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Digital Intelligence Empowerment and Group Differentiation: Information Behavior and Intervention Pathways in Health Communication—A Review Based on Panel 4 of MHM 2025

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Abstract

On July 6, 2025, the 8th "Medicine, Humanity and Media" Health Communication International Conference & Doctoral Symposium was held at Peking University. This panel report summarizes six research presentations delivered during Panel 4 of the MHM2025 International Conference, themed "Digital Intelligence Empowerment and Group Differentiation: Information Behavior and Intervention Pathways in Health Communication." The research topics address fact-check label efficacy on short-video platforms, discourse evolution of monkeypox narratives, technological emotion and youth resilience, internet use as a mediator of elderly depression, older adults' health information seeking, and health information engagement among pregnant women. The panel highlights how digital empowerment intersects with social differentiation, offering nuanced insights into health misinformation correction, digital literacy, and culturally situated intervention design.

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Health communication, Information behavior, Digital literacy, Misinformation correction, Vulnerable populations

On the afternoon of July 6, 2025, Panel 4 of the 8th Medicine, Humanity and Media (MHM2025) Health Communication International Conference & Doctoral Symposium, titled "Digital Intelligence Empowerment and Group Differentiation: Information Behavior and Intervention Pathways in Health Communication", was held in Lecture Hall 113 of the School of Journalism and Communication at Peking University. The session featured Associate Professor Jingbo Meng (jointly appointed in the School of Communication, the Department of Biomedical Informatics, and the Institute for Data-Driven Discovery at Ohio State University) and Associate Professor Liang Chen from Tsinghua University's School of Journalism and Communication as discussants. Six doctoral presenters—Maowen Yuan (Zhejiang University), Yi Zhou (Communication University of China), Lijie Du (Shenzhen University), Dianrui Yao (Shanxi Medical University), Mingzhi Chang (Zhejiang University of Finance & Economics), and Lixia Peng (Minjiang University)—delivered their research reports in turn.

Based on the immersive scene dissemination and algorithmic recommendation mechanisms of short video platforms, health-related misinformation can be "super-amplified." However, there remains a lack of systematic research on the forms, mechanisms, and effectiveness of fact-checking labels in the short video context. In response to this gap, "Breaking Health Rumors: A Study of the Impact Mechanisms of Fact-Check Labels on Short-Video Platforms Based on Protection Motivation Theory", by Hongliang Chen, Maowen Yuan, Qianxi Zhou, and Lijun Du, examines how fact-check labels influence the correction of health misinformation in a short-video context. In an online questionnaire experiment, 500 participants were randomly assigned to a 2 (label color salience: high vs. low) × 2 (label content detail: detailed vs. brief) between-subjects design. Based on their responses to different types of fact-check labels on Douyin, the authors employed Structural Equation Modeling (SEM) to test the mediating roles of user attention, threat appraisal, and coping appraisal in the effectiveness of rumor correction.

The study found that in the information-overloaded short-video environment, the mere presence of a fact-check label draws user attention and lowers perceived risk more effectively than the label's level of detail, thereby prompting corrective action. Threat appraisal and subsequent responses occur only when users focus on the label. When users perceive a high health risk, they are more likely to engage in self-protective behaviors rather than helping others, and excessive fear can even lead to avoidance. Health literacy further determines how deeply users process label information: those with higher literacy engage in systematic, central-route processing to accurately identify rumors, suppress panic, and bolster confidence in taking action. This research provides theoretical support for enhancing platforms' "soft governance" mechanisms and offers intervention points and strategic guidance for public health information management.

During the discussant session, Professor Liang Chen commended the study's academic value and significance, while pointing out that its theoretical framework still requires further development and precise articulation. Professor Jingbo Meng praised the completeness of the report and its literature review on Douyin's short-video platform characteristics. She advised that future research focus on the core variable of the presence versus absence of fact-check labels, rather than on color differences, to build a more appropriate theoretical framework. Additionally, she recommended a more detailed examination of participants' reactions to different label formats.

