COVID CHALLENGES OVER DEVELOPING WORLD: HOW DOES CULTURE AFFECT CRISIS MANAGEMENT?

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ABSTRACT

Corona Virus Disease 2019 (COVID-19) is an ongoing unprecedented global pandemic crippling world economy and all aspects of human life. Facing shifting COVID epicenters from East to West, many developing and lower-developed countries have been devastated to tackle such public health crisis, especially when endowed with sub-standard health care, unstable and meagerly growing economy, and dearth of resources. Given the pressing need of pandemic control which relies weightily on the 'hardware' of medical treatments and supplies, along with economic remedial plans, this study accentuates the equal importance of the 'software' lying on one's culture which is deemed to help guiding how people act to collectively reach a COVID relief while achieving societal altruism. Founded on the Hofstede cultural paradigm, this paper offers qualitative investigations on epidemic management of developing and lower-developed countries across East Asia, Latin America, and Africa. It is believed that effective crisis control is most likely resulted from the collaborative culture, reflected in long-term orientation, low individualism, high power distance, low uncertainty avoidance, and low self-indulgence, where an early and comprehensive compliance of public-mandated safety measures is adopted by a country's citizens, while the risks of failing intervention due to citizens' defiance may prevail in a relatively uncooperative and solitary culture. Facing impending COVID management, policy makers should hence take the pragmatic cultural traits into consideration. This study is original and creative founded on the classification of Hofstede culture.

Keywords: Hofstede Cultural Classification, Public-health Crisis Management, COVID-19, Global Pandemic.

INTRODUCTION

Since its 'silent' ignition in December 2019 from Wuhan (of Hubei province), China, the outbreak of novel Coronavirus disease (coded COVID-19 by World Health Organization (WHO)) has proven to be extremely infectious with a relatively high mortality rate. Its swift contagion with respiratory symptoms including fever, cough, headache, chest pain, sore throat, difficulty in breathing, loss of taste or smell, and other uncommonly reported signs have somewhat fooled the infected and even the medical personnel to initially think and treat it as some less-fatal diseases such as seasonal influenza, while the mistreatment and misdiagnosis of

1544-0230-20-4-141

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COVID-disease have inopportunely led to a later severe public health consequence. Due to its ongoing threat from rapid spread worldwide, WHO declared COVID-19 as a global pandemic on March 11th, 2020, two days later followed by the United States' declaration for a national health emergency. According to WHO (2020), as of mid-March, 135 countries and territories across the world have reported confirmed cases of COVID-19 with a mortality rate ranging from 1.5% outside China to 3.6% within Mainland (Ahorsu *et al*., 2020). Either imported transmission or cluster of cases in some local communities, its infection rate has been proliferating across countries, while such severity was regretfully downplayed by many Western economies.

Time progresses to September 24th, 2020, as WHO announced the global confirmed COVID cases reaching 32.1 million people distributed to 22.1 million of them recovered but 980,000 deaths. The deteriorating infection differs across continents reflecting uneven spreads across countries and asymmetric demographics including higher fatality risks and severity faced by the old (between 50 to 70 years) and those with underlying health conditions (Clark *et al*., 2020). Meanwhile, developed over the developing and less-developed countries were observed to seemingly witness higher virus infection as many argued that the number of COVID-19 tests performed in low-income countries was comparatively smaller (Schellekens & Sourrouille, 2020). Other reports suggested possibility of asymptomatic COVID which undermines WHO's statistics to be fully reliable or underestimated (Wang *et.al*., 2020). Although few direct-acting antiviral drugs or COVID-19 vaccines are presently available across some major developed nations (especially in North America and Europe), many countries instantaneously are redirecting resources and efforts toward preventive measures and virus control strategies, as stipulated by WHO and public health agencies around the world, including state-mandated stay-home orders, operational/business closure except for essential businesses, mandatory public face-covering and social distancing, curfews, and restrictive public and social gatherings (Dhama *et al.*, 2020).

COVID-19 with its wide and vigorous transmission has impacted the whole world unprecedentedly. Other than spreading in developed economies like U.S., Germany, and U.K., its contamination is equivalently fast across developing and less-developed world including Brazil, India, and Bangladesh where the related infection and fatality data are incomplete and lagged. Facing its speedy transference, some countries are able to contain and slow it down while others face increasingly devastating casualty without effective control, reflecting to tactics of instant versus delayed lockdowns, proactive versus reactive public responses, and how citizens of a country comply with protective protocol. As asserted by Hofestede (1980), humans are a cultural species. A nation's culture shapes and disseminates shared psychological meanings and collective practices which differentiates one country from another. Hence, cultural understanding of a country's (or country-group's) coping strategies and managements to the pandemic becomes vital. Founded on holistic assessment of the ongoing infectious disorder, this study attempts to answer the inquiry of *How does culture affect COVID crisis management across lower-developed and developing countries?* As reflected by the disease infection and fatality rates, its analysis will center on the cultural contexts pertaining to COVID safety measures such as face-masking and social-distancing. Given how novel and unprecedented this virus is and still developing, this paper is original and creative from the cultural and qualitative standpoint, rather

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than adding to the numerous studies from the COVID-related medical, societal, and economic views.

