INA-RESPOND

INDONESIA RESEARCH PARTNERSHIP ON INFECTIOUS DISEASE

KEMENTERIAN KESEHATAN REPUBLIK INDONESIA

NEWSLETTER

October 2024

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HEALTH POLICY AGENCY
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FEATURES

INA-RESPOND Newsletter

InVITE & PROACTIVE Study Updates

By: Eka Windari R., I Wayan Adi Pranata, Lois E. Bang, Melinda Setiyaningrum, Regina Septiana, Nur Latifa Hanum, Restu Amalia, Riza Danu Dewantara

InVITE

The Indonesia InVITE study is preparing for a Site Closeout Visit (SCV) scheduled for February 2025. The Secretariat and Sites team are coordinating to ensure all study documents and supplies are ready for SCV activities. The first shipment of serum specimens, totaling approximately 1,053 serum vials from Visits 1, 2, 3, and symptomatic visits (13 cryoboxes), was successfully sent via World Courier on September 23, 2024, and arrived at the Central Laboratory (Frederick National Lab USA) on September 27, 2024, without issues. A second shipment, containing 1,046 serum vials (13 cryoboxes), was sent on October 14, 2024, and reached the Central Laboratory on October 19, 2024, after an unexpected airline delay from Jakarta to the US. To prevent the specimens from thawing, the Central Laboratory team arranged for dry ice replenishment upon arrival at John F. Kennedy International Airport in New York. The specimens remained frozen, with an average recorded temperature of -81.5°C (SD ± 2.7°C). The Central Laboratory team is currently assessing the specimens' integrity and packaging suitability for future shipments and has requested the shipment video from the INA-RESPOND Reference Laboratory team. Additionally, the mid-turbinate swab specimen shipment is still under discussion between the Secretariat and NIAID Team due to poliovirus eradication requirements for RNA extraction.

After the Indonesia InVITE team recently bid farewell to dr. Natalia from Site 02 (Maumere), they will soon say goodbye to dr. Regina Septiana, a dedicated Research Assistant (RA) from Site 03 (Banjarmasin), as her contract ends. In this newsletter, dr. Regina shares her nearly three-year experience working as an RA at Site 03 for the INA-PROACTIVE Study, starting in February 2021.

Site 03 became a top choice when the InVITE study expanded its recruitment target from 500 to 700 participants, thanks to its strong history of collaboration with INA-RESPOND from the INA-

Figure 1. Site 03 team (left to right): Lutfia Rahimah, SKM (LT), Silvia Rahmi Astuti, Str, Kes (LT), dr. Regina Septiana (RA), dr. Rizka Dwi Puteri (RA), Tiya Saraswati (CRA), dr. Wiwit Agung SNC, Sp.PD, K-Ger (PI), dr. Maimunah (NSC member), dr. Rahmawati, Sp.PK (Co -PI), dr. Dewi Rizki Agustina, Sp.PD, FINASIM (Co-PI).

PROACTIVE study. dr. Wiwit Agung SNC, Sp.PD, K -Ger, served as the Site Principal Investigator (PI) for both the INA-PROACTIVE and InVITE studies. Known for her commitment, dr. Wiwit encouraged RAs to engage actively in scientific writing beyond just conducting the study. At Site 03, dr. Regina worked closely with Co-PIs, dr. Dewi Rizki Agustina, Sp.PD, FINASIM, and dr. Rahmawati, Sp.PK, and also co-partnered with dr. Rizka Dwi Putri, who served as an RA from January 2022 until August 2023.

A site preparation visit and training session were held on January 6-7, 2022, after which subject recruitment began in February 2022 at Kayutangi and Cempaka Public Health Centers (Puskesmas). dr. Regina faced challenges in recruitment, such as individuals perceiving little personal benefit, educational barriers to understanding the study's purpose, long travel distances for follow-up visits, scheduling conflicts, and fear of blood draws. Despite these challenges, Site 03 successfully completed recruitment within two months, reaching the target of 130 subjects.

During the follow-up phase, dr. Regina was responsible for contacting participants for their scheduled visits, conducted at the Clinical Pathology Laboratory with support from the Laboratory Technician (LT). Most participants cooperated with follow-up requests, and the LT's experience made the process smooth. However, some participants were anxious during specimen collection and required reassurance. Several participants expressed interest in their local SARS-CoV-2 antibody results, frequently inquiring about them during visits or via WhatsApp.

In her role, dr. Regina conducted bi-weekly calls to monitor participants for COVID-19 symptoms and encourage symptomatic visits when necessary. Some participants reported symptoms but were hesitant to attend symptomatic visits, fearing a positive result might impact their job or invite social stigma. The bi-weekly calls were sometimes challenging as not all participants had personal mobile phones, requiring dr. Regina to reach out to family members or use SMS and calls instead of WhatsApp.

Figure 2. Laboratory activities.

Figure 3. INA-RESPOND Secretariat Room at Site 03 and specimen shipment activities at the hospital laboratory.

dr. Regina and her team also encountered challenges in specimen collection and transport due to the distance between the Public Health Center and the hospital. The LT periodically transported samples using a cool bag with ice packs, and after each follow-up, samples were sent to the INA-RESPOND Reference Laboratory at Tangerang Hospital. dr. Regina and the LT managed sample shipment preparations, including verification, packaging, and documentation. Coordinating flight schedules from Banjarmasin to Tangerang was often challenging, requiring early arrival at the hospital. Flights were mostly timely, ensuring samples arrived frozen. The team was trained to use the Credo Cube instead of dry ice for better cold chain management.

Personally, dr. Regina found her experience in the InVITE study both exciting and challenging, especially due to its focus on COVID-19. She gained valuable insights into COVID-19 and vaccine effects and appreciated the support from the INA-RESPOND teams. A memorable moment for dr. Regina and the Secretariat was her participation in a "Phone Call" manuscript plan, where she presented her experience conducting bi-weekly calls in English. Her presentation was highly praised, though the manuscript plan was eventually canceled due to data harmonization challenges. dr. Regina's effort is commendable, and we fully support her future scientific pursuits.

Currently, Site 03 is preparing for the SCV. After a seven-year collaboration with INA-RESPOND that began with the INA104-PROACTIVE study and continued with the InVITE study, the Site 03 team expresses heartfelt gratitude to INA-RESPOND for the opportunity to work on studies with high standards. The team has gained extensive knowledge in informed consent procedures, sample collection, and document management. They feel appreciated for their involvement in scientific writing and publication opportunities based on research data.

