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COVID-19 outbreaks: Responding, risk conception, communication and management

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Abstract
The number of global infected with COVID-19 reached to 41.104.946, within 210 countries around the world, more than 1.132.325 deaths with death rate is up to 36.3% till 22nd October-2020, according to data released by Johns Hopkins University, which collects statistics on victims. The COVID-19 was not the first pandemic to hit the world, but it was exposed during the past twenty years to four waves of epidemics, Although the epidemic was announced early on the 29th of December of 2019 in Wuhan, China, in Hubei district, the disease overspread 77and the world did not learn from its previous experiences in managing the risks of infectious diseases, and its economic results were much greater than its health effects. The current study search at the function of risk, and particularly the conception of risk, its management and communication, shared in making the economic effects of COVID-19. It considers the public and public health response to COVID-19, the performance of the media and all civil societies, and recommends programs and research issues for creating a system to the more real deal with the next outbreaks. It is agreed that the potential for the fast spread of infectious disease is not significantly a greater threat than it has always been, but the impact that an outbreak can have on the economics is, which needs additional research and strategy development.

Keywords: risk conception; risk communication; infectious disease; COVID-19; Economy

Introduction

The excessive global connectivity (globalization) raises the possibility that an infectious disease arising in one country will expand rapidly to another [1]. Although not unique in this respect, COVID-19 is a new case. Within a matter of weeks in early 2020, COVID-19 separated from the Wuhan center of China to fast infect people in some 184 countries around the planet [2]. The first case of COVID-19 outside China was announced on 13 January 2020 in Thailand [3]. Confirmed cases reached 1.7 million on 13 April with an increase of 20,337% it is an unreasonable comparison between COVID-19 and SARS, which had a total of 8359 during five months of the outbreak, while total mortality reached 774 in SARS but in COVID-19 reached 102000 with an increase of 13.178% [4]. Many studies set the global macroeconomics forces of COVID-19 [5, 6]. These fees were divided into a wide variety of areas like tourism and travel, leading to a valuable economic shock its effects exceeded the health impact of the epidemic result, the most optimistic scenario, economies are witnessing an unprecedented contraction in the second quarter of this year, and it will be referred to as the worst economic recession [7, 8]. Economies witnessed double-digit rates for the year as a whole. The recovery in 2021 will be relatively weak and will take until 2023 before most economies return to pre-crisis levels [9]. Prior epidemiological investigations have prophesied that the asymmetrical pattern and character of this economic failure have caused concern that outbreaks of more serious illnesses such as a flu pandemic could have a catastrophic influence on the global market [9]. Knowing the circumstances that drove this impact of COVID-19 might improve the deal with the potential reflection and administration of other infectious disease outbreaks. Perhaps most enough of these factors is the conception, communication, and management of the risk presented by COVID-19. In such studying, it is necessary to locate the review with observance to the two models of risk used in social studies. The first is the 'realist procedure, where risk is viewed as an actual threat and can be measured separately of the social status within which it occurs [8]. The other is the 'social constructionist' procedure, which examines risk as intimidation or threat that is created by social and cultural rules and cannot describe being independent of these rules [9]. The meaning of 'risk society' is a modern concept that refers to social fears of a permanent danger, such as terrorist attacks and outbreaks of infectious diseases,

The most important in this conceptualization is how communities develop defense tools to regulate their stress [10]. In the present study, a more material rationalistic believes was adopted by showing both conceptualizations as having some sufficiency; that a 'risk' includes both a materially calculable component of the probability of an event and a socially created component of how that probability event is sensed by the individual and community [10]. In this design, a difference can be detected through the analysis of the influence of COVID-19 between what is learned from a realist perspective (the materially weighable prospect of, for example, infection with COVID-19, different results of disease, and the prospect of different strategies to control infection, on the other hand, the

social formed conception of these probabilities as 'risk'. The present study examined the role of risk, and particularly the concept of risk, that led to the economic impact of COVID-19. Then the study goes on to the public health acknowledgment to COVID-19, and the response to risks introduced by COVID-19, after that study of the importance of communication in risk understanding, looking at the use of the mass media, and a review of measures for responding to future COVID-19 like situations.