On August 14, 2024, the World Health Organization (WHO) declared the monkeypox (MPOX) outbreak a "Public Health Emergency of International Concern," triggering widespread panic and controversy across social media platforms. In this context, Yi Zhou Yi Zhou, Qibo Chen, Ziqin Ma, Huiting Luo, Mingwei Zhou and Mengying Zhang's paper, "The Evolution and Impact of Public Discourse on MPOX on the X Platform under the Influence of the COVID-19 Pandemic", explores the characteristics of monkeypox discourse on X, the mechanisms that trigger panic, and its social impacts, offering theoretical and empirical support for responding to public health emergencies and preserving social stability. The study gathered "monkeypox"–related posts from X between 2019 and 2024 using Python web scrapers, analyzed the text with AntConc, and employed Latent Dirichlet Allocation (LDA) topic modeling to extract latent themes. These themes were then visualized to reveal the discourse's dissemination patterns and thematic distribution. The findings show that the viral spread of social panic exposes structural weaknesses in the information ecosystem; that changes in disease nomenclature reflect the dynamic process of epidemic stigmatization and destigmatization; and that the generalization of disease discourse illustrates how medical issues permeate the political sphere. Together, these results demonstrate that monkeypox narratives act as power discourse continually shaping public cognition, underscoring the urgent need for coordinated strategies in public awareness, risk response, information verification, and emotional guidance.

In the discussant session, Professor Chen praised the report's comprehensive data but observed that the study lacks an overarching theoretical framework and a clear academic question—beyond detailing what was done, it does not explain why it was done or what core problem it aims to address. He recommended that the authors establish a guiding conceptual approach before presenting extensive statistics to steer their subsequent analysis. Professor Meng advised narrowing the focus to a single key issue to deepen the study and strengthen its logical coherence.

The rapid advancement of technology has accelerated the digitalization of society. While digital technologies offer new opportunities and resources to address the uncertainties of modern development, they have also deepened society's dependence on these technologies. Lijie Du's paper, "Emotion Sparks Resilience: The Impact Mechanism of Technological Emotions on College Students' Digital Resilience in the Smart-Media Era," examines how young people's emotional responses to technology influence their digital resilience. The authors conducted a questionnaire survey that yielded 469 valid responses. Using prosocial behavior as a mediator and digital literacy as a moderator, they constructed a mediation model to examine how technological emotions affect students' digital resilience. Their findings indicate that technological emotions are a primary driver of college students' digital resilience, with prosocial behavior mediating this

effect. Moreover, digital literacy significantly moderates the relationship between prosocial behavior and resilience. The study underscores the necessity of cultivating young people's positive, rational emotional engagement with digital technologies and argues that fostering digital resilience requires coordinated efforts at the individual, community, and national levels. This research provides both theoretical and practical insights for promoting digital resilience among youth and highlights the crucial role of emotional factors in that process.

During the discussion, Professor Chen observed that the paper's introductory section was too broad and lacked a detailed examination of the relationships among its variables, and he recommended that the authors refine and expand that portion. He argued that the concept and definition of technological emotion should be the study's focal point and explored more thoroughly. Professor Meng agreed, pointing out that without clear conceptual definitions, readers may struggle to understand the abstract theory. She also noted that, although the report cites multiple theoretical frameworks, the authors should avoid redundancy by concentrating on the most essential theory and streamlining their main argument to improve overall coherence and clarity.

In the context of an aging society and the growing prevalence of chronic diseases, the mental health of elderly individuals has become a critical public concern. Dianrui Yao and Le Yang's paper, "Socioeconomic Status and Depressive Symptoms among Elderly Chronic-Disease Patients in China: The Mediating Role of Internet Use", examines the interrelations of socioeconomic status (SES), depressive symptoms, and internet use in China's elderly chronic-disease population. Drawing on data from 5,267 respondents in the 2020 China Health and Retirement Longitudinal Study (CHARLS), the authors used hierarchical linear modeling (HLM) to assess the linear association between SES and depressive symptoms. They tested the mediating effect of internet use via the product-of-coefficients method and conducted stratified moderation analyses to explore how this pathway varies by SES, age group, and chronic-disease status. The findings reveal a significant negative association between SES and depressive symptoms among elderly chronic-disease patients, and show that internet use markedly strengthens SES's protective effect. They also demonstrate that depressive symptom levels differ across age groups within this population. This study offers new insights and practical guidance for reducing depression risk among elderly individuals with chronic diseases.

