

The Psychological Economic and Social Costs to Not Consider Some Respiratory Viruses as Airborne

Luisetto, M.^{1*}, Fiazza, C.² & Oleg yurevich Latishev³

¹IMA Academy Administration and Management Branch, Social Science Branch, Italy

²Hospital Pharmacist Manager, PC Area, Italy

³IMA Academy President, RU, Italy

***Correspondence to:** Dr. Luisetto, M., IMA Academy Administration and Management Branch, Social Science Branch, Italy.

Copyright

© 2020 Dr. Luisetto, M., *et al.* This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 29 October 2020

Published: 09 November 2020

Keywords: COVID-19; Coronavirus; Pandemic; Economy; Healthcare Management; Social Science; Psychology; Infectious Disease; Airborne; Air Pollution; Prevention; Opens the Window Strategy; Management; Accounting

Abstract

In actual second wave of COVID-19 pandemic it is interesting to observe also the psychological economic and social effect.

Related some diffusion and spread modality principally considered by some healthcare international and national authority.

If direct contact and by droplet transmission was well accepted as major mechanism the AIRBORNE possibility of transmission was considered less relevant.

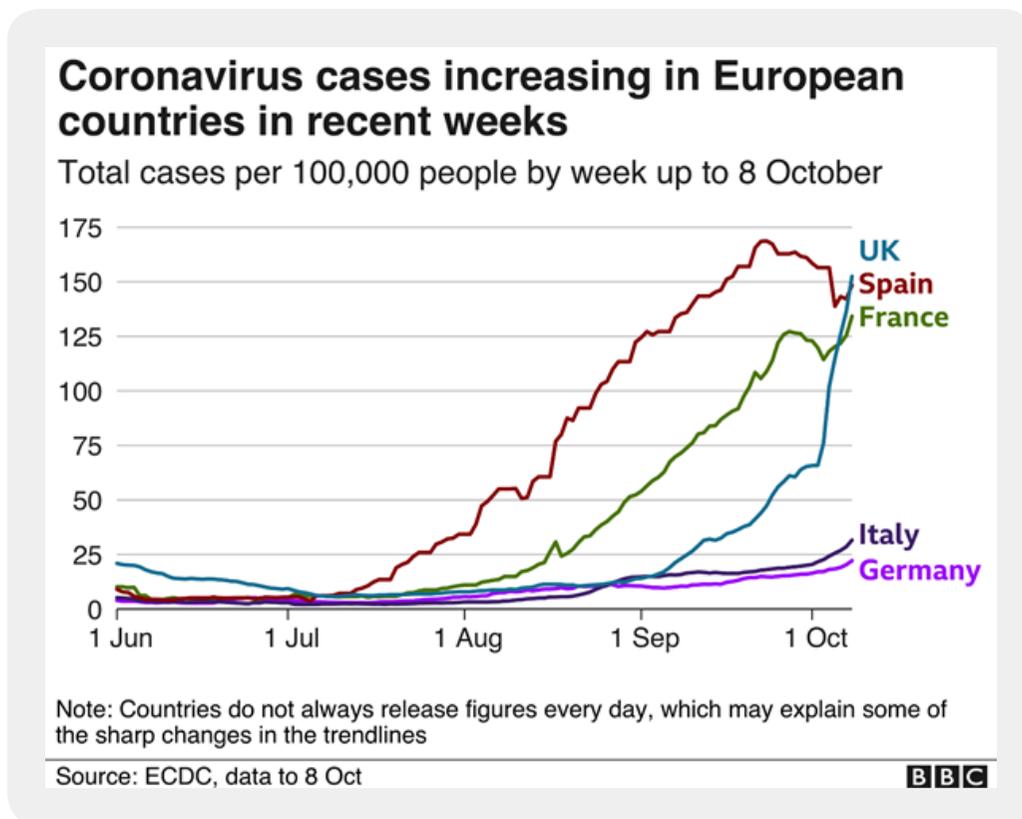
But observing nowadays velocity in increase in COVID- 19 cases among France or Spain countries in a very few

Weeks seen to show that other modality of transmission must to be take in consideration.

