EMBRACING SOCIAL MEDIA FOR GENERATING AND TESTING HYPOTHESES

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In the era of the COVID-19 pandemic, international scholars' attention is rapidly switching to globally available online communication tools and platforms. Numerous online channels have long been operated to serve diverse public interests, including social networking and entertainment. The lack of expert monitoring and ethical regulations of these channels has led to the dissemination of unchecked, misleading, and apparently harmful information, particularly in the past year [1]. Poorly evaluated and inconclusive reports on miraculous hydrochloroquine therapy in COVID-19 were often mentioned in quick and unsubstantiated posts across influential news outlets, blogs, and other well populated online platforms. The countless instances of misinformation found their fertile ground on popular social media platforms where easily created posts were immediately disseminated and globally resonated due to the proactive stance of online users across most Anglophone countries.

Admittedly, the most influential social media posts are often created by Anglophone users. Such activities are part of the scientific culture across Anglophone countries where promotion of research and post-publication communication have long been prioritized. Non-Anglophone online users, including those in Central Asia, are still slow to appreciate the role of such activities and to take part in the global communication on equal grounds. The inertia of outdated research infrastructure, absence of comprehensive strategies for science, education and practice, and inadequacy of academic English skills are the main culprits of the limited activities [2].

A recent analysis of social media activities in Central Asia has demonstrated the dominance of some local and Eurasian online channels which are not compatible with the globally acceptable systems of altmetrics aggregation [3]. A subsequent analysis of reviewing activities of Central Asian scholars recorded on the

Publons platform also pointed to unsatisfactory results in view of the disproportional presentation of registered reviewers (only 370 [12%] out of 15,764 scholars had verified records) and regional inconsistencies of reviewer contributions [4]. In fact, only Kazakhstan had more than 100 active reviewers on the platform, and half of the top 20 Central Asian reviewers were affiliated with Nazarbayev University (Nur-Sultan, Kazakhstan) [4]. The unacceptably low online activities in the region marginalize individual scholars and research groups, preventing them from contributing to the dissemination of innovative ideas and evidence accumulation.

Well organized online communities with numerous scholarly followers can be viewed as drivers of expert opinion garnering in surveys. While surveys have long been successfully employed for sociology and public health research, clinical disciplines that embrace online research tools are increasingly benefiting from the same approaches. The expanded benefits of online surveys are particularly apparent in the time of the COVID-19 pandemic due to the quarantine restrictions and limitations of face-to-face data collection [5]. Large surveys may both prove established hypotheses and justify new ones which are in great demand during the COVID-19 pandemic.

Hypothesis generators may benefit from comprehensive and systematic analyses through the Scopus database, Directory of Open Access Journals and Open Ukrainian Citation Index (OUCI), to name just a few advanced research tools. Combining bibliographic searches with citation and altmetric rankings may lead to hypothesis generation, research trends visualisation, and erroneous literature correction. Importantly, Scopus and OUCI are integrated with the Plum Analytics social media aggregator to display both citations and altmetric indicators. Initial attempts to explore the implications of traditional and alternative impact analysis have proven

successful in the context of established scholarly journals [6].

Our own snapshot Scopus and Altmetric.com analysis of *Medical Hypotheses*, the flagship hypothesis journal, revealed that the publication activity doubled in the year 2020, compared with the previous year, due to the predominant coverage of COVID-19 articles. Among the ten top-cited articles in 2020, some presented with impressively high Altmetric Attention Scores (AAS) which are driven by numerous tweets and mentions in news outlets. Related examples include hypotheses on zinc supplementation for COVID-19 treatment (AAS 1639; <https://tinyurl.com/38hzm5>), post-COVID-19 syndrome (703; <https://tinyurl.com/fjr6vbm>) and airborne route of SARS-CoV-2 transmission (522; <https://tinyurl.com/b7k6adj4>). Most notably, the highest AAS is recorded in connection with the retracted overview of the role of facemasks in COVID-19 (20511; <https://tinyurl.com/afmx6r2f>).

Apparently, rapidly accumulating experience of the expanded use of online tools and platforms points to a paradigm change in research. Regional scholars need to adjust to the change and advance their knowledge of advanced search engines [7]. Such an adjustment is warranted to successfully communicate with Anglophone researchers and actively contribute to international projects. Envisaging a complicated process of the adjustments, research managers may find it feasible to organize regional scholarly communities on popular social media platforms and create incentives for online research activities. With improved knowledge of social media and altmetrics aggregators, researchers may wittingly utilize online tools for formulating testable hypotheses and choosing optimal research designs. Given the double-edged sword of social media, the organized online groups need to be guided by skilled moderators updated on social media ethics.

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ГИПОТЕЗАЛАРДЫ ДАМЫТУ ЖӘНЕ СЫНАУ ҮШІН ӘЛЕУМЕТТІК ЖЕЛІЛЕРДІ ПАЙДАЛАНУ

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РАБОТА В СОЦИАЛЬНЫХ СЕТЯХ ДЛЯ ФОРМУЛИРОВАНИЯ И ТЕСТИРОВАНИЯ ГИПОТЕЗ

Ключевые слова: COVID-19, Центральная Азия, дизайн исследования, гипотезы, опросы и анкеты, социальные сети

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