LITERATURE REVIEW

COVID-19 vs. Face Masking

Face masks are personal protective equipment (PPE) that are used to reduce the spread of respiratory infections transmitted by viruses or bacteria. Although different health authorities across the world have recommended the use of face mask, incongruities and controversies have been raised on its effectiveness in preventing COVID-19 infections (Cheng *et al*., 2020; Feng *et al*., 2020; Martin, Hanna, & Dingwall, 2020). As asserted by Liu & Zhang, (2020), wearing a face mask simply protects oneself and others. In an incident of COVID-19 outbreak on public transportation of Chongquing, China, a COVID-patient who took a coach bus with 39 others all without wearing masks traveling for over an hour between cities has resulted in five onboard passengers infected. Nevertheless, when the same person wore a mask on bus having 14 others ride together for 50 minutes, no onboard passengers were infected after 14-day medical examination and testing, according to the report of local epidemiological investigation and contact tracing management.

Similarly, evidence of a recent experiment conducted in U.S. by Lyu & Wehby, (2020) suggests that mandating face cover in public places across 15 states and Washington, D.C. is proven to reduce daily growth rate of COVID-19 infections, as more than 200,000 cases were averted in three weeks (by May 22, 2020). Of another study by compartmental model testing the community-wide usefulness of face-masking from general asymptomatic public, Eikenberry *et al*. (2020) indicated that face-covering has a potentially high value in curtailing community spread and suppressing COVID pandemic, although it is testified that the most significant benefit could be actualized when face-masking is universally complied while combined with other non-pharmaceutical practices such as social distancing.

COVID-19 vs. Social Distancing

Social-distancing measures including 6-feet interpersonal distance, self-isolation, stay-home order, and shelter-in-place sanctioned by governments are critical factors in mitigating the spread of COVID-19 (Painter & Qiu, 2020). Inopportunely, different governments imposing such measures have received various levels of civilian compliance resulting some in preventive success and failure of others. Of an Italian governmental mandate, Briscese *et al*. (2020) concluded that Italians are willing to self-isolate following shorter lockdown while somewhat defiant when the lockdown is prolonged. Strategically, high civil compliance rate to governmental order should be established upon prompt and transparent public-private communication, with rational and feasible social expectations to ensure optimal public-health outcome. Rather unsurprisingly, disease control and prevention are often beyond public-health management, as it is frequently tied to politics. The debates of COVID-19 social-distancing are witnessed in the area of political polarization (Painter & Qiu, 2020), along with those in multifaced ethical considerations (Lewnard & Lo, 2020), economic losses (Sheridan *et al*.,

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2020), social and religious challenges (Yezli & Khan, 2020), mental health implications (Venkatesh & Edirappuli, 2020), and sexual activity problems (Jacob *et al*., 2020).

COVID-19 vs. Culture

Cultural setting and internalized cultural orientation such as values, norms, regulatory focus, and thinking structure often play an essential role in determining how individuals, organizations, and nations interact and respond to fast-changing situations like global COVID crisis (Guan *et al*., 2020). The pluralities of social identity following poly-cultural perspectives suggest that individuals of different nations may or may not adapt a culture which suits to cope with the pandemic. In a cross-cultural assessment of Serbia and Latin-America by Jovančević & Milićević (2020), it is suggested that culturally optimistic persons who show high level of general trust and disbelieve conspiracies demonstrate lower level of fears in food shortage, less anxiety for oneself, and more confidence in beloved others than those of cultural pessimism. Such effect of optimism is moreover said to endorse preventive behavior to promote healthy result. According to Ubani (2020), societal nature of developing countries reacting to disease outbreak normally reflects cultural characteristics and how people think and act, along with their quality of education and social development, which links to successful or failing crisis management. Interestingly affirmed by Huynh (2020), individuals under Hofstede culture of high 'uncertainty avoidance' would tend to abide by social-distancing policy following less-dense and less-frequent public gathering which potentially ends in lower virus infection rate. As also resonated by Bruns et al. (2020), public health efforts should be geared toward providing "culturally appropriate methods of education, prevention, treatment and follow-up" to make pandemic management accountable.

THEORETICAL PARADIGM

Culture has been defined in different ways in the literature. For instance, Hofstede (2001) defined culture as the *"collective programming of the human mind that distinguishes the members of one group or category of people from another"*, whereas Matsumoto (2000) defined culture as *"a dynamic system of rules – explicit and implicit – established by groups in order to ensure their survival, involving attitudes, values, beliefs, norms and behaviors, shared by a group but harbored differently by each specific unit within the group, communicated across generations, relatively stable but with the potential to change across time"*. Essentially, culture endogenizes human behavior while how human acts reflects underlying culture.

Hofstede Framework: Six Cultural Dimensions

Hofstede cultural system consists of six dimensions: long- versus short-term orientation, *individualism versus collectivism, high versus low power distance, strong versus weak uncertainty avoidance, indulgence versus self-restraint,* and *masculinity and femininity*. Each dimension classified in high versus low score with corresponding cultural behavior is summarized as follows.

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Long- versus Short-Term Orientation

Long-term orientation refers to "*the fostering of virtues related towards future rewards – in particular, perseverance and thrift"* whereas short-term orientation denotes *"the fostering of virtues related to the past and present- in particular, respect for tradition, perseverance of 'face', and fulfilling social obligations"* (Hofstede *et al*., 2010). A culture which scores high is termed as long-term orientation – orienting 'future', personal assertiveness and materialism, whereas a low culture score implies short-term focus – favoring 'present' or 'now', more relaxed lifestyle and less material gain.

