematic bias in findings and conclusions. Our analysis and recommendations are still limited by the comprehensiveness and quality of the information and insights obtained via our landscape mapping methodology.

Key Takeaways

Table 4 offers a preliminary synthesis and integration of key competencies of global health communication professionals that emerge across all research activities employed in this project. The table identifies five fundamental sets of required skills, the foundational knowledge needed to acquire and implement each set of skills, and the corresponding competencies. Both the required skills and key competencies are organized around major tasks and/or responsibilities of global health communication professionals that emerge from the findings we reported. This list is not presumed to

be exhaustive nor inclusive of all relevant competencies but rather intended to offer a framework for systematically aligning competencies with specific skills, foundational knowledge, and subsequently tailored training opportunities.

Table 4

Pooled Inventory of Key Competencies of Global Health Communication Professionals

Required Skill	Foundational Knowledge	Key Competencies
Effective engagement with diverse audiences	• Public health knowledge • Health literacy • Risk and crisis communication • Interpersonal communication • Mediated communication • Persuasion • Community engagement • Digital literacy	• Written, verbal, and digital communication proficiency • Active listening • Translation and presentation of complex information • Cultural and linguistic sensitivity • Public and media relations • Choice of target audience, communicators, and channels • Message design and tailoring • Community outreach and advocacy • Tracking and responding to misinformation
Program planning, implementation, and evaluation	• Socioecological models of health • Theories of behavior and social change • Problem and situation analysis • Audience analysis • Research and data analysis • Dissemination and implementation • Program design and evaluation	• Needs assessment, formative evaluation, and SWOT analysis • Setting program goals and objectives • Identifying and securing needed program resources • Determining target audience and program inputs (activities) • Designing outreach and engagement strategy • Developing a program's logic model • Conducting process, outcomes, and impact evaluation • Preparing and disseminating program reports

Collaboration and coordination	• Stakeholder engagement • Effective teamwork • Facilitation and conflict resolution • Group and organizational communication • Knowledge transfer/brokerage • Capacity-building frameworks and strategies	• Communicating and networking with stakeholders • Working and communicating in teams • Fostering productive dialogue and exchange among collaborators • Facilitation, moderation, and coordination of partners' communication • Conflict resolution and consensus-building in teams • Communication capacity-building and support
Ethical and equitable conduct	• Information deficits and knowledge gaps • Social determinants of health • Unintended effects of health communication interventions • Communication ethics • Diversity, equity, and inclusion (DEI) training • Human subjects research, ethics, compliance, and safety training	• Reflexivity, intellectual humility, and respect mindset • Transparency, honesty, and accountability in all communications • Just, fair, and inclusive communication practices • Monitoring of potential adverse outcomes of health communication
Program management and leadership	• Dynamics of global organizations • Interorganizational relationships and stakeholder communication • Organizational change • Leadership in groups and organizations • Strategic planning • Social impact communication • Reputation management • Organizational assessment	• Project management and budgeting • Organizational culture • Navigating and driving change • Data-informed decision-making (strategic, operational, and tactical) • Troubleshooting and adaptability • Fundraising and grant writing • Analysis and reporting • Effective public and policy advocacy • Mentoring and workforce development

Proposal for Operationalizing Global Health Communication Training

Table 5 builds on this preliminary framework to propose a scheme for aligning required skills and competencies with target audiences and training delivery modules by level of professionalization or role. The principles guiding this scheme are transferability (i.e., competencies that are applicable across positions and settings at each level), tiered complexity (i.e., progressing from basic to advanced skills), and integration with existing training structures and opportunities (as opposed to creating dedicated ones). Here, too, our primary motivation is to outline a potential strategy for aligning competencies with different levels of professionalization and roles and training opportunities that can inform efforts to standardize and coordinate global health communication training at Rutgers University and beyond.

