



Novel Coronavirus (COVID-19) Pandemic: The Role of Printing Media in Asian Countries

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During all critical incidents, the media frame our understanding and create powerful forces at both individual and societal levels. The mental health of readers and viewers can also be affected by the media after tragic events. Potentially, the media have a proactive role in shaping the actions of the mass population and thereby influencing policy actions. The print media especially are considered a key avenue for taking information to the masses. However, in this information and communications technology (ICT) era, people are increasingly reluctant to carry hard-copy newspapers, instead preferring e-newspapers. At the present time, entire newspapers, and especially their opinion sections, are deluged by concerns about the novel coronavirus disease 2019 (COVID-19) pandemic. After China and Japan first encountered COVID-19, other Asian countries began their COVID-19 fight at different times between January and March 2020. All affected countries sought to manage the pandemic in their own way, following lessons learned from China and Japan. Every form of media in affected countries highlighted concerns by presenting news, perceptions, and opinions related to the pandemic. With opinion sections and editorials, the key sections of e-newspapers to reflect experts' perceptions and thoughts, this study aims to examine experts' views in the e-newspapers of five different countries in Asia, in relation to China and Japan. Considering the diversity of socioeconomic and geopolitical settings, five countries—South Korea, Singapore, Iran, India, and Bangladesh—are selected, each represented by one leading English-language e-newspaper. This study explores how experts' perceptions in the studied countries present different aspects of life. It also examines which e-newspaper emphasized which aspect of life and in which period of the outbreak. By intensive text mining in each selected e-newspaper, the study found that experts' opinions addressed diverse issues with regard to COVID-19. These issues are grouped under the following eight categories: health and drugs, preparedness and awareness, social welfare and humanity, the economy, governance and institutions, politics, the environment and wildlife, and innovation and technology. This pioneering study of five different e-newspapers in Asian countries from January to March 2020 presents a similar picture of experts' concerns and their roles in shaping responses to health crises; thus, it plays a role in contributing to policy actions.

Keywords: coronavirus, COVID-19, print media, editorial, opinion, Asia

INTRODUCTION

Dudden and Marks (2020) asserted the following: “[p]reventing journalists from covering unpleasant information reassures a government that hates criticism, but leaves the public less secure.” This presents clarification of the media’s position during the novel coronavirus disease 2019 (COVID-19) pandemic. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) respiratory coronavirus was an earlier instance of coronavirus, with the latest coronavirus officially referred to as COVID-19. Studies have claimed that, during the last two decades, the mass media have become a vital part of social, political, economic, and environmental situations. Studies have also argued that the role of the mass media in any crisis or disaster cannot be denied, as the media facilitate access to information for government, policy makers, and citizens to assist with managing the situation (Ghassabi and Zare-Farashbandi, 2015). COVID-19 is a new type of virus, with the virus changing its form, structure, and characteristics through continuous mutation and rapidly spreading from person to person by close contact. A study conducted by Indian scientists among 3,636 patients across 55 countries indicated that, to date, COVID-19 has mutated at least 11 times (Biswas and Majumder, 2020). In this pandemic, people worldwide are relying more and more on credible news media (Straits Times, 2020a). People want reliable news about how their lives are changing during lockdown, about the millions of people who have lost their jobs, about the millions who have become infected, and about the hundreds of thousands who have died (Muno, 2020). A recent study by the University of Oxford polled people in Argentina, Germany, South Korea, Spain, the United Kingdom (UK), and the United States (US) and found that people gave the news media greater credibility than social media. The study also claimed that 60% of respondents stated that the news media helped them to understand the pandemic crisis, while 65% supported the view that the news media explained to them what to do in response to the pandemic (Nielsen et al., 2020).

Time magazine, a US weekly news publication published since 1923 and now a news website, is headquartered in the city of New York (Time Magazine, 2020). Its January 2020 issue recorded 41,000 English-language articles with the word “coronavirus,” of which 19,000 used the word in the headline. On the other hand, Recode (a technology news website that has focused on business in Silicon Valley since 2014) (Recode, n.d.¹) reported on March 17th, 2020, that around 1% of published articles on 3,000 high-traffic news sites were related to the coronavirus. Furthermore, news website visitors were found to be reading the news more due to COVID-19, with the total number of article views ~30% higher in mid-March 2020 than in mid-March 2019 (Molla, 2020).

The Huanan Seafood Market in Wuhan, China, is considered to be the epicenter of the COVID-19 outbreak. The first news reports about the outbreak came from Wuhan Municipal Health Commission on December 31st, 2020 (Gralinski and Menachery, 2020). As a result of COVID-19’s highly infectious

nature, in January 2020, different parts of China and different countries in Asia gradually started to report their first cases of COVID-19. Among the many countries in Asia, Japan, Thailand, Vietnam, Singapore, South Korea, India, and the Islamic Republic of Iran (Iran) were on the initial list of countries reporting their first cases of the outbreak. Between January and April 2020, almost every country in the world was fighting against COVID-19. As of April 30th, 2020, more than 3,193,886 cases of COVID-19 have been reported in 225 countries and territories, resulting in 227,638 deaths. In addition, 972,719 people have recovered (Gisanddata, n.d.²). At the time of writing this paper (April 2020), the US has the highest level of infection followed by Spain, Italy, Germany, and Britain (Figure 1).

In every region and country, from the identification of the first infected case to the gradual spread, the fatalities and the initiatives to fight COVID-19 are reported in different types of media. In every country, from reporting the first case, the government, institutions, and the media have shown their highest levels of concern in addressing the pandemic’s different aspects. Chunara et al. (2012) argued that, during infectious disease outbreaks, in the initial weeks, it may not be possible to have adequate and appropriate data from health institutions and officials. This absence of institutional reports and data may hinder early epidemiological assessment (Chunara et al., 2012), with all sectors of a country and all strata of society relying on the media. The media frame our understanding and create powerful forces at both individual and societal levels during all critical incidents. The media can also negatively affect the mental health of readers and viewers after any tragic events (Hawdon et al., 2014). Thus, the media are said to have a proactive role in shaping actions of the mass populations and thereby influence policy actions. The print media are considered an especially crucial factor in taking information to the masses.

The COVID-19 pandemic has established its association with every aspect of life, ranging across health, society, the economy, politics, the environment, sports, recitation, arts and culture, the media, innovation, and technology. The pandemic has led to disruption, postponement, or cancellation of hundreds of important national and international religious, political, and cultural events, including the Tokyo Olympics (The New York Times, 2020). Widespread shortages of supplies have been exacerbated by panic buying (CNBC, 2020). Schools, colleges, and universities have closed either on a nationwide or local basis in 197 countries, affecting ~91% of the world’s student population (United Nations Educational, 2020). After the initial outbreak of COVID-19, conspiracy theories, misinformation, and disinformation emerged regarding the origin, scale, prevention, treatment, and other aspects of the disease (British Broadcasting Corporation, 2020). Misinformation and disinformation spread through social media (Kassam, 2020; McDonald, 2020) and text messages (The Financial Times, 2020), as well as the print and broadcast media

¹Recode (n.d.). Available at: www.vox.com/recode.

²Gisanddata (n.d.). Available at: <https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>.

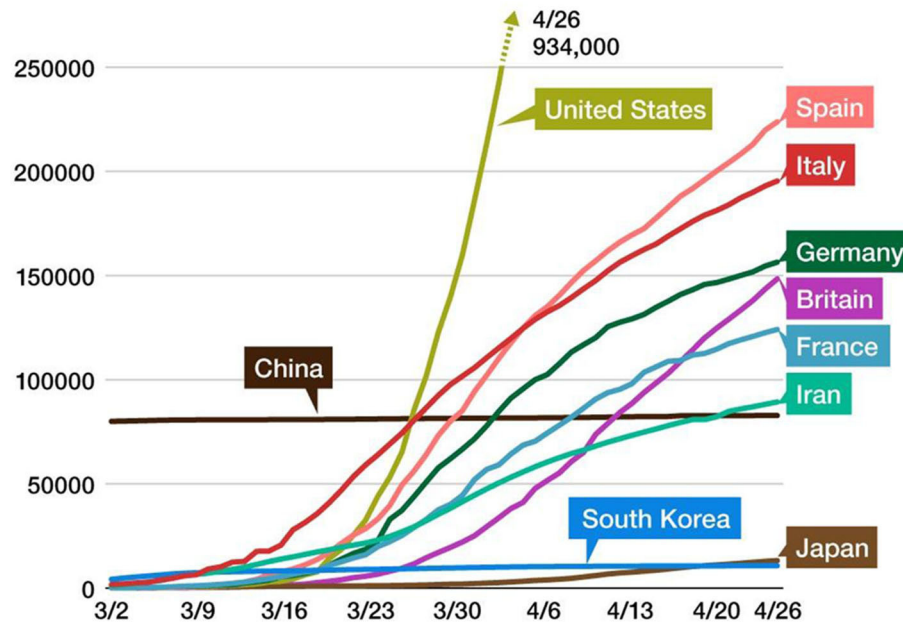


FIGURE 1 | Countries with the highest number of coronavirus disease 2019 (COVID-19) infections up to April 26th, 2020 (source: <https://www.nippon.com/en/japan-data/h00673/>).

of countries such as China, Iran, and Turkmenistan (Kassam, 2020; The Diplomat, 2020; The Jerusalem Post, 2020).

Following the experiences of China and Japan, other countries in Asia started their fights against the COVID-19 outbreak at different times from January to March 2020. All affected countries came forward to manage the pandemic their own way, following the lessons learned from China and Japan. Concerns in affected countries were highlighted by every form of media by presenting news, perceptions, and opinions related to the COVID-19 outbreak. However, in this world of the Internet and social media, different forms of media and approaches are continuing to be used to convey and spread the news. Nevertheless, reliability and trust are not always the same in all forms of media. Prior research has claimed that the print media are still the most reliable and valued source of information for the public, stating that the print media play a vital role in taking information to the masses and in continuing to shape public opinion in countries (Kuppuswamy, 2017). However, in this information and communications technology (ICT) era, people are reluctant to carry hard-copy newspapers, instead showing their preference for e-newspapers. Therefore, readers of online newspapers or e-newspapers, the digital version of print newspapers, are increasing in number (Hollander et al., 2011; Richardson and Stanyer, 2011). Almost all leading newspapers in different parts of the world have their corresponding e-newspapers. These online versions offer faster access and more updates compared with their print counterparts (Bokesoy, 2008). As online versions or e-newspapers have rapid access, they can spread and update the news about COVID-19

more quickly to large communities worldwide. Notably, the English-language versions of e-newspapers in affected countries continue to play a pivotal role in informing the world about the spread and infection of COVID-19, the preparedness and awareness situation, institutional efforts, and other critical issues.

From the literature review, it can be said that the media have a proactive role in shaping the mass population's actions, thereby influencing policy actions. The print media especially are considered a key factor in taking information to the masses. With the shortage of institutional reporting and COVID-19 results, all industries in a nation and all strata of society depend on the media. In the present study, newspapers, and especially their opinion sections, have been deluged with concerns about the COVID-19 pandemic. Expert opinions and editorials are the key sections of newspapers reflecting, as they do, experts' perceptions and thoughts. Therefore, this study aims to examine experts' views as expressed in the e-newspapers of five Asian countries from different regions, covering diverse socioeconomic and geopolitical settings, namely, South Korea, Singapore, Iran, India, and Bangladesh, with one leading English-language e-newspaper of each country selected. The study, as documented in this article, explores how experts' perceptions in the studied countries present different aspects of life. By intensive text mining in each selected e-newspaper, experts' opinions were found to address diverse issues regarding COVID-19. Different issues were grouped into the following eight categories: health and drugs, preparedness and awareness, social welfare and humanity, the economy, governance and institutions,

politics, the environment and wildlife, and innovation and technology. This pioneering study of five different e-newspapers in Asian countries from January to March 2020 presents a similar picture of experts' concerns and their roles in shaping responses to health crises; thus, it plays a role in contributing to policy actions.

