

Information Communication Technologies (ICTs), Crisis Communication Principles and the COVID-19 Response in South Korea

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Abstract

This case study highlights several communication insights that have emerged from the South Korean national response to COVID-19. In particular, it focuses on how innovative disease control programmes and information and communications technologies (ICT) have been used in conjunction with appropriate message strategies. The South Korean government used ICTs in a variety of ways to enhance crisis communication, coordinate large-scale public health efforts and supply chains, and facilitate widespread adoption of preventive measures such as social distancing and mask wearing. The response and communication strategies were based on principles established by research in social sciences and recommended for pandemic response, including social marketing, crisis communication, and normative influence. South Korea's COVID-19 response and communication strategies can provide useful insights for national efforts to manage COVID-19 and other possible future infectious disease outbreaks.

Keywords

Crisis Communication, Normative Influence, Social Marketing

Introduction

As in other countries, South Korea's experience of the COVID-19 pandemic has gone through several waves of increasing and decreasing severity. During the outbreak's first 2 months, that is, January and February 2020, South Korea followed only China in having the highest number of cases, and some countries banned South Korean travellers from entry. Subsequently, though, it has become acknowledged as one of a small number of countries that have maintained exceptionally low rates of infection and

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mortality. Even though these rates have increased for a brief period, South Korea's response to COVID-19 has been prompt and effective.

This effectiveness has been attributed to a variety of factors, including citizens' cooperation and compliance with public health recommendations, as well as several measures initiated by the government: early recognition of the threat; rapid activation of national response protocols and diagnostic capacities; enactment of procedures for preventing community transmission; and collaborations among government, health, and private sector organisations to develop extensive treatment systems (Ariadne Labs, 2020; Oh et al., 2020). The Korean government has proposed its quarantine model, K-Quarantine, as a global standard for international efforts to manage COVID-19.

The following case study highlights several communication insights that have emerged from the South Korean national response to COVID-19. In particular, it focuses on how innovative disease control programmes and information and communications technologies (ICT) have been used in conjunction with appropriate message strategies. South Korea's COVID-19 response and communication strategies can provide useful insights for national-level efforts to manage COVID-19 and other possible future outbreaks.

South Korean Innovations for Responding to COVID-19

In the early phases of COVID-19 in South Korea, outbreaks of new infections remained at a steady low rate of one to five cases in the national population per day. This early success can be attributed to government efforts that grew out of lessons learnt from the 2015 outbreak of Middle East respiratory syndrome (MERS). Compared to COVID-19, the MERS outbreak in South Korea occurred on a much smaller scale, with 186 confirmed cases and 38 deaths. Another negative outcome of MERS was a severe decline of public trust in government. People believed that government officials failed to enact timely countermeasures against the disease, and that they did not transparently and consistently inform people about the risks it posed (Paek, 2017). Hoping to avoid a similar failure during the early spread of COVID-19, the government immediately put several measures in motion: setting up the infectious diseases response system, holding regular media briefings to provide the public with up-to-date facts and scientifically supported information, and developing cooperative disease control efforts with groups and businesses in the private sector.

During early efforts to impede community transmission of COVID-19, the most critical tasks were to identify, trace, and test suspected patients as quickly as possible. To achieve this goal, ICTs were used in several ways; for example, in order to promptly inform the public about the movement paths of newly confirmed patients, text message alerts were sent to personal cell phones. These alerts were disseminated through the cellular broadcasting service (CBS), which enables government agencies to transmit emergency messages about disasters and risks to all individual South Korean cell phone numbers through mobile telecom carriers (Government of the Republic of Korea, 2020). This procedure was deemed to be effective because about 95% of Korean people own a smartphone (Silver, 2019). Text message alerts were also used for other public health purposes, for example, providing practical information about COVID-19, persuading and encouraging people to take preventive actions such as distancing and mask wearing, and expressing gratitude to health professionals for their hard work and dedication. Although such efforts to keep the public informed are necessary, communication alone would not be sufficient to control the spread of COVID-19. Other large-scale innovations would be needed. In South Korea, one notable innovation was easily accessible mobile testing stations. Another was a centralised system for distributing the initially short supply of masks.