The conception of risk and economic impact of COVID-19

It seems difficult to study and investigate the health, economic and social impacts of an epidemic during its outbreak, but it will be easier after it regresses and recedes although the direct payments of a disease on the medical and health service can be abundant, the secondary payments on other areas of the economy may be more significant [1]. COVID-19 surely confirmed this [1, 2, 6, 7]. The indirect damages of an epidemic are built about only by the public's understanding of the risk of becoming infected, and the risks correlated with the various results of that infection. An epidemic that is believed to be transformed by direct touch with infectious individuals is expected to lead to decreases in additional contact [1]. Wherever individuals taste some 'control' over their exposure to infection, like HIV, this decrease may be more restricted [4]. Nevertheless, in cases where noted control is data sources, such as media, government, and international societies, it is a significant portion defining the level of perceived risk and prevented over an epidemic [8].

COVID-19 showed many of these specialties, and in private a union of two important shapes of risk the first one, was solid scientific uncertainty of the beginning of the epidemic, including the identity and nature of the microbes, and thus the probability and pathways of infection. Next, there was much doubt about the degree of efficiency of specific interferences or measures to defeat the probability of outcomes of disease [6, 7]. These are consistent with the 'terror' factors highlighted in analyses of risk conception [9]. Although as time grew levels of 'terror' were defeated, originally all that was known about COVID-19 was that it was transmissible immediately by the airborne path; the disease had a high mortality ratio of around 4% without specific vaccines or medications. This generated extensive social anxiety that then turned into sharp economic impact [1, 2]. And know that COVID-19 spread rapidly, disease transported was mainly confined to when people were sick, and disease mainly concerned adults. This indicated that common public health actions, such as tracking and isolating cases, were sufficient public health actions [1]. That these public health actions were powerful had associations for how the people began to view the risks connected with COVID- 19, and the improvement of public performance during the epidemic, Public health response

COVID-19 is possibly the common unique pattern in recent times of the widespread use of common, public health measures, nonmedical, include transmissible disease outbreak. These actions can be classified into two classes. First, these decreasing communication among infectious and susceptible cases, like separation and quarantine, travel limitation and enhanced public distance. Second, these decreasing useful contact the probability of infection happening should communicate between infectious and susceptible people happen through the case and meeting health, including cleaning hands and using masks, and environmental hygiene Like sterilization and ventilation [1, 2, 6, 7]. The probability of these actions working according to the features of the epidemic and affected individuals. This involves the method of transmission, incubation time, period, infectiousness degree, Target age group and contact patterns of the people. Incertitudes around these factors, notably at the origin of an outbreak. In review, despite COVID-19 was transmitted principally by the respiratory track it normally behaves as a deeply infectious agent and several parameters helped its containment in common public health interferences. Certain factors included the absence of pre-symptomatic infection, a low level of transmission at the start of the infection, and that infectivity was principally by respiratory aerosol and happened originally in healthcare or home settings including isolate person to person meeting. despite the reproductive number was comparatively long at 8–10 days between the onset of signs in the first one and the start of symptoms in the second one in the series of infection. Those parameters made it enough to reduce infection by quickly separating person, quarantining, and beginning and implementing transmission control and hygiene measures [8]. Nevertheless, additionally the point that for these public health actions to be useful, the receipt of, and approved with, them by the society was important which may not this is the situation. For example, there have been studies on the H7N7 avian influenza epidemic in the Netherlands in 2003 that refers that practices and preventive actions were low [10]. The application of such common virus control actions nowadays is very attractive because it influenced public attention to risk. From the first side the increase of understanding the severe risk of disease, and on the other providing reassurance, that activity is happening that lessens that risk (9). For example, it is believed that enough of the highly obvious public health action over the world in connection with temperature readings for people, wearing masks Social isolation, environmental epidemiological survey, and comprehensive disinfection of all surfaces in public and private facilities, may not have been effective indirect infection control, but gave a high level of reassurance to the society, so lessening the financial impact of the outbreak [11]. When referring to the usual behavioral study of individuals and societies during the outbreak of SARS - 2003 and in comparison with the behavior of the same societies, can be found the degree of commitment to health and safety standards was greater and more stringent in the case of COVID-19 because of most people became aware of the seriousness of the disease and the speed of the outbreak and that societies that underestimated the risks of the disease were severely hit and paid very expensive health and economic costs, which could have been avoided by several public health measures. European countries and the USA had economic priorities at the expense of public health, so the number of victims was very high, which led to

economic and human losses in addition to prolonging the period of community recovery compared to the societies that applied early isolation measures quantifying the behavioral modifications that might be required in front of various threats would significantly aid enhance both epidemiological and economic predicting [4]. Similarly, knowing the related importance of risk conception in behavioral development, associated with other agents, such as understanding, perspective and recognized influence of prevention measures, would further support the management of transmissible disease outbreaks.