The InVITE study at Site 03 was a success, providing valuable insights to the INA-RESPOND Secretariat. We extend our deep gratitude to the Site 03 team for their cooperation, patience, flexibility, and hard work. '***Thank you*'s and apologies might not be enough to show how grateful we are for the Site 03 team's patience, flexibility, and hard work during the study**. We're excited to work with Ansari Saleh Hospital on more INA-RESPOND projects in the future and wish the entire Site 03 team continued success. **Special thanks to dr. Regina — we are truly grateful for your dedication and hard work throughout the InVITE journey, especially regarding the careful study data completion with minor queries and smooth communication. This experience will indeed become a fond memory. We wish you happiness and success in your next endeavor, and we hope our paths will cross again.**

INA104

Figure ref: Cronin H, Hamblin F, Goldenberg NA. Operationalizing Good Clinical Prac-

The INA-PROACTIVE study team is finalizing the study report for submission to the Ethics Committees (EC) alongside manuscript preparation. A clinical study report (CSR) provides a comprehensive summary of studies involving human subjects, integrating clinical and statistical analyses. Upon study completion, the Sponsor prepares and submits the CSR to regulatory agencies, and the Investigator provides the institution and EC with a study summary.

In December 2023, after closing all INA-PROACTIVE study sites, the EC was notified of the study close-out activities and provided an interim study report, with the final report expected by year-end.

Summary of the Final Study Report

The INA-PROACTIVE study was conducted by 19 sites across Indonesia, with 15 using a Central EC and four using a Local EC. Initial approval was granted on January 18, 2018, with one protocol amendment in June 2018. Each site obtained hospital study permits before starting. The first site activation occurred on March 12, 2018, followed by screening and enrollment. At first, the Central EC responsible for approving and evaluating the study was the *Balitbangkes*, MoH EC. However, during the study, the *Balitbangkes*, MoH EC underwent restructuring and ceased operations. Consequently, the Central EC was changed to the FK-UI, RSCM EC. All study activities, from screening to the last patient's final visit, took place between January 10, 2018, and May 31, 2023.

Of the 4,336 subjects enrolled, 3,496 completed the study, and 840 withdrew due to reasons like relocation, negative HIV status, and death. Additionally, 57 subjects transferred between sites, resulting in a retention rate of 86.76%.

Collected specimens included plasma and buffy coat samples, managed per INA-RESPOND protocols. Only three adverse events (AEs) related to blood collection were reported, with no Serious AEs (SAEs) or Unanticipated Problems. There were 757 Reportable Events (REs) from disease complications, including 251 deaths, 427 hospitalizations, and 76 Important Medical Events (IMEs) such as COVID-19.

Clinical research associates (CRAs) conducted 108 on-site and remote visits, ensuring protocol and Good Clinical Practice compliance. Minor protocol deviations totaled 1,598, with 7 major deviations, all reviewed, reported to the EC, and corrected. Site close-out occurred from March to October 2023, with study documents securely stored by *Indo Arsip*.

Now focused on study results, Clinical Research Site Specialists (CRSS) collaborate with Data Management and Scientific Teams to reconcile safety reports, especially IMEs related to COVID-19. The Statistician is conducting data analyses for the Scientific Team to determine the study conclusions outlined in the protocol.

INA-RESPOND Newsletter

FEVERISH EARTH: EXPLORING HEATSTROKE AND THE RISE OF INFECTIOUS DISEASES

By: Fadlika Harinda, Tiara Kumala Putri, Adhella Menur

Theories about climate change and early observations of the greenhouse effect on Earth began emerging around 1820. In 1938, an engineer and little-known amateur scientist named Guy Callendar became the first 'doctor' to diagnose the Earth's fever. He analyzed records from 147 weather stations worldwide and discovered that average global temperatures had risen by 0.3°C over the previous 50 years. Callendar proposed that industry carbon dioxide (CO_2) emissions were responsible for this warming. Yet, his findings were largely ignored at the time, as most scientists doubted that human activities could significantly influence a system as vast as the Earth's climate. Today, we know Callendar was right: **the Earth's fever won't go away, and the degrees keep climbing**.

In 2015, in response to the increasing urgency of climate change, 195 nations signed the Paris Agreement. This landmark treaty aims to keep Earth's temperature rise "well below 2°C above pre-industrial levels" and ideally limit it to 1.5°C. The "pre-industrial" period refers to 1850–1900, when

