

A Critique of Recent Medical Research on COVID-19

Michael McAleer^{1-5*}

¹Department of Finance, Asia University, Taichung City, Taiwan

²Discipline of Business Analytics, University of Sydney Business School, Sydney, Australia

³Econometric Institute, Erasmus School of Economics, Erasmus University Rotterdam, Rotterdam, Netherlands

⁴Department of Economic Analysis and ICAE, Complutense University of Madrid, Madrid, Spain

⁵Institute of Advanced Sciences, Yokohama National University, Kanagawa, Japan

Abstract

The world community has been changed irrevocably by the highly infectious and mutating SARS-CoV-2 virus that causes the COVID-19 disease. The necessary research output on COVID-19 has been revolutionary, especially in the medical and biomedical sciences, where the search for a vaccine is essential for the world to have a semblance of normality in the era of COVID-19. Much of the advanced research has been distributed in the leading medical journals, including the Journal of the American Medical Association (JAMA), where the latest medical research is distributed on a daily basis, and where comments can also be published. The purpose of this paper is to provide a critique of 26 interesting and highly topical research papers that have been published in JAMA, mostly within the past two months. The diverse topics include treating influenza and COVID-19 simultaneously, dealing with a second wave of COVID-19 in Beijing, honesty is best for known and unknown GAWI and WIST, unreliability of asymptomatic COVID-19 testing outcomes for children, the effectiveness of flu vaccines, acute anxiety during COVID-19, MAID as an end of life option, longer-term effects of corticosteroids on the mortality of critically ill COVID-19 patients, isolation, loneliness and psychological distress during COVID-19, the selection of volunteers for COVID-19 vaccine trials, the mental health of children and adolescents during COVID-19, fertility preservation through hormonal intervention for transgender adolescents, safe, effective and affordable COVID-19 vaccines, essential requirements for acceptance of a COVID-19 vaccine, ischemic stroke rates from COVID-19 and influenza, mandatory COVID-19 vaccination of children, COVID-19 asymptomatic children and adults, and Who Dares Wins (Qui Audet Adipiscitur), even against COVID-19.

Keywords: COVID-19; Influenza vaccines; Dealing with a second wave of COVID-19 in Beijing; Honesty is best for known and unknown GAWI and WIST; Unreliability of asymptomatic COVID-19 testing outcomes for children; Acute anxiety during COVID-19; MAID as an end of life option; Longer-term effects of corticosteroids on the mortality of critically ill COVID-19 patients; Isolation; Loneliness; Psychological distress during COVID-19; Selection of volunteers for COVID-19 vaccine trials; Mental health of children and adolescents during COVID-19; Fertility preservation through hormonal intervention for transgender adolescents; Safe; Effective and affordable COVID-19 vaccines; Essential requirements for acceptance of a COVID-19 vaccine; Ischemic stroke rates from COVID-19; Influenza; Mandatory COVID-19 vaccination of children; COVID-19 asymptomatic children and adults; Who dares wins (Qui Audet Adipiscitur); Even against COVID-19

Introduction

The world community has been changed irrevocably by the highly infectious and mutating SARS-CoV-2 virus that causes the COVID-19 disease. The necessary research output on COVID-19 has been revolutionary, especially in the medical and biomedical sciences, where the search for a vaccine is essential for the world to have a semblance of normality in the era of COVID-19.

A substantial amount of the recent advanced research has been distributed in the leading medical journals, including the Journal of the American Medical Association (JAMA), where the latest research is distributed on a daily basis, and where comments can also be published. In respect of critical evaluation of recent papers in JAMA on COVID-19, some of which are based on published Comments, McAleer discusses one paper in general medicine [1], McAleer evaluates 10 papers in general medicine, internal medicine, and oncology [2], Chang et al. examine 16 papers in general medicine, internal medicine and oncology

[3], McAleer analyses 15 papers in general medicine, internal medicine and oncology [4], McAleer assesses 19 papers in general medicine, global health, healthcare, internal medicine, oncology, and pediatrics [5], and McAleer evaluates 44 recent papers on general medicine, global health, oncology, internal medicine, pediatrics, geriatrics, and surgery [6].

In addition to medical research, Chang et al. estimated and evaluate alternative global health security indexes for risk analysis of COVID-19 [7], Chang et al. presented a charter for sustainable tourism after COVID-19, whenever that might occur, and discuss the future of tourism in the COVID-19 era [8,9], Chang et al. examined risk and financial management of COVID-19 in business, economics and finance [10], and Wang et al. analyzed risk management of COVID-19 by universities in China [11].