Risk conception and communication

The society of economic and other establishments take choices and make decisions in all fields. The 'standard' view is that the society makes choices according to their perception of the risk, rather than the real risk, whereas states and other organizations are more possible to make their judgments according to the real risk [12, 13]. Nevertheless, these systems also have their judgments changed by other variables, like the economic and political 'needs' of society. How risk is sensed by people, and translated by these organizations is for basic to steps practiced in the face of a different, or replacing, risk of an incident [12].

The challenges this offers for risk information, and strategy development, was well typified during the COVID-19 epidemic. The mechanisms of assessment by individuals and investors are complicated and it is not easy to craft a real perception because individuals partially base their judgments on the behavior of others [6, 7]. This would lead to a result in performance that is susceptible to unplanned incidents and related to the decisions of those that first respond but is more receptive to new knowledge and thus simply changed [11, 12]. Instead, the fast and mass abstention in travel and tourism, for example, in COVID-19 concerned areas may easily have been the result of huge numbers of people making related choices given hardly alike information sets. This action is less susceptible to immediate data and less simply changed. The logic behind observed behaviors are therefore essential as they can influence the expected result of various risk communication strategies and the speed by which request recovers following a crisis. The important players in this position are the Society as political and economic 'claimer' and it is essential to look at how individuals of the society collect data on which they base their expectancy and following actions. Civil perceptions of risk are complicated, and affected by variables like whether the risk contains possibly fatal results, is stubborn and unexplained [13]. COVID-19 rivaled all these features. Further, this study revealed that the observed deadly nature of COVID-19 was enough operator of actions needed to avoid infection. Thus, while COVID-19 posed some medical risk, it exercised a disproportionately large emotional effect on people concerning its moderately low morbidity and mortality (6). The obvious psychological result of COVID-19 can be referred to the joining of two features of information about the sickness. First, the essentially costless and fast transportation of knowledge, through advanced media and communication tools, not only supported attention on the improvement and diffused of infection but also indicated that embarrassing news was distributed in the urgency to report in 'real-time' [13]. Other, the absence of sufficient therapitque, messages on COVID-19 indicated that, although there was a fast flow of knowledge, often this was not hardy scientific information. Rather, much of the data given during the outbreak was based on belief, guesswork and precursory results [1, 2].

COVID-19 and the Mass Media

The media was and still is the real window from which the public receives its information, so it was necessary for the messages addressed through the media to be real and reassuring to a large extent and away from intimidation [14]. Indeed, the COVID-19 that hit Wuhan city last December is anonymous, and many medicinal properties are unclear, but it was not the first of its kind. In the past two decades, the world has experienced similar epidemiological waves, such as SARS and influenza. It is expected that the media discourse will be more objective in conveying the news of the pandemic and drawing a true picture of the form and concept of danger. Overall, the consent is that the communication coverage of COVID-19 was extreme, seldom incorrect, and sensationalist [15]. Nevertheless, much is still not known according to the method by which 'risk' is reached or, possibly, more importantly, known and worked upon. For example, there is a shortage of data concerning the dependent role of the media, state or other agencies in increasing common interest and implanted alarm related to giving reassurance. Thus, particularly in the unique situations of an infectious disease epidemic of global anxiety, specific studies of the association in the mass media and risk disclosure in the meaning of, for example, COVID-19 is active in the improvement of the perception of the role of the media and the role of this for the control of the future epidemic.

In this regard, the recording of COVID-19 tended to follow that of another communicable disease epidemic, following two different phases (16). The first stage defines the outbreak as a scary threat. Microorganisms are on the revolt, are more intelligent than us and know no borders.

In this regard, media outlets announced that researchers and physicians said that there is no real treatment and that 75% of the population of the earth will be vulnerable to infection and that there is no vaccine a year and a half from now. And that the current health systems (NHS) will not be able to absorb the growing population of patients, and these systems may collapse, so people must strictly adhere to the conditions of social separation and quarantine. These descriptions designed the form and concept of risk and determined its dimensions and changed its concept from the public thought to the real concept of risk, it may be mostly imaginary and lacks scientific, but it outlined the image of the risk and gave it dimensions with a thought close to reality. This is well shown in an in depth for [14] regarding how the media image of SARS carried in the UK noticed that the media represented

SARS as a serious threat to the UK, whilst concurrently proposing that this threat had been 'contained' that SARS was incredible to influence the British as it had the Chinese, as the Chinese are so 'diverse'. In this meaning, the communications can contribute to stigmatization and separation, which in the case of SARS was obvious against the Asian display [17]. This resonates with the presentation by the media of outbreak.

