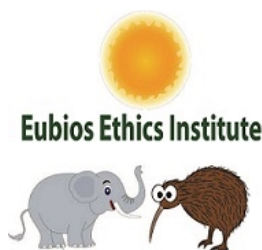


Eubios Journal of Asian and International Bioethics



EJAIB Vol. 32 (3) May 2022

www.eubios.info

ISSN 1173-2571 (Print) ISSN 2350-3106 (Online)

Official Journal of the Asian Bioethics Association (ABA)

Copyright ©2022 Eubios Ethics Institute

(All rights reserved, for commercial reproductions).



Contents	page
Editorial: Medical ethics in practice and in literature - <i>Darryl R.J. Macer</i>	69
Proposals to improve patient safety approaches based on analysis of medical error cases - <i>Xu Hua</i>	70
Desperate mothers and mad scientist in a divided world: Discussions of ethical, legal, and social issues depicted in Kazuo Ishiguro's <i>Klara and the Sun</i> - <i>Atsushi Asai, Taketoshi Okita, Miki Fukuyama, Motoki Ohnishi and Seiji Bito</i>	77
Urgent care services: An initiative towards combating non-emergent emergencies in Karachi, Pakistan - <i>Kiran Karim Jivani, Aamna Nazish Iqbal, Arusa Lakhani and Unab Khan</i>	85
Ethics in COVID-19 pandemic: Narrative review of challenges and lessons learned by healthcare workers - <i>Sarosh Saleem and Maha Khalil</i>	88
Reflections on research resource allocation and data sharing as ethical dilemmas in conducting COVID-19 research - <i>Isaac A. Adedeji, Saheed Akinmayowa Lawal, Onyeunoneme Alexandra, Odiari Sola, Aluko-Arowolo and Ebunoluwa Oduwole</i>	92
EJAIB Editorial Board	96
Ordering information	96

Editorial address, and all correspondence to:

Prof. Darryl Macer, Ph.D., Hon.D.

President, American University of Sovereign Nations (AUSN),

<https://www.ausovereignnations.org>

Email: darryl@eubios.info

Please submit your papers, commentaries and reflections!

Editorial: Medical ethics in practice and in literature

Although, in the midst of immediate medical ethics crises, it may seem that the issues raised are novel and unprecedented, one of the important ethical issues is the necessity to draw from our traditions, culture and social context, in order to resolve moral dilemmas that we face in medical ethics. In this issue, we have a couple of papers examining the COVID-19 pandemic and challenges that it raised, from Pakistan and Nigeria.

No matter where we live, it is important for people in the medical system to raise fundamental issues of preservation of autonomy and protection of persons, and doing good. Medical themes are explored in many different literature, and in this paper the question of the issues raised by desperate mothers and mad scientists by Asai et al. is quite fascinating. We can see this issue also raised when we have questions such as the debate over, whether or not to start human gene editing, as was seen in the first trial in China. Although that issue has not really been resolved, but just postponed, we can continue to benefit from an expansion of such depictions in television, movies, and other media.

Human beings always have to balance what is the safety and what is beneficence. It's no coincidence that balancing is also really the fundamental ethical principle. As human beings we will always make mistakes and is there anything in the regulatory system that will protect everyone all the time? It's in these broad issues that that we see explored in this the papers in this journal, and we need further debate on these topics in the coming years. We have to build upon the wisdom of all who wrote before, as in the famous saying, we stand on the shoulders of giants.

Thank you for those who have renewed their subscriptions to EJAIB and looking forward to meeting you in person at the ABC22 Conference in Kuala Lumpur, Malaysia, 15-17 May 2023! - Darryl Macer

Proposals to improve patient safety approaches based on analysis of medical error cases

- Xu Hua

Department of Medical Ethics, Tohoku University
Graduate School of Medicine, School of Public Health
Sendai, Japan
E-mail: xuhua813hh@163.com

Abstract

The purpose of this paper is to point out serious problems related to patient safety in the modern Chinese medical setting and discuss how to resolve them, based on an analysis of a hypothetical event created in reference to actual experiences and the latest literature. In this case study, a hypothetical scenario is presented in which three doctors treat three patients in a particular department and all the patients die within 24 hours. After presenting the hypothetical case, I examine the problems involving the doctor's practice system and clinical education, communication among relevant personnel, the discharge policy, physician well-being, and uncertainty in medicine. I argue that serious harm to current and future patients is inevitable if these conditions are allowed to persist and conclude that new patient safety approaches are needed to resolve these problems in China.

Introduction

As a patient safety manager, I often feel deep sorrow and regret from witnessing the sudden death of many patients caused by medical errors and the great loss experienced by their families. I have seen situations in which a medical error also damages the well-being of the doctor who committed the error.

A recent study claimed that the causes of medical malpractice are complicated and fundamentally not a "bad apple" problem, but rather a problem faced by competent healthcare providers working in a broken system that does not prioritize safety; significant errors should be thoroughly investigated by a root cause analysis (RCA), seeking system problems that merit improvement [1].

A significant amount of work has been done to promote patient safety, and yet, evaluation of the effects of this work yields primarily frustration and disappointment. The occurrence of medical errors is no new trend, and their frequency has generally increased. Somehow the same or similar medical errors have a way of repeating themselves. Most Chinese people, including myself, have always insisted that medical errors are mainly due to human error, including the doctors' lack of responsibility, communication ability and skills, and vigilance. In the past, we have spent significant time reviewing the flaws in the treatment process, i.e., medication error, postoperative remaining sponges, infections, or skin burns in operating rooms. Doctors involved in medical malpractice face possible

suspension from work, and may even be transferred out of their department, which may harm their future career success. In recent years, some strategies and tools aimed to improve patient safety have been introduced, including items such as incident reporting systems, root cause analysis (RCA), and even the PDCA cycle (plan, do, check, act). Unfortunately, I would argue that many people still do not fully understand the essence and significance of these safety tools. Little emphasis has been placed on system improvement, which means that more paperwork, rather than action, has been generated by these efforts [2,3]. Even less emphasis has been placed on doctors' attitudes toward medical errors [4,5]. All these factors have prevented us from identifying the true root causes of medical errors.