Table 5

Proposed Operationalization of Global Health Communication Training

Level	Target Audience	Sets of Skills and Competencies	Delivery
Introductory	• Public health professionals • Community health workers • D&I practitioners • Health communication and community outreach specialists	• Effective engagement with diverse audiences • Ethical and equitable conduct	Global Health Communication Specialization (undergraduate, 18 credits) Global Health Communication Certificate (continuing education, 18 units) On-demand training for groups of students and professionals (workshops, retreats, online course)

Intermediate	• Program managers • Program supervisors	Introductory-level skills, plus: + Program planning, implementation, and evaluation + Collaboration and coordination	Master in Global Health Communication (graduate, 36 credits) Advanced Global Health Communication Certificate (continuing education, 18 units) On-demand training for teams of managers and advanced professionals (workshops, retreats, online course)
Advanced	• Senior management • Executives • Advanced professionals	Intermediate-level skills, plus: + Program management + Leadership	Executive Certificate in Global Health Communication (continuing education, 8-12 units) On-demand training for executives and senior management (workshops, retreats, online course)

Cross-Cutting Themes

An additional insight emerging from the findings is regarding the importance of integrating knowledge and competencies domains with the following cross-cutting themes:

- **Interdisciplinary Integration:** Health communication intersects with various disciplines, including public health, psychology, sociology, information technology, and data science. Programs could further enhance their offerings by integrating these interdisciplinary perspectives more deeply, providing students with a broader toolkit to tackle complex health challenges. For example, courses that combine health communication with data science could

teach students how to analyze and interpret large health datasets, while integrating psychology could enhance understanding of behavior change theories (Park et al., 2021).

- **Data Science Literacy:** The rapid pace of technological innovation, including the use of artificial intelligence (AI) and machine learning (ML) in health communication, presents new opportunities and challenges. Programs might lag in offering comprehensive courses that prepare students for leveraging these technologies in health campaigns, patient engagement, and data analysis. Including practical modules and use cases of AI and ML applications in health communication, such as predictive analytics for health trends and automated patient interaction systems, could significantly enhance program relevance and graduate preparedness (Park et al., 2021).

- **Cultural Competency:** Although some programs may address these issues, there's an ongoing need for specialists who are deeply knowledgeable about communicating health messages to diverse populations, considering cultural, linguistic, socioeconomic, and health literacy dynamics. More focused coursework or specializations in this area could address gaps in effectively reaching underserved or marginalized communities. For instance, incorporating case studies on health campaigns in diverse cultural settings and training on creating accessible health materials can be beneficial (Park et al., 2021).

- **Ethics in Digital Health Communication:** The ethical considerations surrounding privacy, consent, and misinformation in digital health communication are increasingly important. Programs could offer more in-depth exploration of these topics, preparing specialists to navigate ethical dilemmas in digital environments. This could include courses on digital health ethics, covering topics such as patient data privacy, ethical use of social media in health campaigns, and strategies to combat health misinformation online.

- **System Thinking:** Public health challenges increasingly span boundaries of social, economic, legal, and policy systems, both nationally and internationally, and therefore require greater familiarity with system theory and social-ecological models of health to successfully navigate the challenge of coordinating and mobilizing system-wide responses to challenges (Park et al., 2021).

Conclusion

Recent global health crises, including the 2020 COVID-19 pandemic, have underscored the centrality of health communication in efforts to prepare for and effectively mitigate the impact of health emergencies. Such exigencies and the need to continue to address persistent global health issues—from the spread of communicable diseases to the proliferation of health misinformation to health inequities—have created a need for an increasingly diverse global health workforce.

In this context, the spectrum of competencies health communication professionals must possess to be most helpful has also expanded. Our hope is that our findings will offer institutions committed to global health objectives a type of blueprint to guide the design of necessary new training programs and to do so at scale.

Recommendations for Rutgers

The findings and insights produced by this study suggest that developing and offering a standalone degree program in global health communication at Rutgers University may not be a cost-effective option at this time. This is both because the necessary capacity and faculty expertise for delivering interdisciplinary, competency-based training are spread across Rutgers units and programs and because of the less-than-predictable demand for such niche training in the absence of established career tracks or robust employment opportunities.

More feasible and cost-effective options for delivering global health communication training at Rutgers include (1) a specialization option for undergraduate and graduate students interested in pursuing a career in this area; (2) a global health communication certificate targeted to professionals via a continuing education program; and (3) opportunities for on-demand training (e.g., workshops, retreats, etc.) for external groups (e.g., global public health professionals and leaders) and internal audiences (e.g., graduate students and faculty).