Introduction

The second wave of COVID-19 pandemic presented an characteristic and original

Epidemiological Behavior whit in a little time window high number of positive COVID-19 subject in some countries like France, Spain, UK.



Figure

This kind of spread seem not follow only the PATIENT ZERO THEORY due the

Few time involved in a logarithmic explosion of cases.

Other factor must be investigated in an new light.

In previous INTERNATIONAL HEALTH CARE ORGANIZATION related pandemic was

Highlighted the direct contact and by droplet transmission as relevant route.

But airborne transmission was not considered as crucial factor.

Two great factor and 1 cofactor, but it is true and correct this approach?

In WHO document 3 March 2020 Getting your workplace ready for COVID-19 was reported:

During the meeting events:

“Open windows and doors whenever possible to make sure the venue is well ventilated”

The pandemic have produced and it is producing and will produce a very complicated social - economic situation.

Also psychology of individuals and of population was deeply influenced by pandemic.

Social life of many people changed in a restricted periods of time.

The fear of a new disease, of the unknown, to dye or to get infections from other people, the lockdown and other measure produced a great psychological pressure even in individuals but also in entire population.

Great problems was due by the sharing of images of china people of Wuhan

Taken by policy at their home if suspected to be infected and so on.

Images of hospital full, the every day data of death and related the growth of the contagious was pervasive in all media.

Social distancing, reducing of meetings, on distance work and school produced a sort of artificial world.

The only safe place was considered the family and home.

Event to go in a supermarket was considered dangerous and capable to make possible a contagious situation.

The use of mask reduce the ability to see emotion of the people among them.

More use of social media, ICT and more time spent on internet produced a strange new kind of society.

The health people vs the ill people.

The same transfer of the guilty of the start of infectious involved many nations.

In example USA vs china and son on.

Great psychological problem involved people aged from 10- to 20 year due the evolutive period.

Also people older or with disease as comorbidities was highly involved.

Many business and economic activities was stopped or reduced global sales volume in many field.

Fear for the present and for the future, fear for the police check.

Fear not to have efficacy drugs or vaccine, fear not to have ICU bed, fear not to have oxigeno-therapy.

Problems in diagnostic test, time wasted in medical settings.

Problems for lovers especially in young people.

According Nina Vindegaard *et al.*:

“A total of 43 studies were included. Out of these, only 2 studies evaluated patients with confirmed COVID-19 infection, whereas 41 evaluated the indirect-effect of the pandemic (2 on patients with preexisting psychiatric- disorders, 20 on medical health- care workers, and 19 on the general -public). 18 of the studies were case-control studies/compared to the norm, while 25 of the studies had no control- groups. The 2 studies investigating COVID-19 patients found a high- level of post-traumatic stress symptoms (PTSS) (96.2%) and significantly higher- level of depressive symptoms ($p = 0.016$). Patients with preexisting psychiatric- disorders reported worsening of psychiatric -symptoms. Studies investigating health- care workers found increased depression/depressive symptoms, anxiety, psychological distress and poor sleep -quality. Studies of the general public revealed lower psychological well-being and higher- scores of anxiety and depression compared to before COVID-19, while no difference when comparing these symptoms in the initial- phase of the out-break to four weeks later. A variety of factors were associated with higher- risk of psychiatric- symptoms and/or low psychological well-being including female gender, poor-self-related health and relatives with the COVID-19.”

G Serafini *et al.*:

“As a result of the emergence of coronavirus- disease 2019 (COVID-19) outbreak caused by severe acute respiratory syndrome- coronavirus 2 (SARS-CoV-2) infection in the Chinese- city of Wuhan, a situation of socio-economic crisis and profound psychological- distress rapidly occurred world-wide. Various psychological- problems and important consequences in terms of mental- health including stress, anxiety, depression, frustration, uncertainty during COVID-19 out-break emerged progressively. This work aimed to comprehensively review the current- literature about the impact of COVID-19 infection on the mental -health in the general- population. The psychological impact of quarantine related to COVID-19 infection has been additionally documented together with the most relevant psychological -reactions in the general- population related to COVID-19 outbreak. The role of risk and protective -factors against the potential to develop psychiatric disorders in vulnerable individuals has been addressed as well. The main implications of the present findings have been discussed.”