In this paper, I present a situation involving inadequacies in the physician's practice and clinical education, poor communication among those involved, a problematic discharge policy, a damaged sense of well-being of the doctor due to overwork and burnout, the uncertain nature of medicine, and finally, the added impact of Chinese society and culture. In my discussion of the implications of this situation on patient safety, I argue that if such a situation persists, serious harm to present and future patients is inevitable. I also maintain that it is unfair, irrational, and even unscientific to place the entirety of the blame on the individual doctors who committed the medical errors as a main cause of the error and the patient's resulting predicaments. I conclude that new approaches to patient safety that contribute to the resolution of these problems are urgently needed to achieve and sustain safe medical practices in Chinese healthcare. The case I present here is a hypothetical scenario, synthesized from many past cases I have encountered during my many years of experience as a patient safety manager. Importantly, the issues implied by this fictional scenario are real. I will develop my arguments by using additional fictional information in my discussion.

Hypothetical medical malpractice cases involving three doctors and three patients

First, I briefly describe the doctors and patients involved. The following three doctors belong to the Department of Emergent Surgery (DES) of Teaching Hospital X. Doctor A is the Head of the DES with roughly 30 years of clinical experience. Doctor B is a full-time doctor in the DES with roughly 20 years of clinical experience, subordinate to Doctor A. Doctor C is a full-time doctor in the DES with approximately 10 years of clinical experience, subordinate to Doctor B.

The following three patients visit the DES of Teaching Hospital X, where Doctors A, B, and C work, one after the other, from early morning to early afternoon on the same day. All patients are accompanied by several family members, but the family members have not received a full explanation from the doctors about the patient conditions.

Patient D is 30 years old, brought to the DES due to a stab wound with a sharp piece of metal in the neck. Patient E is 50 years old, came to the hospital with acute abdomen, is febrile and complaining of abdominal pain; urgently admitted to the DES. Patient F is 70 years old, was discharged from Teaching Hospital X after undergoing surgery for colorectal cancer in another department. Half a month later, the patient developed gastrointestinal bleeding and was treated for more than one week at the Department of Internal Medicine of Teaching Hospital X. However, as the bleeding could not be controlled, the patient was transferred to the DES.

Patient D is transported to the DES on the weekend. Doctor C is on duty and provides first aid and reports the patient condition to Doctor B when he arrives at work. Doctor B instructs Doctor C on treatment and follow-up for Patient D, then begins emergency surgery on Patient E. Doctor B has recently been in poor health due to overwork.

Doctor A then instructs Doctor C by telephone to follow a different treatment plan for Patient D than that prescribed by Doctor B, and Doctor C follows Doctor A's instructions to treat Patient D. Doctor A does not examine Patient D directly but gives his instructions to Doctor C after receiving a direct telephone call from Patient D's family. At this point, a detailed investigation of Patient D's neck puncture site is not performed.

Doctor B's surgery on Patient E is completed a few hours later, but postoperative bleeding leads to a second emergency surgery. Patient E is given intensive care after surgery, but the condition is unstable.

Doctors B and C are responsible for Patient E and newly transferred Patient F; both doctors are busy treating these two patients, and consequently, delay their observations of Patient D.

The conditions of Patients D and E worsen, and they die from massive bleeding, one after the other, despite treatment by Doctors B and C. Neither of the patient families can accept the patient deaths and refuse to leave the hospital with the deceased; their bodies are therefore kept in the hospital ward.

Doctors A and B operate on Patient F to stop their gastrointestinal bleeding. However, the patient's condition worsens after the surgery and the patient dies. Neither doctor was informed of the details of the cancer resection surgery that had been performed a month earlier in another department of Teaching Hospital X, nor were they informed of Patient F's behavior prior to the occurrence of the bleeding (i.e., failure to follow home bed rest instructions).

Subsequently, Doctor B becomes involved in medical disputes concerning Patients D, E, and F. It is determined that the deaths of the three patients were caused by Doctor B's errors in his surgery, rapid deterioration of the patient conditions, and lack of disclosure on the part of Patient F about poor compliance to medical instructions. Doctor B's practice is suspended.

Discussion

1. Problems with the doctor's practice system and training

China's medical system has several serious problems [6]. The doctors practice in a three-level doctor round system, which coexists with the attending doctor round system in China [7]. The former was designated in 1982 and gradually implemented thereafter. The system is composed of residents, attending doctors, and (associated) chief doctors. The department director makes rounds once a week and the attending doctors do so at least twice a week; residents make rounds at varying times as the situation demands. In the three-level round system, there are three main shortcomings [8,9]: First, the department director is the person in charge of the administration and business of the department, and cannot spend enough time and energy on the patients, which not only leads to rounds becoming a formality without significance, but increases the patient safety risks; second, junior doctors often contact patients but have no decision-making power; third, the growth of junior doctors is hindered, which is not conducive to the cultivation of intermediate strength in hospitals. Although the latter system (composed of one team leader, one attending doctor, and one to four residents) makes up for the shortcomings of the former to a certain extent, some problems still exist in the clinical practice. First, the cohesion of the department and teamwork of the whole department is low [10]; second, "management blind spots" are created, increasing patient risk; third, problems emerge regarding qualification assessment, ability and employment of the team leader, and the assessment of the medical team [11].

It can be argued that treatment for Patient D was delayed. The patient should have been able to survive. I cannot help but think that the patient was unlucky because they required care on an extremely busy weekend. As mentioned above, the three medical accidents occurred on the same weekend. Only one doctor was on duty in each department over the weekend, when the three patients required hospitalization and/or surgery. Clearly, this was destined to be a very busy weekend, and many uncontrollable factors contributed to the bad luck. Several points are worth considering: first, it is a reality that health workforce is lacking in both quality and quantity. The team has only one associate chief doctor (team leader), one attending doctor, and one resident. The lack of medical resources and uneven regional distribution is a global problem; however, this is not the key point of these issues. While there is certainly a marked decrease in the number of doctors in China relative to those in other developed countries, China's shortage is not the most serious. The number of doctors per 10,000 people in China was 19 in 2012 [12] and 30 in 2021 [13]. As a comparison, the density of medical doctors was highest in European

region around 43 per 10,000 population in 2021 [14]. Conversely, the African region remains with the lowest density of medical doctors (around 2 per 10,000 population) in 2021 [14]. The ambiguous amalgamation of the two medical systems (leading to training deficiencies among junior doctors) is likely the key factor causing the lack of human resources. Doctor C and other residents on the team could neither play an intermediary role in case of emergency, nor get help from other team members. Moreover, despite their frequent contact with the patients, they lack decision-making authority. Furthermore, the Grading Management regulations stipulate that senior attending doctors can master Level 3 operations (moderately difficult) under the instruction of the doctors with a higher professional title, and (associated) chief doctors can perform Level 4 operations (very difficult). However, in practice, most of the operations above Level 3 are performed by (associate) chief doctors, with residents and attending physicians rarely getting much surgical practice. This explains the high incidence of medical disputes in the surgical system against doctors with a higher title. To sum up, although doctors technically work only 8 hours every day, the care for patients D, E, F, and others demands far more than 8 hours. This imbalance in circumstances reflects the contradiction between the unlimited health demand of the public and the limited quantity of medical resources.