As discussed in a number of research papers on COVID-19, many of these papers have been included in the World Health Organization's (2020) "WHO COVID-19 Global literature on coronavirus disease", which is intended to bring "the world's scientists and global health professionals together to accelerate the research and development process, and develop new norms and standards to contain the spread

*Corresponding author: Dr. Michael McAleer, Department of Finance, Asia University, Taichung City, Taiwan, Tel: (+886) 3 571 5131; E-mail: michael.mcaleer@gmail.com

Received: September 16, 2020; Accepted: September 30, 2020; Published: October 07, 2020

Citation: McAleer M (2020) A Critique of Recent Medical Research on COVID-19. Diagn Pathol Open 5: 176.

Copyright: © 2020 McAleer M. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

of the coronavirus pandemic and help care for those affected.” The list currently has around 730,000 entries [12].

The purpose of this paper is to supplement the previous reviews and perspectives discussed above by providing a critique of 26 interesting, informative, and highly topical research papers that have been published in JAMA, mostly within the past two months. The diverse topics include public health, general medicine, internal medicine, oncology, pediatrics, geriatrics, and biostatistics.

Each of the papers evaluated here is worth highlighting as they cover several highly topical medical issues in the COVID-19 era, including treating influenza and COVID-19 simultaneously, dealing with a second wave of COVID-19 in Beijing, honesty is best for known and unknown GAWI and WIST, unreliability of asymptomatic COVID-19 testing outcomes for children, the effectiveness of flu vaccines, acute anxiety during COVID-19, MAID as an end of life option, longer-term effects of corticosteroids on the mortality of critically ill COVID-19 patients, isolation, loneliness and psychological distress during COVID-19, the selection of volunteers for COVID-19 vaccine trials, the mental health of children and adolescents during COVID-19, fertility preservation through hormonal intervention for transgender adolescents, safe, effective and affordable COVID-19 vaccines, essential requirements for acceptance of a COVID-19 vaccine, ischemic stroke rates from COVID-19 and influenza, mandatory COVID-19 vaccination of children, COVID-19 asymptomatic children and adults, and Who Dares Wins (Qui Audet Adipiscitur), even against COVID-19.

Treating Influenza and COVID-19 Simultaneously

The world listens when the US CDC speaks, especially on influenza and COVID-19 as the flu season approaches [13].

Prioritizing vaccination against flu should increase protection for the population in the face of COVID-19 that does not seem to respect seasonal changes across different continents.

Important issues for interventionist healthcare policy for all gender, age, race, ethnic, and medically, physically, psychologically, economically, and financially disadvantaged cohorts in the population, might be to determine if:

1. Flu precedes or follows COVID-19;
2. Treatment for flu and COVID-19 simultaneously is feasible;
3. Reinfection of flu and COVID-19 can occur contemporaneously;
4. Sequential reinfection is possible;
5. The order can be determined if sequential reinfection occurs;
6. The duration between initial and repeat infection can be determined;
7. COVID-19 treatment is affected by flu;
8. Vaccination against flu is affected by COVID-19.

The problematic issues are likely to be exacerbated with the onset of stress, anxiety, and mental illness arising from social distancing, self-isolation, quarantining, and lockdowns.

Dealing with a Second Wave of COVID-19 in Beijing, China

Wu et al. demonstrated a clear explanation of the dynamic development of a second wave of COVID-19 in an agricultural wholesale market in Beijing from 11 June-10 July 2020 provides helpful

information, advice and a warning to every country that is experiencing a wave of whatever order after purported abatement, to prepare and plan public health policy in anticipation of a shock that is likely to occur [14].

For purposes of interpretation, a preliminary case study involving 33 asymptomatic positive infections were not recorded as part of the 335 confirmed cases until 5 July 2020, with no informed consent, but with immediate and aggressive contact tracing, self-isolation, and quarantining.

In a stark warning to act quickly with a prepared plan of attack, the public health intervention led to a duration of 7 days from early symptom onset to confirmed case and outbreak alert, with rapid community containment imposed within 24 hours.

Further studies in dealing with second and subsequent waves would make the results of the present study more robust and widely applicable.

As the second wave was flattened quickly, a rapid response with strict isolation measures should be a cornerstone of public healthcare policy for any COVID-19 wave that might be churning.

Honesty is Best for Known and Unknown GAWI and WIST

The honest and sensitive declaration by a caring pediatrician [15] on known and unknown “Got Away With It” (GAWI) and “Will I Sleep Tonight” (WIST) outcomes reflect on the issue that honesty is always the best policy for the physician and their patient.