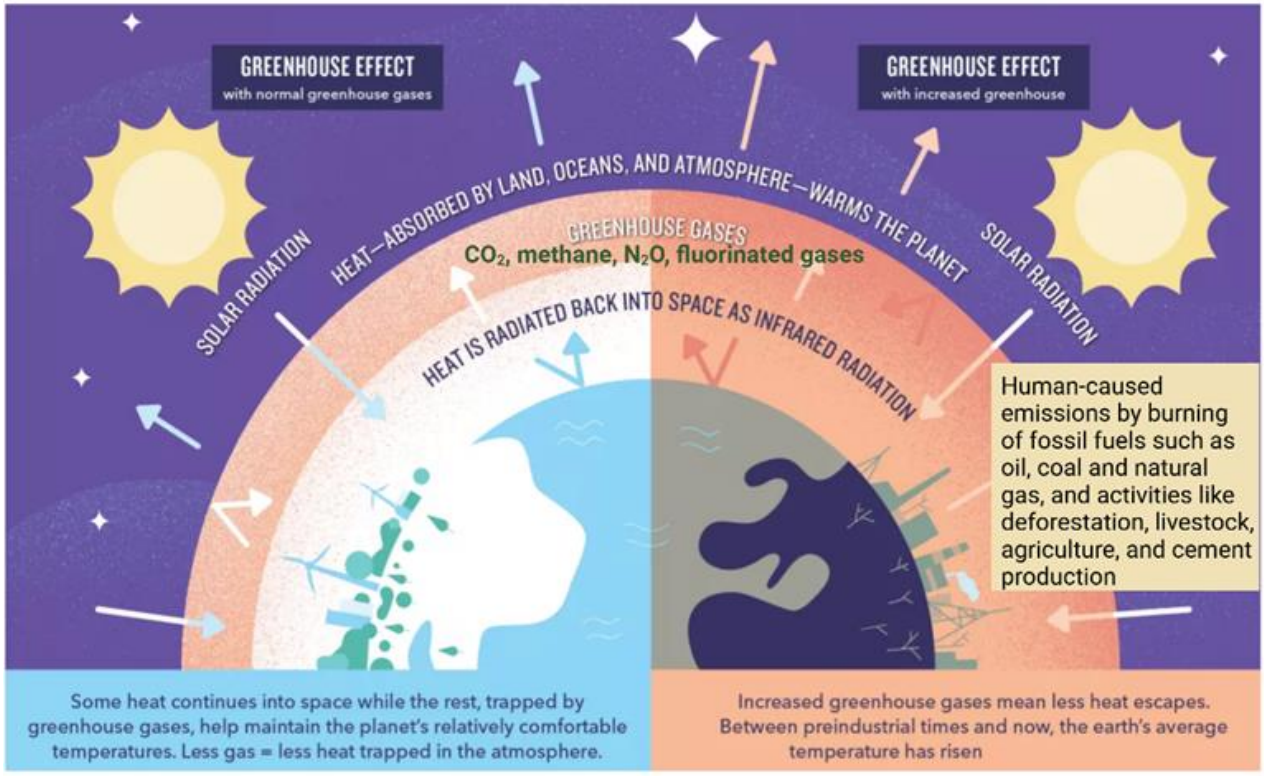


Figure 1. The greenhouse effect helps trap heat from the sun, maintaining a comfortable temperature on Earth. However, human activities are increasing the concentration of heat-trapping greenhouse gases in the atmosphere, causing the earth to warm up (Michal Bednarski in https://www.nrdc.org/stories/greenhouse-effect-101#whatis).

reliable observations of global surface temperatures first became available, and before widespread fossil fuel use. Although a 1.5°C increase might sound modest, climate scientists agree it marks a critical threshold. Beyond it, the impacts of climate change become significantly more severe for both human societies and natural ecosystems. Alarmingly, these changes may be inevitable, as global temperatures between 2023 and 2024 were the highest on record, exceeding 1.5°C above pre-industrial levels. According to the World Meteorological Organization (WMO), temperatures could reach as high as 1.9°C above pre-industrial levels by 2028. While natural phenomena like El Niño and volcanic eruptions contribute to the warming, the primary driver is human-induced greenhouse gas emissions.

Climate change is associated with negative impacts on physical, mental, and community health and well-being through the increasing frequency and intensity of extreme weather events such as extreme heat, prolonged heat waves, and abnormal rainfall. It is also driving a rise in infectious and vector-borne diseases, reduced air and water quality, food insecurity, and declining biodiversity. Moreover, it is projected to worsen heat-related illnesses and mortality, presenting unprecedented challenges to public health systems. Heat-related illnesses often affect elderly individuals, whose ability to adapt to heat stress has diminished, as well as those who are chronically ill, frail, pregnant, or unable to care for themselves, such as infants and toddlers. Additionally, outdoor and manual laborers, athletes, and individuals in poverty without access to cooling systems are at heightened risk. **In this edition, we'll explore heat stroke, the most serious heat-related illness, and examine how Earth's "fever" is driving the spread of infectious diseases.**

Uncovering heat stroke

Heat stroke is a severe, potentially life-threatening form of heat illness. It is a clinical constellation of symptoms that include a severe elevation in body temperature, **typically, but not always**, greater than 40°C, with central nervous system dysfunction. Determining where the patient falls on the heat illness continuum is crucial. The signs and symptoms of heat exhaustion, such as cramping, fatigue, dizziness, nausea, vomiting, and headache, may overlap. However, when progression to end-organ damage occurs, it becomes heat injury. What differentiates heat stroke from heat injury is the presence of neurological impairment. Patients typically present with hyperthermia, hypotension, hyperventilation, and tachycardia, often accompanied by altered mental status, seizures, and in severe cases, coma. The mortality rate for heat stroke ranges from 20-65%, and 7-20% of survivors may suffer permanent neurological damage.

There are two types of heat stroke depending on the heat source. The classic non-exertional heat stroke emanated from a poor heat-dissipation system during environmental passive heat exposure. Meanwhile, the heat source for exertional heat stroke is due mainly to endogenous heat, i.e., excessive metabolic heat production during physical exercise that overwhelms the physiological heat-loss system.

As the Earth's fever rises, the likelihood of heat-related hospitalizations and mortality increases. Clinicians and researchers should be concerned about heat stroke, as it can affect a broad range of individuals, including healthy populations. For years, much of the focus has been on the thermolytic effects of heat, also known as the heat toxicity pathway, where high temperatures directly cause cellular and organ damage, leading to heat stroke.

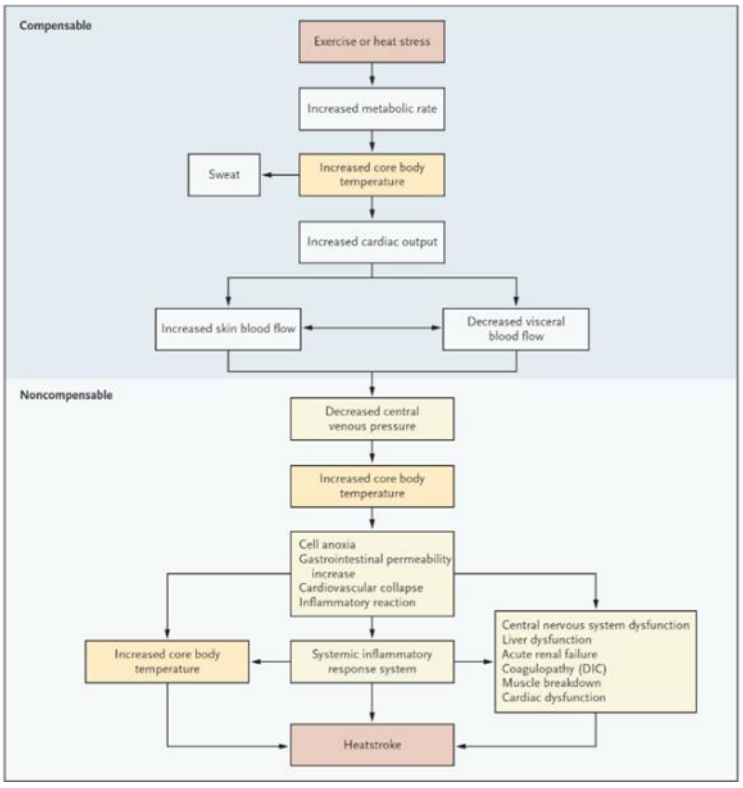


Table 1. Epidemiologic and Clinical Features of Classic and Exertional Heatstroke.