2 The problem with information transmission

Even though transitions are inevitable in medical care, transition and handoff errors are among the most common and consequential errors in healthcare [1]. The presence of all these transitions and handoffs makes it critical to consider how information is passed between healthcare providers and patients (and their family members). In the clinical setting, there are generally two kinds of information transmission: between the doctor and patient, and between doctors. The information transmission can also occur in the same department, among several different departments or institutions, and sometimes after the patient is discharged from the hospital.

In China, medical resource availability is highly dependent upon the region, the setting of the area (urban or rural), and population, which means that increasingly more patients are opting to visit large urban general hospitals in pursuit of better medical services and technology. According to data from the National Health Commission of China, in developed cities, i.e., Shanghai and Beijing, out-of-province patients accounted for 23.19% and 10.58% of the patients, respectively [15], which is a very large group of patients. When patients receive a higher level of medical care, transition and handoff errors can increase patient safety risks. Of the three medical malpractice scenarios presented here, Patients D, E, and F all experienced transition and handoff errors, to varying degrees.

2.1 Information transmission problems in the same department

Patient D did not leave the ward until after death; however, there were at least five incidents of information transmission errors related to his case: 1) that which occurred between Doctor C and Patient D, 2) that between Patient D and Doctor A (family members of Patient D contacted Doctor A by phone), 3) that between Doctors C and B, 4) that between Doctor B and Patient D, and 5) that between Doctors A and C. The following points are worth considering. First, Chinese people have a deep-rooted belief that "it is easy to work among acquaintances" and that they should "obey authority, but not willingly." This would explain why the family contacted Doctor A, as well as some of the behaviors exhibited by Doctors B and C. These traditional cultural behaviors may have rendered Patient D's treatment unnecessarily complex. They not only complicated the interpersonal relationships between superiors and subordinates but also increased the number of people involved in Patient D's treatment to excessive numbers. It is also worth noting that on the weekend when Doctor A was resting at home, information about Patient D's condition could only be transmitted through Patient D's family members by phone. Moreover, Doctor A discussed the treatment plan for Patient D with Doctor C only by telephone. This style of communication could increase the medical risk of Patient D.

Secondly, Doctor B instructed Doctor C to observe rather than suture the wound. Doctor B obviously knew Doctor C very well. If the patient's neck wound remained exposed for several hours, it might have increased his chances of survival. However, in this scenario, there was no effective information transmission among the three doctors and Patient D's family. Accordingly, Patient D's family called Doctor A again to express that they did not understand Doctor B's treatment plan, attempting to exert pressure on Doctors B and C through Doctor A. After receiving the second instruction from Doctor A, Doctor C quickly explored the wound and sutured it. The effect of the telephone call between Patient D's family and Doctor A was evident, but the consequence was fatal. Finally, when Doctor B learned that Patient D's wound had been sutured, he gave no further treatment instructions to Doctor C. This relates not only to the difference in status of the two doctors within the system but also the inherent inclination of Chinese people to obey authority, but not willingly (specifically, Doctor B obeyed Doctor A, but not willingly, expressing silent defiance through passive action). Doctor C lacks diagnostic decision-making authority, and Doctor B is administratively subordinate to Doctor A.

2.2 Problems in information transmission between departments

Patients E and F were both in serious postoperative conditions and needed to be transferred to another

department. Patient F rotated through three departments, one by one. For patients with serious and complex conditions who need to be transferred to another department or another hospital for further treatment, it is critical that their disease information can be accurately and effectively transmitted among the doctors caring for them. Data from the United States show that nearly 20% of patients have experienced adverse events within three weeks after discharge [16], reflecting the correlation between patient transfer and patient safety. Family members of Patients E and F had doubts from the beginning to the end concerning treatment because of the insufficient explanation they received from the doctors, as well as their lack of comprehension about the patient situation; they were unsure of what exactly happened. In my experience as a patient safety officer, this is the most common complaint in real medical malpractice cases. Doctors are challenged with questions and accusations such as, "Why did my family member die immediately after being discharged? He was fine when he was admitted to the hospital!" or "Doctor, you are a murderer! Our family member walked into the hospital and left there lying down." While some might point out that this is merely a problem of informed consent, I would argue that some deep-seated factors are affecting information transmission among the different departments in the following ways.

First, regarding the transition and handoff between departments, information transmission between departments generally occurs via a formal application for consultation within the hospital, and the doctors on duty at the time are responsible for consultation. However, in practice, several problems exist [17]. First, department consultation is a mere formality, and its effectiveness and timeliness are difficult to guarantee. In addition, inexperienced doctors might go to other departments for consultation, which makes the actual effect of consultation poor. Furthermore, the preparation prior to the consultation is insufficient. Finally, there is no strict implementation standard and protocol established for the consultation system. Collectively, this creates a situation in which the accuracy and integrity cannot be guaranteed for information of patients who have been transferred. In the present hypothetical situation, additional issues exacerbated the situation surrounding treatment for Patient F. For one, Patient F concealed some of their own behavior that negatively influenced their physical condition. The professional differences between internal and surgical medicine compounded the problem, and an uninformed doctor on duty that day underestimated the seriousness of Patient F's situation. All these issues led to the situation in which Patient F had to wait for longer to receive conservative internal medicine treatment, which resulted in the delayed execution of the second operation, leading to the patient's death.

Second, in terms of information transmission

between doctors, although the first surgeon who operated on Patient F knew the operation process very well, he was not obliged to disclose the key information to the other related doctors, unless it happened that this first surgeon was on duty at the time the information was needed. Doctor C was the consulting doctor on that day and was the only doctor who had a face-to-face handoff with the internal doctor. It is highly likely that there was no information exchange between Doctors A and B and other previous doctors of Patient F. These inadequacies in information sharing could have caused delays in performing the second operation on Patient F, which would have represented a fatal failure of treatment for Patient F in this scenario.