ASIA'S CORONAVIRUS SITUATION: FOCUSING ON THE STUDIED ELECTRONIC NEWSPAPERS IN SELECTED COUNTRIES

The World Health Organization (2020a) declared the outbreak of a "Public Health Emergency of International Concern" on January 30th, 2020, and a "Pandemic" on March 11th, 2020. Using COVID-19 data compiled from the WHO's "Coronavirus disease (COVID-2019) situation reports" <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>, Wikipedia's heading "COVID-19 pandemic" https://en.wikipedia.org/wiki/COVID-19_pandemic, and Johns Hopkins University's "Coronavirus Resource Center" <https://coronavirus.jhu.edu/map.html>, this article presents the exact numbers of confirmed cases and recovered cases and the death toll in each selected country in this study. **Table 1** presents information on the date of the first confirmed case, the total number of confirmed cases, recovered cases, and deaths as well as the mode of transmission in the selected five Asian countries. **Table 2** presents the cumulative affected cases and deaths by months from January to March 2020 in the selected five Asian countries.

The first confirmed case of COVID-19 in South Korea was announced on January 20th, 2020. South Korea introduced one of the most extensive and best-organized epidemic control programs in the world. As a result of such programs, up to April 30th, 2020, the country had only 10,765 confirmed cases with 247 deaths. The first case of COVID-19 in Singapore was confirmed on January 23rd. Like South Korea, Singapore took strict measures to stop the spread of COVID-19; thus, up to April 30th, they had only 15,641 confirmed cases and 14 deaths. On the other hand, Bangladesh and India are developing countries with almost half the population living below the poverty line. The first case was reported on March 7th in Bangladesh and on January 30th in India. The two countries, up to April 30th, had 7,103 and 33,050 confirmed cases, respectively. Experts have criticized the low number of tests conducted in Bangladesh with its population of over 160 million. Newspaper reports and social media are continuing to report additional deaths of patients with COVID-19 symptoms.

Experts have suggested that the number of infections could be much higher as India's testing rates are among the lowest in the world, even though it is the world's second most populous country with 1.35 billion people. Furthermore, Iran reported its first confirmed cases of COVID-19 infections on February 19th, 2020. The number of confirmed cases is 93,657, up to April 30th, with 5,957 deaths. Owing to accusations directed at the government in Iran of cover-ups,

and censorship, and mismanagement, some external estimates of the number of COVID-19 deaths are much higher than those from government sources.

MATERIALS AND METHODS

As every part of the world, ~213 countries and territories, and every aspect of life are now associated with the COVID-19 pandemic, all forms of media are highlighting the news, opinions, and concerns related to COVID-19. How different countries in Asia and their print media are shaping the concerns and worries related to the outbreak are explored by this study. The approach taken by this study in its selection of countries and e-newspapers and the issues that it has chosen to cover are presented in **Figure 2**.

Selection of Countries

As the scope of simultaneously focusing worldwide would be too broad, in this study, only five countries, namely, South Korea, Singapore, Bangladesh, India, and Iran, from four regions of Asia were selected. As many Asian countries were among the first to be affected by the COVID-19 outbreak, it was determined by the present study that Asian countries would be the central focus of the study. The COVID-19 pandemic began in Asia in Wuhan, China, and has spread widely throughout the continent. Among the earliest Asian countries to report COVID-19 cases after the outbreak in China were Japan, South Korea, Singapore, Taiwan, and Vietnam. Therefore, after China and Japan, South Korea and Singapore were the next two countries to receive greater attention from the media about the COVID-19 outbreak, its impact on society, health, and the economy; control measures; government initiatives; etc.

The coronavirus pandemic in South Korea, at one stage, appeared terribly out of control, with skyrocketing new cases and a large cluster of people experiencing illness, rendering the country the next most affected outside China. In South Korea, on February 18th, 2020, the pandemic unexpectedly spread. Over 2 weeks, the caseload rose by a factor of 180, with 909 daily cases on February 29th, 2020. However, the chaos soon dissipated. South Korea began reporting evidence of reduced numbers on March 6th, 2020, from more than 200 infected cases per day to <100 cases per day. In comparison to many other countries, South Korea has taken a stronger stance to control and minimize the risks of COVID-19. For example, in the US on January 20th, 2020—the same day that South Korea discovered its first outbreak—the overall incidence on March 31st, 2020, reached 163,000, with at least 2,860 deaths. Spain and Italy also failed to minimize the spread. These results have prompted the present study to select South Korea as one of the study settings and to evaluate the facts through online media analysis. Furthermore, South Korea has proven that COVID-19 can be contained in another way. Businesses have carried on as normal, and no town has been shut down. Life in South Korea is back to normal, with new cases declining.

According to the WHO, outside China, Singapore has the highest level of contact with Wuhan, with an estimated 3.4 million people traveling between Wuhan and Singapore annually.

TABLE 1 | Number of people affected by coronavirus disease 2019 (COVID-19) in selected five Asian countries (to April 30, 2020).

Country	Confirmed cases ^a	Recovered cases	Deaths	Transmission classification ^b	Date of first confirmed case
South Korea	10,765	9,059	247	Local transmission	20 January 2020
Singapore	15,641	1,188	14	Local transmission	23 January 2020
Bangladesh	7,103	150	163	Local transmission	07 March 2020
India	33,050	8,325	1,074	Local transmission	30 January 2020
Iran (Islamic Republic of)	93,657	73,791	5,957	Local transmission	19 February 2020
Total	160,216	92,513	7,455		
Global percentage	5.02	9.51	3.27		

World Health Organization (WHO), Wikipedia, and Johns Hopkins University.

^aNumbers include both domestic and repatriated cases.

^bLocal transmission indicates locations where the source of infection is within the reporting location.

TABLE 2 | Compilation of data of the number of people affected by COVID-19 in selected Asian countries.

Country	Affected by month			Deaths by month		
	January	February	March	January	February	March
South Korea	11	3,150	9,887	–	17	165
Singapore	16	102	926	–	–	3
Bangladesh	–	–	51	–	–	5
India	1	3	1,397	–	–	35
Iran	–	593	44,606	–	43	2,898
Total	11,836	83,911	140,599	243	2,935	6,475

Compiled from the existing data sources of the WHO, Wikipedia, and Johns Hopkins University.

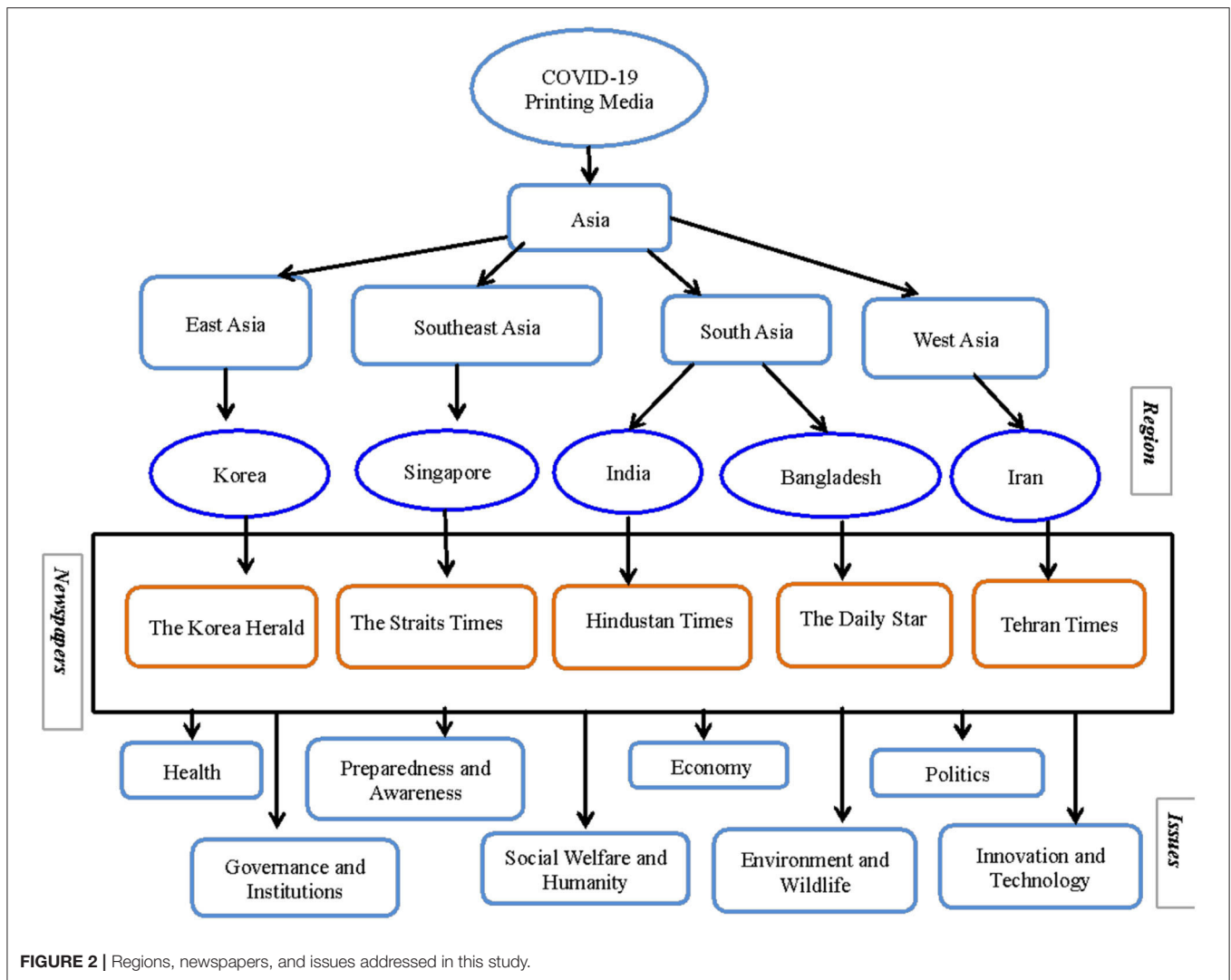
These travelers formed the greatest potential existential threat as a result of COVID-19 (World Health Organization, 2020b). However, despite this threat, it is interesting to note that the rate of the spread of coronavirus infection in Singapore has been one of the slowest worldwide (Kuguyo et al., 2020). Singapore, very early on, had its first case of COVID-19, a Chinese tourist who arrived on January 23rd, 2020, from Wuhan, thus placing the virus epicenter in total lockdown that same day to ensure safety. However, an alarming exponential rise occurred within 2 weeks of the first case among the migrant worker population of Singapore—the hundreds of thousands of men from developing countries working in manufacturing, shipping, and maintenance. Singapore is totally dependent on these workers to keep its economy functioning, and they carry out jobs in which social distancing is impossible. These workers are also required by law to live in dormitories (dorms)—private facilities that house up to 12 men per room, with shared bathroom facilities, cooking facilities, and social facilities. It seemed almost inevitable that these dorms would become clusters of infection, with this proving to be the case. One facility alone accounted for 15% of all national cases. Singapore used a robust legal framework and political strategy to control the pandemic in this island nation. Therefore, Singapore is a key state to study in order to understand the application of regulations to control the COVID-19 pandemic.