Feature*	Classic Heatstroke	Exertional Heatstroke
Age group	Prepubertal, elderly	Postpubertal and active
Occurrence	Epidemic (heat waves)	Sporadic (any time of year)
Concurrent activity	Sedentary	Strenuous
Health status	Chronically ill	Generally healthy
Medications	Often being used (prescribed medications)	Usually none being used (sometimes ergogenic aids, illicit drugs)
Mechanism	Absorption of environmental heat and poor heat dissipation	Excessive heat production, which overwhelms heat-loss mechanisms
Sweating	May be absent (dry skin)	Usually present (wet skin)
CNS dysfunction	Common	Common
Acid–base disturbance	Respiratory alkalosis	Metabolic acidosis
Rhabdomyolysis	Unusual	Frequent
Liver dysfunction	Mild	Marked to severe
Renal failure	Uncommon (<5%)	Common (25–30%)
DIC	Mild	Marked to severe
ARDS	Common	Common
Creatine kinase	Mildly elevated	Markedly elevated
Calcium	Normal	Low (hypocalcemia)
Potassium	Normal	Usually high (hyperkalemia)

* ARDS denotes acute respiratory distress syndrome, CNS central nervous system, and DIC disseminated intravascular coagulation.

Figure 2. The general pathophysiology of heat stroke and the comparison between classic vs. exertional heatstroke (Epstein Y and Yanovich R, 2019, doi: 10.1056/NEJMra1810762).

And now, the potential link between heat stroke and endotoxemia, first discussed by Brock-Utne et al. in 1988 after observing exhausted runners following a long-distance race, has shed light on the concept of 'heat sepsis,' expanding our understanding of heat stroke mechanisms.

The last three decades of evidence suggested that endotoxemia and sepsis may have important roles independently from the heat stress itself in heat stroke pathophysiology. Suggested that heat-related sepsis precedes the thermolytic effects generated by heat, such as heat toxicity, during the development of heat stroke. This evidence and information presented on the mechanisms of heat stroke apply to heat stroke in general without differentiating between the two forms. Learning this model will hopefully lead to a better understanding of how heat stroke develops and will give a wider opportunity to prevent fatal events.

The dual-pathway model of heat stroke introduces novel concepts, suggesting that heat stroke is triggered by two independent pathways, activated in sequence. The first pathway to start with is heat sepsis, in which endotoxemia, systemic inflammation, and the sepsis response are the underlying' pathophysiological pathways. In this pathway, heat contributes to the induction of change in gut permeability and the promotion of gram-negative bacteria and lipopolysaccharides (LPS) translocation to the circulatory space. In immune-competent individuals, LPS in the circulation is removed by monocytes, LPS-specific antibodies, and high-density lipoproteins. When the immune system is under suppression, the LPS clearance is compromised, leading to endotoxemia of LPS accumulation until it reaches the systemic inflammatory response threshold and turns into sepsis.

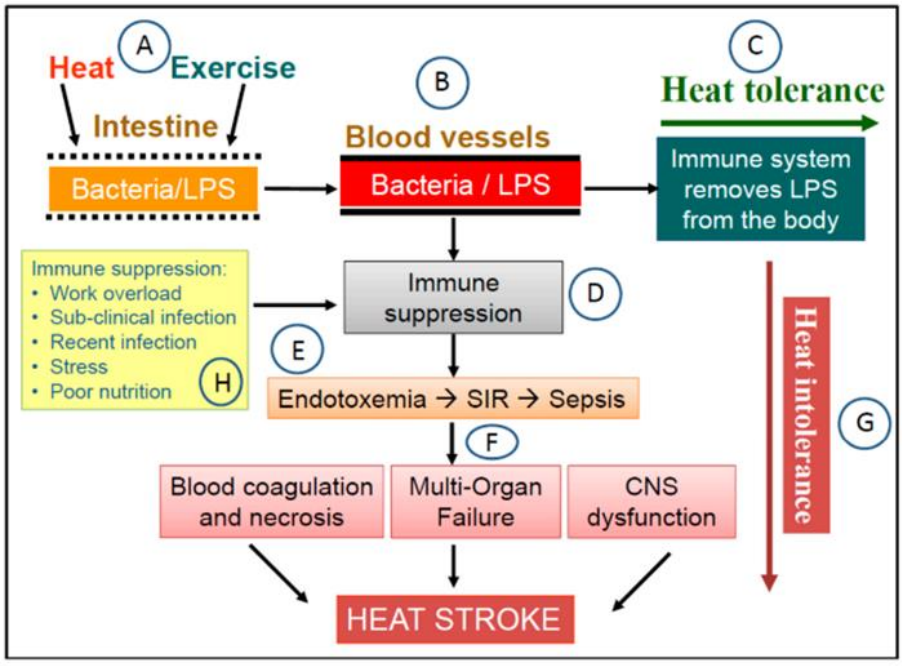


Figure 3. The heat sepsis pathway in the dual pathway model of heat stroke (Lim CY, 2018, doi:10.3390/antiox7110149).

This pathway is then followed by the second pathway which is known as the heat toxicity pathway. During this pathophysiological process, heat initiates cellular disintegration, thus damaging the structure and body organs. It is postulated that the heat sepsis pathway preceding the heat toxicity pathway started when the core body temperature (Tc) entered 40oC and transitioned to when the Tc reached around 42oC. Further mechanism of the proposed heat sepsis is seen in figure 3. In this model, the immune system state acts as a switch between heat tolerance and intolerance. Examples of immune-suppressing circumstances are also suggested in the figure.