In many countries, physicians will not always inform their patients of serious diagnoses that affect morbidity and mortality in order to “spare the patient unnecessary stress and anxiety”, which is a denial of informed consent.

GAWI might, in fact, be “Got Away with It Somehow” (GAWIS), but maybe only this time?

If only all physicians could be so humble and compassionate.

Unreliability of Asymptomatic COVID-19 Testing Outcomes for Children

The analysis by a team of medical researchers [16] investigating the reliability of asymptomatic COVID-19 testing outcomes for children bears careful scrutiny because of the indicative prevalence of infection in children without symptoms that can have a significant effect on infection control policy.

The data and statistical analysis suggest that there is a strong correlation between disease prevalence in asymptomatic children and the weekly general incidence of COVID-19 in the population.

The estimated linear regression models in Figures 2A and 2B seem, at first glance, to support the inferences that are drawn, though the lack of statistical diagnostic checks raises serious questions relating to the robustness of the empirical analysis.

The estimated model in Figure 2A shows the linear relationship between prevalence and general incidence.

Two obvious outliers in the top and centre right in Figure 2A lead to a downward bias in the estimated linear model, with a concomitant flatter relationship between prevalence and general incidence.

Judicious removal of the two outliers would show a steeper and stronger relationship between the two variables.

The impact of outliers is even more pronounced in Figure 2B, where only one observation lies above the estimated linear regression, with 3 observations sitting on the estimated line, and 7 below, which indicates that the estimated model cannot possibly be the line of best fit.

Furthermore, deletion of the two outliers on the right would make the estimated line much steeper, but without going through the origin, which is logically problematic.

As the detailed study suggests, there is undoubtedly a strong correlation between disease prevalence in asymptomatic children and the weekly incidence of COVID-19 in the general population, with greater scrutiny of the data and alternative estimated models adding greater strength, reliability, and robustness to the important investigation.

How Effective are Flu Vaccines?

The informative message about flu vaccines by Walter bears careful attention by medical practitioners and patients alike [17].

In addition to asthma sufferers, who are designated as high risk potential recipients of the flu shot, and how closely monitored are they in a clinic, hospital, or at home?

What are the major causes of suppressed immune systems and chronic medical conditions?

What is the potential morbidity and mortality side effects when a live attenuated vaccines are given to children aged 2-17 years and to adults aged 18-49 years, both with suppressed immune systems, and high does inactivated vaccines and recombinant vaccines are given to adults, presumably without suppressed immune systems?

What are the likely effects of flu vaccines on asymptomatic COVID-19 patients, and those who have purportedly recovered from the first bout of the disease?

Potentially catastrophic?

Acute Anxiety during COVID-19

Ayers et al. discussed that stress and anxiety are clear indicators of mental distress due to the possibility of infection, seeing close relatives and friends infected, the likelihood of becoming unemployed with or without medical and employment insurance, and lack of social connections and cohesion through social distancing, self-isolation, quarantining, and lockdowns [18].

The informative and helpful empirical analysis was conducted using US data from 13 March to 9 May 2020.

Recent research for the USA and UK through to August 2020 shows that stress, acute anxiety, mental distress, mental illness, and self-harm, all of which are keywords in any internet search, are continuing to grow across all age cohorts, especially among the young, and young women, as the COVID-19 pandemic shows little indication of abatement.

MAID as an End of Life Option

The sensitive message from a caring neurologist [19] on medical aid in living is reminiscent of the final words of The Last Samurai, where the Emperor Meiji asks Nathan Algren about the warrior Katsumoto: "Tell me how he died", to which the response is: "I will tell you how he lived".

The medical aid-in-dying (MAID) law enables terminally ill patients with a prognosis of six months or less to request medication to voluntarily end their lives as an end of life option.

Some terminal illnesses may provide clear indications of longevity, but others might be more opaque about the expected time to the end of life.

How accurate is the prognosis of six months for all illnesses and all patients, especially regarding the possible feedback effect of admission to a MAID program on the prognosis?

Longer-Term Effects of Corticosteroids on Mortality of Critical COVID-19 Patients

A striking finding in the important meta-analysis of clinical trials of systemic corticosteroids for critically ill COVID-19 patients, compared with usual care or placebo as the conditioning set, was associated with lower 28-day all-cause mortality.

Mortality and serious adverse effects of the corticosteroids were mentioned, but the latter was not explained critically as the definitions differed across the clinical trials.