Bangladesh and India received attention from both print and social media as these two developing countries are the most populous countries in the world. Media reports on how the

governments of these two countries were handling the COVID-19 situation proved to be popular, with readers and viewers keen to see how they were tackling the health, employment, and economic crises that have arisen during the pandemic. On the other hand, Iran is considered a unique country in Asia in terms of its geographical location, religion, economy, technology, and government, and facing as it does long-term sanctions from societies across the world. Therefore, considering these diverse geographical, social, cultural, economic, and political backgrounds, South Korea, Singapore, Bangladesh, India, and Iran were selected purposively for the present study. The present study reviews and reports the role of the print media in relation to COVID-19 in these five countries. Only expert opinions and columns under the “Opinion” sections of the top five circulated English-language newspapers from these five countries were selected for the study.

Selection of Newspapers

Taking into consideration newspapers' reputation, position, and daily print circulation, five English-language daily newspapers from the five selected countries were considered for this study. These comprised *The Korea Herald* (South Korea), *The Straits Times* (Singapore), *The Daily Star* (Bangladesh), *Hindustan Times* (India), and *Tehran Times* (Iran). All the newspapers had both print and online versions, with pages/accounts in different social media including Facebook, Twitter, YouTube, LinkedIn, and Instagram, as well as having apps in the Google Play Store



and the App Store for Android and Apple mobile phone users, respectively (Table 3).

Text Mining From Opinion Sections

Instead of regular news items, the opinions of guest authors (experts and scholars) related to the recent outbreaks of COVID-19 in the selected five Asian countries were analyzed in this study. All the selected newspapers published opinions, thoughts, concerns, advice, and suggestions of experts and editors worldwide in their “Opinion” sections. These opinions were also expressed in the “Editorial” (statements made by the Editor on behalf of the newspaper itself), “Viewpoint,” and “Opinion” in the selected newspapers. Considering these various sources, the Opinion section can be defined as an article, usually published in a newspaper or magazine, that mainly reflects the author’s opinion about a subject or a recent issue without claiming objectivity. The opinion expressed is

intended to supplement the news sections and to provide for the exchange of ideas. On the other hand, text mining (also referred to as “text data mining” or “text analytics”) is the prime approach used in this research to gather critical concerns and focus on experts’ perceptions and opinions as expressed in the text. The fundamental virtue of the text-mining approach is its timeliness; information from online text sources can be easily collected and promptly available for various uses (Pyo and Kim, 2019).

Primary Issues Used in Text Mining

To the best of our knowledge, this is the first study that applies text mining analysis to COVID-19 studies. Despite the increasing importance of the text mining approach in the COVID-19 literature, with the exception of Jahanbin and Rahmanian (2020) study, no similar study has been completed on COVID-19 either in the Asian region or in the rest of the

TABLE 3 | Details of study areas and English-language dailies searched in this study.

Country	Geographical region	Name of newspaper	First published	Daily print circulation (approx.)	Version	Position in the country ^a	Social media	Registered online users (approx.)
South Korea	East Asia	<i>The Korea Herald</i>	August 1953	35,000	Both print and online	First	Facebook, Twitter, YouTube, Instagram	Data deficient
Singapore	Southeast Asia	<i>The Straits Times</i>	July 15, 1845	968,000	Both print and online	First	Facebook, Twitter, LinkedIn, Instagram	370,000
Bangladesh	South Asia	<i>The Daily Star</i>	January 14, 1991	55,000	Both print and online	First	Facebook, Twitter, YouTube, Instagram, Pinterest	Data deficient
India	South Asia	<i>Hindustan Times</i>	September 26, 1924	945,221	Both print and online	Second	Facebook, Twitter, YouTube, Instagram, LinkedIn, news feed	2,800,000
Iran (Islamic Republic of)	West Asia	<i>Tehran Times</i>	May 21, 1979	100,000	Both print and online	First	Facebook, Twitter, Instagram, news feed	Data deficient

All the information collected from the websites of each newspaper: ^aPosition in the country based on daily print circulation of English-language dailies.

world. The present study grouped all the diverse discussion points under the eight primary issues below. To examine experts' opinions related to COVID-19 and how these opinions are guiding societies in the respective countries, text mining was undertaken in alignment with these issues. Each issue was investigated by keyword searching and after the keyword search, the keyword-related concerns were carefully examined to explore why and how the experts expressed their concerns related to these keywords. These issues formed eight broad categories: (i) health and drugs, (ii) preparedness and awareness, (iii) social welfare, (iv) governance and institutions, (v) politics, (vi) the economy, (vii) the environment and wildlife, and (viii) innovation and technology (**Table 4**). This study sought to analyze how the perceptions of editors and experts and the features related to COVID-19 were being highlighted, thus shaping these critical issues in people's lives and livelihoods in the five selected countries.

Study Period

After COVID-19's emergence in China, it became the focus of the print media worldwide from mid-January 2020. The present study therefore collected data from the published Opinion sections from the five English-language daily newspapers from the selected five Asian countries between January 20th, 2020, and March 31st, 2020.

Data Analysis

The study employed a qualitative data collection technique using a checklist to collect data from the Opinion sections of the five newspapers. The checklist was developed based on the eight broad categories of primary issues, and data (using text mining) were arranged under these categories for further analysis. Before data compilation began, the checklist was thoroughly checked and edited: the data were then interpreted following the content analysis technique. During content analysis and interpretation, the study, to some extent, sought to conceptualize some theories

related to the media, the press, and the sociocultural aspects of the study.

Media Theories and Theories of the Press

This study was initially motivated by the media richness theory (MRT) which was introduced by Lengel and Daft (1989). This theory is mainly used to rank and evaluate the richness of different forms of communication media. However, in the present study, instead of ranking or evaluating different forms of media, comparative perspectives of different newspapers from selected countries were examined. As the basic idea behind the MRT is that the media can be better or worse in transmitting social cues, in resolving ambiguity, or in providing immediate feedback (Hoof and Boell, 2019), this study attempted to evaluate how the selected newspapers presenting experts' concerns transmitted different aspects related to the pandemic and how they resolved ambiguity.

Different theories of the press argue that state systems, ownership, politics, and economics also shape the concerns of the media (Ostini and Ostini, 2002). Although the present study was not oriented to the media theory-based analysis of newspapers' concerns, it attempted to understand how these issues shaped the thoughts published in different newspapers.

Hofstede's Cultural Dimensions Theory

Furthermore, during this analysis of experts' views published in the newspapers from the five selected countries, the present study sought to explain the relationships between the cultural differences of these countries and their effects on the eight broad categories of issues. Hofstede (1984) model was used to explore the cultural differences between the selected countries. Hofstede's cultural dimensions theory is a framework for cross-cultural communication, developed by Geert Hofstede at the end of the 1970s (Hofstede, 1984). The theory was one of the first quantifiable theories that could be used to explain observed differences between cultures (Hofstede, 1991). Hofstede's model consists of six dimensions of culture: power

TABLE 4 | Study's scope on the role of print media in five Asian countries in the COVID-19 pandemic.

Selected countries	Selected newspapers	Section of the newspapers	Study duration	Key aspects of study focus
<ul style="list-style-type: none"> • South Korea • Singapore • Bangladesh • India • Iran (Islamic Republic of) 	<ul style="list-style-type: none"> • <i>The Korea Herald</i> • <i>The Straits Times</i> • <i>The Daily Star</i> • <i>Hindustan Times</i> • <i>Tehran Times</i> 	<ul style="list-style-type: none"> • Opinion (Editorial, Viewpoint) • Opinion (ST Editorial) • Opinion (Opinion, Editorial) • Opinion (Opinion, Editorial) • Opinion (Opinion, Editorial) 	January–March	<ul style="list-style-type: none"> • Health and drug • Preparation and awareness • Economy (employment, production, and supply) • Politics national and world • Governance and institutional • Social welfare and humanity • Sports • Environment and wildlife • Media and technology

distance, uncertainty avoidance, individualism vs. collectivism, masculinity vs. femininity, long-term orientation vs. short-term orientation, and indulgence vs. restraint (Hofstede et al., 2010). Using Hofstede's model, the similarities and dissimilarities in the highlights of the selected countries' newspapers were examined. The selected countries had different scores in these six dimensions of culture, with these scores providing some explanation regarding the priority and focus of an issue in a specific country.

RESULTS

Experts' concerns related to the COVID-19 pandemic, published as editorial thoughts or in "Opinion" sections in the leading e-newspapers of five Asian countries in the initial 3 months of the pandemic, were analyzed. The study's results are presented in this section and organized according to the eight issue categories identified as being associated with the COVID-19 pandemic, under each of the following subheadings.

How the Asian Print Media Shaped the Pandemic COVID-19 Situation

Sue Llewellyn, the famous BBC journalist, advised all media as follows: "[a]t times of crisis, we turn to experts—but news outlets and social media must be careful about the information they share, particularly informally" (Llewellyn, 2020). Her statement indicated the important role played by the media in shaping the news during this kind of health crisis. In the present study, it was noticed that the different e-newspapers from the five Asian countries had their own approach and focus when highlighting aspects of life associated with the COVID-19 pandemic. The study's findings showed that different countries took dramatically different approaches to managing the pandemic. These variations were marked by prior experience and preparation and included early reinforcement of strict vigilance, testing, and isolation vs. late enforcement; strong vs. weak levels of public awareness; self-restraint; commitment; and other factors (Djalante et al., 2020). These different approaches were reflected in the analysis and concerns of experts as expressed in the leading newspapers of the five studied countries.

Print Media in South Korea: *The Korea Herald*

Despite its role as a global manufacturing giant, South Korea is more concerned about the politics between North Korea and South Korea and "try[ing] to avoid panicking" whenever the North Korean government in Pyongyang takes apparent steps to transform its capital, Seoul, into an "ocean of fire." That same South Korea is now taking the lead and trying not to panic in the face of COVID-19, by minimizing the death toll and stopping the spread from affecting the whole nation. Following the first confirmed case of COVID-19 in South Korea on January 20th, 2020, despite a gradual rise in cases, the coronavirus was under control (Dudden and Marks, 2020). However, the whole scenario changed on February 18th with the 31st patient in Daegu. Within 2 weeks, the total number of infected people increased from 31 to 3,000 residents.

The first patient infected with COVID-19 in South Korea, a 35-year-old Chinese woman, was identified on January 20th, as confirmed by Korea Centers for Disease Control and Prevention (KCDC) (now known as the Korea Disease Control and Prevention Agency). However, the government and the KCDC were not sufficiently prepared to respond immediately. Subsequently, the whole situation developed into an epidemic when the 31st COVID-19 positive patient attended a social gathering. From that point, South Korea's news media began to track COVID-19 and all related issues, including prevention, protection, and isolation, and impacts on the economy, education, politics, and social affairs. **Table 5** below shows critical editorials published from January 20th to March 31st, 2020, in *The Korea Herald* addressing different issues associated with COVID-19. However, at different periods, the editorial focus shifted from health to the economy to politics.