To explore these possibilities and formulate an actionable planning agenda, we recommend that Rutgers Global Health Institute facilitate the following near-term activities to advance this process:

1. Compile and share an inventory of global health communication relevant coursework and training opportunities at Rutgers.
2. Work with the Office of the Executive Vice President for Academic Affairs to fund and conduct market research to explore the feasibility and cost-effectiveness of offering global health communication training at Rutgers (including a mechanism for supporting a specialization across Rutgers schools and units).
3. Convene an ad-hoc committee composed of representatives from units participating in the Rutgers Global Health Institute Collaborators Network and other relevant units to collaborate on determining optimal structures, curricula, and modules for offering high-quality global health communication training at Rutgers.

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Appendix 1: Academic and Gray Literature Reviewed (Full Bibliography)

A. Academic, Peer-Reviewed Literature

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Appendix 2: Knowledge Domains and Communication-Dependent Competencies Addressed in the Academic, Peer-Reviewed Literature Analyzed

#	Academic, Peer-Reviewed Publications (*N* = 29)	Type of Publication	Communication-Dependent Competencies[1, 2]	Health Communication Knowledge Domains[1, 3]
1	Bardosh, K. L., de Vries, D. H., Abramowitz, S., Thorlie, A., Cremers, L., Kinsman, J. & Stellmach, D. (2020)	Empirical Research	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns Public Health Emergency Communication Grant Proposal Preparation Policy & Advocacy Support Community Engagement & Interaction Exercise Leadership	Intercultural Communication Health Behavior Research Public Health Fundamentals Crisis & Risk Communication Healthcare Communication
2	Bartlett, J. A., Cao, S., Mmbaga, B., Qian, X., Merson, M., & Kramer, R. (2017)	Empirical Research	Community Engagement & Interaction Exercise Leadership Building / Sustaining Global Partnerships	Health Behavior Research Public Health Fundamentals
3	Cherniak, W., Nezami, E., Eichbaum, Q., Evert, J., Doobay-Persaud, A., Rudy, S., DeFrank, G., Hall, T., & Hoverman, A. (2019)	Empirical Research	Project Design / Implementation / Evaluation Community Engagement & Interaction Exercise Leadership	Intercultural Communication Health Behavior / Social Research Public Health Fundamentals

4	Crump, J. A., Sugarman, J., the Working Group on Ethics Guidelines for Global Health Training (WEIGHT)	Conceptual Article	Teaching / Learning Practice Ethical Communication	Ethical Communication
5	Dickmann, P., Abraham, T., Sarkar, S., Wysocki, P., Cecconi, S., Apfel, F., & Nurm, Ü. (2016)	Conceptual Article	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns & Programs Effective / Active Listening Community Engagement & Interaction Building / Sustaining Partnerships Teaching / Training	Crisis & Risk Communication Public Health Fundamentals
6	Hamer, D. H., Hansoti, B., Prabhakaran, D., Huffman, M. D., Nxumalo, N., Fox, M. P., Gopal, S., Oberhelman, R., Mwananyanda, L., Vwalika, B., & Rispel, L. C. (2019)	Empirical Research	Communicate with Diverse Audiences Effective / Active Listening Community Engagement & Interaction Exercise Leadership Teaching / Training	Intercultural Communication
7	Harrison, M., Chung, E., Kajungu, D., Mahapatra, T., Rahman, M., Ungureanu, M.-I., & Kalbarczyk, A. (2022)	Empirical Research	Communicate with Diverse Audiences Conduct Social Scientific Research Community Engagement & Interaction Training / Teaching	Intercultural Communication Social Scientific Research Public Health Fundamentals Healthcare Communication

8	Hawcroft, C., Rossi, E., Tilouche, N., Oliveira, A. & Bacchus, L. J. (2023)	Empirical Research	Communicate with Diverse Audiences Conduct Social Scientific Research Community Engagement & Interaction Design / Implement / Evaluate Health Campaigns Teaching / Training	Intercultural Communication Social Scientific Research
9	Hoffman, S. J., & Silverberg, S. L. (2015)	Empirical Research	Design / Implement / Evaluate Health Campaigns Policy & Advocacy Support Community Engagement & Interaction Exercise Leadership	Intercultural Communication Public Health Fundamentals
10	Huang, K., Abdullah, A. S., Ma, Z., Urmi, D. S., He, H., Quintiliani, L., Friedman, R. H., Yang, J., & Yang, L. (2019)	Empirical Research	Information & Communication Technology Use & Management Teaching / Training	Social Scientific Research Information & Communication Technologies
11	Kalbarczyk, A., Martin, N. A., Combs, E., Ward, M. & Winch, P. (2018)	Empirical Research	Exercise Leadership Effectively Communicate in Teams Effectively Communicate across Disciplines Teaching / Training	Team Communication Organizational Communication