The role of the WHO in infectious disease outbreaks

The World Health Organization (WHO) was a significant appearance in interfering and describing the risks concerning COVID-19. At the beginning of COVID-19 outbreak in the last December in Wuhan City, WHO responded through its regional and international office and issued guidance and reports.it immobilized the international effort to tackle the epidemic and formed with its partners' research groups on the source of the outbreak and the structural and pathological traits of the virus [18]. It issued bulletins and periodic reports on statistics and the dramatic increase in the number of infections and documented accurately the dates of the cases that struck each country, and also followed the course of the infection in countries where the disease spread, to identify the true form of transmission between humans and issued directives in preventing travel, health quarantine, social separation and changes levels the risk is from one level to another based on the data that is collected from countries and health systems around the globe. The World Health Organization (WHO) announced the 2019–20 coronavirus disease a Public Health Emergency of International Concern [19], on 30 January 2020 and a pandemic on 11 March 2020 [20]. Regional transmission of the disease has been reported in many countries overall six WHO areas [6, 7]. It also defined how COVID-2019 affects people, such as the aged and those with pre-existing pathological circumstances (such as high blood pressure, heart disease, lung disease, cancer, or diabetes), WHO develop a more serious illness than others. It completely prevented self-medication or traditional medicine with any remedies, including antibiotics, as a prevention or treatment for COVID-19. It registered that there are many clinical actions undertaken that involve both combined and conventional medicines. It assured to give updated information as soon as clinical results were available. WHO leaders explain that there is no vaccine and no particular antiviral medication to prevent or treat COVID-2019. But, people should take care to reduce symptoms. People with a severe illness must be hospitalized. Most patients improve with supportive care. Potential vaccines and some specific drug treatments are under study [1, 2]. It is tested through clinical trials. WHO is organizing aims to develop vaccines and medicines to prevent and treat COVID-19?

The origins of hygiene are completely stressed, such as cleaning hands frequently, covering the cough by elbow or tissue curve, and keeping a distance of at least one meter (3 feet) from people who suffer from coughing or sneezing. Although the disease is still widespread, challenging the lives of many people around the world without a distinction between nationality or affiliation, we must learn from the lessons that the epidemic contributed to societies of different associations, that threats and disasters are the same and target humans in general and do not exclude anyone. Must unify the discourse, unite efforts, and stay away from the racist approach in dealing with problems and disasters, and do not stigmatize someone and let the attack take from the approved scientific methods and compare the results of previous experiences with the current one to the best results [3, 20].

Describing the reaction to COVID-19

Two main factors improved the response. First was the global meaning of a 'climate of fear' that was surely caused by previous experiences like SARS outbreak. The second was the wide geological spread of an unclassified virus; COVID-19 was a 'secret' disease, with the intimidation of being able to hit anyone, anywhere, anytime service to that the high case lethality rate, methods of infections, the origination of the and risk over identification and direction of the disease all provided to the public warning, whether they were immediately excited by COVID-19 or not. This emotional impact generated a feeling of importance that may not be found in [3, 4].

Future response to conditions such as COVID-19

Perhaps, the most many factors supporting the early response to, and control of, the COVID-19 epidemic were advanced technology and the actual results of globalization in communication (21-25). The quality, fast and effectiveness with which the global public health community responded to the COVID-19 epidemic established the forces that have been made in communication global public health. The efforts performed by WHO has been clear and truly commendable for their coordination in the containment of the epidemic, In the future, this coordination requires to be strengthened, as part of the COVID-19 experiment, but including recent attention over bio attack, and can respond to the crisis of a higher degree than COVID-19 [26, 27]. Further, the novel improvement in applications to plan for probable bio attacks should include and enhance procedures for dealing with communicable disease. After all, one does not truly identify at the source of a virus if it is natural or manipulated and, in both cases, a strong and ready system will be needed to quickly and efficiently respond to include virus spread and impact [14, 16], and there are many lessons for management related risk and communicable disease that may be received from the COVID-19 outbreak. First, a transformation in behavior from emergency responsiveness to control readiness is required, as a component of a more holistic and important program to preparing for communicable disease outbreaks [12]. Particularly, emergencies submit an inadequate timeframe for getting action, and would, therefore, benefit from a definite series of command, effective