Health and Protection

On January 22nd, an editorial published in *The Korea Herald* reported that the virus could be present in saliva and was possibly spread by airborne particles from coughing or sneezing. It suggested that it was wise to take simple precautions such as wearing masks and washing hands. Furthermore, the authorities raised the alert level for infectious diseases from "attention" to "caution," following the first confirmed case of the virus. Editorials published in early February 2020 in *The Korea Herald* suggested precautions against the threat of community-based

TABLE 5 | Issues related to COVID-19 addressed by *The Korea Herald* editorials (January–March 2020).

Month	Health and protection	Economy and industry	Isolation and treatment	Politics	Recovery	Total
January	4	0	0	0	0	4
February	3	4	6	7	0	20
March	3	18	4	4	7	36
Total	10	22	10	11	7	60

The Korea Herald (January 20–March 31, 2020).

transmission. Experts advised the authorities to recognize the possibility of community spread and to concentrate their efforts on the early detection of infections, symptom relief, and the prevention of further infections.

Editorials from mid-February and later clearly indicated the limitations of the local and federal governments of South Korea in controlling the spread of COVID-19. Cases were increasing sharply in Daegu and nearby North Gyeongsang Province. The rapid increase in the number of COVID-19 patients stretched the capacity of the nation's epidemiological investigators. The number of cases grew to about 140, fueling fear that the situation could be developing into an epidemic. Experts had earlier warned that it would be hard to control the spread of the coronavirus in the community and had called on the government to take proactive measures, including a temporary entry ban on visitors from all parts of China. However, the government turned a deaf ear and followed the “business as usual” strategy, seeking to minimize the COVID-19 scenario in South Korea. Experts and editors expressed views in the media that the government's limited understanding and its emphasis on fair trade and economic relations with China would cause a sharp impact.

The Economy and Industry

From the onset of the outbreak in South Korea, the COVID-19 epidemic began to affect the country's economy from consumption to production, as well as its financial market. An editorial, published in *The Korea Herald* on February 4th, highlighted concerns over the rising number of local infections, reporting that the spread of COVID-10 was expected to reduce domestic consumption by 0.3–0.4% in 2020.

Within the initial 10 days from February 1st to 10th, South Korea's stock prices tumbled 7.28%, the second steepest decline (after Hong Kong) among Asian markets, excluding mainland China.

The Editorial section published on March 2nd reported that government officials had warned the government about the potential negative impact on the economy of the coronavirus spreading. The editorial reported that South Korea's Finance Minister had indicated that the coronavirus could significantly weigh on South Korea's economy unless it was quickly addressed by the government. To overcome economic shortages and to protect low- and middle-income groups and the domestic market, President Moon Jae-in's administration proposed an extra budget worth 11.7 trillion won (US\$9.86 billion) to help deal with the mass outbreak of COVID-19. The Bank of Korea

has slashed its growth outlook from 2.3% at the beginning of 2020 to 2.1%.

The national debt-to-gross domestic product (GDP) ratio was projected to exceed 45% of a per capita basic income. In the same Editorial section, experts proposed a focus that would offer a range of specific support measures tailored for more vulnerable people, including small business owners, small manufacturing industries, and domestic help. Experts advised that it would be more realistic and efficient if the government pushed for an across-the-board cut in taxes at least temporarily, which would have the same effect as putting more cash into consumers' pockets and would help to ease the mounting difficulties faced by companies.

Furthermore, the unemployment issue was raised in the Editorial section as an outcome of COVID-19. South Korea has faced an unemployment surge due to the COVID-19 crisis and the job situation is rapidly worsening. Even before the outbreak, the employment situation was already in bad shape. Fiscally created part-time jobs had barely buttressed employment growth for those aged 60 and older. Jobs for those in their 40s were on the decline. Manufacturing had continually shed jobs for 21 straight months through December 2019.

Isolation and Treatment

In early March 2020, the number of confirmed cases of COVID-19 was reported as topping 3,000 on February 29th and 4,000 on March 2nd. In terms of the number of confirmed cases per one million people, South Korea had reportedly surpassed China, where the virus originated. With a surge of COVID-19 infections, South Korea had reached the pitiful state where it was being treated as a “second Wuhan” by the international community, as written on February 25th in *The Korea Herald* editorial. Countries like Hong Kong, the Philippines, the USA, Morocco, and Taiwan closed their borders to South Korea to isolate South Koreans. Some apartment buildings in Beijing, China, reportedly insisted that South Koreans quarantine themselves for 14 days before entering. Experts expressed the view that the root cause of South Koreans being shunned was that the South Korean government had not stopped the influx of COVID-19 from China.

To provide the best treatment, the government declared that it would quarantine people with mild and moderate cases of COVID-19 in public facilities, in a bid to focus on the treatment of severe cases in hospitals, with this reported in the Editorial section on March 2nd. However, the experts and the general

public thought that this decision should have been made much earlier to avoid reaching this point.

Although South Korea had about 1,000 of the negative pressure rooms needed to treat COVID-19 patients, the number of confirmed cases topped 3,000 on February 29th and 4,000 on March 1st. The Minister of Health stated the government would not hospitalize everyone with a confirmed case. Patients would be stratified into four groups depending on the severity of their illness. Only those in the two most serious categories would be admitted to hospitals for treatment, while those with less severe cases would receive medical help in other public facilities.

Based on the experience in Daegu and North Gyeongsang Province, experts warned the Seoul local government that, with the slightest slip, the situation in the Seoul area could get much worse. Seoul is a cosmopolitan city: more than 25,000 people use Guro Station every day, while about 100,000 enter and exit Sindorim Station daily. Approximately seven million people ride the Seoul subway every day. Most subway trains are crowded at rush hour, and countless buses stop near subway stations. With its understanding of the urgency, the government introduced proactive measures to encourage people to work from home. These measures also encouraged employers to offer flexible work schedules and increased distance between workers. The KCDC increased their efforts and established a system of working from home to minimize community infection.

From March 22nd, editorials focused on better treatment and control, with South Korea's COVID-19 situation still uneasy but showing signs of calming down. However, experts advised that if the authorities failed to effectively control overseas travel and entry into South Korea, the country could suffer a second wave of COVID-19 outbreaks similar to what had hit Daegu and North Gyeongsang Province.

Politics

With Daegu's rapid increase in COVID-19 infections during March 2020, the US State Department raised its travel advisory for Daegu to level 4. It warned US citizens to "not travel" to this southeastern South Korean city. It was thought that if Washington barred entry to travelers from South Korea, other countries would be likely to follow suit. The US-South Korea trade would then shrink, exposing the domestic economy to a major crunch. South Korea countered Japan's effective entry ban with reciprocal measures, but it was thought that an emotional battle or extreme confrontation would be detrimental to both countries. The fundamental solution is to contain the spread of the COVID-19 outbreak as quickly as possible.

Japan next began to restrict the entry of visitors from China. South Korea has still kept its doors open to China, except for those from Hubei Province. Some stated that Japan's restriction was meaningless and too late, as the number of confirmed infections in Japan had already topped 7,000. The concerns in South Korea about being isolated have not yet abated, with views expressed that something went wrong from the beginning.

Recovery

The important points for recovery were that the KCDC needed to precisely assess the situation and make decisions before COVID-19 did, with swift follow-up and execution by the government.

These were the critical features of discussions on prevention and disease control. Experts emphasized the proactive role needed from the South Korean government to contain COVID-19. If the government waited until hospital beds ran out and did not make the mass-scale quarantine decision, this would be the worst event in South Korean history and extremely damaging for the economy.

All manufacturing industries in South Korea took a complete U-turn, while the government injected more than US\$13 billion in emergency funds to stoke economic activities sapped by the fast-spreading COVID-19 and to balance international trade with neighboring economies (Yoon and Wong, 2020). The current ruling party considered the 11.7 trillion won (US\$9.6 billion) extra budget bill, submitted to the parliament earlier in March 2020, as being insufficient to help with the fight against COVID-19 and to minimize its economic impact.

Print Media in Singapore: *The Straits Times*

On January 23rd, 2020, the first COVID-19 infection in Singapore was detected in a visitor from Wuhan (Young et al., 2020). Immediately after that, different forms of the news media started to focus on the news and experts' opinions related to the outbreak. *The Straits Times*, considered one of Singapore's leading English-language newspapers (based on the number of readers and circulation), began to publish regular concerns and the perspectives of scholars. These perspectives covered a wide range of issues. However, the economy, social welfare, humanity, and politics were the aspects that received the highest priority in connection to COVID-19. Preparedness and awareness generation and focusing governance and institutional efforts also received attention, whereas the environment, technology, and innovation were minimally mentioned. However, these priorities did not remain the same from January to March 2020 (Table 6).

As January 2020 was the beginning of Singapore's experience with the COVID-19 outbreak, January's editorial began with preparedness and awareness and then institutional efforts. Naturally, with the first case only just identified in Singapore, this was not the time to be concerned about issues such as the economy, politics, and social welfare. These critically important issues received attention from February and achieved their highest focus in March. The extent to which the different aspects of life during COVID-19 received experts' attention from January to March 2020 is analyzed in this section.

Health and Drugs

The COVID-19 outbreak was now regarded as a pandemic and treated as a global health concern (Wang et al., 2020). Health concerns were now extended and affected all aspects of life. Despite the lack of any direct opinions or concerns related to health and drugs in Singapore's leading newspaper's editorials, this was implied in all aspects of the concerns and perception expressed.

Preparedness and Awareness

Preparedness and awareness are considered vital issues in controlling and managing any risk or hazard. Scholars have advised that institutional and health care systems' preparedness be established to prevent any virus outbreaks (Jeon and Kim,

TABLE 6 | Issues related to COVID-19 addressed by *The Straits Times* editorials (January–March 2020).

Month	Preparation and awareness	Social welfare	Governance and institutions	Politics	Economy	Environment and wildlife	Innovation and technology, and media	Total
January	1	0	1	0	0	0	0	2
February	3	2	1	3	4	0	1	14
March	2	5	3	4	4	1	1	20
Total	6	7	5	7	8	1	1	36

<https://www.straitstimes.com/opinion/st-editorial?page>.

2016). Singapore reported its first case of COVID-19 infection on January 23rd. Since then, the country has been praised for its different preparedness and awareness initiatives. However, as of April 30th, Singapore had the highest number of infected cases in Asia, except for China, numbering 15,641, as reported at <https://covidstrep.moh.gov.sg/>.

Along with the need for institutional efforts, experts focused their attention on preparedness and awareness generation, with this reflected in *The Straits Times*, the leading English-language newspaper in Singapore. In February 2020, experts sought to raise citizens' awareness of authorities' recommendations for the frequent washing of hands with soap and water which could serve as an effective safeguard. At the same time, experts attempted to increase the government's preparedness, urging that Singaporeans needed to play an essential role in minimizing the risks of local spread. It was emphasized that COVID-19 knew no borders and that distance did not matter in the age of globalization and air travel. After February 2020, when the number of cases was overwhelmed by those in March, the newspaper's editorials imposed the warning that COVID-19 would not be the last pandemic. Therefore, experts advised that countries could and should plan now for how to meet the next challenge. Editorial comments extended this concern by stating that health care systems were in danger of being overwhelmed in some countries, where it had never been imagined that they would face a crisis of such proportions.