12	Kalbarczyk, A., Hood, E., Azizatunnisa, L., Cintyamena, U., Nigatu, F., & Baral, P. (2022)	Empirical Research	Communicate with Diverse Audiences Exercise Leadership Negotiate / Mediate Active Listening Teaching / Training	Intercultural Communication Public Health Fundamentals Organizational Communication Team Communication Negotiation / Mediation Approaches Science Communication
13	Keralis, J. M., Riggin-Pathak, B. L., Majeski, T., Pathak, B., Foggia, J., Cullinen, K., Rajagopal, A., & West, H. (2018)	Empirical Research	Information & Communication Technology Use & Management (including Social Media Management) Community Engagement & Interaction Exercise Leadership Building / Sustaining Partnerships Manage Programs / Projects / Grants	Social Scientific Research Health Behavior Research Public Health Fundamentals Interpersonal Communication Mediated Communication Organizational Communication
14	McHenry, M. S., Tam, R. P., Nafiseh, A. A., Etling, M. A., Barnes, A. E., Rule, A. R. L., Crouse, H. L., Haq, H., Morris, L. E., Murray, B. L., Umphrey, L. A., & Keating, E. M. (2021)	Empirical Research	Intercultural Communication Community Engagement & Interaction Building / Sustaining Partnerships Exercise Leadership Information & Communication Technology Use & Management	Intercultural Communication, Organizational Communication Information & Communication Technologies

15	McNabb, S. J. N., Magowe, M., Shaw, N., Berrian, A. M., Wilkes, M., Shaikh, A., Gachuno, O., Perrone, L. A., Murray, B. L., Berman, E., & Hansoti, B. (2021)	Conceptual Article: Expert Consensus Document (labeled by journal)	Information & Communication Technology Use & Management Teaching / Training	Information & Communication Technologies
16	Miller, A. N., Sellnow, T., Neuberger, L., Todd, A., Freihut, R., Noyes, J., Allen, T., Alexander, N., Vanderford, M., & Gamhewage, G. (2017)	Empirical Research: Systematic Review	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns & Programs Building / Sustaining Partnerships Training / Teaching	Crisis & Risk Communication Intercultural Communication Health Behavior Research
17	Odugleh-Kolev, A. (2014)	Conceptual Article: Editorial	Health Communication Program Design / Implementation / Evaluation Health Education Material Development Public Health Emergency Communication Community Engagement & Interaction Exercise Leadership	Health Behavior Research Crisis & Risk Communication Health Sciences
18	Ridde, V., & Capelle, F. (2011)	Empirical Research	Conduct Social Scientific Research Building / Sustaining Partnerships Teaching / Training	Intercultural Communication Social Scientific Research
19	Sadigh, M., Parve, S., Nakato, J., Nsereko, H. B., & Sadigh, M. (2022)	Empirical Research	Building / Sustaining Partnerships Teaching / Training	Organizational Communication Clinical Communication

20	Schiavo, R. (2014)	Conceptual Article: Editorial	Community Engagement & Interaction Conduct Social Scientific Research Design / Implement / Evaluate Health Communication Campaigns (or Programs)	Health Behavior Research Crisis & Risk Communication
21	Schiavo, R. (2016)	Conceptual Article: Editorial	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns Community Engagement & Interaction Conduct Social Scientific Research	Intercultural Communication Public Health Fundamentals Strategic Communication Health Disparities & Equity Issues
22	Seo, S.-W., Ombengi, D., Sultan, D. H., Kahaleh, A. A., Nonyel, N., Karwa, R., Abrons, J., Lukas, S., Singhal, M., Miller, M., & Truong, H.-A. (2020)	Conceptual Article	Building / Sustaining Partnerships Conduct Social Scientific Research Practice Ethical Communication	Intercultural Communication Organizational Communication Negotiation / Mediation Approaches Research Ethics
23	Tartaglia, R., Regina, M., Tanzini, M., Pomare, C., Urwin, R., Ellis, L., Fineschi, V., Venneri, F., Seghieri, C., Lachman, P., Westbrook, J., Braithwaite, J. (2021)	Empirical Research	Communicate with Diverse Audiences Design / Implement / Evaluate Health Communication Campaigns & Programs Administer Services	Mediated Communication Organizational Communication Health Behavior Research