Individualism versus Collectivism

Individualism refers to *"societies in which the ties between individuals are loose; everyone is expected to look after him- or herself and his or her immediate family"*, whereas collectivism denotes *"societies in which people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty"* (Hofstede *et al*., 2010). A culture scoring high indicates individualism as individuals are prone to self-interest pursuit, contrary to those in collectivism of low-scored culture who tend to integrate into a strong and cohesive group with consistent loyalty (Wild *et. al*., 2006)

High versus Low Power Distance

Power distance refers to "the extent to which the less powerful members of institutions and organizations *within a country expect and accept that power is distributed unequally"* (Hofstede *et al.*, 2010). For a culture with high power distance in high score, organizational ranks are obvious and hierarchical, and power is distributed favorably toward superiors but inauspiciously against subordinates. In culture of low score reflecting low power distance, rewards, force, and prestige are more equally shared within organizations.

Strong versus Weak Uncertainty Avoidance

Uncertainty avoidance refers to "the extent to which the members of a culture feel *threatened by ambiguous or unknown situations"* (Hofstede *et al*., 2010). A high score implies people detest insecurity and are less daring to take risks. In workplace, employees are likely to shy away from challenges and contained by formal rules, resulting in difficulty of implementing new changes in organization. In contrast, a culture scoring low shows low avoidance of uncertainty as people are open for changes, and welcome and accept new ideas, thoughts, and beliefs.

Indulgence versus Self-Restraint

Indulgence refers to *"a tendency to allow relatively free gratification of basic and natural human desires related to enjoying life and having fun",* whereas self-restraint denotes *"a conviction that such gratification needs to be curbed and regulated by strict social norms"*

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(Hofstede *et al*., 2010). A high-scored culture typically approves indulgence among people who are encouraged to 'treat oneself good' and 'reward oneself', while a low-scored counterculture sinfully disgraces self-pleasure, believing self-restraint and strict discipline are to honor intrinsic human value.

Masculinity and Femininity

Masculinity refers to societies *"where emotional gender roles are clearly distinct: men are supposed to be assertive, tough and focused on material success, whereas women are supposed to be more modest, tender and concerned with the quality of life"* Femininity, on the other hand, denotes societies where *"emotional gender roles overlap both men and women are supposed to be modest, tender, and concerned with the quality of life"* (Hofstede *et al*., 2010). As linking to the gender role definition and distribution, a masculine society with high score means that both men and women seem to be assertive and competitive, prioritizing goal-achieving over relinquishment, whereas in a feminine culture both genders are deemed more caring, harmonious, and mutually modest to one another.

DATA AND METHODOLOGY

16 countries from developing regions around the world that have been mostly impacted by the COVID-19 pandemic are studied, which includes Brazil, Chile, Colombia, Mexico, and Peru of Latin America; Indonesia, Malaysia, Philippines, Thailand, Vietnam, and China of East Asia, and Algeria, Egypt, Libya, Morocco, and Nigeria of Africa. Data of COVID-19 confirmed cases and total deaths for the selected countries are extracted from WHO website (https://covid19.who.int/) over 40 weeks between March and November, 2020. The country-specific number of cases and deaths, each on *per hundred thousand people*, is estimated by dividing the total number of cases and deaths, respectively, by each country's population. The infection rate is computed by dividing the total number of confirmed cases by each country's population expressed in percentage. Per-country macroeconomic fundamentals such as per-capita annual income and its fiscal spending on COVID-related remedy as economic references are also included. Lastly, the cultural scores of these countries are extracted from the Hofstede cultural classification system (https://www.hofstede-insights.com/), which provides qualitative and analytical foundation as the main methodological structure across cultural assessment and COVID crisis management in this study.

EMPIRICAL FINDINGS

Preliminary Statistics of COVID Across Regions

Table 1 below presents a stock and static COVID condition across regions as of November 30, 2020, where both infections and deaths were topped in Latin America, followed by Africa, while the crisis control seemed relatively effective in East Asia, as also reflected by the COVID affected rates. Across these developing regions, Brazil, Peru, and Chile of Latin America with higher infection rates also revealed their governments' attempt of trying to calm the crisis by

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allocating higher fiscal resources (COVID-fiscal spending of 12%, 5.9% and 4.7% of GDP respectively). Nonetheless, across East Asia, the significantly lower confirmed cases and deaths paired with overall high percentages (e.g. 9.6%, 6.0%, and 5.0%) of GDP fiscal spending on COVID making one wonder whether the '*ex ante*' or 'proactive' effect – increasing fiscal spending results in lower confirmed-case rate, or the '*ex post*' or 'reactive' effect – higher infection rate leads to increasing fiscal spending, dominates the strategy of governmental COVID-control. Controversially, countries of Africa were facing ineffective disease control while simultaneously struggled with fiscal challenge to manage COVID.

Alternatively, from the flow and dynamic viewpoint, the trends of COVID development in cases and deaths across the developing world have been summarized in weekly % change across the 40-week span as illustrated in Figures 1 (a & b), 2 (a & b), 3 (a & b) below. As somewhat expected, spikes reflected in the first several weeks (e.g. up to Week 7 or 9 in most countries) reveals the human intrinsic nature and governmental character by first reacting to the shock and then acting either proactively or continuing-reactively to the crisis management. Proactive manner of government tended to activate proactive safety measures such as imposing face-masking and social-distancing mandates and limiting business and social activities, whereas other reactive governments verged to deny the effectiveness of public safety measures, with a few even claiming such calls as some sorts of political or economic conspiracies (e.g. lopsided political control from one country to another, or specific business conglomerate's attempt of manipulating the economic and market power) discrediting the protective protocols. Consequently, a proactive government supported by its proactive citizens would seem to subside the COVID crisis, while the misfortune tends to linger when a reactive government is followed by a skeptical and resistant public.