The management of heat stroke involves ensuring proper airway protection, breathing, and circulation (the ABCs). After stabilizing these critical functions, rapid cooling becomes the primary treatment. Thus, if we find someone with heat stroke symptoms, we must cool down the core body through whatever means. For instance, put the body in a pool of cool water or under a cool shower; spray the body using a garden hose or sponge with cool water; fan the body with cool water mist; place ice packs or cool wet towels on the neck, armpits, and groin; cover the body with cool damp bedsheets; and offer chilled water if the person is conscious enough or begin CPR if the person shows no consciousness with a missing pulse and breath. In all cases, the person should be transported to a hospital as quickly as possible for emergency medical care. The target core temperature is typically below 39°C, with a preferred range between 38.0°C and 38.5°C, to reduce the risk of further clinical deterioration and prevent end-organ damage. Anticipating SIRS and sepsis in heat stroke cases and immediate intervention should be the standard of care (e.g., antibiotics, fresh frozen plasma, cryoprecipitate, or platelet concentrates to treat DIC). Pharmaceutical and nutraceutical approaches to boost the immune system and cleanse the gut of bacteria might improve heat tolerance. Further research is needed to optimize the management of heat stroke and refine treatment protocols.

Hotter Earth and infectious diseases

The relationship between climatic factors and infectious diseases is complex, involving multiple interactions. A warming and increasingly unstable climate, characterized by more frequent and intense heat waves, abnormal precipitation, and droughts, is playing a growing role in driving the

global emergence, resurgence, and redistribution of infectious diseases. It affects pathogen abundance, survival, and virulence, as well as human behavior and host susceptibility. Furthermore, droughts and heat waves may increase the risk of wildfires and accelerate the melting of ice and frozen ground (permafrost) in polar regions, damaging ecosystems both on land and at the poles. These poor habitat conditions can force animals to move into human settlements, potentially increasing the risk of pathogen exposure and disease outbreaks.

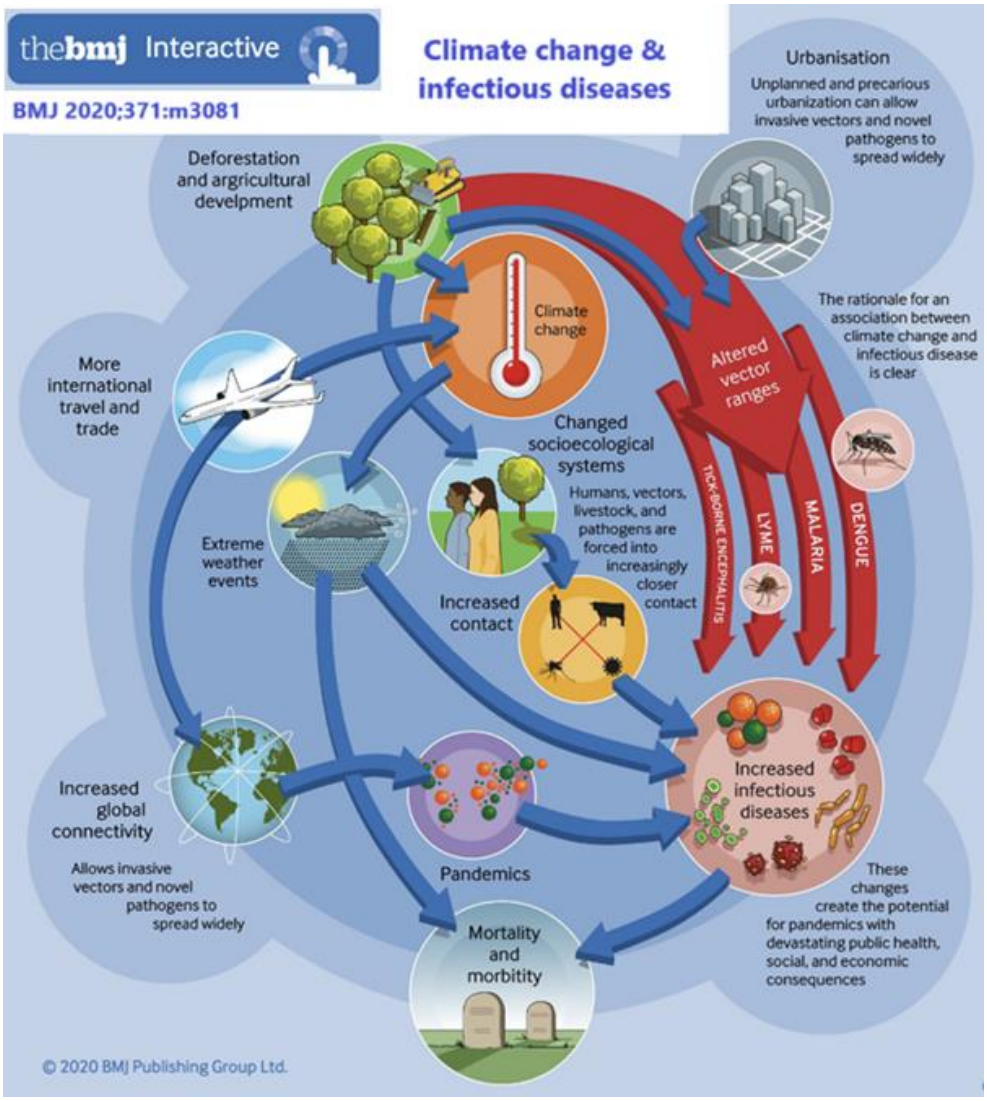
Vector-borne infectious diseases are caused by pathogens transmitted by arthropods, with mosquitoes, fleas, and ticks being the primary vectors. The effect of global warming on these diseases is indirect but significant. High temperatures and humidity alter the geographical distribution of vectors, creating favorable conditions for their survival and faster reproduction. This, in turn, can accelerate the spread and transmission of infectious diseases. Mosquitoes are prevalent vectors in tropical and subtropical regions. They transmit diseases by biting their hosts and turning previously non-infectious individuals into infectious ones. High temperatures could have activated the mosquito breeding season early and reduced the extrinsic incubation period. As the temperature continues to rise, mosquitoes in low-latitude regions may find new habitats in mid or high-latitude regions and in areas of high altitude, leading to geographical expansion or shift of diseases. Aedes aegypti, the primary mosquito vector for several arboviral diseases such as dengue, chikungunya, yellow fever, and Zika, has experienced global expansion due to rising global temperatures along with increased population movement through air travel and urbanization.