In the discussant session, Professor Chen highlighted that relying on secondary data imposes certain limitations. He recommended treating socioeconomic status as a categorical variable rather than positioning it as the study's central focus. Professor Meng praised the results analysis and urged the authors to probe, within their econometric model, the reasons behind the weakening influence of socioeconomic factors, in order to pinpoint which specific elements drive this attenuation.

In the context of active aging and the Healthy China strategy, Mingzhi Chang and Dan Liu's paper, "'Let Me Look It Up': Factors Influencing Health Information–Seeking Behavior among Older Adults", investigates the mechanisms driving seniors' health information seeking. Drawing on the Comprehensive Model of Information Seeking (CMIS) and data from the 2021 Chinese General Social Survey (CGSS), the study examines how health-related factors, characteristics of information channels, and social environmental variables affect older adults' health information–

seeking behavior. The authors found that seniors seek health information infrequently; self-efficacy, trust in physicians, social support, and perceived usefulness of channels all positively and significantly predict their information–seeking behavior, while direct personal experience and issue salience have limited impact. These effects also vary by education level and urban–rural residence. By incorporating physician trust and social support into the CMIS framework, this study extends and advances the model in a Chinese context.

During the discussant session, Professor Chen commended the vitality of the CMIS framework and lauded the innovative incorporation of Chinese cultural characteristics. However, he noted the limitations of the CGSS data and recommended a deeper exploration of how the two selected variables relate to others to enrich the analysis. Professor Meng praised the study's thoroughness and its valuable theoretical extension, and suggested adding a discussion of the conditions under which older adults can access the internet to offer a more complete understanding of the factors influencing their information-seeking behavior.

In the context of optimizing national population policies and building a supportive childbirth system, Lixia Peng's paper, "The Diamond Model: Patterns and Mechanisms of Health Information Engagement among Pregnant Women," explores how expectant mothers seek and process health information. By combining the Experience Sampling Method, diary entries, and the Critical Incident Technique, the study constructs a "Diamond Model" that divides the engagement process into six stages: need recognition, source selection, information acquisition, screening and evaluation, decision application and feedback; and identifies five primary engagement modes: active seeking, social sharing, trust-based reliance, personalized customization and continuous updating. This framework reveals systematic patterns across channels, content, evaluation and outcomes. Finally, the authors propose optimization strategies in four areas: channel design, content development, oversight mechanisms and enhancement of pregnant women's health literacy. This research both enriches a localized theoretical framework for prenatal health communication and offers empirical guidance for optimizing channels, content and governance practices, as well as informing public health policy.

During the discussant session, Professor Chen observed that although the study's topic offers substantial theoretical value, its conceptual framework remains underdeveloped. He also expressed keen interest in how participants recorded their diaries and how their emotions may have evolved over the extended study period, recommending that this aspect be explored in greater detail. Professor Meng praised the model's broad applicability but cautioned that its universal scope risks overgeneralization and may overlook the specific nuances of this health topic. While the Diamond Model is innovative, its graphical representation is quite complex; she advised the authors to distill and highlight a few core cyclical patterns to improve the model's clarity and practical applicability.

This panel showcased a range of studies on health information dissemination, social-media impacts, and elderly health behavior, examining the roles of short-video platforms, digital emotions, and socioeconomic factors in public health. Each paper introduced innovative research approaches and provided new theoretical insights for tackling current public health challenges, especially through the combined effects of information dissemination, risk management, and social support. The discussants gave high praise to the academic and practical contributions of all six

studies, noting that they offer valuable theoretical foundations and practical guidance for public health, risk response in the digital age, and social behavior research. Maowen Yuan's paper from Zhejiang University received the forum's Excellent Paper Award.

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