Specifically, few countries across developing regions which experienced case or death spikes amid COVID also transpire individual government's ability to the ongoing crisis management. For example, between Week 22 and 24 in mid-June, a case spike in Chile was due to a delayed administrative order in activity lockdown and failing to reflect accurate case data which incited Chileans to potential health risks (News wires, 2020). Another case spike in Da Nang, Vietnam, between Week 30 and 32 in early August was caused by a new strain of coronavirus, which victimized more individuals than did by its original form (Insider, 2020). Consequently, a late detection and report of COVID variant prevented the best-timing action when asymptomatic virus carriers returned to communities resuming their 'normal life' while starting the disease transmission (Jha, 2020; Vu & Nguyen, 2020). Both instances suggest that an inattentive government become vulnerable facing the crisis, whereas a preparative government may seize the opportunity to subdue abrupt issues with instantaneous coping strategies.

TABLE 1
COVID-19 DATA FOR THE SELECTED COUNTRIES (AS OF NOV. 30, 2020)

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Country	No of cases per 100k people (% weekly change)	No of deaths per 100k people (% weekly change)	Affected rate (%)	*Population (Million) 2019	**Per capita income ($) 2019	***COVID-19 fiscal spending (% of GDP)
Brazil	3097 (4.74)	84 (2.32)	3.10	211	8717.20	12
Chile	2941 (1.77)	83 (1.76)	2.94	19	14896.50	4.7
Colombia	2706 (4.81)	75 (3.46)	2.71	50	6432.40	1.3
Mexico	904 (6.06)	86 (3.8)	0.90	128	9863.10	2.0
Peru	2942 (1.31)	110 (0.99)	2.94	33	6977.70	5.9
Indonesia	211 (7.9)	7 (5.67)	0.21	271	4135.60	4.4
Malaysia	223 (12.95)	2 (6.63)	0.22	32	11414.80	5.0
Philippines	406 (2.4)	8 (2.32)	0.41	108	3485.10	3.9
Thailand	6 (2.67)	1 (0)	0.006	69	7808.20	9.6
Vietnam	2 (1.79)	1 (0)	0.002	96	2715.30	4.1
China	7 (0.89)	1 (0.06)	0.007	1434	10261.70	6.0
Algeria	204 (7.75)	6 (4.51)	0.20	43	3948.30	2.2
Egypt	119 (2.46)	7 (1.95)	0.12	100	3020.00	1.8
Libya	1070 (5.24)	16 (5.72)	1.07	8	7683.80	1.0
Morocco	1047 (7.74)	18 (7.75)	1.05	36	3204.10	3.0
Nigeria	35 (2.39)	1 (0.77)	0.035	201	2229.90	0.3

Source: *https://en.wikipedia.org/wiki/List_of_countries_by_population_(United_Nations)
**https://data.worldbank.org/indicator/NY.GDP.PCAP.CD
***https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19

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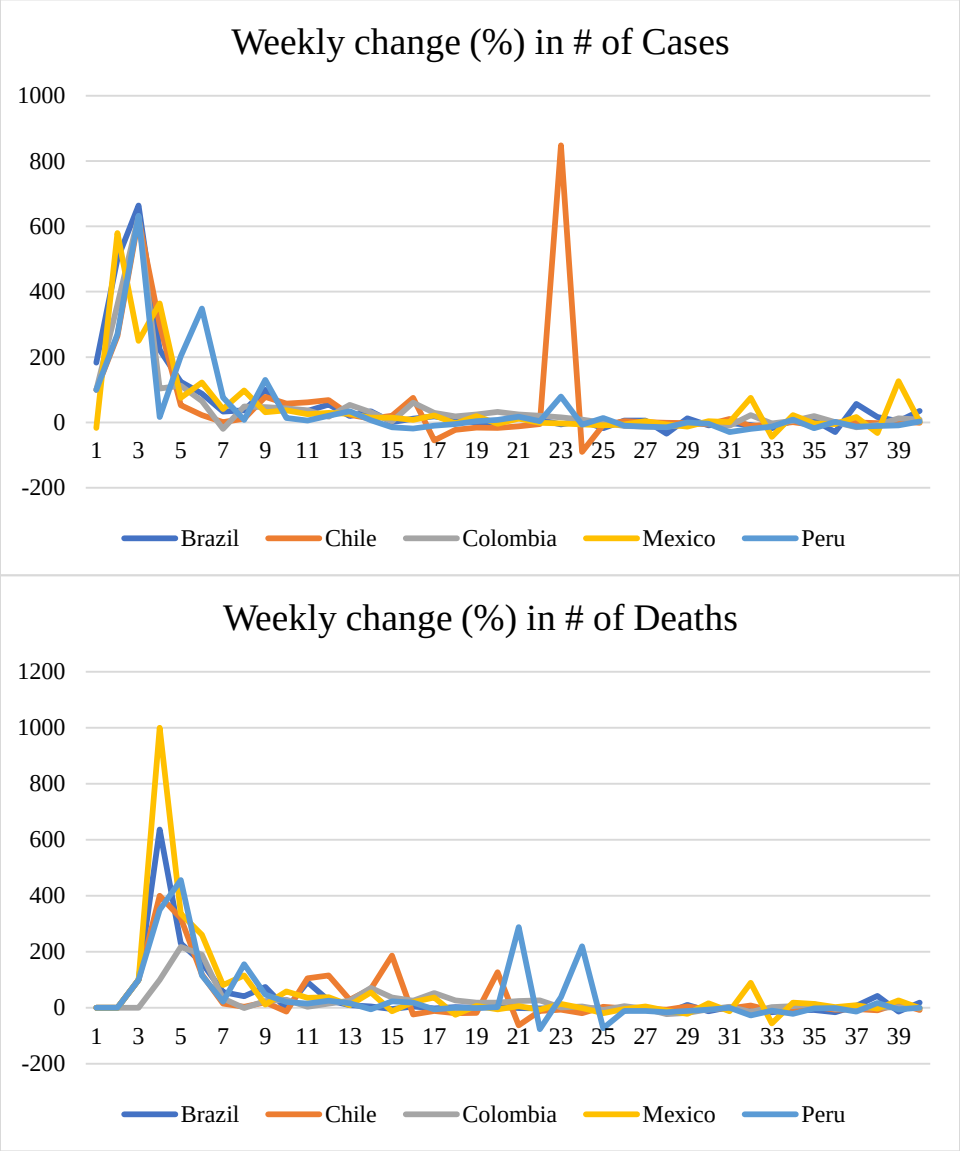