Social Welfare and Humanity

In early February 2020, *The Straits Times* started to emphasize issues of social welfare and humanity associated with the COVID-19 outbreak. In fact, from early February 2020, people in different parts of the world started to express their hate and discriminatory attitudes toward Chinese people and people of Chinese appearance, as Wuhan, a city in China, was the epicenter of the virus. Editorials published in the leading Singaporean English-language newspaper considered this sensitive issue, warning at the very early stage of the outbreak that "creeping discrimination in Singapore is in danger of feeding into a malevolent international pattern. Sentiments against citizens of China have emerged among some groups" (Straits Times, 2020b). Editorials expressed appreciation for different forms of public support; for example, GrabCare helped health care workers to travel to and from health care facilities, donations of different forms were made such as through Courage Fund, etc., with

all mentioned in the editorial to highlight and appreciate the humanitarian efforts of people and organizations.

From March 2020, along with different approaches to donations and support for frontline workers dealing with the outbreak and for the general public, humanitarian initiatives were undertaken by the Singapore government. The government initiated its own 1-month pay cut to show solidarity with Singaporeans coping with the COVID-19 outbreak. At the same time, public officers on the front line received up to one extra month's special bonus in recognition of their efforts in battling COVID-19. Newspaper editorials urged social responsibility to safeguard public health and warned that fear and panic had also led to selfish acts of self-protection. In the last part of March 2020, experts writing in *The Straits Times* initiated efforts to increase readers' sense of hope, stating how people and neighbors in different parts of the world were extending support to each other's mental health.

Governance and Institutions

Shortly after the detection of the first case of COVID-19 in Singapore, initiatives from the government and various institutions began to emerge. The present study has already highlighted that the Singapore Ministry of Health issued a health alert that patients with pneumonia and recent travel to Hubei Province should be screened for SARS-CoV-2 (now COVID-19) infection, and all individuals suspected of being infected were isolated. Extensive contact tracing was undertaken followed by the quarantine of asymptomatic contacts and hospital isolation and screening of symptomatic contacts with all strictly enforced (Young et al., 2020).

In January 2020, the editorial in *The Straits Times* expressed its first opinion regarding COVID-19 and governance, advising all institutions that the fear of infection was an understandable response. However, it continued by stating that discrimination against people was out of sync with both Singapore's moral imperatives and practical needs, with foreigners an integral part of its globalized economy. It also highlighted China's institutional efforts, referring in February 2020 to the comment made by the head of the World Health Organization (2020a) and the study by Harvard University experts that focused on Singapore's efforts. The latter study highlighted that Singapore's approach to the COVID-19 outbreak was the "gold standard." In March 2020, news editorials directed their attention to the strict rules of the government to control the coronavirus outbreak. In mid-March 2020, when over 160,000 people were stricken by COVID-19

across 118 nations, the experts' views expressed in editorials addressed the efforts of different governments over the previous 3 months to keep the virus and its rapid spread under control. Various countries' efforts, such as tightened border controls, expanded flight restrictions, and travelers banned from specific regions, were mentioned in editorial discussions. In the last part of March 2020, the editorial reflected the concerns that resulted in the government instruction to Singaporean residents or long-term pass holders who insisted on leaving the country, despite advice to not do so. The editorial reminded readers of the government instruction and mentioned that these residents would have to pay full hospital charges if they were admitted for coronavirus-related treatment when they returned.

Although Singapore was praised for its institutional initiatives and its government's active efforts to control the outbreak, the editorial concerns were not very oriented to specific institutional issues nor were institutional attempts criticized in editorials.

Politics

No concerns regarding politics were reflected in editorials in January 2020. From February 2020, views expressed in *The Straits Times* started to criticize authorities in China for the country's initial paralysis and lack of transparency about the severity of the situation. After China's discovery of the highly infectious virus in December 2019, it was allowed to spread to the far corners of the vast country and to at least another 28 countries and territories. In February 2020, experts urged the necessity of the world's two most powerful nations (China and the US) pausing in their rivalry for primacy and joining hands against COVID-19.

Singapore's general election date was a key focus of editorials in March 2020. Worries were expressed about the possibility of the election being delayed and mention was made of the Prime Minister's concern about whether to delay the election until the COVID-19 outbreak situation improved or to hold it earlier before the situation deteriorated. World politics also received attention from the experts. This mostly criticized US President Donald Trump's delayed response to taking initiatives to prepare for and manage the outbreak. During this pandemic, the timing blame game between China and the US has also been criticized by experts.

The Economy

In Singapore, experts writing in editorials focused on the economy from the first week of February 2020. They reflected on falls in oil prices of more than 15% in the peak period for oil demand in most parts of Europe, the US, and a large part of Asia. Apart from the oil price fall, editorial perceptions in Singapore focused on other issues such as severe reduction in the tourism industry, reduction of GDP, recession in the global economy, and supply chain disruption.

The editorial concerns reflected the downgraded GDP forecast from 0.5 to 2.5% to -0.5 to 1.5% provided by the Ministry of Trade and Industry: it warned of the possibility of a recession. Scholars emphasized government initiatives and budgetary strategies to support businesses, workers, families, and frontline agencies in the face of the ongoing COVID-19 outbreak. They

stated that not only was the coronavirus a public health concern, but it was also an economic challenge.

The Environment and Wildlife and Innovation and Technology

While the issues of the environment and wildlife as well as innovation and technology have a close relationship with the COVID-19 outbreak, experts in *The Straits Times* only stated these crucial issues once, in March 2020. From an environmental aspect, experts' thoughts highlighted the reduction of pollution and the improvement of ecological settings. They stated that birds could be heard singing without the incessant noise of traffic and that the murky waters of the fabled canals in the Italian city of Venice had turned a bright blue-green. Experts also referred to the outcome reported by the European Space Agency which found that the levels of nitrogen dioxide in Asia and Europe were significantly lower than for the same period in the previous year. Experts also alerted readers to the fact that this drop in emissions was likely to be temporary, and that when the pandemic ended and factories reopened, cars returned to the roads, and people started to travel, carbon emissions would spike. The spread of fake news all over the world and the postponed Olympic Games also received attention in the editorials.

Print Media in Iran: *Tehran Times*

Iran in 2000 had 23 Persian-language daily newspapers, three English-language daily newspapers, and one Arabic-language daily newspaper (Joel and Kamalipour, 2000). However, between 2000 and 2004, 85 newspapers were closed down (Kokan, 2004). At present, six English-language newspapers are published in Iran: of these, considering the daily circulation, *Tehran Times* is one of the leading English-language newspapers with an online version. Considering its dominance in the local society and internationally and its online accessibility, *Tehran Times* was selected for the present study's analysis of the perceptions and thoughts of experts in relation to the COVID-19 pandemic. In Iran, the first case of coronavirus was reported on February 19th, 2020. However, even before that case, *Tehran Times* had started to focus on news related to COVID-19. From January to March 2020, the thoughts and analyses of all scholars as they related to COVID-19 were diverse. Their concerns focused on health, awareness, the economy, society, politics, governance, the environment, and technology. How these experts' concerns shaped different aspects of life in Iran with, and disrupted by, COVID-19 is discussed in this section (Table 7).

Health and Drugs

Few direct health-related opinions and analyses were published in *Tehran Times* from January to March 2020. In early March 2020, health-related editorial mainly addressed the emergence and nature of coronavirus-type diseases. In mid-March 2020, another health-related article highlighted the world situation with regard to the spread of COVID-19. The editorial warned that the coronavirus was spreading rapidly, from isolated cases to expanding clusters and into communities.

TABLE 7 | Issues related to COVID-19 addressed by *Tehran Times* editorials (January–March 2020).

Month	Health and drug	Preparation and awareness	Social welfare	Governance and institutions	Politics	Economy	Environment and wildlife	Innovation and technology	Total
January	0	0	0	0	0	0	0	0	0
February	0	0	2	1	1	2	0	0	6
March	2	2	1	1	3	2	1	4	16
Total	2	2	3	2	4	4	1	4	22

<https://www.tehrantimes.com/archive>.

Preparedness and Awareness and Social Welfare

Iran announced social distancing measures in a bid to minimize the spread of COVID-19. In relation to awareness and preparedness, another *Tehran Times* editorial criticized the current situation of armed violence in the US, seeking an answer to the following question: “Which one is the ultimate winner in the United States, COVID-19 or armed violence?” This was an approach designed to increase the world’s awareness of armed forces and preparedness for health issues. In February 2020, expressing a social welfare-type concern, the editorial urged the expression of feelings of empathy toward the Chinese.

Politics

A world politics expert’s view expressed appreciation for Iran’s support to China by the sending of masks. The ambassador of the People’s Republic of China to Tehran started direct communication *via* his Twitter account to reduce the level of fear among Iranians. However, Iran’s social media were critical of Chinese tourists who were spending their New Year holidays in Iran. Experts criticized Iran’s President and, at the same time, asked him to revise his actions. The Chief of the Medical Council of Iran was requested to avoid presenting a “semi-normal” picture of the situation in the country as it dealt with COVID-19. The editorial also expressed the views of doctors who warned the government not to create a false sense of security and not to undermine society’s psychological health (*Tehran Times*, 2020). In terms of politics, the editorial criticized US President Trump’s “maximum pressure” policy that slapped the harshest ever sanctions against Iran.

Governance and Institutions

In February 2020, experts writing in *Tehran Times* attempted to justify the delayed announcement of the outbreak of COVID-19 in the central Iranian city of Qom. The editorial analyzed the government’s roles and duties and the mechanism for announcing the coronavirus outbreak. The editorial stated that, generally, unusual incidents, such as epidemics, should be publicly announced after conducting accurate assessments and detailed probes to avoid creating panic in Iranian society.

In March 2020, when COVID-19 was quickly spreading in Iran and had caused a significant number of deaths, experts on governance issues highlighted the government’s views and recalled the public service values: equity, consistency, sustainability, adaptability, precedent, and free public services. By pointing to these principles, the government, as well as these

experts, reminded and advised public service officials to extend their help and act accordingly.

The Economy

In February 2020, two perspectives related to COVID-19 were published in *Tehran Times*, with one article expressing concerns related to the oil market due to the rapid spread of COVID-19 in China. At that time, the WHO declared the accelerated dissemination of COVID-19 as an emergency for global health and that it created concerns in the world oil market. Following this reflection of oil market concerns, no articles or editorial related to COVID-19 appeared in *Tehran Times* until February 23rd, 2020. However, after the first reported case of coronavirus infection on February 19th, 2020, experts expressed their thoughts in relation to the government’s role, the economy, and world politics. The government’s instructions and its role were mentioned, while economy-related editorial mainly focused on low oil prices and the downward movement of US stock indices. This indicated the worries and forecasts related to COVID-19’s pressure on oil prices. In March 2020, the *Tehran Times* published the opinions of experts that focused strongly on the economy. In relation to concerns about the economy, instead of job losses or losses due to the shutdown of industries, the main focus was related to the travel market and private theater viability. The editorial stated that, in contrast to any previous year, during the peak season in 2020, the travel market faced an adverse hit due to the COVID-19 outbreak, with local and government authorities issuing severe warnings to limit travel between major cities to contain the virus. The government also warned that it might use “force” to limit travel throughout the country if necessary. Furthermore, experts addressed the loss of the private theaters of Iran and urged the government to provide support to minimize the loss.

Apart from these experts’ views and thoughts, different dimensions of news related to COVID-19 were reported in *Tehran Times*, mostly from February 22nd. Less focus was given to the economy, preparedness, and governance, with greater emphasis on sports and the media. The issue of the environment and wildlife, which could have been a prime focus, was missing in almost all issues of the newspaper.

The Environment and Wildlife

From January to March 2020, environmental issues received the attention of experts only once, in early March. Concern was expressed about future warnings and fears related to the environmental consequences that all countries worldwide

may need to bear due to the outbreak of COVID-19. Unlike environmental issues in newspapers in other countries which indicated the reduction of pollution, an opinion in *Tehran Times* was related to hazardous waste generation.