coordination between related organizations, and solid administrative authority. Clarity of responsibility, through epidemic time, from national to the international levels, is important for efficient action his involves organizations outside the health sector, like communication, transportation, education, economy, housing, defense and, municipal services. While many sectors are involved, if there are scientific ambiguity and uncertainty, and during the time frame are critical, administrative leadership becomes an utmost necessity Moreover, if an outbreak happens, choices need to be taken by different sierra of actors, from different attitudes and at different locations in the policymaking method. Given the characteristics of public health emergencies, hence the effectiveness of the emergency response depending on the level of decision making. Illustration, through the COVID-19 epidemic there were many forms of organizing. The slackness shown by the health authorities in the European Union and the slow pace in taking the appropriate decision at the right time made Europe pay a high price for the spread of the epidemic, and it weakened public confidence in the health authorities and crisis management. Efficient decision making is distinguished by such points as timeliness, correctness, suitability, utility, and accuracy of goals, and information. It is hence necessary to reflect on how decision making can rightly be taken out throughout health disasters [28-30].

Other, as a portion of the decision-making method, there is a required for knowing about the charges and benefits of sufficient responses. Financial data is currently concentrated on direct and immediate expenses, such as medications, other interferences, health supervision services, to the appropriate national health sector. A more comprehensive description of macroeconomic charges will support a more important passageway to decision making, and provide more informed choices that are taken retroactive, more than reactively, previous to and through difficulties. Although macroeconomic modeling of health concerns not previously tracked, with only rare employment. Work like that is needed to implement the support for suggesting how much financial knowledge may best be evaluated and best consolidated into the decision- making method for epidemic response. Third, global monitoring and response-ability to address rising risks through acceptable time reporting, rapid information and evidence-based behavior are very powerful techniques to containment and preventing, but all these are not sufficient without appropriate decision at the timely. Fourth, it will be important to guarantee that interferences attend health ethics and supporting human rights. Numerous public health actions employed through the COVID-19 outbreaks, like separation and quarantine, may contradict with some human rights for design a response to widespread outbreaks it will, consequently, be important to study a variety of subjects concerning the ligament between control and individual freedoms. For example, using separation and quarantine, there wants to be thought of the level of clarity with which such procedures are established and implemented, proportionality in the demand of these procedures associated with the benefits they give and the support of safe and comfortable surroundings for people subservient to these rules. Finally, it is necessary to build more stringent measures and restrictions to deal with and trade in wild animals, and that the wildlife that has been created is part of a natural environmental balance and not meals on the menus. Try to change everyday lifestyles and take advantage of people's daily lifestyles and behaviors without epidemics, because these wild animals have been an important source of many outbreaks.

Conclusion

Early and soon response for infectious disease outbreaks. May led to economic and health impacts can be decreased significantly. Serious infectious disease outbreaks need to be identified and dealt with quickly. Adverse health and economic effects can be reduced by early detection and response. Serious media and modern communication technologies play a fundamental role in transmitting messages and information between different levels and transforming the form and concept of risk into the most realistic and serious form. Also, there is a demand for greater perception and managing of risk surrounding outbreaks. For example, knowing the association between infectious disease flows and flows of merchandise, duties and, services persons can help institutions assess the related risk of and to specific countries through an epidemic.

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References

1. Carlos WG Cruz CS, Cao B, Pasnick S, Jamil S, Novel Wuhan (2019-nCoV) coronavirus. Am. J. Respir. Crit. Care Med,2020:201:7-8.
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, *et al*. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet,2020:395:497-506.
3. Cheng WC, Wong SC, To KW, Ho PL, Yuen KY. Preparedness and proactive infection control measures against the emerging Wuhan coronavirus pneumonia in China. J. Hosp. Infect, 2020.
4. Arnot M, Mzezewa T. The Coronavirus: What Travelers Need to Know; The New York Times: New York, NY, USA, 2020. Available online: https://www.nytimes.com/2020/01/26/travel/Coronavirus-travel.html (accessed on 17 February 2020).