Fleas are vectors that infect both domestic and wild animals. Flea species such as Ctenocephalides canis and Ctenocephalides felis, commonly found on domestic animals, act as vectors for the bacterium Rickettsia typhi, which causes murine typhus. Fleas can survive in a wide range of environmental conditions, and warm temperatures and high humidity favor their proliferation. Ticks are poikilothermic animals that cannot regulate their body temperature, so the ambient temperature greatly influences their body temperature. Some diseases transmitted by ticks include encephalitis, babesiosis, Lyme disease, Crimean-Congo hemorrhagic fever, spotted fever, and various rickettsioses. Global warming causes an increase in extreme temperatures, heat waves, and longer summers and springs, with shorter winters, creating conditions that favor the survival of ticks.

Positive associations between hot temperature and all-cause or bacterial diarrhea have been observed, while negative associations have been noted with viral diarrhea, particularly rotavirus-associated gastroenteritis. Drought can increase the risk of diarrhea by concentrating pathogens in water sources. The changing climate and increased drought may jeopardize access to adequate water, sanitation, and hygiene (WASH) practices, leading to heightened diarrhea risk. Salmonella is climate-sensitive, with higher temperatures linked to increased incidence due to faster bacterial replication. In contrast, Campylobacter, which cannot replicate outside the host, is less directly influenced by warm weather. Instead, its seasonal variation may be linked to human behaviors, such as riskier food production, consumption patterns, or other seasonal factors.

Rising temperatures may also accelerate bacterial growth, increase infection rates, and expand the geographical distribution of bacteria. This also rais-

es the frequency of infections in healthcare settings and enhances the likelihood of horizontal gene transfer, leading to the emergence of drug-resistant infections.



Furthermore, due to global warming, Alaska's entire ecosystem is changing, with winter temperatures rising by nearly 4°C over the past 60 years. Sea ice is breaking up earlier, and new pathogens are emerging. Viruses and bacteria can survive for millennia when frozen, and there is little understanding of what might be released as icy soils and glaciers melt. It could be seen as a 'Pandora's box,' given the vast reservoir of pathogens accumulated over time and the possibility that many of these may be novel to humans. In the past five years, the European Space Agency has discovered hundreds of ancient, antibiotic-resistant microorganisms in Alaskan permafrost. Similarly, Chinese hunters have isolated 33 previously unknown viruses, dating back at least 11,000 years, from Tibetan glaciers and ice samples in Greenland and other regions. Finally, the changes brought by a feverish Earth are presenting numerous medical challenges and pandemic threats, and we must be prepared.

What should we do?

The Earth's persistent and worsening 'fever' will continue to pose increasing risks to public health, both in the short and long term. To prevent heat-related illnesses, it's important to stay cool indoors during the hottest parts of the day, wear loose-fitting, lightweight clothing, protect our body from sunburn by wearing a hat and sunscreen, and stay hydrated. It's also important to improve gut health by increasing high fibre intake, limiting consumption of ultra-processed foods, incorporating probiotics into our diet, managing stress, and getting enough sleep. Try to schedule exercise or physical

labor for cooler times of the day, such as early morning or evening, and gradually increase the time spent working or exercising in the heat to allow our body to acclimate. With the rise of infectious diseases in the context of global warming, we can take proactive measures to protect ourselves: maintain good hygiene, wash hands regularly, stay current with vaccinations (including for our pets), handle food and water safely, use insect repellent, avoid contact with sick animals, and stay informed with global health news.

Mitigating climate change requires reducing the emission of heat-trapping greenhouse gases into the atmosphere. This means cutting emissions from major sources like power plants, factories, cars, and farms. Forests, oceans, and soils, which absorb and store these gases, are also crucial to the solution. While we rely on nations for high-level commitments to combat climate change and on scientists to develop clean energy and green technologies, there are actions individuals can take to reduce their personal carbon footprint and contribute to cooling the planet, such as saving energy at home and work; walk, bike, or use public transportation; reduce waste and plastic usage; reuse, repair, and recycle; consume more vegetables and reduce meat and dairy consumption; plant trees; switch to eco-friendly energy sources; choose products from companies that use resources responsibly; and, most importantly, speak up and raise awareness! Our everyday choices shape the future and can help cool our Earth!

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INA-RESPOND Newsletter

UNPACKING "KUMPUL KEBO": COLONIAL INFLUENCE & SOCIAL PERCEPTION

By: Dedy Hidayat

For illustration purposes only

The phrase "*kumpul kebo*" has a quirky ring to it, doesn't it? In Indonesian, it refers to couples living together without the traditional bonds of marriage, a concept that's often still frowned upon in more traditional settings. While today it's commonly used as a mild criticism, the story behind "*kumpul kebo*" weaves together history, culture, and even a dash of colonial influence, making it more than just an expression—it's a mini cultural tale.

"*Kumpul Kebo*" – What's in a Name?

Let's break it down: "*kumpul*" means "to gather," and "*kebo*" (or "*kerbau*") means "buffalo." So, "*kumpul kebo*" translates to "gathering like buffalos." But why the buffalo? In Indonesian culture, buffalos are often seen as social animals that hang around in groups without much structure, a bit like free spirits of the animal world. This loosely mirrors the idea of couples who live together without the formal structure of marriage.

However, using "buffalo" in this context has always added a bit of a sting. Buffalos are commonly seen as more rustic, rough-around-the-edges animals, often associated with rural life. So, to live "like buffalos" hinted at something unconventional, maybe even "untamed" or "uncivilized" in traditional Indonesian views. It's a phrase that taps into both cultural symbolism and social expectations, becoming a playful—if somewhat sharp—metaphor.

Colonial Roots and the Dutch Connection

But wait, there's a twist! Some historians argue that "*kumpul kebo*" may actually have Dutch roots. Let's

go back to the 17th century when the Dutch East Indies (modern-day Indonesia) was under colonial rule. It wasn't uncommon for Dutch soldiers, workers, or settlers to live with local partners in Indonesia without formal marriage, especially those stationed in smaller, more rural settings. In fact, the old Dutch word "*koebo*" (sometimes spelled "*kaboew*") referred to a small, rustic hut or temporary home. This term was used by the Dutch to describe modest living quarters, and it's possible that we, Indonesians, adopted the word over time.

The theory suggests that locals might have observed Dutch settlers "gathering" with their partners in *koebo*-like settings, living in a way that didn't conform to the Indonesian standards of marriage. These simple, temporary dwellings might have sparked the idea of "kumpul koebo," which over time evolved phonetically into "kumpul kebo."