FIGURE 1 (A & B)
TRENDS OF WEEKLY CHANGE (%) IN (A) NUMBER OF CASES, AND (B) NUMBER OF DEATHS IN SELECTED LATIN AMERICAN COUNTRIES

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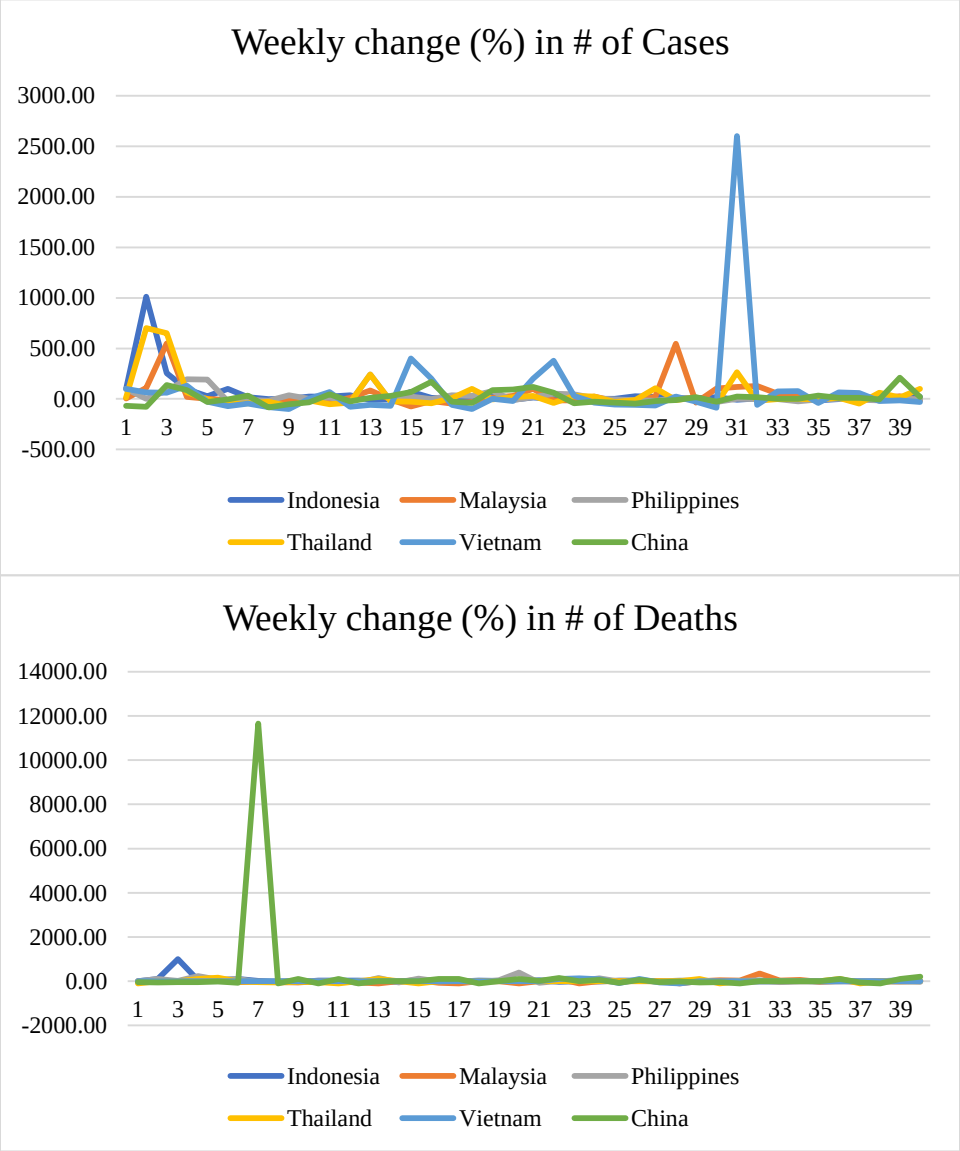

FIGURE 2 (A & B)
TRENDS OF WEEKLY CHANGE (%) IN (A) NUMBER OF CASES, AND (B) NUMBER OF DEATHS IN SELECTED EAST ASIAN COUNTRIES