As five of the seven randomized trials reported shorter-term mortality at 28 days, this time frame was chosen arbitrarily as the primary outcome.

There are many questions that can be directed to the empirical findings of meta-analyses, with the following issues of paramount importance to the health care policies, treatment and outcomes of critically ill patients infected with COVID-19:

1. Examining different age (median 60 years) and gender (29% women) cohorts;
2. Using surveys of random trials that are representative of socio-economic, race and ethnicity, geographic, and environmental considerations;
3. Analyzing longer-term mortality beyond 28 days for post-discharge patients;
4. Analyzing longer-term mortality beyond 28 days for different age and gender cohorts;
5. Explaining the more serious adverse effects, in addition to secondary infections and sepsis, across different intervention groups;
6. Evaluating the potential corticosteroid-induced complications based on consistent definitions and methods of assessment for the clinical trials;
7. Expanding the numbers of patients with serious adverse effects in each clinical trial;
8. Extending the clinical trials data set for future meta-analyses beyond June 9, 2020;
9. Performing follow-up analyses on all seven clinical trials for post-discharge patients;
10. Preparing and analyzing surveys of random trials that are representative of socio-economic, race and ethnicity, geographic, and environmental considerations.

Findings from future clinical trials and associated meta-analyses would add strength and robustness to the significant findings of the novel meta-analysis investigated by the WHO Rapid Evidence Appraisal for COVID-19 Therapies (REACT) Working Group (2020) [20].

Isolation, Loneliness and Psychological Distress during COVID-19

The invaluable and sensitive research letter by McGinty et al. on psychological distress and loneliness will strike a touching chord with everyone who has experienced such symptoms, or knows someone who has, especially during the COVID-19 pandemic which shows little sign of abatement [21].

The important findings based on a comparison of national data from 2018 and an independent representative national survey in April 2020 for respondents aged 18 years or older would be enhanced considerably with further surveys and clinical analysis according to:

1. Updating the findings from the early days of the pandemic in April 2020 through to August 2020;
2. Expanding the analysis to include elementary school children and high school students;
3. Using gradations of psychological distress from serious to medium and mild, together with degrees of loneliness, isolation, social distancing, quarantining, and lockdowns;
4. Conditioning on a wider set of control variables, including race, ethnicity, and varying degrees of income and employment disparities;
5. Including non-healthcare essential services providers who are faced with a higher likelihood of contracting the disease in the workplace;
6. Conducting separate surveys for front line healthcare workers, who are known to suffer from both COVID-19 and acute mental health issues, ranging from medium through to extremely serious cases of morbidity and mortality.

It is not surprising that the symptoms of psychological distress and loneliness are greater in 2020 than in 2018, but this disparity will have increased substantially as the pandemic continues to grow exponentially rather than flattening.

Who should be selected as Volunteers for COVID-19 Vaccine Trials?

The insightful perspective by Jaklevic regarding the selection of recruits for COVID-19 vaccine clinical trials highlights key elements in convincing individuals that their safety can be guaranteed when they volunteer to be tested [22].

The temporary suspension on 9/9 of the Oxford University-AstraZeneca COVID-19 clinical trials due to an adverse reaction in a single patient emphasizes the need for care and caution, and the implementation of the most rigorous scientific safety standards in testing the efficacy of any proposed vaccines.

The enthusiasm of warp speed testing of clinical trials needs to be tempered with scientific wariness for all individuals, regardless of the severe and diverse imbalance in terms of the socioeconomic, geographic, gender, age, race, ethnicity, and income disparities of the members of minority communities who might be most heavily affected by the disease.

Mental Health of Children and Adolescents during COVID-19

There have been substantial anecdotal evidence and empirical studies regarding the greater stress, anxiety, mental illness, self-

harm, and worse, faced by various cohorts in the population, with an emphasis on gender issues and young adults, who are suffering from social distancing, self-isolation, quarantining, and lock downs.

The fatigue associated with the temporary, though sustained, pressure on social relationships is a constant reminder of the mental strain that the COVID-19 pandemic is inflicting on all sectors of modern society.

The viewpoint by public health care experts Golberstein et al. on the mental health of children and adolescents is a welcome and significant contribution, though data are not as widely or readily available as for young adults and older age cohorts, especially according to household income disparities [23].

The young in society have longer life expectancy, but this also results in a longer life with lingering mental health illnesses if such issues are not resolved at a tender age.

School closures have inflicted extreme social disruption on the young when learning with and from their peers is needed the most.