Within South Korea's borders, the first rapid spread of the virus occurred around 18 February, the date when the 31st confirmed case of COVID-19 (Patient 31) was detected in Daegu, a large city located in the southeast region of the country. Patient 31 was a 61-year-old woman who may have spread the virus to hundreds of people, primarily as a result of her attendance at services of the Shincheonji ('New World') Church. This church rapidly became a hot spot for massive community transmission in the Daegu area. By February 29, the number of new patients per day in South Korea reached a peak of 909, and the country was beginning to face a shortage of healthcare facilities to handle the pandemic. At the suggestion of a local health professional, the government began to set up innovative 'Drive-through' screening stations, testing facilities where people experiencing possible symptoms of COVID-19 could remain in their cars, have minimal contact with healthcare workers, and complete screening within 10 minutes (Kwon et al., 2020).

Soon after, similar rapid testing facilities were set up in other regions, including newly developed 'Walk-through' and 'Mobile' stations. Walk-through stations consist mainly of portable, phone-booth-sized enclosures in which a healthcare worker can be safely isolated while testing suspected patients via large disposable gloves (Song, 2020, September 4). Such facilities greatly reduced testing time down to 1 minute for collecting samples and 2 minutes for ventilating and disinfecting the station. Mobile stations are vehicle-mounted screening facilities that can be transported anywhere and do not require additional equipment such as tables, tents, or chairs. Drive-through and Walk-through testing stations are now part of the K-Quarantine model, and they have been adopted by many other countries. These testing innovations were proudly promoted by government officials during their regular briefings on broadcast and social media.

Another problem during the Daegu outbreak, when the national infectious disease alert was raised to the highest level (Red), was a shortage of mask supplies for the general public. Many people were unable to buy face masks, and those who tried had to wait in long lines. To supply masks fairly and effectively during the shortage, the government implemented a 5-day-rotation mask distribution system that permitted each ID-holding citizen and foreign resident to buy two face masks from pharmacies on specific days of the week assigned according to birth year. When this system was initially enacted in mid-March, pharmacies with masks in stock were difficult to find. To address this problem, the government shared real-time data about mask supplies at all of the country's pharmacies. These data were available on the leading Korean Internet portal cloud service Naver, which made them easily accessible to website and app creating. In turn, developers made mask supply information quickly and conveniently available for public use by creating more than a dozen apps (e.g., maskscanner, mask Alimi) and websites (e.g., wheremask.com, publicmask.com). After a couple months, mask supplies became sufficient, and the 5-day-rotation distribution system was able to be discontinued in early June.

Information and communications technologies played critical roles in efforts to trace and gather information about suspected cases of COVID-19. In May 2020, after the Daegu outbreak had been stabilised and only sporadic community transmissions were occurring, a cluster of infections originated in several dance clubs and bars in Seoul. In response to this large outbreak, the government teamed up with cell phone companies and local businesses to trace people who had been in the area of the clubs within about 2 weeks of the incident. This contact tracing involved prompt searches of data from cell phone usage, credit card histories, and closed-circuit camera recordings from the clubs and nearby businesses where confirmed patients were known to have been present. Text message alerts were sent to people who were indicated by the data to have been in the infected areas, informing them that they may have been infected and requesting them to get tested as soon as possible.

Later, when other community cluster infections began occurring more frequently, the government worked with major Internet communications companies such as the portal service Naver and the text

messaging service KakaoTalk to develop tracking systems using QR codes. At ‘high-risk’, densely populated places such as bars, restaurants, and health clubs, visitors were required to use cameras and apps on their personal smartphones to generate a QR-code identifier called KI-Pass. As an alternative to handwritten visitor logs, this code served the dual purpose of tracking people while maintaining a degree of privacy protection. It enabled facility and business managers to keep digital logs of QR codes generated by each visitor, as well as time records of when those visits were made. For the visitors, the codes enabled them to register their presence in specific places without giving facility managers their personal information. If a person were to test positive for COVID-19, the government would have their phone number and then ask the Internet companies for the QR codes they generated in order to trace their registered presence in crowded places (Song, 2020, June 21).