Commerce, travels, sports, holidays, restaurant, hair salon, gym, theatre and so on was also deeply involved.

This crisis produced and produce or will produce reducing in PIL and sales volume and also reduced taxes due to lost of business opportunity.

Aim of this work is to evaluate this aspect but related not adequately consider also AIRBORNE way of transmission.

According Article

CORONAVIRUS Top World Bank economist says corona-virus pandemic morphing into ‘major economic-crisis’

‘This is a war,’ said Carmen Reinhart

“This did not start as a financial -crisis but it is morphing into a major economic- crisis, with very serious financial consequences,” World- Bank Chief Economist Carmen Reinhart told Bloomberg. “There’s a long road ahead.”

She said the “longer the uncertainty, the longer the pandemic works its way through the global- economy, the bigger the balance sheet damage

This is a war,” she said about central -banks trying to keep yields low by buying -bonds. “During wars governments -finance their war expenditures however they can and right now there are dire needs.”

2020 Matteo Lucchese *et al.*:

The Coming Coronavirus Crisis: What Can We Learn?

The Financial Crisis has Arrived

“With fears of a harsh credit -crisis and a major- collapse in economic- activity, the spreading of the pandemic crashed financial- markets all over the world. Between 19 February and 20 March 2020, the S&P500 index at the Wall Street Stock- Exchange lost 32%. In London, the fall of the FTSE100- index was in the same -range. In Italy - the first European -country to be infested by the pandemic - the Milan FTSE MIB index lost 38%” [1].

Timothy Laing

“The COVID-19 global- pandemic has not only caused infections and deaths, but it has also wreaked havoc with the global economy on a scale not seen since at least the Great- Depression. COVID-19 has the potential to destroy individual- livelihoods, businesses, industries and entire -economies. The mining sector is not immune to these impacts, and the crisis has the potential to have severe- consequences in the short, medium and long-term for the industry. Understanding these impacts, and analyzing their significance for the industry, and the role it plays in wider- economic development is a crucial- task for academic research” [2].

Rahmiye Figen Ceylan *et al.*:

“Like wars and socio-politic shifts, contagious -diseases have changed the economics and politics of the world throughout- history. In 2020, the world faced COVID-19, a globally effective- virus leading to mass losses and socio-economic- panic. Due to apparent psycho-social conditions, analyzing the potential economic-

effects of the COVID-19 pandemic was inevitable. discussing economic- effects of previous global and regional- epidemics is considered beneficial. This research evaluated most of the known epidemics and their effects on economics and socio-politics by reviewing scientific- literature. In addition to the vast -literature and observations on the ongoing -process, we assessed the potential -impacts of COVID-19 and potential ways to overcome these impacts. The most urgent socio-economic measures needed to combat the negative-effects of a contagious disease are related to un-employment with its income effects and security of all sectors. To prevent persistent un-employment, service, retail, and even the industrial sectors need to be supported. Additionally, we discussed the need for re-organizing the funding and managerial sustainability of healthcare- services to be prepared for the future” [2].

Antoine Mandel *et al.*:

“This paper estimates the cost of the lock-down of some sectors of the world- economy in the wake of COVID-19. We develop a multi sector dis-equilibrium- model with buyer-seller relations between agents located in the different countries. The production- network model allows us to study not only the direct -cost of the lock-down but also indirect- costs which emerge from the reductions in the availability of intermediate -inputs. Agents determine the quantity of output and the proportions in which to combine in-puts using prices that emerge from local- interactions. The model is calibrated to the world -economy using input-output data on 56 industries in 44 countries including all major- economies. Within our model, the lock-downs are implemented as partial reductions in the output of some sectors using data on sectoral-decomposition of capacity -reductions. We use computational- experiments to replicate the temporal sequence of the lockdowns implemented in different -countries. World output falls by 7% at the early stage of the crisis when only China is under lock-down and by 23% at the peak of the crisis when many countries are under a lock-down. These direct impacts are amplified as the shock propagates through the world -economy because of the buyer-seller relations. Supply-chain spillovers are capable of amplifying the direct-impact by more than 2 folds. The substitutability between intermediate- inputs is a major- determinant of the amplification. We also study the process of economic- recovery following the end of the lock-downs. Price flexibility and minor- technological adaptations help in reducing the time it takes for the economy to the recover. The world -economy takes about one quarter to move towards the new- equilibrium in the optimistic and unlikely scenario of the end of all lock-downs. Recovery time is likely to be significantly greater if partial lock-downs persist” [3].

Maria Nicola *et al.*:

“COVID-19 has affected many communities, businesses and organisations globally, inadvertently affecting the financial- markets and the global -economy. Un-coordinated governmental- responses and lockdowns have led to a disruption in the supply -chain. In China, the lock-down restrictions significantly reduced the production of goods from the factories, while quarantine and self-isolation -policies decreased consumption, demand and utilisation of many products and services. As COVID-19 has progressed to affect the rest of the world, China will begin to recover faster than the rest of the other countries, strengthening its trade-negotiating power against the United states. Chinese companies will be in the advantageous position to acquire their western- counter-parts, which are greatly dependent and will be inevitably affected by the stock- market.

In addition to the disruption in the supply-chain, the capital-market sector has also been affected. In the US, the S&P 500, a stock market-index that measures the stock-performance of 500 large-companies on the US stock-exchange, the Dow Jones Industrial-Average and the Nasdaq fell dramatically until the US-government secured the Coronavirus-Aid, Relief, and Economic-Security (CARES) Act, with the indexes raising by 7.3%, 7.73% and 7.33% respectively. 10-year US Treasury bond-yields have dropped to 0.67% [4].

Debanjan Banerjee et al:

Intern. j. social psychiatry

“The world is facing a global public-health crisis for the last three-months, as the coronavirus-disease 2019 (COVID-19) emerges as a menacing-pandemic. Besides the rising number of cases and fatalities with this pandemic virus, there has also been significant socio-economic, political and also psycho-social impact. Billions of people are quarantined in their own-homes as nations have locked-down to implement social-distancing as a measure to contain the spread of infection. Those affected and suspicious-cases are isolated. This social-isolation leads to chronic loneliness conditions and boredom, which if long enough can have detrimental effects on physical and mental well-being. The timelines of the growing-pandemic being uncertain, the isolation is compounded by mass-panic and also anxiety. Crisis often affects the human-mind in crucial-ways, enhancing threat arousal and snowballing the anxiety. Rational and logical decisions are replaced by biased and faulty-decisions based on mere ‘faith and belief’. This important social threat of a pandemic is largely-neglected. We look at the impact of COVID-19 on loneliness across the different social-strata, its implications in the modern digitalized age and outline a way forward with possible solutions to the same” [5].

Krishna P. Reddy et al:

“In South-Africa, a strategy of household contact-tracing, isolation, and mass-symptom screening would substantially reduce COVID-19-mortality and be cost-effective. Adding quarantine-centres for COVID-19 contacts is not cost-effective” [6].

Jagdish Sheth:

“The lockdown and social-distancing to combat the covid-19 virus has generated significant disruptions on the consumer-behavior. All consumption is time bound and location-bound. With time-flexibility but location-rigidity, consumers have learned to improvise in creative and innovative-ways. The work-life boundaries are now blurred as people work at home, study at their home, and relax at home. Since the consumer is unable to go to the store, the store has to come to the consumer obviously.

As consumers adapt to the house arrest for a prolonged period of time, they are likely to adopt newer-technologies which facilitate work, study and consumption in a more convenient-manner. Embracing digital-technology is likely to modify existing habits. Public-policy will also impose new consumption habits especially in public-places such as airports, concerts, and public-parks” [7].