Innovation and Technology and the Media and Sports

With the increasing spread of COVID-19 and fatalities at a very high level in March 2020, the news and editorial focus increased in March 2020. This began in the regular news from February 22nd with thoughts and perspectives of 14 scholars in March. Among the issues raised, the media and technology received more focus than economic, social, and environmental issues. Coronavirus-related fake news, bad news, and concerns related to the reliability of news sources were highlighted in different media-related editorials. Distance learning technology for students during the outbreak of COVID-19 was addressed. Sports-related articles primarily discussed the cancellation of different sports events at national and international levels. During mid-March 2020, the worries expressed by experts were related to the Olympics, reflecting the view that the 2020 Tokyo Olympic Games could be postponed.

Print Media in Bangladesh and India: *The Daily Star* and *Hindustan Times*

From the start of the COVID-19 outbreak, Bangladesh and India have been undergoing a health emergency that experts have suspected will have potential long-term impacts on education, the economy, governance, society, health, geopolitics, and people's minds. This has been not only a time to “stay at home and be safe” but also a crucial time for the respective experts, leaders, politicians, and media staff to encourage coordinated action plans to resolve the upcoming bad situation through risk management and mitigation strategies, using the print media to transmit news. The first case of COVID-19 in India was reported on January 30th, 2020, whereas in Bangladesh, the country's Institute of Epidemiology, Disease Control, and Research (IEDCR) confirmed the spread of COVID-19 into the country on March 8th, 2020.

In Bangladesh, *The Daily Star*, a well-circulated English-language newspaper, paid sparse editorial attention to COVID-19. Initially, very limited editorial consideration was given to how to tackle the coronavirus and what type of precautionary measures should be taken, but only at airports by foreign migrants. A few commentaries had an international focus, especially on China's COVID-19 settings and future predictions of the death toll and economic effects (**Table 8**).

Hindustan Times, an English-language newspaper in India, published similar observations to those in *The Daily Star* in Bangladesh. However, in contrast, *Hindustan Times* was more proactive in highlighting the news on COVID-19 in China and on China's activities, especially with regard to the infection rate and economic analysis predicting China's slow growth in the coming decade, etc. Apart from these aspects, *Hindustan Times* focused on other areas rather than alerting Indians to the potential of COVID-19 to wreck lives and economies (**Table 9**).

In February 2020, the editors of *The Daily Star* and *Hindustan Times* had noticed little about COVID-19 on their editorial

dashboards. However, different national and international op-eds on COVID-19 were being published, covering different corners of the news. It is worth mentioning that neither of these national newspapers focused on their country's context; instead, the emphasis was on international coverage. Most op-eds covered the death toll and the spread of the coronavirus, but were limited to preparedness and awareness building, which needed considerable attention due to the large populations of these two nations. *The Daily Star* sought to discover the pitfalls of the Bangladesh government's preparedness: although preparation had been far from negligible, the question was whether the government had taken the right approach.

In March 2020, the editorials of both newspapers provided massive coverage on COVID-19 after it had already been declared a pandemic by the WHO. However, this coverage saw both editors play a supportive role for their countries' governments even though they were failing to take the necessary preparatory and precautionary steps to stop the health risk to their whole nations. The editorials in both countries' newspapers also focused on the economic growth pattern, employment and displacement trends, good governance, and innovative technology for testing and the development of drugs.

Last, but not least, national op-eds and readers' commentaries covered preparedness and response measures for COVID-19, including surveillance and contact tracing, the lockdown scenario, laboratory diagnosis, risk communications, community engagement, social distancing, hospital preparedness, infection prevention and control, and implementation of containment plans. Furthermore, the various aspects of life and livelihood options that received attention from experts and scholars from January to March 2020 were analyzed. These aspects are summarized under the subheadings below.

Health and Drugs

Health and appropriate treatment are among people's basic needs according to the Constitutions of both Bangladesh and India. Hence, emergency efforts were implemented to find targeted medical products to prevent widespread infection and to diagnose and treat victims during the COVID-19 pandemic. The production and supply chains for COVID-19 candidate drugs (such as chloroquine and hydroxychloroquine) and for many other essential medical products were impaired by this crisis (Newton et al., 2020). Effective and efficient interventions were needed globally to ensure access to safe, quality-assured, and effective medical products on which the world's population would depend (Gawande, 2020). Nevertheless, editorials in both newspapers mainly discussed the death toll and, to a slightly lesser extent, took into account the health emergency or the progress of candidate drug availability issues. Price hikes of medicine and reduced availability of testing kits, personal protection equipment (PPE), health care facilities, and intensive care unit (ICU) facilities, as well as unequipped isolation rooms, also received priority news coverage in both newspapers.

Preparedness and Awareness

“Prevention is better than cure” is a well-known proverb, with this receiving much attention in both newspapers, when

TABLE 8 | Issues related to COVID-19 addressed by *The Daily Star* editorials (January–March 2020).

Month	Health and drug	Preparation and awareness	Social welfare	Governance and institutions	Politics	Economy	Innovation and technology, and media	Total
January	3	2	2	0	0	0	0	7
February	4	8	3	4	0	7	0	26
March	9	21	6	8	5	16	1	66
Total	16	31	11	12	5	23	1	99

<https://www.thedailystar.net/editorial/>.

TABLE 9 | Issues related to COVID-19 addressed by *Hindustan Times* editorials (January–March 2020).

Month	Health and drug	Preparation and awareness	Social welfare	Governance and institutions	Politics	Economy	Environment and wildlife	Innovation and technology, and media	Total
January	6	1	6	1	0	2	0	0	16
February	8	6	2	1	0	3	1	1	22
March	14	17	3	10	5	8	1	2	60
Total	28	24	11	12	5	13	2	3	98

<https://www.hindustantimes.com/editorials/>.

considering the country context. From the very beginning of the COVID-19 outbreak, preparedness received the highest priority in editorials, commentary, and readers' opinions. *The Daily Star* and *Hindustan Times* sought to raise the awareness of their countries' mass populations regarding the devastation of this novel coronavirus. They published details of how awareness and preparedness activities, especially social distancing and staying and working at home, could reduce the spread of COVID-19. Both governments also planned firm action against rumormongers, urging people not to be panicked while directing all relevant government departments to become prepared to successfully handle the coronavirus. Editorials and commentary from newspapers also emphasized and raised awareness that the concerned authority should conduct widespread testing which, it was hoped, would provide the real picture of transmission.

Social Welfare

Neither Bangladesh nor India is new to disasters or significant humanitarian crises. Despite the COVID-19 pandemic, in the period of late January to February 2020, *The Daily Star* published less pinpoint news regarding social welfare activities and necessities for people living below the poverty line or depending on their daily wage. However, in the middle of March 2020, an editorial commentary tried to warn the government that it needed to increase social safety-net activities and coverage for hand-to-mouth workers who had stayed at home due to the pandemic. In contrast, *Hindustan Times* showed the opposite direction in its editorial and commentary, with the newspaper focusing more on social welfare and humanitarian concerns in January 2020, but shifting its focus to other issues in March 2020.

Governance and Institutions

Good governance and reliable institutional mechanisms are analogous in the fight against any crisis. Again, a comprehensive, multisectoral, and proactive communication strategy is crucial for effective governance during a pandemic situation *via*: (i) official communication during the outbreak, response, and control activities; (ii) scientific communications between scientists and officials; and (iii) mass communications using the media, interpersonal communication, announcements, advertisements, etc. (Ministry of Health Family Welfare, 2020). Even with their above contrast, both newspapers had a pivotal role in monitoring the governance mechanism and its execution during this pandemic situation. At this point, both *The Daily Star* and *Hindustan Times* had a similar focus on governance and institutional operations. Moreover, both countries had the capacity for sentinel-based, event-based, community-based, web-based, and cell phone-based surveillance.

The Economy

COVID-19 is a crisis of an entirely different level of magnitude and one that will require a response on an unprecedented scale. Governments alone cannot accomplish the fight against COVID-19. It will require an unprecedented level of coordination between the public and the private sector at the local and international levels (World Economic Forum, 2020). The leaders of Bangladesh's and India's public and private sectors must come together to respond to the immediate threats to their health systems and the long-term effects on their countries' economies. Considering the published editorials and commentary, the economy received the second highest priority in *The Daily Star*, whereas it had the third highest priority in *Hindustan Times*. In *The Daily Star* in Bangladesh, from the beginning of February 2020, editorials, commentary, and expert opinions

gave greater emphasis to the country's economy and probable outreach program to counter the pandemic situation. They also mentioned and calculated the growth of GDP in 2020 and 2021. Editorials and expert opinions recommended some probable solutions and pathways to tackle this situation, as well as providing information on market analysis. On the other hand, *Hindustan Times* mentioned that COVID-19 would severely impact the global economy. Businesses worldwide were reported to be temporarily halting production, and many might even face bankruptcy. With global supply chains critically dependent on imported intermediary inputs from China and other countries currently under lockdown, this would create a recession in India.

Politics

Politics are part and parcel among those of South Asian ethnicity. However, in the situation of the COVID-19 pandemic, politics have received much less attention in both newspapers. *The Daily Star* has focused only on national political opinions, while, in contrast, *Hindustan Times* has focused on geopolitical tension due to statements by the US President (Donald Trump) and the secrecy of China's government on COVID-19.

The Environment and Wildlife

The *Hindustan Times* provided only a single expert opinion, in February and March 2020, on the environment, stating that this pandemic has given pause to allow the earth to breathe itself. This was regarded as a real breakthrough for the environment as the load-bearing capacity of nature has already been overburdened.

Innovation, Technology, and the Media

Innovative technology has been crucial in the COVID-19 pandemic. However, from January to March 2020, very little news was available on this topic in either of these newspapers. Only issues associated with the development of rapid test kits received any emphasis.

DISCUSSION

Taking into consideration the findings and results of this study, the following analytical discussion is presented. This discussion is mainly oriented to the comparative analysis of the issues highlighted in newspapers on the basis of Hofstede's model of cultural differentiation in the selected Asian countries. The discussion has explored how cultural differences in the different countries influenced the news media to shape responses to the pandemic. Furthermore, the discussion aimed to relate the priorities of the newspapers to the socioeconomic and even the political structures of a country, with this aspect built on the theories of the press.

Comparative Analysis of the Studied Newspapers: Focus on Hofstede's Model of Cultural Differentiation in Different Countries

Scholars have claimed that, despite the occurrence of a concrete event, crises are highly influenced by the communicative actions taken to define, describe, and solve them (Hearit and Courtright,

2004). Other studies have also identified the role of cultural and political influences in crisis communication (Huang et al., 2016). This section seeks to depict comparative pictures of the five different newspapers representing the five selected Asian countries which have varied sociocultural and political settings. It presents the percentage distribution of the highlighted issues from January to March 2020. Results denote that these five newspapers have some similarities as well as wide dissimilarities. In **Tables 5–9**, the overwhelming concentration of experts' thoughts is shown to have been published in March 2020, even though the first case of COVID-19 was reported in January 2020 in both South Korea and Singapore. In summarizing the findings and presenting a comparative picture, **Table 10** reveals that the economy and politics received more attention in March 2020 in all the studied newspapers. However, it is natural that all countries started to highlight health, preparedness, and social issues from January 2020 and from the beginning of the COVID-19 outbreak in their country. From January to March 2020, all newspapers gave the least priority to issues like environment and wildlife, innovation and technology, and the media.