Finally, as far as information transmission between doctors and patients (i.e., the informed consent process) is concerned, a high incidence of medical disputes has led doctors and patients to feel defensive and on guard against each other in China. This lays the foundation for a toxic situation in which both parties are sensitive toward the issue of who is responsible for any medical errors that might occur. This is likely why Patient F's family concealed from the doctor that the bed rest instructions were not followed strictly. Doctors B and C did not feel obliged to inform their patients and family members of the previous treatment the patient had received in other departments. Furthermore, Doctors B and C may have felt that it would be wise for them not to disclose the information, including that about the problems in the first operation, the latest discharge, and the conservative treatment given by the internal medicine department, to avoid unnecessary conflict with the patient families and preserve the relationships between colleagues (including that between the first surgeon and internist). Taken together, all these factors could create a situation in which the new doctors taking over patients would not inform patients about their previous diagnosis and treatment in other departments. In other words, Patient F's family members would have no knowledge of the diagnosis and treatment for the disease of Patient F until the patient died. Of course, any of Patient F's existing medical problems could have a tremendous impact on the treatment offered by Doctor B; failed treatment could then lead to patient death. Such a non-disclosure policy should be abandoned not only to improve patients' and their family's understanding of the medical situation, but also to avoid medical lawsuits.

2.3 Information transmission issues with discharging patients

Patient F developed massive postoperative bleeding after discharge, which begs several questions: Did the surgeon's discharge decision meet the standards for discharge? Assuming that these standards were met, was the patient adequately informed of the discharge notes including medical directions telling them what they should or should not do? The patient should have rested at home but failed to follow this

instruction. The mortality rate of discharged patients in China has been on the rise year by year, reaching 1.05% in 2020 [15]. Some medical disputes pertain to discharged patients or those who were readmitted. These data include many patients with severe complications after discharge, such as Patient F.

3 Doctor well-being, burnout, and treatment outcomes are related

There is no doubt that the core purpose of patient safety is patient safety itself, but it must be emphasized that modern patient safety refers not only to patient safety, but to doctor safety as well. This is because doctor safety and patient safety are mutually interdependent [18-20]. Well-being is the state of feeling healthy and happy [21], whereas burnout is primarily driven by certain characteristics of the work. Many factors contribute to the health of an organizational system, and particular attention is warranted for items such as electronic health record (EHR) documentation, coding, and inter-office communication [22,23]. Doctor well-being, burnout, and patient safety are highly interconnected, such that change in one variable inevitably causes marked changes (both good and bad) in others, regardless of which occurred first [24].

The poor health status of Doctor B is undeniably and directly related to the unsuccessful operation of Patient E. Due to overworking, he was likely burnt out, with a low sense of well-being. A study published recently suggested that burnout, well-being, and work unit safety grades were strongly and independently associated with perceived major medical errors and, together with other previous studies, identified an association between physician burnout and adverse quality of care including self-reported errors [25]. If Doctor B had a healthy mental, physical, and work status, Patient E's operation should have gone as smoothly as it could go, and Patients D and F would have been able to acquire the attention they required. The health benefits and lives of these three patients are likely connected to a large degree. From my experience as a patient safety officer, the relationship between the working state and health of doctors is undeniably correlated with the treatment outcomes of their patients.

In this scenario, especially for Doctor B and Doctor C, this is a very challenging weekend. We can imagine how busy their work is, how chaotic the work scene is, and how tense their psychology is for a long time. Of course, the story only reflects the doctor's work of treating patients. However, doctors obviously perform a great deal of other work, including but not limited to rounds in the ward, consultation, meetings, medical record writing, education, and administering examinations, to name just a few. In the hypothetical scenario presented here, in the days following the patients' death, Doctors B and C will become involved in medical disputes and may face suspension, transfer,

interrogation by the hospital, criticism and threats from patient family members, and evaluation from their own colleagues, not to mention their own internal battles processing through the incident. We must acknowledge that in real clinical settings, doctors are also victims of medical accidents.

For Doctors B and C, this was no doubt a challenging weekend, both emotionally and physically. Unfortunately, this represents a typical and common workload to which countless Chinese doctors can relate. They work hard, year after year, under high risk and high pressure, and their health problems are worrisome. Within the single hospital where I previously worked, five highly qualified and excellent surgical doctors died of cardiovascular or cerebrovascular diseases in just three years. The fourth Special Research Report on Doctor-Patient Relationship from the National Health Commission of The People's Republic of China shows that doctors are worse than laypeople in making time for self-care and daily exercise, and relative to laypeople, they have significantly higher levels of pain and discomfort, anxiety, and depression [26]. Coupled with this toxic medical practice environment described above, there is no country in the world where the doctor-patient relationship is like that of China, i.e., that in which patients, doctors, the government, and society are all so highly dissatisfied. The number of reports of workplace violence against physicians in medical settings is increasing in many countries including China, and is considered a serious problem [27,28]. A search within the Chinese Judgement Online System for medical dispute damage cases in China in the past decade will reveal a sharp increase in the number of medical lawsuits, from 221 in 2010 to 23,338 in 2018 [29]. Injuries to and murders of doctors are frequent in China and have persisted even during the COVID-19 pandemic. These situations affect the physical and mental health of medical staff, and increasingly more doctors are extremely worried about their personal safety and dignity.

4. Problems with medical technology and uncertainty in medicine

Doctor B had roughly 20 years of work experience and significant surgical experience, but in this scenario, he failed. Medical experts might argue that rare surgical complications, difficult clinical diagnoses, rapid disease transformation, and the patient's concealment of their personal behavior caused the fatality in this hypothetical scenario. Let us consider several points here.

First, surgery does not come with a safety guarantee, and the risk of adverse events inevitably exists. Due to advances in medicine and the various procedures, we have good reason to believe that surgery (as well as anesthesia and prospective care) is safe enough. However, deaths and complications arising from the technology itself or the disease itself cannot be omitted by technology and are unavoidable. Nevertheless, survey data [15] on in-

hospital mortality of surgical patients from the National Health Commission of China show that from 2016 to 2020, the in-hospital mortality of surgical patients in the tertiary general public hospitals in China (8442 hospitals) has been increasing yearly; mortality rates at private hospitals is even higher. The Inpatient Hospital Acquired Condition Index (IHACI) also shows an annual upward trend; specifically, among the 33 kinds of IHACI, 22 kinds of IHACI including infection, bleeding, foreign body retention, sudden postoperative death, and a few others, showed an upward trend. Total in-hospital mortality of patients with IHACI was 7.43 times that of patients without IHACI.