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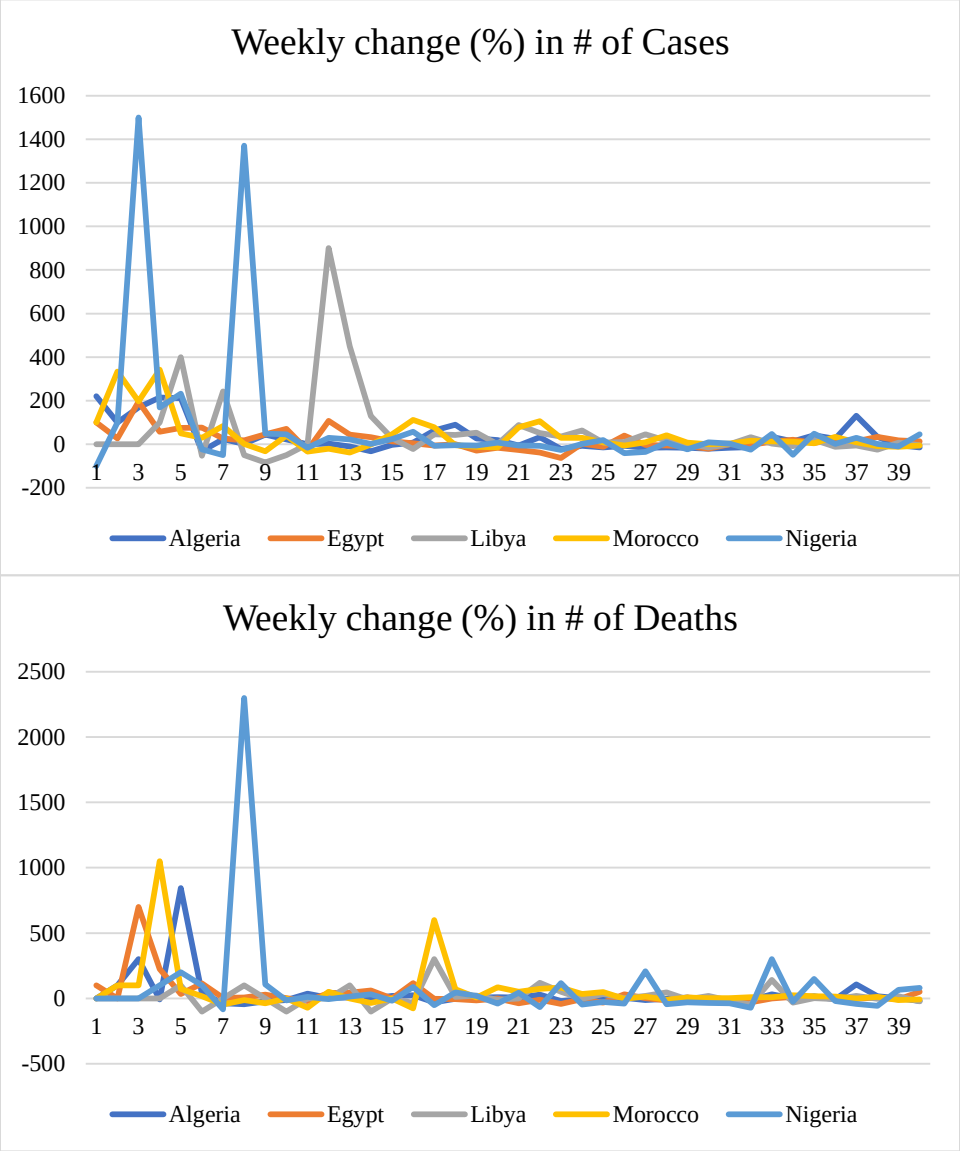

FIGURE 3 (A &B)
TRENDS OF WEEKLY CHANGE (%) IN (A) NUMBER OF CASES, AND (B) NUMBER OF DEATHS IN SELECTED AFRICAN COUNTRIES

Hofstede cultural evidence of Latin American, East Asian, and African countries

Figures 4, 5, & 6 demonstrate regional cultural traits and uniqueness across Latin America, East Asia, and Africa. In sum, as compared with those in East Asia and Africa, general culture in Latin America maintains relatively lower power distance, higher uncertainty avoidance, and higher self-indulgence, signifying Latin Americans' favors in less hierarchy, likelihood of

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resisting challenges, and personal pleasure-seeking across their society. However, they reveal relatively more individualistic than East Asians (except the Filipinos) while slightly lagging Africans' individualism, and being as masculine as many in East Asia beyond which African citizens seem to favor harmony and relative femininity. Of the time-horizon classification, East Asians are most long-term oriented followed by Latin Americans, both witnessing Africans' short-term orientation which may be subject to their scarce economic resources in the process of economic development.