24	Togami, E., Lowbridge, C., Chinnayah, T., Kato, M., Fukusumi, M., Gwack, J., Matsui, T., Olowokure, B., & Li, A. (2021)	Empirical Research	Communicate with Diverse Audiences Community Engagement & Interaction Interprofessional Practice Teaching / Learning	Crisis & Risk Communication Organizational Communication Interprofessional Communication
25	Tulenko, K. (2014)	Other (Interview)	Communicate with Diverse Audiences Public Health Emergency Communication Community Engagement & Interaction	Intercultural Communication Crisis & Risk Communication
26	Vanderford, M. (2015)	Conceptual Article: Editorial	Design / Implement / Evaluate Health Campaigns Community Engagement & Interaction Public Health Emergency Communication	Crisis & Risk Communication Media & Journalism
27	Walker, J.-A., Hashim, Y., & Oranye, N. (2019)	Empirical Research	Community Engagement & Interaction Communicate Effectively with Diverse Audiences Design / Implement / Evaluate Health Campaigns & Programs	Intercultural Communication Health Behavior Research
28	Wang, M., Katz, C., & Wiegand, J. (2012)	Empirical Research	Communicate with Diverse Audiences Teaching / Training	Intercultural Communication Interpersonal Communication

29	Wang, J., Abdullah, A. S., Ma, Z., Fu, H., Huang, K., Yu, H., Wang, J., Cai, L., He, H., Xiao, J., Quintiliani, L., Friedman, R. H., & Yang, L. (2017)	Empirical Research	Information & Communication Technology Use & Management Teaching / Training Conducting Social Scientific Research	Information & Communication Technologies Team Communication, Intercultural Communication Social Marketing Social Scientific Research

Notes

[1] Informed by Park et al. (2021)

[2] Communication and communication-dependent competencies referenced beyond those explicitly mentioned by Park et al. (2021): (1) building / sustaining partnerships, (2) effective / active listening, (3) conduct social scientific research, (4) information and communication technologies (including social media) use and management (note: parallels Park et al.'s [2021] reference to "new media and tools"), (5) multimedia storytelling (6) debunking misinformation / disinformation, (7) negotiate, (8) manage programs / projects / grants (not specifically health communication programs / campaigns, a focus of Park et al. [2021]), (9) practice ethical communication, and (10) interprofessional practice.

[3] Health communication knowledge domains referenced beyond those explicitly mentioned by Park et al. (2021): (1) social scientific research (note: Park et al. [2021] focus on health behavior research), (2) information and communication technologies (note: parallels Park et al.'s [2021] reference to "new media and tools"), (3) science communication, (4) team communication, (5) negotiation approaches (note: Park et al. [2021] make reference to mediation, under the organizational communication knowledge domain), (6) interpersonal communication, (7) mediated communication, (8) health disparities and equity issues, (9) strategic communication (note: broader than social marketing, referenced by Park et al. [2021]), (10) research ethics, and (11) ethical communication. Here we also distinguish between (12) clinical communication between patients and their healthcare providers, and (13) clinical communication as interprofessional communication.

Appendix 3: Knowledge Domains and Communication-Dependent Competencies Addressed in the Gray Literature Analyzed

#	Gray Literature (*N* = 12)	Type of Material	Communication-Dependent Competencies[1, 2]	Health Communication Knowledge Domains[1, 3]
1	Briseño, L. (2016)	Website: Blog Post	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns	Crisis & Risk Communication Health Disparities & Equity Issues
2	Centers for Disease Control and Prevention. (2018, January 23)	Website	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns Health Education Material Development Public Health Emergency Communication Community Engagement & Interaction Exercise Leadership Teaching / Training	Crisis & Risk Communication Organizational Communication Media & Journalism Health Disparities & Equity Issues
3	Evans, D. P., & Smith-Easley, J. (2024)	Online Course	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns Health Education Material Development Public Health Emergency Communication Community Engagement & Interaction Exercise Leadership Teaching / Training	Crisis & Risk Communication Organizational Communication Media & Journalism Health Disparities & Equity Issues International Health Policies & Regulations