These phenomena should not simply be attributed to medical errors or medical system flaws. No matter how fast medical technology and understanding of diseases progress, and whether we are willing to admit it or not, advances in medical technology must be regarded, first and foremost, as a double-edged sword. The perks from the health gospel and economic benefits brought about by medical technology are inevitably accompanied by problems such as over-medication, complications, and side effects, to name a few, and the occurrence of these could very well increase due to the ever-increasing complexity of the medical procedures. According to the WHO 2022 World Health Statistics Report [30], global life expectancy at birth increased from 66.8 years in 2000 to 73.3 years in 2019, while healthy life expectancy (HALE) at birth increased from 58.3 years to 63.7 years. Life expectancy has increased at a slightly faster rate than HALE; the discrepancy between the two would result in a slightly larger proportion of years lived with disability. The longer the period of disability and physical vulnerability, the greater the challenge to the safe use of and satisfactory outcomes given by medical technologies. Finally, as is the case for most things, medical technology has its limitations. It would be arrogant for us to assume that medical technology can eliminate all disease and suffering in our world. Regardless of rapid advances in contemporary medicine, human death will continue due to disease and human tragedies. These trends reflect the existence of both the limitations of medical technology and the complexity of disease itself.

Second, the maxim that practice makes perfect is not absolute. One early study [1] showed that surgical volume and perfect operation technique are not fully proportional. Another remarkable study showed that surgeons vary from one another in technical skills, and that surgeon scores are highly correlated with rates of complications, mortality, infection, and secondary surgery. In one medical dispute I experienced, a local doctor spent 2 hours trying and failing to remove a short pencil that had been stuck in a patient's hand for over 20 years, while another doctor took less than 10 minutes to remove it successfully. In the hypothetical scenario

presented here, Doctor C debrided the patient's neck wound twice, but apparently did not thoroughly explore the wound. Clearly, subjective and objective factors can create differences in the technical skills of doctors; these differences can be minimized only through continuous practice.

Finally, the uncertainty of disease itself is always a factor, and human beings have yet to overcome this challenge. The verdict of medical malpractice involving a patient death rarely places all of the responsibility and blame on the doctors. Rather, it is most often shared by the doctor, patient, and "uncertainty in medicine." Some diseases develop very quickly, and even doctors have difficulty comprehending accurately and quickly their own disease development. In real life, just like ordinary people, some doctors may die suddenly and unexpectedly, possibly even at work.

Conclusion

While the scenario portrayed here is fictional, all the components come from real life situations. We must establish the rational belief that most errors are committed unintentionally by hardworking, well-trained individuals, and that some errors involving complicated factors in the story are not those that can be prevented simply by admonishing people to be more careful, or worse, by shaming, firing, or suing them. Doctors who inadvertently caused terrible harm to their patients due to medical mistakes should not become the second victim of the incident, and doctor well-being and patient safety cannot be separated at all. Patient safety is dependent upon the nation's health care resources and their distribution, its healthcare systems, doctor's practice systems, and doctor and patient groups, to name a few factors. Patient safety can also be regarded as the result of interactions between people, society, and the medical system. Doctors cannot operate independently of medical system and hospital management systems [31-33].

Improving patient safety in China will require the joint participation and cooperation of the government, hospitals, doctors, and patients; this is a very arduous task. From a governmental perspective, China's medical system is a rare system with unique issues. Compared to other developed countries and some developing countries, the following problems are particularly prominent [6]: Insufficient investment in medical resources and extremely unbalanced allocation, an incomplete medical insurance system, low levels of medical insurance, poor equity of medical services, a chaotic practice system for doctors, poor quality of medical care, poor coordination and integration of various interests (government, local, and medical service provider, etc.), and conflicts between doctors and patients. China's massive population, combined with its aging population and the constraints of economic development, make it difficult to balance equity in medical services and ensure the quality and quantity of medical human resources; this is an urgent

problem that needs to be addressed. All these issues negatively impact patient safety. For the Chinese government, resolving these contradictions not only requires human and financial resources but also wisdom to learn from other countries, rather than simply imitating their medical policies. China faces a significant challenge in this regard.

From the perspective of hospital patient safety management, medical quality and safety of hospitals largely depend on the management of human resources. This is relatively easy to control compared to government policy regulation, and also has immediate results. In daily clinical practice, not all adverse outcomes are caused by medical errors, and not all medical errors are preventable. Nevertheless, both preventable and unpreventable medical errors must be acknowledged in order to improve patient safety. Conventional ways of addressing medical errors that are unscientific and unreasonable must be abandoned; instead, energy should be spent more on exploring the true root causes and on improving the medical system. Rather than simply making policy changes in writing, posting reminders or addressing it only in a class setting (to say nothing of condemning and sermonizing doctors), our efforts should focus more on making true and lasting improvements in clinical settings. This may, in fact, be the only way to control and reduce similar errors by addressing the root causes.

Funding: This work was funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Grant-in-Aid for Scientific Research (B) (KAKENHI 20H03922): Decision-making process and role of health care professionals in clinical practice with advanced information technology (Principal investigator Seiji Bito, 2020-2023).

Conflict of interest: The author declares no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

Acknowledgment: Professor Atsushi Asai at the Department of Medical Ethics, Tohoku University Graduate School of Medicine made excellent suggestions regarding this manuscript.