5. Péter B, Tamás T, Zsolt V, Attila D, Ferenc AB, Gergely R. Risk Assessment of Novel Coronavirus COVID-19 Outbreaks Outside China, J. Clin. Med,2020:9:571. doi: 10.3390/jcm9020571.
6. Bhakta KC, COVID-19 pandemic: Time to focus on quitting tobacco use in Nepal and globally, Popul. Med,2020:2(9):28.
7. World Health Organization [Internet]. Novel coronavirus (nCoV-2019) situation report-1 [Cited 2020 Mar 3]. Available from: https://www.who. int/docs/default-source/coronaviruse/situation-reports/20200121-sitrep1-2019-ncov.pdf?sfvrsn=20a99c10_4.
8. World Health Organization [Internet]. Coronavirus disease (COVID-19) situation report-45. [Cited 2020 Mar 22]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200305-sitrep-45-covid- 19.pdf? sfvrsn=ed2ba78b_4.
9. Balram R, Anandi S, Laxmi KD, Dynamics of COVID-19 in India: A review of different phases of lockdown, Popul. Med,2020:2(7):21
10. World Health Organization [Internet]. Report of the WHO-China Joint Mission on Coronavirus Disease 2019(COVID-19). [Cited 2020 Mar 3].
11. Frederic B, Phurichai R, Macroeconomic effects of Covid-19: an early review, 2020. https://www.bis.org/publ/bisbull07.pdf
12. Eichengreen B. The human-capital costs of the crisis, Project Syndicate, 2020.
13. International Monetary Fund, World Economic Outlook, Chapter 1, the Great Lockdown, 2020.
14. McKibbin W, Fernando R, The global macroeconomic impacts of Covid-19: seven scenarios, CAMA Working Paper, no 19/2020
15. Blendon RJ, Benson JM. The public's response to severe acute respiratory syndrome in Toronto and the United States. Clinical Infectious Diseases,2004:38:925-931.
16. Ungar S. Hot crises and media reassurance. British Journal of Sociology,1998:49:36-56.
17. European Centre for Disease Prevention and Control (ECDC). Rapid Risk Assessment: Cluster of pneumonia cases caused by a novel coronavirus, Wuhan, China, 2020 2020 [17 January 2020]. Available from: https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-cluster-pneumonia-cases-causednovel-coronavirus-wuhan
18. European Centre for Disease Prevention and Control [Internet]. Risk assessment tool. [Cited 2020 Mar 3]. Available from: https://www.ecdc. europa.eu/sites/default/files/documents/operational-tool-rapid-riskassessment-methodolgy-ecdc-2019.pdf.
19. Kim I, Jia L, Jihee L, Eensuk S, Chaeshin C, Seon KL. KCDC Risk Assessments on the Initial Phase of the COVID-19 Outbreak in Korea. Osong Public Health Res Perspect,2020:11(2):67-73.
20. Griffin RJ, Dunwoody S. Public reliance on risk communication channels in the wake of a Cryptosporidium outbreak. Risk Analysis,1998:18:367–375.
21. Stegeman A, Bouma A, Elbers AR, de Jong, MC, Nodelijk G, de Klerk F, *et al*. Avian influenza A virus (H7N7) epidemic in The Netherlands in 2003: Course of the epidemic and effectiveness of control measures. Journal of Infectious Diseases,2004:190:2088–2095.
22. Richard DS, Responding to global infectious disease outbreaks: Lessons from SARS on the role of risk perception, communication and management. Social Science & Medicine,2006:63:3113–3123.
23. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, *et al*. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. The Lancet. 2020; Elsevier BV,395:(10229):1054–1062. doi:10.1016/s0140-6736(20)30566-3. ISSN 0140-6736. PMID 32171076.
24. Wald NJ, Hackshaw AK, Frost CD. When can a risk factor be used as a worthwhile screening test. BMJ,1999:319:11.
25. Jung SM, Akhmetzhanov AR, Hayashi K, Linton NM, Yang Y, Yuan B, *et al*. Real-Time Estimation of the Risk of Death from Novel Coronavirus (COVID-19) Infection: Inference Using Exported Cases. Journal of Clinical Medicine,2020:9:(2):523. doi: 10.3390/jcm9020523. PMC 7074479. PMID 32075152.
26. Harrabin RA, Coote. Health in the news risk, reporting and media influence. London: King's Fund, 2003.
27. Health Canada. Learning from SARS. Renewal of public health in Canada. Ottawa: Health Canada, 2003.
28. Hill A. Media risks: The social amplification of risk and the media violence debate. Journal of Risk Research,2001:4:209.
29. Hughes JM. The impressive and rapidly expanding knowledge base on SARS. Emerging Infectious Diseases,2004:10:171-172.
30. Person B, Sy F, Holotn K, Govert B, Liang A. NCID/ SARS Community Outreach Team. Fear and stigma: The epidemic within the SARS outbreak. Emerging Infectious Diseases,2004:10:358-363.
31. Wu, Yi-Chi C, Ching C, Yu J. The outbreak of COVID-19: An overview. Journal of the Chinese Medical Association,2020:83(3):217-220.