In the case of experts' concerns published in newspapers, some similarities were found between two South Asian countries, Bangladesh and India. However, these two countries reported their first case in two different months. Socioeconomic, demographic, cultural, and even geographical similarities may have shaped the thoughts of experts and scholars during the COVID-19 pandemic. Both India and Bangladesh gave the highest focus to health, preparedness, and awareness, with these issues comprising about half the editorials published in the two leading newspapers of these two countries. Social and political issues received similar priorities in experts' concerns published in the newspapers of both countries. Of all the studied countries, health infrastructure, services, and facilities were the worst in India and Bangladesh. Furthermore, a highly dense population living in poor health and hygiene conditions has influenced the focus and priorities of health, preparedness, and awareness issues in the editorials of newspapers in both countries.

Hofstede (1984, 1991) cultural dimensions scores for India and Bangladesh are similar in the case of most dimensions which could explain the reason for the similarities in the newspapers' focus. In the case of the "indulgence" dimension (the extent to which people try to control their desires and impulses), Hofstede's insights indicate a very low score for India (26) and Bangladesh (20). This low score denotes that a culture of restraint and a culture of being guided by social norms and regulations remain in both countries. This culture has influenced the editorials to instruct people, to guide them, and to be aware of them. Furthermore, India and Bangladesh have high scores in the dimension of power distance (77 and 80, respectively) (<https://www.hofstede-insights.com/country-comparison>), which denotes the top-down or bossy approach, with this guiding the editorial concerns.

In analyzing Hofstede (1984, 1991) cultural dimensions scores of all five studied countries, it is noticeable that, with the exception of India and Iran, all other countries have individualism scores below 20, while India and Iran have scores around 40. As all these countries still have collective

TABLE 10 | Comparison of different areas of focus of e-newspapers in five Asian countries.

Newspapers	Months	% of different broad issues highlighted among all editorials in a newspaper from January to March					Possible reasons
		Health, preparedness, and awareness	Economy, industry, production, supply, demand	Social	Governance and politics	Innovation, technology, environment, and wildlife	
<i>The Korea Herald</i>	January (N = 4)	100	0	0	0	0	
	February (N = 20)	45	20	0	35	0	Domestic consumption reduced, stock prices collapsed 7.28%
	March (N = 36)	39	50	0	11	0	Proposal of extra budget of \$9.86 billion by the president's administration, Bank of Korea slashed its outlook from 2.3 to 2.1%, debt to GDP ratio projected to exceed 45%, rising unemployment issue
	Total (N = 60)	42	37	0	11	0	
<i>The Straits Times</i>	January (N = 2)	50	0	0	50	0	Highest affected cases in Asia after China and governmental and institutional initiatives emerged
	February (N = 14)	21	29	14	29	7	Falling in oil price, tourism industry, reduction of GDP, decline in the global economy, disruption in supply chain
	March (N = 20)	11	21	26	37	5	Due to General Election and the reasons mentioned in the month of February
	Total (N = 36)	17	23	20	34	6	
<i>Tehran Times</i>	January (N = 0)	0	0	0		0	
	February (N = 6)	0	33	33	17	0	Falling down in oil price
	March (N = 16)	25	13	6	25	31	Shutdown of industries, adverse hit in travel market and theater
	Total (N = 22)	18	18	14	27	23	
<i>The Daily Star</i>	January (N = 7)	71	0	29	0	0	Price hike of medicine and lesser availability of testing kit and PPE; hospital facilities are not up to mark
	February (N = 26)	46	27	12	15	0	Due to rapid outbreak in several parts of the world, as a developing country started to fight against COVID-19 by preparing and creating awareness to the people
	March (N = 66)	45	24	9	20	2	
	Total (N = 99)	47	23	11	17	1	
<i>Hindustan Times</i>	January (N = 16)	44	13	38	6	0	Mass populated country, less available facilities to fight against COVID-19, mostly rely on health and drugs, prevention and creating mass awareness
	February (N = 22)	63	14	9	5	9	
	March (N = 60)	52	13	5	25	5	
	Total (N = 98)	53	13	11	17	5	

societies, social issues did not receive much priority in the newspapers' editorials. However, as Singapore is a multiracial country dominated by Chinese people (and faced the risk of discrimination and violence against those of Chinese ethnicity due to the origin of the COVID-19 outbreak), social issues received more focus in Singapore's newspaper. In addition to social issues, governance and politics received the highest attention from this newspaper. Singapore's general election was due on July 10, 2020, and was one probable reason for this concern in the editorials.

In the case of the economy, South Korea showed the highest level of concern in the newspaper editorials. South Korea had a booming economy and faster development. However, COVID-19 imposed a sharp declining trend in its stock prices. In the initial 10 days from February 1st to 10th, following the COVID-19 outbreak, South Korea's stock prices tumbled 7.28%. Furthermore, Hofstede (1984, 1991) cultural dimensions can explain the high focus on the issue of the economy in *The Korea Herald*. Among all five countries, South Korea has the highest score in long-term orientation (100) and uncertainty avoidance (85). These two high scores can explain why South Korean newspapers and experts are highly concerned about the economy.

Among all five countries, Iran has a unique socioeconomic and political situation. Despite having the highest number of cases (among the studied five countries) in March 2020, *Tehran Times* published a very low number of experts' views. International sanctions and restricted diplomatic relations with the Western world have delimited Iranian experts from expressing their concerns in an English-language newspaper. Among the small number of experts' thoughts expressed, the issues of health, preparedness and awareness, the economy, innovation, technology, and the media had the same priorities in *Tehran Times*. However, compared with other countries' newspapers, the *Tehran Times* gave more attention to innovation and technology, the media, and the environment and wildlife.

One prior study has claimed that cultures and social structures of various actors in society influence risk perception, identification, and management (Dressel, 2015). Scholars have also advised that public relations practitioners must consider culture when creating messages (Wertz and Kim, 2010). It is therefore evident from prior studies that sociocultural and even political and institutional issues have roles to play in shaping crisis communications. In the present study, variations in different newspapers' concerns from the selected countries have provided evidence of the role of a country's sociocultural influence and, thus, the role of that country's newspaper in shaping the news and crisis response in that country.

Experts' Thoughts in Electronic Newspapers: Shaped by Theories of the Press

In this analysis of the five studied newspapers from five Asian countries—South Korea, Singapore, Iran, Bangladesh, and India—it has been noticed that the different newspapers had different priorities. However, in the case of all five countries, the economy was a key issue of concern. With the exception of

India's *Hindustan Times*, all newspapers gave the highest level of attention to highlighting experts' concerns related to the issue of the economy. Economic issues mainly covered employment, job losses, disruption of the supply chain, negative crude oil price, and a low forecast level of GDP in all countries. To generate awareness among the mass population and to build preparedness in institutions and communities, editorials gave attention to activities related to preparation and awareness. Experts showed their concerns for the social welfare-related aspect, emphasizing the maintenance of harmony in their society, the extension of help to others, and the demonstration of mental health support to frontline workers fighting COVID-19. Among these aspects, concerns about politics also received much attention in the experts' opinions. During this devastating time, the "blame game" was being played, with one country criticizing others. Several sports events, including the 2020 Tokyo Olympics, were canceled or postponed; in some countries, sports received attention to some extent. However, the environment and wildlife, the latter suspected of being linked to the outbreak, have not been widely focused upon in the experts' opinions. Innovation and technology-related efforts have been continuing worldwide, but this issue has not been highlighted much in editorial concerns.

Experts have argued that the socioeconomic structure of the country and community has a strong link to aspects like risk perception, awareness, and response (Djalante et al., 2020). Theories of the press also support the view that the state system, ownership, politics, and the economy influence and shape the concerns of the media (Hachten, 1981). Therefore, different countries and their leading print media have shaped different aspects affected by COVID-19 according to their socioeconomic structures and even their political structures and settings. Analysis with the help of Hofstede (1984, 1991) model also denotes this relationship between the socioeconomic and cultural dimensions of a country and their influence on communication behavior.

Limitations of the Study

Within the scope of this study, five newspapers from five Asian countries have been highlighted. However, China and Japan, the two countries in which COVID-19 emerged, are not included. Newspapers of other Asian countries with different sociocultural and ethnic settings (e.g., Malaysia, Indonesia) are not included in this study.

This study considered only one leading English-language newspaper from each of the selected countries. However, other newspapers and forms of media may have addressed and shaped the pandemic situation differently. Due to time and resource limitations, it was difficult to include more countries and more newspapers and other forms of media.

This study mainly analyzed the editorials of the studied newspapers. Many other opinions and concerns were expressed by other scholars and experts in the op-eds section. However, the study, as described in this article, failed to address all experts' views, as this would considerably extend the workload and the study's scope.

This study was initiated and motivated by the MRT and theories of the press. Hofstede (1984, 1991) model of cultural differentiation was also incorporated into the analysis. However, intensive analysis based on these theories was not conducted. Analyses and discussions were limited to brief reflections of the theories.

Finally, as a further possible limitation, human errors may have occurred when conducting text mining from a large number of editorials. Therefore, despite their sincere efforts, the authors may have missed or duplicated some important observations or concerns addressed in editorials.

CONCLUDING REMARKS

From the emergence of COVID-19 in late December 2019 to April 2020, the coronavirus has not only turned into a pandemic but has also created a devastating global problem. The pandemic now shapes almost every sector of every nation. Nevertheless, the situation is not the same in all nations and all sectors. Along with the timing of the outbreak, the extent of its spread and fatalities, the socioeconomic and political conditions of a country have, to some extent, determined the preparedness, institutional efforts, socioeconomic conditions and measures, and also the political debates. All these topics are dealt with and researched by professionals, and the world's newspapers must learn from these analyses.