References

1. Robert M. Wachter, Kiran Gupta. Understanding Patient Safety[M]. New York: McGraw-Hill Education, 2018.
2. Zhang Yanli, Ma Guoqiang, Zhao Ji, et al. Analysis of big data and strategy research on medical safety (adverse) events in China[J]. Chinese Hospital Management, 2020,40(8):29-32.
3. Huang Li, Yuan Da, Peng Hua. Application and practice of medical risk management in medical safety adverse events[J]. Chinese Hospitals, 2022,26(1):63-64.
4. Zhang Meng, Xu Lina, Zhang Chunhua. Qualitative study disclosing medical adverse events and errors among medical staff[J]. Journal of Nursing Science, 2020, (35):75-77.
5. Lu Lanting, Lu Jiangzhen. Current challenges of medical safety supervision in China and suggestions of improvement: based on Health Care Supervision Committee's experiences[J]. Chinese Hospital Management, 2018, 38(6):38-41.
6. Zhou Yi. Comparative research on medical system reform[M]. Xin Hua Press, 2015.
7. Ying Jiaoqian, Li Jing, Wang Chenxi, et al. Comparative Analysis of the Three-Level Rounds System and Responsible Physician Rounds System[J]. Chinese Health Quality Management, 2021,28(2):3-5.
8. Wu Peixin, Wang Chen. Exploration and practice of attending physician responsibility system under the background of China's medical reform[J]. Chin J Hosp Admin, 2021,37(6):501-504.
9. Xu Xi, Hu Xinyu, Qian Cuiyu, et al. Practice and Exploration of Attending Physician Responsibility System [J]. Hospital Management Forum, 2020,37(7):36-37,53.
10. Luo Jiade, Zhang Yajue, Guo Menglun. Actors' motivation for change and system reform, taking the implementation of the attending doctor rounds system in public hospitals as an example[J]. Academia Bimestrie, 2020(2):90-99.
11. Wu Shaowei, Yu Xiaoyun, He Zhe, et al. Implementation Strategy and Thinking of Medical Group Management System under the Attending Physician Responsibility[J]. Chinese Hospital Management, 2022,42(10 : 57-59 , 63.
12. National Health Commission of the People's Republic of China. Statistical bulletin of the health and development in 2012. <http://www.nhc.gov.cn/>
13. National Health Commission of the People's Republic of China. Statistical bulletin of the health and development in 2021. <http://www.nhc.gov.cn/>
14. <http://www.who.int/data/gho/data/themes/health-workforce>.
15. Health Service, Quality and Safety Report 2021 from National Health Commission of the People's Republic of China[M]. Scientific and Technical Documentation Press. 2022.08.
16. Kitch BT, Cooper JB, Zapol WM, et al. Handoff caused patient harm: a survey of medical and surgical house staff. Jt Comm J Qual Patient Saf 2008;34:563-570.
17. Ying Jiaoqian, Zhang Yan, Wang Chenxi, et al. Difficulties Analysis and Management Strategies of Implementation of Consultation System[J]. Chinese Health Quality Management, 2021,28(2):06-08.
18. Bingemann TA, Laubach S. Physician well-being in allergy and immunology: Creating a culture of wellness. *Ann Allergy Asthma Immunol.* 2021; 126(3):219-227.
19. Montgomery, A., Panagopoulou, E., Eamail, A., Richards, T., & Maslach, C., (2019). Burnout in Healthcare: the case for organizational change. *BMJ*, 366, 14774.
20. Prabath IHDS, Mohottala VS, Prasanni WDD, Ranathunga RTR, Mathangasinghe Y. Health-related attitudes, behaviors and burnout in intern medical officers and their effects on self-reported patient care in a developing country [published online ahead of print, 2022 Jan 7]. *Ir J Med Sci.* 2022:1-7.

21. McIntosh C (eds.). *Cambridge Advanced Learner's Dictionary 4th Edition*. Cambridge: Cambridge University Press, 2013.
22. Trockel M, Corcoran D, Minor LB, Shanafelt TD. Advancing Physician Well-Being: A Population Health Framework. *Mayo Clin Proc*. 2020;95(11):2350-2355.
23. Gyimah MB, Shah HP, Lee YH. Maximizing the effectiveness of scribes in surgical practices. *Am J Surg*. 2022;223(1):208-210. doi:10.1016/j.
24. Anthony Montgomery, Margot van der Doef, Efharis Panagopoulou, et al. Connecting Healthcare Worker Well-Being, Patient Safety and Organisational Change. Springer Nature Switzerland AG; 2020,p11-17.
25. Tawfik DS, Profit J, Morgenthaler TI, et al. Physician Burnout, Well-being, and Work Unit Safety Grades in Relationship to Reported Medical Errors *Mayo Clin Proc* 2018 Nov;93(11):1571-1580.
26. Investigation and research on the doctor-patient relationship in China - a special research report on the fourth national health service survey[M]. Center for Health Statistics and Information,MOH,2008.
27. Ali Sahebi, et al. Prevalence of workplace violence against health care workers in hospital and pre-hospital settings: An umbrella review of meta-analysis *Frontiers in public health* 2022 Online published August 08.
28. Zhu H, Liu X, Yao L, et al. Workplace violence in primary hospitals and associated risk factors: A cross-sectional study. *Nurs Open*. 2022; 9(1):513-518. doi:10.1002/nop2.1090
29. China Judgments Online. <https://wenshu.court.gov.cn/>
30. World health statistics 2022: monitoring health for the SDGs, sustainable development goals <https://www.who.int/publications/i/item/9789240051157>
31. Bian Lin. The theory of doctor-patient relationship scientific thinking on the contradiction of doctor-patient relationship[M]. 2018.
32. Wang Xiaobo, The Construction of Harmonious Doctor-patient Relationship in China[M].2014.09
33. Gu Jinxian, Li Daqin, Yu Shaoping, et al. Research on doctor-patient relationship from multidisciplinary perspective[M]. 2009.09.

Desperate mothers and mad scientist in a divided world: Discussions of ethical, legal, and social issues depicted in Kazuo Ishiguro's *Klara and the Sun*

- Atsushi Asai (corresponding author)

Department of Medical Ethics, Tohoku University Graduate School of Medicine, School of Public Health, Sendai, Japan

Email: aasai@med.tohoku.ac.jp

- Taketoshi Okita

Department of Medical Ethics, Tohoku University Graduate School of Medicine, School of Public Health, Sendai, Japan

- Miki Fukuyama

Nursing, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan

- Motoki Ohnishi

Department of Health and Welfare Public Policy, Aomori University of Health and Welfare, Aomori, Japan

Seiji Bito

Division of Clinical Epidemiology, National Hospital Organization Tokyo Medical Center, Tokyo, Japan

Abstract

This paper discusses *Klara and the Sun*, Kazuo Ishiguro's eighth full-length novel and first since his Nobel Prize in 2017, from biomedical ethics perspectives. The novel, set in a near-future society of inequality, addresses issues related to intellectual enhancement in children by means of gene editing and social implementation of self-aware artificial intelligence, which prompt readers to think deeply about the ethical, legal, and social implications of advanced science and technology. Many have commented on the novel's diverse implications including the nature of human uniqueness, dignity, and soul; the anxiety of people in a highly technological capitalist society; the prevalence of meritocracy and scientism and resulting social fragmentation; parents' dilemmas as they make choices for themselves and their children in such a society; the ideal way to complete one's life; and the importance of hope and faith. In this paper, we focus on related ethical issues that have not been previously discussed: the dichotomous 'win-lose' view of life; the blameworthiness of favoritism in an unjust world; a better end for the protagonist of this work, Klara, a self-conscious humanoid artificial intelligence; and the significance of the notion of persistence of self. We offer observations on these topics and argue how we should respond to problems brought about by advanced science and technology in future society.

