Contents lists available at ScienceDirect

World Development

journal homepage: www.elsevier.com/locate/worlddev

Letters on Urgent Issues

COVID-19 in South Korea: Lessons for developing countries

Daejoong Lee, Kyungmoo Heo, Yongseok Seo *

Moon Soul Graduate School of Future Strategy, Korea Advanced Institute of Science and Technology (KAIST), 5 #2241, Daehakro 291, Yousung, Daejeon, Republic of Korea

ARTICLE INFO

ABSTRACT

South Korea's response is considered by many as one the most effective models against COVID-19. The average number of new cases per day fell to 6.4 in the first week of May and currently 90% of all confirmed cases have fully recovered after a massive outbreak in February 29. First, South Korea has flattened the curve of COVID-19 by combining testing, early isolation, and free treatment of positive cases combined with digital technologies without taking to "lockdown" measures. Second, South Korea has been holding press briefings twice a day and disclosed all information on COVID-19 to the public in an open and transparent manner. Third, South Korea has worked to secure the civic participation and voluntary engagement of citizens and businesses. The South Korean approach to COVID-19 may be difficult to emulate even for countries like the U.S. and U.K., but provides important policy implications for developing countries and needs for strengthening three core competencies against the outbreak of an epidemic: digital technology, efficient health governance, and civic partnership. It is a great challenge for developing countries to fight alone against COVID-19. As such, the international community should work to strengthen these core competencies accordingly.

© 2020 Elsevier Ltd. All rights reserved.

South Korea's response is considered by many as one the most effective models against COVID-19 (UN News, 2020). South Korea has flattened the curve of COVID-19 by combining testing, early isolation, and the free treatment of positive cases combined with digital technologies without taking to "lockdown" measures (MOEF, 2020; Majeed, Seo, Heo, & Lee, 2020). The average number of new cases per day fell to 6.4 in the first week of May and currently 90% of all confirmed cases have fully recovered (KCDC, 2020). What measures can be emulated in developing countries to combat the spread of COVID-19? What are the lessons for developing countries from South Korea's approach to COVID-19 in particular?

First, the developing country should equip itself with a robust health and quarantine system of testing, tracing, and treating (3Ts) against infectious diseases. Even at the height of the outbreak in late February and early March, South Korea was able to contain COVID-19 through the 3Ts, without resorting to "lockdown" measures (MOEF, 2020; Thompson, 2020). Widespread testing in South Korea helped the health and quarantine authorities to trace and isolate infected patients which led to the country's high recovery rates. IT-based contact tracing was possible after the 2015 MERS outbreak through revision of the Contagious Disease Prevention

and Control Act (CDPCA). The revised CDPCA overrides certain provisions of the Personal Information Protection Act and gave relevant power to authorities to collect and profile personal location information for epidemiological investigation (Park, Choi, & Ko, 2020). In order to safeguard the privacy of tracked individuals and prevent any potential abuse, "the epidemiological investigation system is equipped with a double login system through a private network to prevent hacking and all log-in data remains in systems" (MOLIT, 2020).

Second, in responding to the highly contagious COVID-19, the developing country should take swift and decisive measures. Even before the first confirmed case of COVID-19 in South Korea, government officials started working with medical companies to develop testing kits (Sisaweek, 2020). In late January, the Korea Centers of Diseases Control approved the very first diagnostic testing kit for COVID-19 (Seegene, 2020). By February, South Korea made international headlines for introducing the world's first drive-through screening testing centers with the ability to test thousands of people each day.

Third, the developing country should be open and transparent in disclosing all information on COVID-19 to the public. Since the first confirmed case of COVID-19, South Korea has been holding detail press briefings twice a day (ROK, 2020). The full disclosure of information has in turn rallied the public to join in the efforts for social distancing and preventing the spread of the virus. The developing country should work closely with businesses and civic

* Corresponding author.
  E-mail addresses: djlee2003@kaist.ac.kr (D. Lee), kyungmoo.heo@kaist.ac.kr (K. Heo), manoa@kaist.ac.kr (Y. Seo).

organizations. Samsung and LG allowed its training facilities to be used as treatment centers for COVID-19 patients with mild symptoms and NGOs have provided food and survival kits for those under self-quarantine order. The high level of civic awareness and voluntary cooperation was essential in adhering to personal hygiene measures, observing self-quarantine measures and maintaining social distancing.