From the results and discussions in this study, it is understandable that cultural differentiation, the socioeconomic, political, and even the institutional setup of a country, and the media all have a remarkable influence on and a role in representing and shaping the news and thoughts expressed in a newspaper. However, scholars have advised of the need for a global standard and protocol for regional and national responses in this strongly interconnected world (Djalante et al., 2020). In this global world, addressing a national issue may have a wider global impact. Therefore, newspapers also should have decisive judgment and concern about the issues that are not only a

REFERENCES

- Biswas, N. K., Majumder, P. P. (2020). Analysis of RNA sequences of 3636 SARS-CoV-2 collected from 55 countries reveals selective sweep of one virus type. *Indian J. Med. Res.* 151, 450–458. doi: 10.4103/ijmr.IJMR_1125_20
- Bokesoy, D. (2008). *E-newspapers: Revolution or Evolution? Scroll Essays on Design of Electronic Text*, Vol. 1, 1–5.
- British Broadcasting Corporation (2020). China Coronavirus: Misinformation Spreads Online About Origin and Scale. Available online at: <https://www.bbc.com/news/blogs-trending-51271037>, January 30, 2020 (accessed April 3, 2020).
- Chunara, R., Andrews, J. R., Brownstein, J. S. (2012). Social and news media enable estimation of epidemiological patterns early in the 2010 Haitian cholera outbreak. *Am. J. Trop. Med. Hyg.* 86, 39–45. doi: 10.4269/ajtmh.2012.11-0597
- CNBC (2020). Why there will soon be tons of toilet paper, and what food may be scarce, according to supply chain experts. Available online at: <https://www.cnbc.com/2020/03/18/supply-chain-experts-foods-that-could-be-less-available-in-pandemic.html>, March 18 2020 (accessed April 3 2020).
- Djalante, R., Shaw, R., DeWit, A. (2020). Building resilience against biological hazards and pandemics: COVID-19 and its implications for the Sendai Framework. *Progress in Disaster Science* 6:100080. doi: 10.1016/j.pdisas.2020.100080

national need but also a world need to combat global crises, such as the COVID-19 pandemic. Avoiding “blame games,” fake news, exaggeration, and politics, newspapers and other forms of media should play key roles in guiding the mass population and policy makers to face crises and to bounce back in even better shape.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

GAP: conceptualization, methodology, data collection (*The Straits Times* and *Tehran Times*), data analysis, writing, reviewing, and editing. RA: data collection, writing, reviewing, and editing. MHR: data curation, writing, and formatting. MA: methodological approaches, data collection and curation, writing, reviewing and editing, formatting, and corresponding. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fcomm.2020.557593/full#supplementary-material>

- Dressel, K. (2015). Risk culture and crisis communication. *Int. J. Risk Assess. Manage.* 18, 115–124.
- Dudden, A., Marks, A. (2020). South Korea took rapid, intrusive measures against Covid-19 – and they worked. March 20 2020The Guardian. Available online at: <https://www.theguardian.com/commentisfree/2020/mar/20/south-korea-rapid-intrusive-measures-covid-19> (accessed April 4 2020).
- Gawande, A. (2020). *Keeping the Coronavirus from Infecting Health-Care Workers*. The New Yorker. Available online at: <https://www.newyorker.com/news/news-desk/keeping-the-coronavirus-from-infecting-health-care-workers> (accessed April 14, 2020).
- Ghassabi, F., and Zare-Farashbandi, F. (2015). The role of media in crisis management: a case study of Azarbayejan earthquake. *Int. J. Health Syst. Disaster Manage.* 3, 95–102. doi: 10.4103/2347-9019.151323
- Gralinski, L. E., and Menachery, V. D. (2020). Return of the coronavirus: 2019-nCoV. *Viruses* 12:135. doi: 10.3390/v12020135
- Hachten, W. A. (1981). “The world news prism: changing media,” in *Clashing Ideologies*. Ames: Iowa State University Press, 60–77.
- Hawdon, J., Agnich, L. E., Ryan, J. (2014). Media framing of a tragedy: a content analysis of print media coverage of the Virginia Tech tragedy. *Traumatology* 20, 199–208. doi: 10.1037/h0099400

- Hearit, K. M., Courtright, J. L. (2004). "A symbolic approach to crisis management: Sears' defense of its auto repair policies," in *Responding to Crisis. A Rhetorical Approach to Crisis Communication* D. P. Millar, R. L. Heath, Eds. (Mahwah, NJ: Lawrence Erlbaum), 201–212.
- Hofstede, G. (1984). *Culture's consequences: international differences in work-related values*. 2nd edition. Beverly Hills CA: SAGE Publications. Available online at: <https://www.hofstede-insights.com/country-comparison/> (accessed July 8, 2020).
- Hofstede, G. (1991). *Cultures and Organizations: Software of the Mind*. London: McGraw-Hill.
- Hofstede, G., Hofstede, G. J., Minkov, M. (2010). *Cultures and Organizations: Software of the Mind*. 3rd edition. New York, NY: McGraw-Hill.
- Hollander, B. A., Krugman, D. M., Reichert, T., Avant, J. A. (2011). The e-reader as replacement for the print newspaper. *Publ. Res. Q.* 27, 126–134. doi: 10.1007/s12109-011-9205-8
- Hoof, F., Boell, S. K. (2019). Culture, technology, and process in 'media theories': Toward a shift in the understanding of media in organizational research. *Organization* 26, 636–654. doi: 10.1177/1350508419855702
- Huang, Y. H. C., Wu, F., Cheng, Y. (2016). Crisis communication in context: cultural and political influences underpinning Chinese public relations practice. *Public Relations Rev.* 42, 201–213. doi: 10.1016/j.pubrev.2015.11.015
- Jahanbin, K., and Rahmanian, V. (2020). Using twitter and web news mining to predict COVID-19 outbreak. *Asian Pacific J. Tropical Med.* 13, 378–80. doi: 10.4103/1995-7645.279651
- Jeon, M. H., Kim, T. H. (2016). Institutional preparedness to prevent future Middle East respiratory syndrome coronavirus-like outbreaks in Republic of Korea. *Infection Chemotherapy* 48, 75–80. doi: 10.3947/ic.2016.48.2.75
- Joel, T., and Kamalipour, Y. R. (2000). *Religion, Law, and Freedom: A Global Perspective*. Oxford: Praeger Publishers.
- Kassam, N. (2020). Disinformation and coronavirus. The Interpreter. Lowy Institute. Available online at: <https://www.loyyinstitute.org/the-interpreter/disinformation-and-coronavirus> (accessed April 3, 2020).
- Kokan, J. (2004). FRONTLINE/World: Forbidden Iran. Available online at: <https://www.pbs.org/frontlineworld/stories/iran/> (accessed April 13, 2020).
- Kuguyo, O., Kengne, A. P., Dandara, C. (2020). Singapore COVID-19 pandemic response as a successful model framework for low-resource health care settings in Africa? *OMICS*. 24, 470–8. doi: 10.1089/omi.2020.0077
- Kuppuswamy, S. (2017). A study on the print media coverage of disasters. *Global Media J. Indian Edition* 8, 1–22. doi: 10.5958/2321-5828.2018.00038.4
- Lengel, R. H., and Daft, R. L. (1989). The selection of communication media as an executive skill. *Acad. Manage. Executive* 2, 225–232
- Llewellyn, S. (2020). Covid-19: how to be careful with trust and expertise on social media. *BMJ* 368:m1160. doi: 10.1136/bmj.m1160.pp.1
- McDonald, J. (2020). Social Media Posts Spread Bogus Coronavirus Conspiracy Theory. Factcheck.org. Available online at: <https://www.factcheck.org/2020/01/social-media-posts-spread-bogus-coronavirus-conspiracy-theory/> (accessed April 3, 2020).
- Ministry of Health and Family Welfare (2020). National Preparedness and Response Plan for COVID-19, Bangladesh. Health Service Division, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, Dhaka, Bangladesh, pp45. Available online at: https://reliefweb.int/sites/reliefweb.int/files/resources/nprp_covid-19_v6_18032020.pdf (accessed July 1, 2020).
- Molla, R. (2020). It's not just you. Everybody is reading the news more because of coronavirus. recode. Available online at: <https://www.vox.com/recode/2020/3/17/21182770/news-consumption-coronavirus-traffic-views> (accessed June 2, 2020).
- Muno, M. (2020). Opinion: coronavirus, the media and credibility. Deutsche Welle (DW). Available online at: <https://www.dw.com/en/opinion-coronavirus-the-media-and-credibility/a-53172087> (accessed 2 June 2020).
- Newton, P. N., Bond, K. C., on behalf of 53 signatories from 20 countries (2020). COVID-19 and risks to the supply and quality of tests, drugs, and vaccines. *Lancet Global Health* 8, e754–5. doi: 10.1016/S2214-109X(20)30136-4
- Nielsen, R. K., Fletcher, R., Newman, N., Brennen, J. S., Howard, P. N. (2020). *Navigating the 'Infodemic': How People in Six Countries Access and Rate News and Information About Coronavirus*. Oxford: Reuters Institute for the Study of Journalism, University of Oxford.
- Ostini, J., Ostini, A. Y. (2002). Beyond the four theories of the press: a new model of national media systems. *Mass Commun. Soc.* 5, 41–56. doi: 10.1207/S15327825MCS0501_4
- Pyo, D., Kim, J. (2019). News media sentiment and asset prices in Korea: text-mining approach. *Asia-Pacific J. Account. Economics* 26, 1–23. doi: 10.1080/16081625.2019.1642115
- Richardson, J. E., Stanyer, J. (2011). Reader opinion in the digital age: tabloid and broadsheet newspaper websites and the exercise of political voice. *Journalism* 12, 983–1003. doi: 10.1177/1464884911415974
- Straits Times (2020a). Coronavirus: survey shows people rely on trustworthy news organisations for information. Available online at: <https://www.straitstimes.com/world/coronavirus-survey-shows-people-rely-on-trustworthy-news-organisations-for-information> (accessed August 10, 2020).
- Straits Times (2020b). Xenophobia not a cure for coronavirus Published, SGT. Available online at: <https://www.straitstimes.com/opinion/st-editorial> (accessed February 5, 2020).
- Tehran Times (2020). Medical Council chief warns Rouhani about fanciful imagination to control Covid-19. Available online at: <https://www.tehrantimes.com/archive?ty=14&ms=2&ps=30> (accessed March 31, 2020).
- The Diplomat (2020). Did Turkmenistan Really Ban the Word 'Coronavirus'? Available online at: <https://thediplomat.com/2020/04/did-turkmenistan-really-ban-the-word-coronavirus/> (accessed April 3, 2020).
- The Financial Times (2020). Huge text message campaigns spread coronavirus fake news. Available online at: <https://www.ft.com/content/34b6df5a-ea4a-471f-8ac9-606580480049> (accessed April 3, 2020).
- The Jerusalem Post (2020). Iran's regime pushes antisemitic conspiracies about coronavirus. Available online at: <https://www.jpost.com/Middle-East/Iran-News/Irans-regime-pushes-antisemitic-conspiracies-about-coronavirus-620212> (accessed April 3, 2020).
- The New York Times (2020). Canceled Events Because of Coronavirus List. Available online at: <https://www.nytimes.com/article/cancelled-events-coronavirus.html>, April 1 2020 (accessed April 3, 2020).
- Time Magazine (2020). Available online at: <https://time.com/>
- United Nations Educational, Scientific and Cultural Organisation (2020). COVID-19 Educational Disruption and Response. Available online at: <https://en.unesco.org/covid19/educationresponse> (accessed April 3, 2020).
- Wang, C., Horby, P. W., Hayden, F. G., Gao, G. F. (2020). A novel coronavirus outbreak of global health concern. *Lancet* 395, 470–473. doi: 10.1016/S0140-6736(20)30185-9
- Wertz, E. K., and Kim, S. (2010). Cultural issues in crisis communication. *J. Commun. Manage.*
- World Economic Forum (2020). How Bangladesh leaders should respond to the economic threats to COVID-19. Available online at: <https://www.weforum.org/agenda/2020/04/covid-19-coronavirus-bangladesh/> (accessed April 17, 2020).
- World Health Organization (2020a). WHO Director-General's opening remarks at the media briefing on COVID-19. Available online at: <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020> (accessed April 3, 2020).
- World Health Organization (2020b). China-WHO joint mission of Coronavirus: 16–24 February 2020. Available online at: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf> (accessed July 12, 2020).
- Yoon, D., Wong, C. H. (2020). South Korea spends billions to blunt Coronavirus's economic impact. *The Wall Street Journal*, February 28. Available online at: <https://www.wsj.com/articles/south-korea-spends-billions-to-blunt-coronavirus-economic-impact-11582872869> (accessed April 7, 2020).
- Young, B. E., Ong, S. W. X., Kalimuddin, S., Low, J. G., Tan, S. Y., Loh, J., Ng, O. T., et al. (2020). Epidemiologic features and clinical course of patients infected with SARS-CoV-2 in Singapore. *JAMA* 323, 1488–1494. doi: 10.1001/jama.2020.3204

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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