Extensive surveys on mental illness are required which, in many countries, are undertaken with adults in mind, albeit young adults and older age cohorts.

Domestic violence faced by the young is also frequently exacerbated during extended lock downs when mental health care is required by all members of households.

If left untreated, the long term effects of mental illness, especially as an existing condition, may be as severe for children and adolescents as the unknown long term morbidities associated with the cause of the pandemic.

Preserving Fertility for Transgender Adolescents

The research in Pang et al. on fertility preservation through hormonal intervention for transgender adolescents 18 years or younger suggests that a significant proportion is in favor of the treatment [24].

What proportion of the sample was either intending to take or were undergoing sexual reassignment surgery or gender confirmation surgery?

Is fertility preservation reversible after prolonged hormonal intervention?

Safe, Effective and Affordable COVID-19 Vaccines

Any vaccine must be safe and effective and, in addition, should be affordable.

The first two essential requirements are based on medical science and extensive clinical trials that are not based on warp speed.

A key word is missing from an otherwise excellent Viewpoint in Persad et al. namely "affordability" [25].

Ethical and equity considerations may be important in theory, but affordability is based on economics.

In some countries, national and state governments might be willing to subsidize the cost of vaccination, whereas in others it will be the user who pays.

In short, who is willing and able to pay the cost of safe and effective vaccines for COVID-19?

Only time will tell.

Essential Requirements for Acceptance of a COVID-19 Vaccine

Bauchner et al. presented an informative editorial on reassuring the public and clinical community about the scientific review and approval of a COVID-19 vaccine [26].

What seems to be missing about attracting support and acceptance are the essential requirements for a COVID-19 vaccine to be accepted by any community, namely safety, effectiveness, availability, affordability, and trust in the science of medical health experts regarding widespread vaccination.

Nothing else matters.

Ischemic Stroke Rates from COVID-19 and Influenza

The comprehensive investigation by expert neurologists in Merkler et al., found that the likelihood of ischemic stroke was higher with COVID-19 infection than influenza infection [27].

Control, conditioning and adjustment factors included demographic variables (such as age, gender, race), and a variety of vascular risk factors, viral symptomatology, and intensive care unit admission.

The critical analysis did not seem to analyze the effects of:

1. Simultaneous infection with COVID-19 and influenza;
2. Duration of infections with COVID-19 and influenza;
3. One or more comorbidities, including mental illness;
4. Younger cohorts of patients infected with COVID-19 and influenza;
5. Geographic dispersion of COVID-19 and influenza across states and cities.

The significant findings suggest that healthcare policy should accommodate time-sensitive interventions to reduce the burden of long-term disability.

Mandatory COVID-19 Vaccination of Children

The questioning and challenging Viewpoint by expert pediatricians in Opel et al. is essential reading for parents, healthcare workers, and education and public policy authorities [28].

The existence of safe, effective, available, and affordable vaccines is moving inexorably from theory to practice, and is an issue that confronts every individual, not just children.

With the politicization of COVID-19 and the numerous vaccines that are in preparation, together with the questioning of trust in medical science and in leading administration officials at the national, state, and municipal levels, mandatory vaccinations will be fraught with civil unrest.

It is clear that COVID-19 is far more serious than the seasonal flu, in both the short and long run, and societal attitudes regarding vaccines for COVID-19 are correspondingly more strident

With the opening of schools, there will be more evidence as to how quickly children can spread the disease to their families and other members of society.

Parental attitudes cannot be ignored in considering mandatory vaccination of children, especially as the long hauler effects, including mental illness, after contracting and supposedly recovering from the disease, are not well established.

COVID-19 Asymptomatic Children and Adults

The percentage of individuals in society who are asymptomatic carriers of COVID-19 is important for efficient healthcare policy in monitoring and management the disease.

A significant finding in Milani et al. is that children are not at higher risk than adults of asymptotically carrying the SARS-CoV-2 virus that causes COVID-19 [29].

A threshold of 18 years is used to distinguish between children and adults, though the median ages of 5.3 and 77 years, respectively, tend to bias the results toward old-age adults who are more likely to be sensitive to the disease.

The significant findings would be further strengthened in future studies using more recent data with the addition of:

1. Cohorts of adults for 18+ years with different median ages;
2. Cohorts of children for 18- years with different median ages;
3. Percentages of children and adults with comorbidities;
4. Non-hospitalized children and adults;
5. Accommodating geographic boundaries, racial and ethnic backgrounds, and socioeconomic and income disparities.