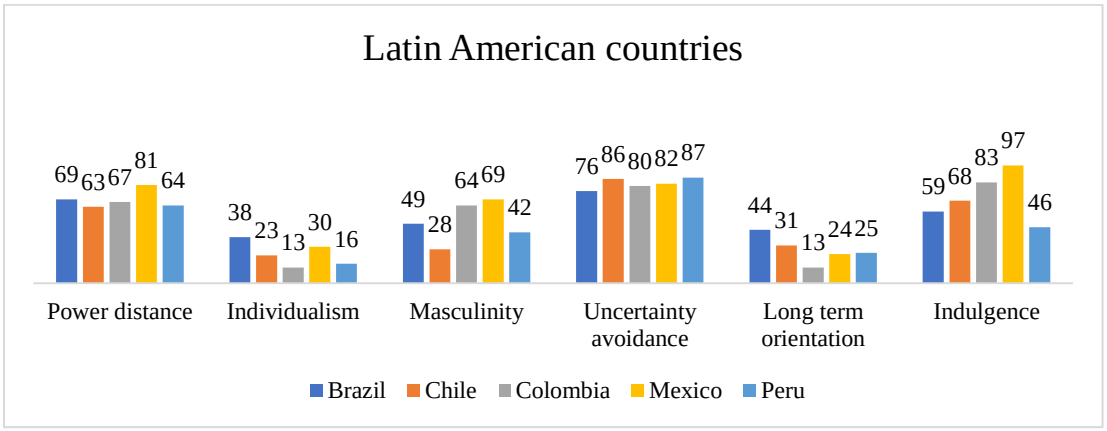

FIGURE 4
HOFSTEDE CULTURAL DIMENSIONS FOR THE SELECTED LATIN AMERICAN COUNTRIES

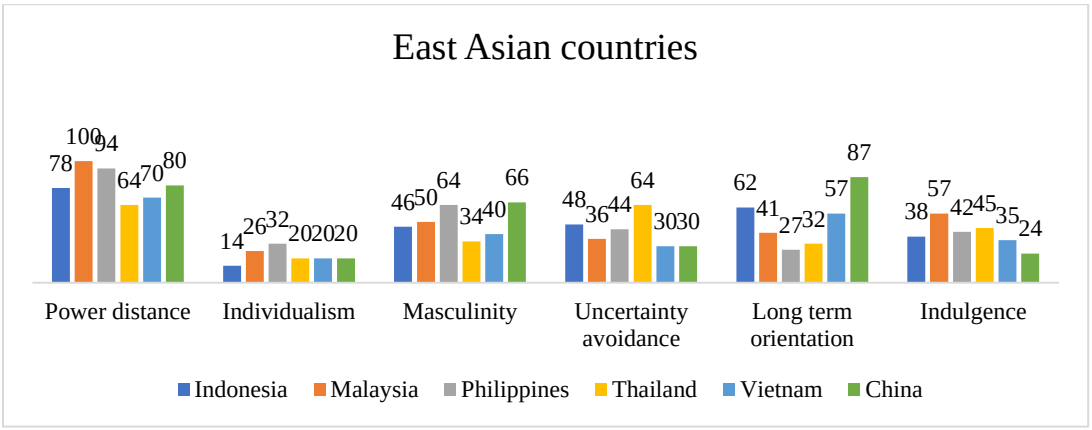

FIGURE 5

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HOFSTEDE CULTURAL DIMENSIONS FOR THE SELECTED EAST ASIAN COUNTRIES

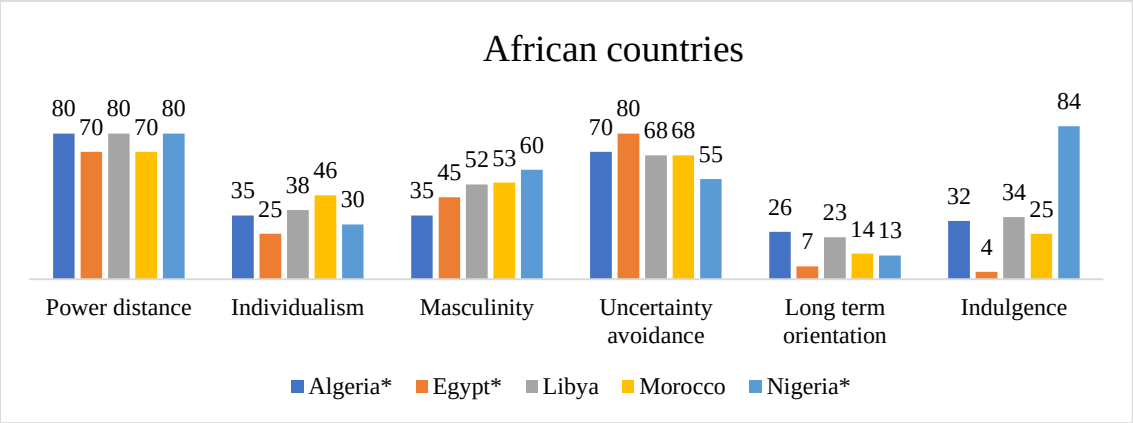

FIGURE 6
HOFSTEDE CULTURAL DIMENSIONS FOR THE SELECTED AFRICAN COUNTRIES

COVID and Hofstede culture combined: What can the COVID interveners learn from cross-cultural practices?

Since the coronavirus outbreak, only scant literature attests the implication of cultural aspect on the pandemic prevention and control. Gokmen *et al.* (2021) suggested that Hosfstede's 'individualism' and 'self-indulgence' pose positive impact on the increasing rate of total COVID-19 cases per million (IRTCCPM) across Europe, while a 'power-distant' culture is observed to lead to negative IRTCCPM, meanwhile leaving 'masculinity', 'uncertainty avoidance', and 'long-term orientation' insignificantly improving COVID. Similarly, in a pre-COVID study by Deschepper *et al.* (2008), 'power distance' and 'uncertainty avoidance' play positive and impactful roles than other Hofstede dimensions in European antibiotic use, suggesting that European patients tend to respect the 'power order' from their physicians to avoid consequential risks otherwise.

In this qualitative study across developing and lower-developed world of Latin America, East Asia, and Africa, it is detected that the comparatively effective control reflecting in East Asian low COVID case and death rates has resulted from its regional cultural practice, which may serve as a pragmatic example for other counterpart regions to assess and reflect in their crisis management. East Asian's low 'individualism' customarily suggests that its people value collective and in-group culture, which prioritizes social altruism over those of the individuals. In the implication of COVID control which needs national-level collaborations, low individualistic society is deemed to follow the state order of face-covering, social-distancing, and other safety calls more closely, presumably leading to lower virus contagion and spread.