To enforce quarantines on inbound travellers, the government required new entrants to download a self-quarantine safety app to their smartphones, which enabled public health workers to monitor their locations via GPS. If someone left their designated quarantine area, the app would alert public health authorities. People who flouted the quarantine restrictions would be more strictly monitored with location-tracking bracelets. New entrants were also required to download and use a self-diagnosis app, which enabled public health workers to monitor the entrants’ health conditions and receive daily updates about their self-diagnosis of symptoms such as fever and coughing.

All these ICTs for testing and tracing required proper coordination and communication at multiple levels. After raising the infectious disease alert level to Red (the highest, level 4) on 23 February 2020, the Korean government bolstered government-wide responses to COVID-19 by assembling the Central Disaster and Safety Countermeasure Headquarters (CDSCH). Headed by the prime minister, CDSCH hosted meetings every morning with all central and local government bodies to discuss daily COVID-19 situations, epidemic and preventive measures, and other matters, including policy decisions and future ideas about how ICTs should be used. Policy decisions were made at the meetings and announced to the public in daily media briefings.

Theoretical and Communication Insights

Many of Korea’s COVID-19 response and communication strategies were based on principles established by research in social sciences and recommended for effective pandemic response (Van Bavel et al., 2020). The most relevant areas of research are social marketing, crisis communication, and normative influence. Social marketing refers to the use of marketing techniques to promote safe and healthy behaviours (Andreasen, 1995; Grier & Bryant, 2005; Paek et al., 2015). Just as commercial marketing promotes products by making them as available, attractive, and cheap as possible, social marketing tries to promote prosocial behaviour changes by making them convenient and easy to adopt. In responding to COVID-19, the Korean government followed this philosophy by setting up several systems to facilitate behaviour changes. To encourage voluntary virus testing, drive-through, walk-through, and mobile testing stations were made widely accessible. To make a variety of other behaviour changes more convenient, smartphone apps were used. These apps made it easier for people to register their presence in potentially risky environments (restaurants, bars, health clubs, beaches), to verify their compliance with quarantines, and to learn where masks could be bought.

Another research area that informed the South Korean government’s efforts was risk and crisis communication. According to the US Centers for Disease Control and Prevention’s Crisis and Emergency Risk Communication (CERC) manual, public communication during an infectious disease outbreak should follow six principles: it should be (a) fast, (b) accurate, and (c) credible, and it should (d) express

empathy, (e) promote action, and (f) show respect for the general public (U.S. CDC, 2020; also see Paek, 2017). The government's text message alerts and regular media briefings followed these principles.

Text message alerts were disseminated as quickly as possible in order to serve several purposes: providing accurate information about patients' movement paths; recommending testing and other preventive actions to people who might have had contact with confirmed patients; reminding and encouraging people's participation and commitment to social distancing and mask wearing; and expressing appreciation for healthcare professionals.

Similar communication goals were pursued in the daily media briefings that began on 20 January 2020, when the 1st domestic COVID-19 patient was confirmed. These briefings were conducted by top officials from the CDSCH and the Korea Centers for Disease Control & Prevention (KCDC). During the outbreak's early weeks, they held two briefings per day. The morning briefing covered the government's COVID-19 response strategies. The afternoon briefing covered up-to-date information about confirmed cases, infection control measures, and epidemiological research findings. These briefings also set several other communication goals: correcting misinformation; expressing empathy for patients; encouraging the general public's active participation in pandemic control efforts, for example, social distancing and mask wearing; and expressing appreciation for the healthcare professionals who were testing and treating COVID-19 patients. These briefings enabled public health authorities to gain and sustain public trust. According to a July 2020 national survey, 90% of respondents said that they trusted KCDC for its management of COVID-19 (Lee, 2020, July 29). This level of trust was significantly higher than that recorded during the MERS outbreak of 2015, when the government failed to communicate properly with the public, and two out of three respondents indicated they did not trust the governmental response to MERS (Paek, 2017).