Who Dares Wins (Qui Audet Adipiscitur), Even Against COVID-19

Legal professionals use laws to govern behavior, economists rely on the price mechanism, and medical and healthcare practitioners use clinical and empirical evidence.

As discussed in Gostin et al. interventions are essential to modify and change behavior, as in the case of the declining life expectancy in the USA and elsewhere [30].

The situation may well be magnified in a world that is presently being exacerbated by the COVID-19 pandemic.

The War on Drugs is being won by drugs, with similar sad outcomes for the War on Anything, including Sickness, Poverty, Ignorance, Human Trafficking, Domestic Violence, Child Abuse, and Reduced Life Expectancy, among many sad maladies that do not reflect well on society.

The War on COVID-19 will eventually be won by the combined global efforts of innovative medical researchers.

Lawyers will then determine regulations about discovery, ownership, patents, and legal liability, while economists will prognosticate about the prices of vaccines, and medical and health insurance premiums.

Global Health Security Index and Responses to COVID-19

There is no doubt that the USA has performed rather poorly in dealing with the COVID-19 pandemic [31].

Although the USA was the highest ranked country in 5 of the 6 categories in the Global Health Security Index, it was ranked 19 in terms of the "Risk Environment: Overall risk environment and country vulnerability to biological threats", a category in which Liechtenstein was ranked number 1, despite being ranked 71 overall [7].

It is worth mentioning that, ignoring nations with small populations, Taiwan with a population of just under 24 million (2018 estimate) has

been the most successful country in terms of dealing with COVID-19, with 509 total cases and 7 deaths (<https://www.worldometers.info/coronavirus/>).

It is also worth mentioning that Taiwan was not included in the Global Health Security Index.

Quality of Life and Dying

Further to the interesting perspective of Tang et al., the quality of life is important and essential for every individual, regardless of their health status [32].

Anyone who is approaching the end of their life wants to be surrounded by those who will miss them the most.

Dying at home is preferred by many terminally-ill patients, but when to move from a hospital to their home or to a hospice depends on just how close they are to the end.

Immunity from COVID-19?

Vaccine or no vaccine, immunity from COVID-19 in whatever form is the end game in the battle against COVID-19, so the Viewpoint from medical specialists is encouraging in understanding and predicting the duration of protection [33].

Adaptive immunity within the first 7 to 10 days of infection would seem to be useful if the precise timing and degree of severity of infection were possible.

Virus neutralizing antibodies may be a viable path to immunity, but can the duration of protection be predicted with accuracy?

Key issues to consider in existing clinical trials to strengthen the important findings on establishing immunity from COVID-19 would be to consider the effects of:

1. Precise timing and degree of severity of infection;
2. Existing comorbidities, including COVID-19;
3. Severely weakened immune systems, including cancer patients undergoing chemo and radio therapies;
4. Differences in age, gender, and ethnicity;
5. Duration and severity of COVID-19 infection;
6. Duration of protection from COVID-19 infection;
7. Duration since presumed recovery from COVID-19;
8. Reinfection of COVID-19;
9. Interaction with seasonal influenza;
10. Half life of neutralizing antibodies.

Predicting the degree of immunity from COVID-19 might be as useful as determining whether sterilizing immunity exists.

To Trust or Not to Trust Regarding COVID-19

When leading healthcare agencies, including the US Centers for Disease Control and Prevention (CDC), are seemingly compromised after coming under immense political pressure, scientists need to step up.

This is where the Societal Experts Action Network (SEAN) is set to become a leading source of scientific and medical advice in dealing with the COVID-19 pandemic [34].

Value of Health Care for Cancer Patients

Further to the interesting viewpoint by Dietz et al., cancer patients are concerned about their quality of life, as well as the quality, availability, and affordability of medical treatment [35].

Nothing else matters for cancer patients.

Previous Medical Research Bodes Well for a COVID-19 Vaccine

Excellence in medical research on viruses, and prevention of associated diseases through the discovery of safe, effective, affordable and available vaccines has been a hallmark of previous recipients of the Lasker Award.

The COVID-9 pandemic might have disrupted the award of a 2020 Lasker [36], but this will also be associated with greater research intensity in the search for a workable vaccine, possibly at warp speed.

You cannot Fight COVID-19 Alone

The personal and reflective perspective by Tisch regarding a panic attack highlights the issues of stress, anxiety, and mental illness associated with the COVID-19 pandemic [37].