Cintia Chamorro-Petronacc et al:

“The COVID-19 - pandemic is an ongoing public -health challenge, also for the dentistry -community. The main objective of this paper was to determine the economic and health-care impact of COVID-19 on dentists in the Autonomous- Region of Galicia (Spain). This was a descriptive- observational- study in which the data was collected by means of a self-administered- survey (from date 1 April 2020 to 30 April 2020). A total of 400- dentists from Galicia responded to the survey. Only 12.3% of the participants could obtain personal protective -equipment (PPE) including FFP2- masks. Of the male- respondents, 33.1% suffered losses >€15,000 compared to 19.4% of female- respondents (OR = 3.121, $p < 0.001$). Economic- losses seem to have contributed to the applications for economic- help as 29.5% of the respondents who applied for this measure recorded losses in excess of €15,000 ($p = 0.03$). Patients complained more about the fact that only emergency- care was available during the State of Alarm, in dental- surgeries that do not work with insurance companies or franchises. Only 4 professionals tested -positive, 50% of whom worked exclusively in private practice and the other 50% who practised in both private and public- surgeries. Dentists who practise in the public- sector saw more urgent patients per week than those practising in private -surgeries ($p = 0.013$). The COVID-19 pandemic has had economic -repercussions in dentistry as only urgent -treatment was available during the State of Alarm. These repercussions seem to be higher in male -participants, as the majority of the participants have revealed higher economic- losses than females. The level of assistance has also been -affected, reducing the number of treated- patients, although this quantity has been different in private and public -surgeries. By presenting these findings we look to highlight the role that dentists play in society in treating dental -emergencies in our surgeries, and this must be recognised and addressed by the relevant- authorities, who must provide PPEs as a priority to this group as well as providing special economic- aid in accordance with the losses- incurred by the sector” [8].

Alexandra Peters et al:

“The infection prevention and control (IPC) measures to limit or prevent HAIs caused by the SARS-CoV-2 are crucial to combatting this pandemic. The Hand -hygiene is widely recognized as the most effective and economically -viable measure in IPC” [9].

Other fact to be taken in consideration is the role played by air- pollution to produce worsening -condition that increase mortality rate.” [10,11].

Counting the Cost of COVID-19

Mohammad Yamin

“The WHO has framed some guide-lines and measures to check or slow the spread of COVID-19 to the community. Some of these measures are also summed -up in. we provide a summary of these kind of measures.

First and foremost, it is highly- recommended to wash- the hands properly and regularly. When-ever the hands are exposed to any surface, the hands should be washed with soap for at least 20s. Use of hand-gloves is helpful in preventing exposure of hands to contaminated- surfaces and places. Protective- gears for

medicos are a necessity but the case of medical and medical- workers will be dealt- elsewhere. Frequent and regular -use of sanitizers- (creams, gels or sprays) is also recommended. There seems to be some controversy about the effectiveness of face -masks. Various -outlets have frequently reported the shortage of medical -grade masks (N95) due to high demand for medical- professionals and general public globally. The Centers for Diseases and Prevention CDC has also advised people to use face -masks, and even use cloth -masks if proper ones are not available. Studies have revealed that even the best face masks cannot prevent some unfiltered- air getting through. In order to make them highly effective, social -distancing is recommended to reduce the risk of contaminated- droplets being spread from an infected -person to other people through coughing or sneezing. Self-isolation is also a very useful- technique to prevent the spread of the COVID-19” [12].

The velocity in spread and the mortality rate was influenced by this condition.

An also this produced and produce economic and social disaster.

Because this fact is not adequately considered by many countries not permitted to contrast this negative effects.

The same considering some worsening factor involved in this kind disease it must be considered also depurative measure like mask use not only to prevent virus exchange but also to prevent air pollution that contribute to the severity of disease also.

The same other fact to be considered is that some depurative strategies in pulmonary chronic condition can help to reduce severity of the relapses due by air pollution.