4	European Center for Disease Prevention and Control. (2023, January 31)	Press Release	Communicate with Diverse Audiences Public Health Emergency Communication Community Engagement & Interaction Building / Sustaining Global Partnerships Teaching / Training	Crisis & Risk Communication Media & Journalism Public Health Fundamentals Health Behavior Research Social Scientific Research
5	European Center for Disease Prevention and Control. (2022, September 16)	Press Release	Communicate with Diverse Audiences Public Health Emergency Communication Debunking Misinformation / Disinformation Effective / Active Listening Teaching / Training	Crisis & Risk Communication Media & Journalism Public Health Fundamentals
6	World Health Organization. (2018a)	Website: Interview	Communicate with Diverse Audiences Public Health Emergency Communication Community Engagement & Interaction Negotiate / Mediate Teaching / Training	Crisis & Risk Communication Public Health Fundamentals Health Behavior Social Scientific Research
7	World Health Organization. (2018b)	Website: News Story	Communicate with Diverse Audiences Public Health Emergency Communication Community Engagement & Interaction Building / Sustaining Global Partnerships Teaching / Training	Crisis & Risk Communication Public Health Fundamentals

8	World Health Organization. (n.d.)	Website: Training Program Presentation	Communicate with Diverse Audiences Public Health Emergency Communication Debunking Misinformation / Disinformation Community Engagement & Interaction Multimedia Storytelling, Effective / Active Listening Teaching / Training	Crisis & Risk Communication Public Health Fundamentals
9	World Health Organization. Regional Office for Europe. (2023a)	Technical Report: Evaluation	Communicate with Diverse Audiences Public Health Emergency Communication	Crisis & Risk Communication Health Behavior Change Research Clinical Communication: Patient-Clinician Communication
10	World Health Organization. Regional Office for Europe. (2023b, May 24)	Website: News Story	Communicate with Diverse Audiences Public Health Emergency Communication	Crisis & Risk Communication Health Behavior Change Research Clinical Communication: Patient-Clinician Communication
11	World Health Organization. Regional Office for Europe. (2021)	Technical Report: Presentation	Communicate with Diverse Audiences Public Health Emergency Communication	Crisis & Risk Communication Health Behavior Change Research Clinical Communication: Patient-Clinician Communication

12	World Health Organization. Regional Office for Europe. (2018)	Technical Report	Communicate with Diverse Audiences Design / Implement / Evaluate Health Campaigns Public Health Emergency Communication Conduct Social Scientific Research Debunking Misinformation / Disinformation Community Engagement & Interaction Effective / Active Listening Teaching / Training	Crisis & Risk Communication Health Behavior Change Research Social Marketing Media Planning

Notes

[1] Informed by Park et al. (2021)

[2] Communication and communication-dependent competencies referenced beyond those explicitly mentioned by Park et al. (2021): (1) building / sustaining partnerships, (2) effective / active listening, (3) conduct social scientific research, (4) information and communication technologies (including social media) use and management (note: parallels Park et al.'s [2021] reference to "new media and tools"), (5) multimedia storytelling (6) debunking misinformation / disinformation, (7) negotiate, (8) manage programs / projects / grants (not specifically health communication programs / campaigns, a focus of Park et al. [2021]), (9) practice ethical communication, and (10) interprofessional practice.

[3] Health communication knowledge domains referenced beyond those explicitly mentioned by Park et al. (2021): (1) social scientific research (note: Park et al. [2021] focus on health behavior research), (2) information and communication technologies (note: parallels Park et al.'s [2021] reference to "new media and tools"), (3) science communication, (4) team communication, (5) negotiation approaches (note: Park et al. [2021] make reference to mediation, under the organizational communication knowledge domain), (6) interpersonal communication, (7) mediated communication, (8) health disparities and equity issues, (9) strategic communication (note: broader than social marketing, referenced by Park et al. [2021]), (10) research ethics, and (11) ethical communication. Here we also distinguish between (12) clinical communication between patients and their healthcare providers, and (13) clinical communication as interprofessional communication.