COVID-19 has brought into sharp focus a number of long-term issues, including purportedly recovered long-haul patients whose ongoing or likely future diagnoses include mental health issues, Parkinson's disease symptoms, and chronic tiredness.

As COVID-19 is new and developing coronavirus, there are many unknowns that have not yet been transformed into knowns through recent factual experience.

Extrapolating from previous coronaviruses and pandemics can do little without facts, but anecdotal evidence suggests that long haulers might eventually experience chronic fatigue syndrome.

Causality between Hypertension and COVID-19

It is disconcerting though not surprising that obesity and hypertension increase risks associated with COVID-19, regardless of age [38].

Hypertension as an existing condition may increase the risk of contracting COVID-19 and experiencing the more severe symptoms of the disease.

As social distancing, self isolation, quarantine, and lockdowns lead to increased stress, anxiety, and even more serious mental health issues, regardless of age, it would be useful to determine whether COVID-19 increases hypertension in a vicious and repeating cycle.

Conclusion

The world community has been changed irrevocably by the highly infectious and mutating SARS-CoV-2 virus that causes the COVID-19 disease. Significant changes are being made to every aspect of society and the economy, including healthcare policy, treatment, and outcomes, including physical and mental health, opening up of the economy, restrictions on tourism, travel, and hospitality, employment, unemployment insurance, education, schooling, social distancing, self-isolation, quarantining, and lockdowns, among many others.

The necessary research output on COVID-19 has been revolutionary, especially in the medical and biomedical sciences, where the search for a vaccine is essential for the world to have a semblance of normality

in the era of COVID-19. A substantial amount of the recent advanced research has been distributed in the leading medical journals, including the *Journal of the American Medical Association (JAMA)*, where the latest research is distributed on a daily basis, and where comments can also be published.

The COVID-19 pandemic has also highlighted the lack of preparation by the World Health Organization (WHO) and every national government worldwide to deal with such unpredictable structural changes in an increasingly volatile world.

The paper provided a critique of 26 interesting and highly topical research papers that have been published in the *Journal of the American Medical Association (JAMA)*. The diverse topics, which includes treating influenza and COVID-19 simultaneously, dealing with a second wave of COVID-19 in Beijing, honesty is best for known and unknown GAWI and WIST, unreliability of asymptomatic COVID-19 testing outcomes for children, the effectiveness of flu vaccines, acute anxiety during COVID-19, MAID as an end of life option, longer-term effects of corticosteroids on the mortality of critically ill COVID-19 patients, isolation, loneliness and psychological distress during COVID-19, the selection of volunteers for COVID-19 vaccine trials, the mental health of children and adolescents during COVID-19, fertility preservation through hormonal intervention for transgender adolescents, safe, effective and affordable COVID-19 vaccines, essential requirements for acceptance of a COVID-19 vaccine, ischemic stroke rates from COVID-19 and influenza, mandatory COVID-19 vaccination of children, COVID-19 asymptomatic children and adults, and *Who Dares Wins (Qui Audet Adipiscitur)*, even against COVID-19, demonstrate that there are many unanswered questions regarding COVID-19.

As COVID-19 is exploding on a daily basis, the number of total cases curve continues to expand exponentially rather than flattening, and as mutations are being detected, eternal vigilance is essential as the increasing higher waves keep churning.

Acknowledgements

For financial support, the acknowledges the Australian Research Council and the Ministry of Science and Technology (MOST), Taiwan.