'*Long-term orientation'* is also a norm in East Asian culture, which describes its people to be forward-looking and 'patient' for their future while willing to endure 'present' sacrifice, as opposed to the mindset of Latin Americans and Africans who are considered short-term focus on present enjoyment. In the COVID intervention, future-oriented Asian citizens may mostly aim at

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their long-term welfare and therefore more likely to adhere to instant state safety protocols, potentially contributing to effectual disease control. As contrary to Latin Americans' and Africans' relaxed lifestyle which may reflect in loose state-order compliance, East Asians tolerate present sacrifice by face-covering and social-distancing to prevent any short-run disadvantages to safeguard their long-run prosperity.

As concluded in Gokmen *et al.* (2021), 'power distance' is influential in pandemic prevention across European experience. Distinct power in a culture is suggested to curb virus transmission, while a 'flattened' power or 'squeezed' hierarchy tends to deteriorate disease control. In East Asia, high power distance is a custom which keeps people in different ranks and 'distances', counter to the flatter power in Latin American and African societies. In COVID prevention, East Asians follow normative power gap by respecting and complying the state COVID regulations and therefore conceivably deter COVID-19 from worsening.

Also asserted by Gokmen *et al.* (2021), adoption of 'self-indulgence' is to invite more virus infection. Parallel to the consequence of 'individualism', self-indulgence emphasizing one's interest pursuit and freedom of choice may lead to lax compliance of public decrees. In East Asian culture at odds with that in Latin America, its relative conservatism in fact confines the quest of self-indulgence persuading its people to support and follow the societal goals. Here, one-point worth noting is that Africa's overall low self-indulgence could be a cultural nature or due to its low economic developing process, which impedes Africans from pampering themselves in monetary or material terms. In fostering COVID relief, East Asian and some African nations' low self-indulgence implies civil subservience in public safety measures leading to positive control of disease.

'*Masculinity*' in Hofstede's cultural setting receives no significant distinction across three regions, except that Africans may seem favoring in relative femininity. As also validated by Deschepper *et al*. (2008) and Gokmen *et al.* (2021), medical exercise and public health (crisis) management in general are unlikely to be affected under masculine or feminine practice of a culture. Hence, facing the COVID administration, governments across Latin America, East Asia, and Africa could pose their public safety codes based on their citizens' needs and the states' operative capacities, along with other cultural references.

Finally, '*uncertainty avoidance*' reveals the degree of cultural acceptance in changes. As claimed by Deschepper *et al*. (2008), citizens of a high uncertainty-avoiding culture are observed to follow existing rules while defying changes. In East Asia, its low uncertainty avoidance compared with those of Latin America and Africa may offer a plausible reasoning as why it could calm its regional COVID contagion, thanks to East Asians' flexibility of taking challenges and swift adoption of public face-covering and social-distancing as new norms. Facing the novelty of COVID and its unknown development, as government's instantaneous response and proactive strategy are essential, a culture with propensity to accept changes and being flexible, like that of East Asia, is believed to potentially produce affirmative COVID prevention outcome in the impending course of public health management.

POLICY RECOMMENDATIONS

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Given above cross-cultural analysis and implication of the ongoing coronavirus spread, it is important that policy makers, while developing strategies for disease control and prevention through medical, fiscal, and monetary responses, take each country's cultural inheritance into account for pandemic management. Based on Hofstede's cultural indexes of developing or lower-developed countries across Latin America, East Asia, and Africa, low COVID case and death rates of East Asia are deemed to be notably attributed to its cultural practices of long-term orientation, collectivism, high power distance, low uncertainty avoidance, low self-indulgence, and impartial masculinity as opposed to those practiced in Latin America and Africa. Though cultural idiosyncrasy and difference are natural across regions which promotes cross-cultural learning and should be appreciated while cultural ethnocentricity should be discouraged, during the prolonged process following possible epidemic-fatigue, it becomes critical that nations should not only work and coordinate jointly, but also learn from one another in cultural practices to combat the COVID war for a global relief.

As Latin American and African governments may ponder on the low virus case and death rates across East Asia while assessing how its positive COVID preventive outcome is achieved, it is important to realize that disease control and prevention rely on collective action of a nation. Successful crisis management needs both tangible efforts from the medical, fiscal, and monetary resources and the 'software' of culture as one should consider the practice of (1) long-term orientation by which citizens could undertake short-term sacrifice such as complying with public face-masking and social-distancing mandates for long-term stability, (2) low individualism by which citizens prioritize societal goals to act collectively protecting one another for COVID relief, (3) high power distance by which citizens follow state safety codes with complete civil compliance, (4) low uncertainty avoidance by which citizens adopt social flexibility and accept changes and new rules, and (5) low self-indulgence by which citizens promote collective pursuit of social altruism rather than searching for self-interest.

CONCLUSION

The unprecedented COVID contagion has interfered all aspects of human life publicly or privately around the globe. Many studies have been conducted to provide advices on COVID-related rescue concurrently with national monetary and fiscal plans to alleviate the economic and business disturbances, whereas scant analysis was laid on cross-country cultural impact on pandemic control and management.

This study acknowledges the importance of national or regional 'hardware' capacity including medical remedy and economic and financial stimuli for COVID relief, while it stresses the essence of cultural 'software' contributing to public health crisis management. From the Hofstede cultural framework across developing world of Latin America, East Asia, and Africa, it is believed that effective disease control is most likely resulted from a collaborative culture, reflected in *long-term orientation*, *low individualism*, *high power distance*, *low uncertainty avoidance*, and *low self-indulgence*, where an early and complete compliance of public-mandated safety measures is adopted by all citizens, while the risks of failing intervention due to citizen's defiance may prevail in a contrary and uncooperative culture. Policy makers in

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forthcoming COVID crisis intervention should therefore take the pragmatic cultural perspectives into consideration.

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