In example global cost can be related to:

- diagnostic test surplus
- meical devices
- hospital beds
- Drugs
- reduced working activities
- taxes not gathered

Commercial activities reduced

- restaurant (in example by smart working)
- closed activity

And many other

Effect: social crisis, economic and financial vicious circle.

Industry less trade.

Positive effect: on distance activities, smart working, on distance school and education, universities

Social media use, ICT use, on line working meeting, reducing in transport of workers and student

Food at home, home delivery commerce, on line e- commerce, telemedicine and so on.

Material and Methods

With an observational approach some relevant (for this work) literature is reported.

All source comes from open literature

After this review phases an experimental hypothesis is produced to make possible verify the statement of

The topics of this short communication.

Results

The literature used for this work is reported in section reference.

All the references are to be fully read to correctly understand the global meaning of this work.

Experimental hypothesis: only for economic and social effect

In order to verify if considering FULLY AIRBORNE actual pandemic can provide real psychological social and economic advantages versus not consider in this way.

Under all ethical condition respected it can be useful consider 2 cities of among the same population

1 city following criteria of prevention for direct contact and by droplet (as today rules)

1 city following also criteria of prevention also for AIRBORNE TRASMISSION in strictly way.

The variables to be measured are:

Total healthcare cost for pandemic

Lockdown days

Questionary of people wellness, quality of life

Total cost losted by local economic activity.

After a period of 3 mount in winter season an statistical analysis must be collected.

If result considering airborne fully are better of this condition public authorities must take in consideration [13-19].

Discussion Conclusion

The reported WHO document related the need to open the window to change indoor air in working setting. In March 2020 was a relevant indication to be followed.

Even if not adequately highlighted the AIRBORNE risk. This kind of indication gives the sense of a real problem.

Not only mask, social distancing, contact tracing, hand disinfection, diagnostic testing, lockdown and many other measures but also CHANGE THE AIR in closed environment.

Not only direct contact and by droplet but also measure to dilute the air in indoor places.

The fact that in a school of an advanced country in October 1 positive produced 17 infected even if obliged to use mask and hand disinfection seem to say something else.

As conclusion of this work is to submit to the public international authorities and government the need to deeply consider also the effect of airborne transmission to prevent the negative psychological, economic and social effect of a respiratory pandemic.

The open window measure is a very low cost measure that also does not produce high trash and is easy to be followed by all.

This measure if considered in March by WHO was not considered in many countries as a STRONG INDICATION like mask use or social distancing or hand disinfection.

But it is needed to give to this the right highlight because every preventive measure can be adequately measured under an economic point of view.

A right analysis of all transmission ways, worsening factors, and the right management instruments help nations to overcome lockdown and avoid negative effects on economy and society of the second pandemic wave.

A table needs 3 legs to stand up, so the same in a pandemic it must be considered all transmission routes and not only 2 (so not only direct contact or by droplet, but also airborne mechanism needs to be considered).

The actual pandemic is due by a RESPIRATORY VIRUS, a virus that follows a relevant respiratory pattern of diffusion.

Economic cycles follow social life and health of population, and even psychological health of the individuals but also of the people.

Economic science must also follow the measures adopted to control a pandemic and their efficacy.

Application and consequences.

Clarifications

This work is produced with out any diagnostic or therapeutic intent, only to produce research hypothesis in economic - social field.

It is clear that all preventing - treating measure to contain spread of COVID-19 disease produced by government and international health organization must be followed.