Introduction

A great work of science fiction (SF) offers vivid images of possible futures. Readers can learn

valuable lessons from various issues depicted through the portrayal of human relations, new cultural tendencies, and novel relationships between human beings, science, and technology (Asai, Okita, Ohnishi, & Bito, 2020). *Klara and the Sun*, Kazuo Ishiguro's eighth full-length novel and first since his acceptance of the 2017 Nobel Prize in Literature (Ishiguro, 2021), brings to light issues related to gene editing (GE) for enhanced intellectual ability in children and social implementation of self-aware artificial intelligence (AI) as matters of everyday family life. Many critics and academic experts have reviewed this novel from diverse perspectives (Abrams, 2021; Askew, 2021; Bravery, 2021; Cain, 2021; Charles, 2021; Enright, 2021; Finch, 2021; Gordon, 2021; Holmes and Rich, 2021; Hui and Ping, 2021; Lombardo, 2021; Maloney, 2021; Mejia & Nikolaodis, 2022; Shulevitz, 2021; Swaminathan and Ravi, 2021; Yiqun 2021).

Ishiguro has dealt with the issues of human cloning and live organ transplantation in his SF novel *Never let me go* from 2005, along with other issues related to the human soul. Some referred to *Never Let Me Go* as a modern Frankenstein story, claiming that the novel depicts what might happen when, in the race to advance science, individuals and societies fail to fully examine the broad consequences of their decisions; it warns us to consider not only who will benefit but also who will suffer (Marchalik & Jurecic, 2016). It was also argued that novels like *Never Let Me Go* are thought experiments that prompt readers to reflect on the human costs of scientific ambitions (Marchalik & Jurecic, 2016). We believe that the same argument can be made for *Klara and the Sun*.

In this paper, we will first provide an outline of *Klara and the Sun* and a brief review of various arguments published to date regarding the implications of the novel (Table 1). We will then discuss important ethical, legal, and social issues that have not yet been fully explored, including the dichotomous 'win-lose' view of life, the blameworthiness of favoritism in an unjust world, how Klara's ending should be, and the notion of persistence of self (continuity of a dying child's sense of self). Finally, we will present our views on these issues and argue how we should respond to the problems of future society brought about by advanced science and technology.

Outline of *Klara and the Sun* (Ishiguro, 2021)

The novel is set in a near-future United States. Advances in science and technology have led to the prevalence of artificial intelligence (AI), pushing people out of employment as their jobs are replaced by AI. Meanwhile, with the spread of GE technology, financially able parents are utilizing the technology to improve the intellectual performance of their children. GE is sometimes referred to as AGE, with no clarification on what A stands for. Most universities only admit "lifted" children, i.e., those with GE-enhanced intellectual abilities. However, GE is not safe, and children who have undergone the

procedure fall ill or die young. "Lifted" children receive their pre-university education at home rather than in school, with an android AI as their artificial friend (AF) who they themselves pick and purchase from a series of new models introduced one after another. Children from less affluent families cannot afford an AF, and not all people are comfortable with the presence of AFs in society and their daily lives. In this fictional world, the lives of Klara, an AF, the "lifted" child Josie, her mother, and her neighbor/childhood friend Rick unfold as a story of encounters and goodbyes.

The main character of this novel, Klara, is a French-like, solar-powered B2 android AI who becomes an AF of Josie, a 14-year-old "lifted" girl who takes a liking to Klara. Klara believes that the sun has miraculous powers, such as restoring the lives of sick street people, based on her AI observations and analysis. She asks the sun to save Josie, who has fallen ill. Rick, Josie's childhood friend, is "unlifted" but is very intelligent and has a particular talent for science and technology, especially when it comes to drones. They are deeply in love and have promised to be together forever.

Josie's mother, Chrissie Arthur, works full time to maintain her and her daughter's lives. She is constantly worried about Josie's health, as she had lost Josie's sister Sal to a GE-induced illness; she is very afraid she might lose her daughter again. Paul, Chrissie's ex-husband and Josie's father, lost his job after being replaced by AI and now lives in a special community with others in similar circumstances. He occasionally visits Josie and his ex-wife and is opposed to the plan that Chrissie proposes regarding Josie and Klara. Chrissie asks Henry Capaldi to create a portrait of Josie in preparation for her plan. Henry, who believes that society should more positively embrace AFs, is a pro-AF AI researcher; he continues his research of trying to solve the "black box" problem that is making people in society uneasy about AFs.

Miss Helen is Rick's mother, once a starlet but now poor, who regrets not having given Rick GE and grows critical of the society that only favors the "lifted." Mr. Vance is Helen's old lover and one of the founding members of Atlas Brookings University, the only university with an admission quota (2%) for "unlifted" children. Mr. Vance receives a request from Helen concerning Rick's future. The story of Josie's life and death is told against this backdrop, with portrayals of the characters and their relationships. Through the eye of Klara, the narrator, the readers experience human love and obsession, hope and despair, conflict and anxiety, the fragility of relationships, and the importance of trust.

Various discussions on *Klara and the Sun*

Table 1 summarizes the various perspectives and issues that have thus far been discussed regarding *Klara and the Sun*. These issues may not be mutually exclusive and are also partly related to our arguments discussed in the following sections.

Table 1. Previously discussed themes of *Klara and the Sun*

What is a human being?

What is human uniqueness?

What is human dignity?

Is there something special about each individual human being that is unique and non-transferable?

What are differences between humans and AI?

Problems in human society brought about by advanced science and technology

Anxieties about the future of emerging technologies and capitalist societies

Life filled with dilemmas with regard to choices one faces in an advanced scientific and technological society

Mortal lottery and the price a child has to pay because of his or her parent's decision

Emergence of new social practices (e.g., interaction meetings)

Division, discrimination, and conflict in a dystopian world

Divided world

Class struggle

Othering

Savage meritocracy

Other issues

Good death and ideal life completion

Skepticism about the validity of our moral intuitions

Importance of hope and faith

Sources: Abrams, 2021; Askew, 2021; Bravery, 2021; Cain, 2021; Charles, 2021; Enright, 2021; Finch, 2021; Gordon, 2021; Holmes & Rich, 2021; Hui & Ping, 2021; Ishiguro, 2018; Lombardo, 2021; Maloney, 2021; Mejia & Nikolaodis, 2022; Shulevitz, 2021; Swaminathan & Ravi, 2021; Yiqun, 2021.

What is a human being?