Lastly, the developing country should gradually and carefully ease quarantine and immigration procedures in line with the health and medical conditions of the country and the local and global spread of COVID-19. Without a complete shutdown of borders, South Korea has managed the risk of the virus arriving from overseas by continuously adapting and fine-tuning measures in border controls. It is critical to ease social distancing and border control measures carefully in stages.

The South Korean approach to COVID-19 may be difficult to emulate even for countries like the U.S. and the U.K. (Majeed et al., 2020), but provides important policy implications for developing countries and needs for strengthening three core competencies: digital technology, efficient health governance, and civic partnership. Digital technology in developing countries will be critical in responding to future crises including pandemics. When establishing the legal basis for contact tracing, the developing countries should prepare adequate measures safeguarding the privacy of infected individuals. The developing country should reorganize its epidemic response governance and maintain decent quarantine and hygiene practices. In particular, health authorities should consider the reorganization of hospitals by the types and severity of diseases to prevent the spread of the virus within the hospitals. And finally, the developing country should strive for cooperation and capacity building in civic organizations. It is a great challenge for developing countries to fight alone against COVID-19. As such, the international community should work to strengthen these accordingly.

Conflict/Declaration of Interest Statement

We (D. Lee, K. Heo, Y. Seo) confirm that this paper does not have any issues relating to the journal's policies and any potential competing interests along with no funding from other external sources.

References

KCDC. (2020). The updates on covid-19 in Korea as of 08 May 2020. Korea Centers for Disease Control & Prevention, Republic of Korea, May 8, 2020. https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030&act=view&list_no=367177&tag=&nPage=3.

Majeed, A., Seo, Y., Heo, K., & Lee, D. (2020). Can the UK emulate the South Korean approach to covid-19?. BMJ. https://www.bmj.com/content/369/bmj.m2084.

MOEF. (2020). Flattening the curve on COVID-19: How Korea responded to a pandemic using ICT. Ministry of Economy and Finance, Republic of Korea, April 15, 2020. http://www.korea.kr/common/download.do?fileId=190536078&tblKey=GMN.

MOLIT. (2020). Corona19 smart management system online briefing, Ministry of Land, Infrastructure and Transport, Republic of Korea, April 10, 2020. http://www.molit.go.kr/english/USR/BORD0201/m_28286/DTL.jsp?id=eng0301&cate=&mode=view&idx=2935&key=&search=&search_regdate_s=&search_regdate_e=&order=&desc=asc&srch_prc_stts=&item_num=0&search_dept_id=&search_dept_nm=&srch_usr_nm=N&srch_usr_titl=N&srch_usr_cnt=N&srch_mng_nm=N&old_dept_nm=&search_gbn=&search_section=&source=&search1=&lcmspage=1.

Park, S., Choi, G., & Ko, H. (2020). Information technology-based tracing strategy in response to COVID-19 in South Korea-privacy controversier, American Medical Association, April 23, 2020. https://jamanetwork.com/journals/jama/fullarticle/2765252.

ROK. (2020). Media resource site for COVID-19 in Korea. Republic of Korea, http://ncov.mohw.go.kr/en/.

Seegene. (2020). CNN spotlighted "How this south Korean company created coronavirus test kits in three weeks". Seegene, Mar 12, 2020. http://www.seegene.com/press_release/how_this_south_korean_company_created_coronavirus_test_kits_in_three_weeks_2020.

Sisaweek. (2020). The story of the rapid development of the 'coronavirus diagnostic kit' in Korea. Sisaweek, March 25, 2020. (In Korean) https://www.sisaweek.com/news/articleView.html?idxno=132319.

Thompson, D. (2020). What's behind South Korea's COVID-19 Exceptionalism?. The Atlantic. https://www.theatlantic.com/ideas/archive/2020/05/whats-south-koreas-secret/611215/.

UN News. (2020). First person: South Korea's COVID-19 success story. UN News Global perspective, May 1, 2020. https://news.un.org/en/story/2020/05/1063112.