Bibliography

1. Top World Bank economist says coronavirus pandemic morphing into 'major economic crisis'.
2. Timothy Laing (2020). The economic impact of the Coronavirus 2019 (COVID-2019): Implications for the mining industry. *Eur J Health Econ.*, 4, 1-7.
- 3a) Rahmiye Figen Ceylan, Burhan Ozkan & Esra Mulazimogullari (2020). Historical evidence for economic effects of COVID-19. *Extr Ind Soc.*, 7(2), 580-582.
- 3b) Antoine Mandel & Vipin Veetil (2020). The Economic Cost of COVID Lockdowns: An Out-of-Equilibrium Analysis. *Econ Disaster Clim Chang.*, 19, 1-21.
4. Maria Nicola, Zaid Alsafi, Catrin Sohrabi, Ahmed Kerwan, Ahmed Al-Jabir, Christos Iosifidis, Maliha Agha & Riaz Aghaf (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *Int J Surg.*, 78, 185-193.
5. Debanjan Banerjee & Mayank Rai (2020). Social isolation in Covid-19: The impact of loneliness. *J. Social Psychiatry.*
6. Krishna Reddy, P., Fatma Shebl, M., Julia Foote, H. A., Guy Harling, Justine Scott, A., Christopher Panella, Clare Flanagan, et al. (2020). Cost-effectiveness of public health strategies for COVID-19 epidemic control in South Africa. (Pp. 1-33).
7. Jagdish Sheth (2020). Impact of Covid-19 on consumer behavior: Will the old habits return or die? *J Bus Res.*, 117, 280-283.
8. Cintia Chamorro-Petronacci, Carmen Martin Carreras-Presas, Adriana Sanz-Marchena, María Rodríguez-Fernández, A., José María Suárez-Quintanilla, Berta Rivas-Mundiña, Juan Suárez-Quintanilla, et al. (2020). Assessment of the Economic and Health-Care Impact of COVID-19 (SARS-CoV-2) on Public and Private Dental Surgeries in Spain: A Pilot Study. *Int J Environ Res Public Health.*, 17(14), 5139.
9. Alexandra Peters, Nasim Lotfinejad, Alice Simniceanu & Didier Pitteta (2020). The economics of infection prevention: why it is crucial to invest in hand hygiene and nurses during the novel coronavirus pandemic. *J Infect.*, 81(2), 318-356.

10. Luisetto, M., Ahmed Yesvi Rafa, Khaled Edbey, Ghulam Rasool Mashori, Farhan Ahmad & Oleg Yurevich Latyshev (2020). Epidemiology and Diffusion of Some Relevant Virus: Latitude, Air Pollutants and Humidity Role, Hypothesis of Work: Covid-19 Effect on the Air Pollution in Some World Region: What Implications? *J. of Toxicology and Risk Assessment*, 6.
11. Luisetto, M., Ahmed Yesvi Rafa, Ferraiuolo, A., Ghulam Rasool Mashori & Latyshev, O. Y. U. (2020). Analysis of Some Worsening Factor Involved with Covid-19 and Other Respiratory Virus Diffusion, How Some Preventive Measure and Therapeutic Strategy Can Improve Clinical Outcome. *J. Pulmonology and Respiratory Medicine*, 9(10).
12. Mohammad Yamin (2020). Counting the cost of COVID-19. *Int J Inf Technol.*, 12, 311-317.
13. Luisetto, M., Almukthar, N., Rafa, A. Y., Jangdey, M. S., Fiazza, C., et al. (2020). On Distance Respiratory Virus Transmission: Sate of Evidence. *J Infect Dis Epidemiol.*, 6(4), 150.
14. Luisetto, M., Naseer Imukthar, Tarro, G., et al. (2020). Respiratory Virus Pattern of Diffusion: Size Influence. Short Communication.
15. Luisetto, M. & Latyshev, Y. O. (2020). Research Article COVID -19 Pandemic and the Management Strategy for Business and Economy. Applied pharmacologist, Europeans specialist in lab medicine. *Journal of Economic and Business Studies*, 3(2).
16. WHO (2020). Getting your workplace ready for COVID-19.
17. Matteo Lucchese & Mario Pianta (2020). The Coming Coronavirus Crisis: What Can We Learn? *Intereconomics Review of European Economic Policy*, 55(2), 98-104.
18. Nina Vindegaard & Michael Eriksen Benros (2020). COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain Behav Immun.*, 89, 531-542.
19. Serafini, G., Parmigiani, B., Amerio, A., Aguglia, A., Sher, V. & Amoreh, M. (2020). The psychological impact of COVID-19 on the mental health in the general population. *QJM.*, 113(8), 531-537.