



# Tobacco Control Research from the Perspective of Health Communication in the Digital-Intelligent Era: Literature Review of the 3rd Session of MHM2025

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## Abstract

This literature review synthesizes five studies exploring tobacco control communication in the digital-intelligent era, focusing on health communication perspectives. The studies investigate multiple dimensions of tobacco control, including influencing factors of first smoking behavior (e.g., individual cognition, media symbols, family and social environments), effectiveness of anti-smoking public service ads (highlighting features like real cases and disease frameworks, and regional differences in acceptance), tobacco control information dissemination on social media (e.g., divergent spread of WeChat Official Account articles, key factors in high-engagement content), and the effectiveness of e-cigarette policies (noting limited outcomes due to regulatory fragmentation and conflicts in regulatory roles). Employing mixed methods—qualitative approaches (in-depth interviews, focus groups) and quantitative techniques (Python data crawling, SPSS analysis, sentiment modelling, LDA topic modeling)—alongside theoretical frameworks such as grounded theory and strategy-tactics theory, these studies reveal complex dynamics in tobacco control communication. Their findings provide multidisciplinary insights for optimizing targeted intervention strategies, refining public service ad design, enhancing social media communication efficacy, and improv-

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ing tobacco control policies, contributing to advancing precision and dynamism in tobacco control efforts amid evolving digital communication ecosystems.

## **Keywords**

Tobacco control, Health communication, Smoking, Digital-intelligent era

The third session of the 8th International Academic Symposium on “Medicine, Humanity and Media: Health Communication for Enhancing Resilience” themed “Tobacco Control Research from the Perspective of Health Communication in the Digital-Intelligent Era” focuses on the field of tobacco control. It explores how health communication can break through traditional paradigms and achieve precision and dynamism in tobacco control interventions against the backdrop of digital-intelligent technologies reconstructing the communication ecology.

Among them, five studies reveal the complex landscape of tobacco control communication from different dimensions. Combining qualitative and quantitative methods, they discuss the influencing factors of smoking behavior, the effectiveness of tobacco control advertisements, the communication mechanism of social media, and the discourse game in policy implementation, providing a multidisciplinary perspective for optimizing tobacco control strategies.

## **Paper 1: Research on influencing factors of first smoking behavior and communication intervention strategies**

**Authors: Na Xin, Xiao Yao, Yujiao Zhang, Yi Chen, Sixuan Li (Peking University)**

Na Xin and her team, based on in-depth interviews and through the three-level analysis path of grounded theory, constructed a model of influencing factors of first smoking behavior. It is found that this behavior is the coupled result of multiple factors, including individual cognition, media symbols, family demonstration, social environment, and the material characteristics of tobacco. The study points out that adolescents' first smoking often stems from curiosity-driven cognitive adventure and alternative needs for emotional management. For example, the cognitive template formed by fathers' smoking behavior in the family, the media framework in Hong Kong films that symbolize smoking as a sign of maturity, and the situational pressure brought by semi-familiar relationships in social occasions. Based on this, the study proposes a “scene blocking - cognitive intervention - communication correction” pre-emptive communication intervention strategy, emphasizing that tobacco control communication should be moved forward to the first contact node to achieve the goal of controlling the expansion of smoking population from the source.

## **Paper 2: Chinese adolescents' feedback on tobacco control public service ads - based on focus group interviews**

**Authors: Yu Chen, Haoyi Liu, Shiyu Liu (Fujian Polytechnic Normal University)**

Yu Chen 's team adopted mixed research methods, taking 125 primary and middle school students aged 10-18 in Beijing and Kunming as subjects to evaluate the effectiveness of 8 tobacco control public service ads. Quantitative analysis shows that the top three ads in preventing adolescent smoking adopt real stories and personal testimonies, disease + death framework, and disease framework; the most ineffective ones adopt celebrity teaching, sex and reproduction framework, and appearance damage framework. Moreover, there are regional differences in ad. acceptance effect: Kunming adolescents have a higher overall acceptance than Beijing; Beijing adolescents are more resistant to celebrity ads, while Kunming adolescents are more negative about humorous ads. Qualitative research shows that effective ads are characterized by specific health hazards, real cases, fear appeal, etc., while ineffective ones include unclear display of hazards, celebrities, humor, etc. The study suggests that the design of tobacco control public service ads should adopt disease warnings and real cases, avoid humorous types, consider regional differences, and can use online and social media channels commonly used by adolescents for communication.

## **Paper 3: Research on influencing factors of first smoking behavior and communication intervention strategies**

**Author: Shupeng Li (Peking University)**

Shupeng Li adopted a three-stage design, using methods such as data crawling with Python, SPSS data analysis, and emotional modeling to conduct an in-depth study on the communication of tobacco control information in WeChat Official Accounts. The study found that there is a significant divergence in communication volume: 66.24% of articles have low communication volume, and only 14.25% have high communication volume; 89.91% of official accounts have low communication volume. Among them, high-communication posts are characterized by concise wording, focusing on smoking health risks and policies, and neutral emotional expression. The number of words in the title, readability, and release time (such as evening) are key positive influencing factors, while word frequency, emotional score, and release year have negative impacts. In addition, the proportion of smoking cessation intervention content in official accounts is insufficient, and although the readability of articles reaches the primary school level, the communication volume has decreased year by year. The study suggests that optimizing the communication of tobacco control information should refer to the characteristics of high-communication content, increase the number of words and readability of titles, choose to push in the evening, strengthen the theme of smoking cessation intervention, and combine graphic interactive design to improve communication effect and help achieve the tobacco control goal of "Healthy China 2030".