References

- McAleer M (2020) Prevention is better than the cure: Risk management of COVID-19. *J Risk Financial Manag* 13: 46.
- McAleer M (2020) Is one diagnostic test for COVID-19 enough? *J Risk Financial Manag* 13: 77.
- Chang CL, McAleer M, Wong WK (2020) Risk and financial management of COVID-19 in business, economics and finance. *J Risk Financial Manag* 13: 102.
- McAleer M (2020) Protecting scientific integrity and public policy pronouncements on COVID-19. *Adv Decis Sci* 24: 70-84.
- McAleer M (2020) Comments on recent COVID-19 research in *JAMA*. *Adv Decis Sci* 24: 62-81.
- McAleer M (2020) Perspectives on topical medical research in the COVID-19 era. *Sci* 2: 68.
- Chang CL, McAleer M (2020) Alternative global health security indexes for risk analysis of COVID-19. *Int J Environ Res Public Health* 17: 3161.
- Chang CL, McAleer M, Ramos V (2020) A charter for sustainable tourism after COVID-19. *Sustainability* 12: 3671.
- Chang CL, McAleer M, Ramos V (2020) The future of tourism in the COVID-19 era. *Adv Decis Sci* 24: 218-229.
- Chang CL, McAleer M, Wong WK (2020) Risk and financial management of COVID-19 in business, economics and finance. *J Risk Financial Manag* 13: 102.
- Wang C, Cheng Z, Yue XG, McAleer M (2020) Risk management of COVID-19 by universities in China. *J Risk Financial Manag* 13: 1-6.
- World Health Organization (2020) WHO COVID-19 Global literature on coronavirus disease.
- Grohskopf LA, Liburd LC, Redfield RR. (2020) Addressing influenza vaccination disparities during the COVID-19 pandemic. *JAMA* 324: 1029-1030.
- Wu Z, Wang Q, Zhao J, Yang P, McGoogan JM, et al. (2020) Time course of a second outbreak of COVID-19 in Beijing, China. *JAMA*.
- Borowsky IW (2020) Tell me. *JAMA Pediatr*.
- Sola AM, David AP, Rosbe KW, Baba A, Ramirez-Avila L, et al. (2020) Prevalence of SARS-CoV-2 infection in children without symptoms of coronavirus disease 2019. *JAMA Pediatr*.
- Walter K (2020) Influenza vaccine. *JAMA*.
- Ayers JW, Leas EC, Johnson DC, Poliak A, Althouse BM, et al. (2020) Internet searches for acute anxiety during the early stages of the COVID-19 pandemic. *JAMA Intern Med*.
- Kluger BM (2020) Medical aid in living. *JAMA Neurol*.
- Sterne JA, Murthy S, Diaz JV, Slutsky AS, Villar J, et al. (2020) Association between administration of systemic corticosteroids and mortality among critically ill patients with COVID-19: A meta-analysis. *JAMA*.
- McGinty EE, Presskreischer R, Han H, Barry CL (2020) Psychological distress and loneliness reported by US adults in 2018 and April 2020. *JAMA* 324: 93-94.
- Jaklevic MC (2020) Researchers strive to recruit hard-hit minorities into COVID-19 vaccine trials. *JAMA* 324: 826-828.
- Golberstein E, Wen H, Miller BF (2020) Coronavirus disease 2019 (COVID-19) and mental health for children and adolescents *JAMA Pediatr* 174: 819-820.
- Pang KC, Peri AJ, Chung HE, Telfer M, Elder CV, et al. (2020) Rates of fertility preservation use among transgender adolescents. *JAMA Pediatr* 174: 890-891.
- Persad G, Peek ME, Emanuel EJ (2020) Fairly prioritizing groups for access to COVID-19 vaccines. *JAMA*.
- Bauchner H, Malani PN, Sharfstein J (2020) Reassuring the public and clinical community about the scientific review and approval of a COVID-19 vaccine. *JAMA*.
- Merkler AE, Parikh NS, Mir S, Gupta A, Kamel H, et al. (2020) Risk of ischemic stroke in patients with coronavirus disease 2019 (COVID-19) vs. patients with influenza. *JAMA Neurol*.
- Opel DJ, Diekema DS, Ross LF (2020) Should we mandate a COVID-19 vaccine for children? *JAMA Pediatr*.
- Milani GP, Bottino I, Rocchi A, Marchisio P, Elli S, et al. (2020) Frequency of children vs. adults carrying severe acute respiratory syndrome coronavirus 2 asymptomatically. *JAMA Pediatr*.
- Gostin LO, Hodge JG, Levin DE (2020) Legal interventions to address US reductions in life expectancy. *JAMA* 324: 1037-1038.
- Nuzzo JB, Bell JA, Cameron EE (2020) Suboptimal US response to COVID-19 despite robust capabilities and resources. *JAMA*.
- Tang M, Bruera E (2020) Hospital deaths a poor quality metric for patients with cancer. *JAMA Oncol*.
- Stephens DS, McElrath MJ (2020) COVID-19 and the path to immunity. *JAMA*.
- Abbasi J (2020) The science of persuasion offers lessons for COVID-19 prevention. *JAMA*.
- Dietz JR, Pronovost P (2020) Time to focus on value-based metrics for cancer care? *JAMA Oncol* 6: 1325-1326.
- Goldstein JL (2020) The 2020 Lasker awards and the COVID-19 pandemic. *JAMA*.
- Tisch CF (2020) Camping alone-recovering from COVID-19. *JAMA*.
- Katz MH (2020) Regardless of age, obesity and hypertension increase risks with COVID-19. *JAMA Int Med*.