Cultural Observations Turned into Language

Language often evolves as cultures clash, merge, and adapt. During the colonial era, Indonesians witnessed not only Dutch customs but also what they saw as a lack of structure in some of these customs—especially when it came to marriage. Marriage is considered highly significant in Indonesia, binding couples legally, socially, and often religiously. To the local eye, the Dutch practice of cohabitation without marriage may have seemed casual, even careless. Over time, "*kumpul kebo*" became an expression of both observation and critique, marking a lifestyle that locals saw as free-spirited, yet missing something crucial.

This term spread within Indonesian society, especially as more locals condemn similar living arrangements without formal marriages. "*Kumpul kebo*" became a way to describe this new, unconventional setup, bringing with it all the associations of buffalo-like, laid-back living.

Folklore and Storytelling: Giving Language Depth

Alongside history, folklore added layers of meaning to "*kumpul kebo*." In rural areas, stories circulated that combined humor, judgment, and a touch of mockery. Tales depicted couples living together in small homes or temporary huts, echoing the humble lifestyle of the Dutch "*koebo*" dwellers. The phrase also carried a hint of satire, as locals didn't just adopt the word—they embedded it in a story that symbolized their reaction to this cultural shift.

Through these stories, "*kumpul kebo*" became part of Indonesian folklore, a term that locals used to capture both their curiosity and their critique. And as the term spread, it took on a life of its own, reflecting the evolving views of society on relationships, marriage, and the influence of foreign lifestyles.

From Frowned-Upon Phrase to Modern Expression

Fast forward to today, and "*kumpul kebo*" remains part of Indonesian vocabulary, though perceptions are slowly shifting. In urban areas, and particularly among younger generations, cohabiting without marriage has become less taboo, reflecting global changes in how relationships are viewed. Yet the term itself, with all its rich historical baggage, remains a bit of a wink-wink term—sometimes used humorously, sometimes with a touch of disapproval.

Language as a Living Heritage

So, what does "*kumpul kebo*" really teach us? Language isn't just words—it's history, values, and social commentary all bundled into sound bites. This quirky phrase captures a slice of Indonesia's complex past, where Dutch colonial influence mingled with local values and sparked new ways of seeing the world. It's a reminder that words carry stories, and stories carry cultural memory.

So next time you hear "*kumpul kebo*," remember the buffalos, the Dutch huts, and the storytelling that turned a casual observation into a lasting piece of language. It's a phrase that doesn't just tell us about relationships—it tells us about adaptation, humor, and the beauty of language as a living, breathing reflection of society.

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THE BENEFITS OF EXERCISE IN BREAST CANCER SURVIVORS

By: Monica Surjanto

Breast Cancer Awareness Month, also known as "Pink October," has been celebrated in October since the 1980s. During this month, people around the world display pink ribbons to raise awareness about breast cancer prevention and the importance of routine screening for early diagnosis. Breast cancer occurs when abnormal breast cells grow out of control, forming tumors. If untreated, these tumors can spread throughout the body and become fatal. The primary risk factor for breast cancer is being female (around 99% of cases), though it affects 0.5-1% of men as well. Other risk factors include age, obesity, alcohol use, family history, radiation exposure, reproductive history (such as age at menstruation onset and first pregnancy), tobacco use, and postmenopausal hormone therapy. Treatment varies by individual and may include surgery, radiation, and medications.[1] When detected early and treated appropriately, survival rates for breast cancer are high.

Exercise for Breast Cancer Survivors

Exercise is highly recommended for breast cancer survivors (BCS), as it not only enhances quality of life but may also improve survival rates. A meta-analysis of studies found that exercise after diagnosis was associated with a 34% reduction in breast cancer mortality, a 41% reduction in deaths from all causes, and a 24% reduction in cancer recurrence.[2] Exercise improves cardiovascular function, mental health, muscle strength, and endurance in BCS. This is significant because physical activity levels tend to drop by 11% following a breast cancer diagnosis. The decrease is even greater in those undergoing chemotherapy (50%) and radiation (24%) compared to those who do not. A study of nearly 3,000 women with stages I-III breast cancer revealed that physical activity post-diagnosis significantly reduced mortality risk, especially for those who walked at an average pace for 3-5 hours per week.[3]

Exercise and Physical Well-Being

The side effects of breast cancer treatments often impact physical well-being, leading to reduced cardiopulmonary fitness, limited upper-extremity mobility, and increased body weight. For BCS, aerobic exercise effectively improves cardiopulmonary fitness, as measured by maximal oxygen consumption (VO2max), and improves body composition by reducing body fat and increasing lean mass. For example, a moderate-intensity aerobic exercise program (45%-65% VO2max) conducted twice weekly for three weeks significantly enhanced VO2max in BCS.[4] Resistance exercise also benefits BCS by improving lean mass, muscle strength, and aerobic capacity. An 8-week progressive resistance program (50%-80% of one-repetition maximum) demonstrated notable strength improvements in exercises like chest presses, leg presses, arm curls, and chair stands among BCS.[5]

Exercise and Emotional Well-Being

Women with breast cancer often experience declines in physical role function (their ability to perform work and daily activities), bodily pain, social functioning, and emotional health. Up to 50% of breast cancer patients

	Frequency	Intensity	Duration/performance	Quality
Aerobic	Patient should start exercises twice a week and progressively increase until 3-5 times a week	Patient should be instructed about effort perception. If exercises are well tolerated (without symptoms or side effects), the intensity of exercises should not be different from that in healthy population. Intensity should be from moderate to vigorous	Exercise duration should be increased according to patient tolerance. A target of 75min/week of vigorous exercise or 150min/week of moderate exercise should be aimed	Rhythmic, prolonged exercises that use large muscle groups. Examples: swimming, walking, bicycling, dancing
Resistance	2-3 days a week	Moderate intensity (60-70% maximum repetitions)	Sets of 8 - 12 repetitions	Programs should include weights, resistance training equipment, functional tasks with weights, using the main large muscle groups
Flexibility	Exercises can be performed daily, according to patient's condition			Programs should include stretching exercises. Attention to body parts with restricted mobility due to treatment