As part of the persuasion strategy to encourage people's participation in and compliance with preventive measures such as testing, mask wearing, hand sanitising, and social distancing, communication campaigns used principles from research on normative influence (Van Bavel et al., 2020). Two types of normative messages—descriptive and injunctive—are commonly used to influence public health behaviours (Cialdini et al., 1990; Paek et al., 2012, 2014). Descriptive norm messages provide information about *how most people do in fact* behave. Injunctive norm messages express attitudes of approval or disapproval regarding *how everyone should* behave. Descriptive norms were salient in that most South Koreans had been regularly wearing masks in public since the early days of the pandemic. Those who did not wear masks would feel pressured by observing the behaviour of people around them and encountering public messages such as, 'Thanks to everyone participating in social distancing and mask wearing'. Other messages included appeals to injunctive social norms; for example, posters targeted risk-oblivious young people and reminded them of moral norms such as showing concern for others and protecting the vulnerable: 'Please wear masks and maintain social distance to protect your parents and grandparents'.

Remaining Issues

Despite South Korea's relative success in controlling COVID-19, it continues to face the same types of outbreak-related dilemmas and controversies that persist around the world. These include issues related to privacy, individual rights, and consistency of information. First, there is the dilemma of finding the right balance between the need to gather health-related information about infected people and the need to protect privacy. Smartphone apps and other communications media have made it easier for health officials to monitor locations of self-quarantined people and to gather and disclose detailed information

about confirmed patients and their movement paths. However, such uses of ICTs may also lead to negative consequences such as excessive invasion of privacy, scapegoating, and discrimination. To mitigate such problems after the MERS outbreak in 2015, the Korean government passed the Infectious Disease Control and Prevention Act (IDCPA) to establish a legal basis for collecting and disclosing patient information. However, debates have persisted about how much information would be acceptable or appropriate to disclose; for example, groups such as the National Human Rights Commission of Korea have expressed concerns about disclosure of unnecessary personal information. In addition, many South Koreans worry that one of the worst aspects of becoming infected with COVID-19 is being exposed to public scrutiny. According to a national survey conducted in February 2020, people reported that they were less worried about contracting COVID-19 than they were about experiencing the community disapproval that would come down on them for being identified as an infected patient (Gallo, 2020).

Related to the privacy issue, the second issue is disagreements both within and across cultures about the extent to which individual rights should be weighed against public safety. Attitudes towards preventive measures such as social distancing and mask wearing continue to differ around the world. In South Korea, the public generally approves of government efforts to recommend or enforce such measures. After the pandemic persisted for several months, the government in June 2020 passed a law requiring masks to be worn on all forms of public transportation. According to a national survey conducted during that month, 80% of respondents agreed that such an official government measure should be implemented to curb the spread of COVID-19 (Lee, 2020, June 15). By contrast, in the USA, President Trump only reluctantly acknowledged the benefits of masks as late as July 2020, and as late as December, he and several state governors still refused to officially recommend mask wearing. Protests against pandemic-related restrictions have taken place in many cities around the world. Because of the diversity of cultural and political attitudes toward such restrictions, various communication strategies should be considered to effectively persuade the public to adopt scientifically recommended preventive measures.