## **Paper 4: Ambiguous discourses: How Chinese media and public undermine tobacco control policies**

**Author: Yanhe Zhao (Communication University of China)**

Taking the incident of South Korean star Jennie using e-cigarettes as the starting point, Yanhe Zhao analyzed 9,872 related posts on Weibo and Xiaohongshu in 2024 by using Michel de Certeau's strategy-tactics theory, combined with computational communication studies and critical discourse analysis. The study found that public sentiment is mainly neutral (83.66%) and negative (15.64%), with three types of discourse strategies: critical, defensive, and diversionary, totaling 13 kinds. Over time, defensive and diversionary strategies have gradually diluted the initial anti-smoking narrative, while the vague framework of the media has intensified public resistance and weakened the policy communication effect. The study points out that the dilemma of China's tobacco control policies not only stems from the institutional contradiction that the State Tobacco Monopoly Administration has both regulatory and commercial functions but also from the ambiguity of media discourse and the public's 消解 of policies through tactical discourses such as "privacy defense" and "normalization interpretation". The study suggests that cross-sectoral cooperation between media, public health institutions, and civil society should be promoted to clarify regulatory intentions, resist the normalization of e-cigarette use, and help the effective implementation of tobacco control policies.

## **Paper 5: Do China's e-cigarette control policies work? A decade-long analysis of public discourse using an AI-integrated mixed-methods approach**

**Author: Zhangyan Li (Zhejiang University)**

Zhangyan Li adopted an AI-integrated mixed method to analyze 129,769 e-cigarette-related posts on Weibo from 2016 to 2025 through LDA topic modeling and quantitative analysis. It is found that although anti-e-cigarette discussions have increased and supportive content has decreased, supportive content still has a high interaction rate, and celebrity use and personal experience sharing are key communication factors. In addition, content associating e-cigarettes with drugs has a high recognition rate but may have the problem of over-warning. The study points out that the current policy effect is limited, which stems from regulatory fragmentation, lack of constraints on celebrity influence, and the contradiction that the State Tobacco Monopoly Administration has both regulatory and commercial functions. It is suggested that the regulatory power should be transferred from the State Tobacco Monopoly Administration to public health institutions, strengthen the supervision of social media content, especially e-cigarette-related content of celebrities and internet celebrities, and promote cooperation between platforms and the government to optimize algorithm filtering and content labeling, so as to improve the effectiveness of tobacco control policies.

## Comments section

After each researcher's presentation, Professor Xiaoquan Zhao and Professor Jian Rui respectively made in-depth comments from the perspectives of theoretical framework, methodological innovation, and practical value, pointing out the direction for the further deepening of each team's subsequent research.

Professor Jian Rui first affirmed the innovation and insight embodied in Na Xin's team's research using qualitative methods. At the same time, he suggested that the research should further focus on core phenomena, avoid an overly broad theoretical framework, and, in particular, deepen the differential analysis of three types of interviewees: regular smokers, occasional smokers, and non-smokers, so as to enhance the explanatory power of the research. Regarding Shupeng Li's research on tobacco control information in WeChat Official Accounts, Professor Jian Rui recognized the data-driven research paradigm, but emphasized the need to supplement the operational definitions of key variables such as the calculation methods for title readability, explain the design logic of the research stages, and theoretically interpret the differences in influencing factors at different stages. For Zhangyan Li's research on the effectiveness of e-cigarette policies, Professor Jian Rui affirmed its concern for reality, and suggested introducing theoretical frameworks such as Bourdieu's field theory regarding "the confrontation between official discourse and folk discourse", clarifying the research's contribution to existing theories, and combining frame theory to conduct an in-depth analysis of the formation mechanism of public opinion polarization.

When commenting on Yu Chen's team's research on the effectiveness of tobacco control advertisements, Professor Xiaoquan Zhao highly praised the scientificity and meticulousness of the mixed research methods, pointing out that the research's systematic evaluation of advertising content has practical value. He also suggested supplementing the background information of the advertisements, and combining the regional cultural differences between Beijing and Kunming to deeply explain the causes of differences in ad acceptance, avoiding staying only at the level of data description. Regarding Yanhe Zhao's research on public opinion of tobacco control on social media, Professor Xiaoquan Zhao appreciated his acute observation of the complex information environment, believing that the application of multiple methods has made the overall analysis more solid. He also suggested strengthening the connection between case studies and the historical evolution of China's e-cigarette control policies, avoiding overly general policy recommendations, so as to enhance the policy guidance value of the research.

This conference, with multi-dimensional research perspectives and innovative methods, has built a dialogue platform integrating theory and practice for tobacco control research in the digital era. Through multiple approaches such as focus group interviews, big data analysis, and AI-integrated mixed methods, the six researchers have revealed key issues such as the motivations behind adolescents' first smoking behavior, the communication effects of tobacco control advertisements, and the public opinion ecology of social media, providing solid academic support for the precise design of tobacco control policies. Participating experts further emphasized that academic research needs to further strengthen the connection between theoretical frameworks and

practical issues, continuously enhance the focus and depth of theoretical research, and avoid staying at the level of descriptive analysis of phenomena.

## **Author biography**

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