Table 1. **Recommended Exercise Prescription for Breast Cancer Patients Post-Treatment**
Source: Adapted from American College of Sports Medicine Guidelines for Exercise Testing and Prescription

experience depression, anxiety, or both within a year of diagnosis.[2] Participating in a 10-15 week moderate-intensity (60% VO2max) aerobic exercise program has been shown to improve psychological and functional well-being, self-esteem, happiness, and body image. Research suggests that aerobic exercise significantly benefits emotional well-being in BCS, with improvements achievable in as little as 6 -24 weeks of regular exercise.[6] A combined 3- or 6-month program of aerobic and resistance exercise also reduced behavioral, sensory, affective, cognitive, and overall fatigue in BCS, making it an ideal choice to enhance emotional well -being due to its profound impact on physical health.[7]

Recommended Exercises Post-Treatment

Cancer survivors should remain physically active. Table 1 summarizes exercise recommendations for breast cancer patients in the post-treatment phase. Exercise progression should be slower for cancer survivors than for healthy individuals, particularly if exercises cause fatigue or unexpected adverse effects. There are no maximum load restrictions for weight training in these patients, but special attention should be given to symptoms in the arms and shoulders, such as lymphedema, which may require modification or cessation of certain exercises.[3]

Conclusion

Regular physical activity is essential for women, as it supports primary prevention, enhances life quality, and reduces mortality rates among survivors. Exercise also plays a vital role in reducing cardiovascular disease risk, further emphasizing the importance of physical activity for these women. While exercise recommendations for breast cancer survivors require special considerations, they are generally similar to those for the broader population.

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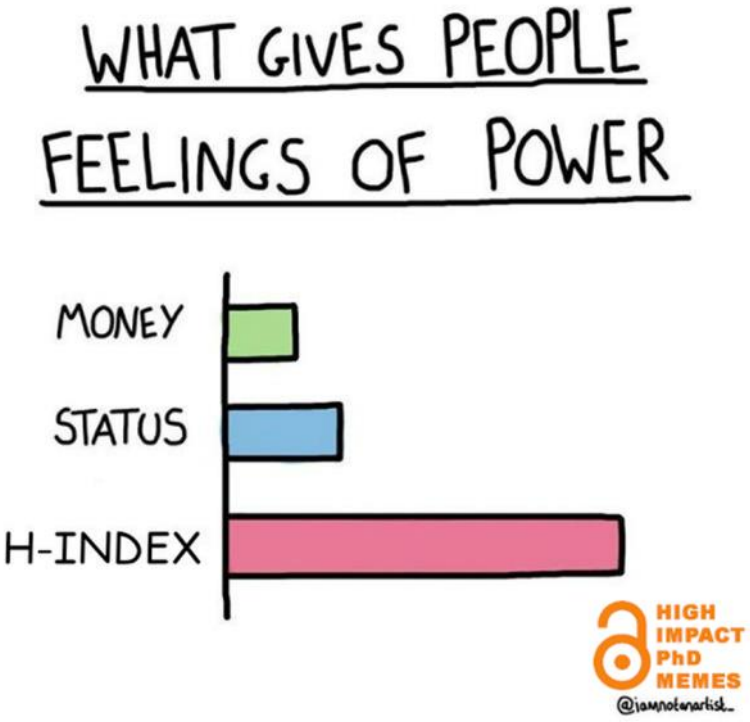
COMIC CORNER

UNDERSTANDING THE H-INDEX: A POWERFUL TOOL, BUT NOT THE ULTIMATE MEASURE

By: Aly Diana



The H-index, developed by physicist J.E. Hirsch and first published in 2005 in the *Proceedings of the National Academy of Sciences*, is now one of the most widely used tools for assessing academic research impact. It offers a convenient way to evaluate both the productivity and citation impact of a researcher's work. However, while the H-index is useful, it should not be the sole measure of academic success. A closer examination of the H-index reveals its advantages and limitations.

What is the H-Index?

The H-index is calculated based on the number of papers (N) that have been cited at least N times. For instance, a researcher with an H-index of 20 has published 20 papers, each cited 20 or more times. This method aims to balance productivity (the number of papers) with impact (citations). The H-index is valuable because it minimizes the disproportionate influence of a single highly cited paper or several lesser-cited ones. By merging these factors into a single metric, it reflects the "well-cited" contributions of a researcher. Databases like Web of Science, Google Scholar, and Scopus are typically used to track and calculate the H-index.

However, the H-index has limitations. A significant criticism is that it favors senior researchers who have had more time to accumulate publications and citations. Early-career researchers, or those in fields where it takes longer for work to gain recognition, often struggle to build a high H-index. Additionally, the H-index does not account for the nature of citations—whether they are positive, negative, or self-citations, which may distort the metric. The H-index also varies significantly across disciplines; for example, researchers in life sciences generally have higher H-indices than those in the humanities. It also doesn't distinguish between types of contributions, such as review articles versus original research, nor does it factor in co-authorship contributions, treating each co-author equally regardless of their actual input.

The Process of Calculating and Using the H-Index

To calculate the H-index, a researcher's publications are ranked in descending order of citation count, and the point is identified where the number of papers matches or exceeds the number of citations. This calculation can be done using databases like *Web of Science* or *Google Scholar*, which track citation data.

Beyond the H-Index

While the H-index is a powerful tool, it's important not to let it define academic success. Research should be motivated by the pursuit of knowledge, not by a chase for higher metrics. An overemphasis on any single metric, including the H-index, may lead to a focus on publishing more papers or pursuing trendy topics rather than producing meaningful, high-impact work. Additionally, metrics alone cannot capture the creative and nuanced nature of scholarly research.

Researchers and institutions should also consider alternative indices, such as the h-frac (fractional h-index), which adjusts the H-index based on co-authorship contributions. This variation is helpful in fields where collaborative research is common and clarifies individual contributions within large research teams. The m-index, another variant, allows for fairer comparisons by dividing the H-index by the number of years since a researcher's first publication, providing a more equitable assessment across different career stages.

Ultimately, while the H-index and its variations offer valuable insights, they should be viewed as only one of many tools to assess scholarly impact. Peer reviews, teaching, mentorship, and community contributions are often more meaningful indicators of a researcher's influence.

Conclusion

The H-index is undeniably a useful metric for evaluating academic productivity and influence, but it is far from perfect. Relying solely on metrics can lead to an overemphasis on quantity over quality, potentially overlooking a researcher's broader contributions to their field. As the academic landscape evolves, it is essential to balance quantitative measures like the H-index with qualitative assessments that better capture the full spectrum of scholarly achievement. By recognizing the strengths and weaknesses of the H-index, academic communities can ensure that meaningful research remains the primary goal, rather than the pursuit of high-impact numbers.

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