Third, public and government communication about COVID-19 has sometimes been contradictory and confusing. In South Korea, President Moon Jae-in declared in mid-February that the outbreak would 'disappear before long'. Such a forecast seemed reasonable because the number of cases was still low. However, at the same time, Jung Eun-Kyeong, Director of KCDC, warned that experts were still uncertain about the pandemic's magnitude and severity. This inconsistency of views within the government opened up President Moon to harsh criticism from his political opposition, and over one million people signed an online petition calling for his impeachment (Choe, 2020). Ever since, South Korean politicians have been careful about seeming to contradict health and medical experts' opinions. By contrast, in countries such as the USA, Brazil, and Belarus, political leaders have either contradicted or refused to endorse the claims of public health experts about issues such as the effectiveness of preventive measures, the likely time frame for vaccine development, and the severity or even existence of the pandemic. This lack of consensus between scientists and other public figures could intensify ambiguities and uncertainties about the pandemic risk, with the side effect of reducing the public's compliance with health messages (Markon & Lemyre, 2013). To avoid such problems, public communication about COVID-19 needs to be consistent, transparent, and delivered by trustworthy experts. In addition, to aid our collective effort to control this pandemic, social scientists have advised against issuing politically divisive messages that scapegoat specific countries and social groups (Van Bavel et al., 2020). Instead, they recommend appealing to the common need shared by everyone around the world to eradicate this pandemic.

Conclusion

Currently, as we enter 2021, much of the world is experiencing another large wave of COVID-19. Even countries such as South Korea, which seemed to have reached a low and stable rate of infections, are now seeing renewed spikes. Experts remain uncertain about when effective vaccines and therapeutics can be made widely available. This pandemic is not only a public health crisis but also a crisis of public communication. The extent to which people adopt preventive actions depends on the extent to which government and health authorities consistently and effectively communicate with them. South Korea achieved relative success in managing COVID-19 without having to resort to extreme measures such as lockdowns. One reason is that the government's public communication followed established principles of effective crisis communication (Kim & Kreps, 2020; Van Bavel et al., 2020). By maintaining message consistency, conveying facts and scientific information transparently, and expressing empathy for the general public through trusted sources, the South Korean government influenced the public to rely more on official sources of information than on rumours and other misinformation circulated through the Internet. In cooperation with broadcast and social media companies, the government used ICTs in a variety of ways to enhance crisis communication, coordinate large-scale public health efforts and supply chains, and facilitate widespread adoption of preventive measures such as social distancing and mask wearing. Theoretically informed and evidence-based preventive and quarantine measures, enhanced by ICTs and informed by crisis communication strategies, will continue to be key components in global efforts to overcome COVID-19 and other pandemics to come.

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References

- Andreasen, A. R. (1995). *Marketing social change: Changing behavior to promote health, social development, and the environment*. Jossey-Bass.
- Ariadne Labs. (2020, June 30). *Emerging COVID-19 success story: South Korea learned the lessons of MERS*. Our World in Data. <https://ourworldindata.org/covid-exemplar-south-korea>
- Central Disaster and Safety Countermeasure Headquarters. (2020). *Korea's response to COVID-19 and future direction*. Ministry of Interior and Safety (MOISA). <http://www.mofa.go.kr/viewer/skin/doc.html?fn=20200520085445765.pdf&rs=/viewer/result/202012>
- Choe, S.-H. (2020, February 27). South Korean leader said coronavirus would 'disappear.' It was a costly error. *New York Times*. <https://www.nytimes.com/2020/02/27/world/asia/coronavirus-south-korea.html>
- Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58, 1015–1026.

