HYPOTHESES AND ETHICS IN THE TIME OF THE COVID-19 PANDEMIC

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On March 11, 2020, the World Health Organization (WHO) officially declared the COVID-19 outbreak as a pandemic and warned of its unprecedented public health and socioeconomic consequences [1]. Over the past year, the global number of COVID-19 cases has reached 127,306,725 with 2,789,920 deaths as of March 28, 2021 (<https://www.worldometers.info/coronavirus/>).

Since the beginning of this pandemic, uncountable human sufferings have been described across all countries due to the loss of lives, psychoemotional stress, and quarantine restrictions [2]. Although the ongoing COVID-19 vaccine rollout in some countries raises hopes of fast recovery and resuming a normal life, the world will never be the same after this pandemic. This pandemic has revealed heroism in ordinary people and health professionals who knowingly risked their lives fighting the coronavirus and saving countless lives. However, the same pandemic has shifted attention of all researchers to the emerging research topics in COVID-19 and uncovered numerous ethical issues that have

slowed the global science growth and negatively affected healthcare [3-5].

The past year has been marked with a substantial growth of empirical reports and hypotheses on COVID-19 prevention and treatment. The annual publication activity in *Medical Hypotheses*, one of the leading MEDLINE-indexed journal, increased from 482 in 2019 to 921 in 2020. Numerous hypotheses have been published urging to repurpose available bacterial and viral vaccines and anti-inflammatory drugs to curb the COVID-19 pandemic. While vaccine hypotheses were mainly based on observations of cross-reactivity and low COVID-19 cases in regularly vaccinated pediatric populations [6, 7], drug repurposing suggestions were relying on a limited experience of previously controlled coronavirus epidemics [8].

With the exception of the notorious hydroxychloroquine hypothesis, no any repurposed drug therapy has

received immediate attention of the global scientific community. While most COVID-19 hypotheses contained some evidence-based points, there have also been groundless suggestions to boost immunity and curb the pandemic by non-specific and apparently pseudoscientific methods [9, 10]. The lack of adherence to widely publicized hypothesis standards [11] and inappropriate editorial strategies could have contributed to the multiplication of unjustified, untestable, and potentially dangerous recommendations [12, 13].

Although the pandemic has hampered research in most non-COVID-19 areas, it has paved the way for new scientific directions and necessitated adjustments in research ethics review and protocol approval [14]. The COVID-19 emergency measures have emphasized the importance of online evaluation, remote monitoring of approved projects, and implementing online informed consents to minimize unnecessary risks and digitize the entire research process. Some research ethics committees have entirely switched their workflows to online mode, with regular video conferencing arranged for discussing research protocols and other documents [15, 16]. Apparently, the current pace of digitization will allow minimizing ethics review turnaround times, improving ethics committees' workflows, and facilitating essential cross-country research. The digital transformation can be particularly beneficial for ethics committees in non-mainstream science countries with ill-equipped documentation and approval procedures [17].

Importantly, an analysis of the global COVID-19 research productivity revealed a disproportionate distribution of related reports, with most Central Asian and African countries being deprived from widely visible publications [18]. Additionally, mapping of social media uses across Central Asia pointed to unpopularity and/or

restricted access to online channels which are extensively employed for research elsewhere in the world [19]. The described trends might be due to the loopholes in the research management which are deep rooted in the non-adherence to evidence-based standards coupled with language barriers and unawareness of global ethics norms [20-22].

Experts have voiced their concerns over the wasteful (predatory) publishing that continue affecting unwitting non-Anglophone authors and their valuable COVID-19 reports [23]. The absolute majority of predatory journals, including those indexed by reputable databases, continue spreading harmful misinformation about COVID-19 therapies and milking public funds that could be allocated to live-saving clinical research and practice [24]. Redundant, senseless, and misleading COVID-19 reports find their way to established ethical journals due to the deficiencies in the (fast) peer review and inadequate editorial policies. Although no journal is immune to erroneous and misleading reports, attentively evaluating central hypotheses and filtering out submissions with redundant and unjustified conclusions may spare indexed periodicals from wasteful publications [13].

In conclusion, the COVID-19 pandemic has uncovered numerous issues in research evaluation and publishing. Some of these issues are rooted in the rigidity of research management and resistance to the enforcement of globally acceptable ethical norms. More emphasis on generated hypotheses and their ethical implications is advisable to improve the quality and dissemination of research projects in the era of COVID-19.

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COVID-19 ПАНДЕМИЯСЫ КЕЗІНДЕГІ ГИПОТЕЗАЛАР МЕН ЭТИКА

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ГИПОТЕЗЫ И ЭТИКА ВО ВРЕМЯ ПАНДЕМИИ COVID-19

Ключевые слова: COVID-19, пандемия, Центральная Азия, периодические издания как тема, гипотеза, управление информацией здравоохранения

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