- Gallo, W. (2020, May 6). *South Korea balances privacy, public health in virus fight*. VOA. <https://www.voanews.com/east-asia-pacific/south-korea-balances-privacy-public-health-virus-fight>
- Government of the Republic of Korea. (2020, May 11). *Flattening the curve on COVID-19: How Korea responded to a pandemic using ICT*. UNDP.
- Grier, S., & Bryant, C. A. (2005). Social marketing in public health. *Annual Review of Public Health, 26*(1), 319–339.
- Kim, D. K. D., & Kreps, G. L. (2020). An analysis of government communication in the United States during the COVID-19 pandemic: Recommendations for effective government health risk communication. *World Medical & Health Policy*. <https://dx.doi.org/10.1002/wmh3.363>
- Kwon, K. T., Ko, J.-H., Shin, H., Sung, M., & Kim, J. Y. (2020). Drive-through screening center for COVID-19: A safe and efficient screening system against massive community outbreak. *Journal of Korean Medical Science, 35*(11). <https://doi.org/10.3346/jkms.2020.35.e123>
- Lee, S. J. (2020, June 15). *COVID-19: Recognizing the possibility of second wave and government intervention*. Korea Research. <https://hrcopinion.co.kr/archives/15737>
- Lee, S. J. (2020, July 29). *COVID-19: 12th survey of public perception (situation awareness, institutional trust, etc)*. Korea Research. <https://hrcopinion.co.kr/archives/16099>
- Markon, M.-P. L., & Lemyre, L. (2013). Public reactions to risk messages communicating different sources of uncertainty: An experimental test. *Human and Ecological Risk Assessment, 19*, 1102–1126. <https://doi.org/10.1080/10807039.2012.702015>
- Oh, J., Lee, J.-K., Schwarz, D., Ratcliffe, H. L., Markuns, J. F., & Hirschhorn, L. R. (2020). National response to COVID-19 in the Republic of Korea and lessons learned for other countries. *Health Systems & Reform, 6*(1), e1753464. <https://doi.org/10.1080/23288604.2020.1753464>
- Paek, H.-J. (2017). Strategic risk communication for infectious disease outbreaks: The evolving landscape of publics and media. *Journal of the Korean Medical Association, 60*(4), 306–313. <https://doi.org/10.5124/jkma.2017.60.4.306>
- Paek, H.-J., Lee, H. G., & Hove, T. (2014). The role of collectivism orientation in differential normative mechanisms: A cross-national study of antismoking PSA effectiveness. *Asian Journal of Social Psychology, 17*(3), 173–183.
- Paek, H.-J., Oh, H. J., & Hove, T. (2012). How media campaigns influence children's physical activity: Expanding the normative mechanisms of the theory of planned behavior. *Journal of Health Communication, 17*, 869–885.
- Paek, H.-J., Jung, Y., Oh, H. J., Alaimo, K., Pfeiffer, K., Carlson, J. J., Wen, Y., Betz, H. H., & Orth, J. (2015). A social marketing approach to promoting healthful eating and physical activity in low-income and ethnically diverse schools. *Health Education Journal, 74*, 351–363. <https://dx.doi.org/10.1177/0017896914540294>
- Silver, L. (2019, February 5). *Smartphone ownership is growing rapidly around the world, but not always equally*. Pew Research Center Global Attitudes Project. <https://www.pewresearch.org/global/2019/02/05/smartphone-ownership-is-growing-rapidly-around-the-world-but-not-always-equally/>
- Song, K.-S. (2020, June 21). [INTERVIEW] How a disappearing QR code helps combat Covid-19. *Korea JoongAng Daily*. <https://koreajoongangdaily.joins.com/2020/06/21/business/tech/Naver-Covid19-mobile-app/20200621183200254.html>
- Song, E. S. (2020, September 4). *From walk-through to mobile screening center ... Evolving drive-through*. dongA.com. <https://www.donga.com/news/article/all/20200904/102797465/1>
- U.S. Centers for Disease Control and Prevention (U.S. CDC). (2020). *Crisis and emergency risk communication (CERC) in an infectious disease outbreak*. https://emergency.cdc.gov/cerc/resources/pdf/315829-A_FS_CERC_Infectious_Disease.pdf
- Van Bavel, J. J., Baicker, K., Boggio, P. S., Capraro, V., Cichocka, A., Cikara, M., Crockett, M. J., Crum, A. J., Douglas, K. M., Druckman, J. N., Drury, J., Dube, O., Ellemers, N., Finkel, E. J., Fowler, J. H., Gelfand, M., Han, S., Haslam, S. A., Jetten, J., ... Willer, R. (2020). Using social and behavioural science to support COVID-19 pandemic response. *Nature. Human Behaviour, 4*, 460–471. <https://doi.org/10.1038/s41562-020-0884-z>

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