Klara and the Sun poses various questions, of which the most often discussed is what it means to be human (Askew, 2021; Bravery, 2021; Cain, 2021; Enright, 2021; Finch, 2021; Holmes & Rich, 2021; Hui & Ping, 2021; Lombardo, 2021; Maloney, 2021; Yiqun, 2021). What would happen to human uniqueness and human dignity if AI robots were to

exhibit intelligence like that of human beings and have a sense of self and emotions, as Klara does? (Lombardo, 2021). Various views on the uniqueness of individuals are expressed by Chrissie, Henry, Paul, and Klara when they discuss the plan to transfer Josie's whole inner life to Klara in the event of her death ("Continuing Josie" project). Does each human being have something special about them, such as a unique and un-transplantable "soul"? Is there an essential difference between humans and AI (Askew, 2021; Bravery, 2021; Finch, 2021; Hui & Ping, 2021; Lombardo, 2021; Maloney, 2021; Yiqun, 2021)? These are questions of replication and authenticity (Enright, 2021). Science and technology can potentially change our perception of what it means to be human (Enright, 2021). In this regard, questions have been raised as to whether it is the systematic memory, or the ability to love others freely, that makes us human (Bravery, 2021; Hui & Ping, 2021; Lombardo, 2021). Lombardo argued that humans can maintain their dignity and humanity as far as they would never cease being able to love, even when they contradict the logic of efficiency, i.e., the social logic of order and control (Lombardo, 2021). However, if Klara, transferred into a body with an appearance no different from Josie's, could play Josie perfectly, both Chrissie and Paul might love Klara with all their hearts.

Problems in human society brought about by advanced science and technology

Klara and the Sun prompts us to face our own anxieties about the future of emerging technologies (Mejia & Nikolaidis, 2022). In the novel, as social implementation of AI becomes more extensive, people's fear of unemployment grows. It is also suggested that, with the spread of GE technology, more parents who are financially able to afford GE opt for "lifting" their children so that they would not be replaced by AI in the future, as Paul was (Enright, 2021; Gordon, 2021; Lombardo, 2021; Shulevitz, 2021). However, parents face a serious dilemma because it is a mortal lottery for the children, given that GE is associated with serious physical risks including death (Bravery, 2021; Hui & Ping, 2021). The risk of death in children is the parents' greatest anxiety and fear. GE exposes Josie to a childhood of illness with the possibility of eventual death. In fact, Josie's sister Sal died because of GE. According to Gordon (Gordon, 2021), the parents in the novel face this terrible dilemma of whether to have their children be "lifted" and risk losing them in the end or refuse the idea and suffer the consequence of limiting the prospects of their children's success. Josie's mother is tormented by never knowing if she had made the right decision (Gordon, 2021).

Parents' motives for "lifting" their children, apart from their desire to provide a better future for their children, are partly selfish, e.g., to maintain their current social status, or to conform their children to their own values and beliefs. In either case, their children will pay the price for their decisions

(Askew, 2021; Finch, 2021; Shulevitz, 2021). The development of advanced technology has transformed the parent-child relationship, and the child suffers a greater harm and risk due to the parent's decisions (Askew, 2021; Enright, 2021; Finch, 2021; Shulevitz, 2021). Had there been no GE, parents would not have to decide whether to "lift" their child, nor would they have to worry about losing their child because of GE. Similarly, with no AF available, there is no need to ponder whether to create a substitute existence for a child lost to GE, or to worry about their ability to love that substitute.

New social practices are emerging in the novel (Abrams, 2021; Finch, 2021). School systems as we know them today have disappeared as AFs like Klara are employed to care for children, and advanced tutoring for "lifted" children is provided online. There is also a practice to improve communication skills in children, although it is only offered to those who are "lifted" ("interaction meeting"). However, the impact of GE on the personality development of "lifted" children is unknown, as are the effects of exclusive interaction meetings. There is concern that GE may reduce human communication ability, the long-term effects of which requires careful monitoring.

Division, discrimination, and conflict in a dystopian world

The third issue relates to the social division, discrimination, and conflict caused by the widening gap in the world of advanced science and technology and capitalist society, as depicted in *Klara and the Sun*. Some have pointed out that such division, discrimination, and conflict have already been occurring in our present world (Askew, 2021; Bravery, 2021; Lombardo, 2021; Maloney, 2021; Mejia & Nikolaidis, 2022; Marchalik & Jurecic, 2016; Shulevitz, 2021). For example, the "lifted" world can be compared to a caste system (Bravery, 2021), with "unlifted" individuals being described as Pariahs (Shulevitz, 2021). Moreover, parents of the "lifted" and "unlifted" (i.e., Chrissie and Helen, respectively) are considered to belong to different social hierarchies (Hui & Ping, 2021; Mejia & Nikolaidis, 2022). Helen regrets not having had her son Rick undergo GE, even after witnessing the death of Sal, her neighbor Chrissie's oldest daughter, and Josie being very ill because of GE (Gordon, 2021). This is because the very fact that Rick has not been "lifted" almost entirely closes off the possibility of his studying in college, regardless of his ability.

There are two types of AFs, B2 and B3, with the latter trying to take over the former. Klara is distinguished from humans and sometimes treated as an object. Josie and Rick go their separate ways because of their GE treatment or lack thereof. In their world, everyone perceives others who essentially differ from them as belonging to a different group (Othering) (Maloney, 2021; Mejia & Nikolaidis, 2022). If the hierarchy of people is based on their ability – whether it relates to their

intellectual capacity or economic power, the more able may bully, discriminate against, and belittle the less able, resulting in conflict and struggle between them (Askew, 2021; Shulevitz, 2021). Liu and Yan argue that human beings, as flesh and blood creatures, are brutal, and people are divided into different levels of hierarchy according to differences in their genetic sequences (Hui & Ping, 2021). Kazuo Ishiguro said in his Nobel lecture in 2017,

'And around the corner – or have we already turned this corner? – lie the challenges posed by stunning breakthrough in science, technology and medicine. New genetic technologies – such as the gene-editing technique CRISPR – and advance in Artificial Intelligence and robotics will bring us amazing, life-saving benefits, but may also create savage meritocracies that resemble apartheid, and massive unemployment, including to those in the current professional elites (Ishiguro, 2018).'

Ishiguro's awareness of the issues, as emphasized in his 2017 speech, are embodied in *Klara and the Sun*. There is a fear that the development of science and technology and the increasing dependence on them might exacerbate merit-based evaluations and scientism in our society (Asai, Okita & Enzo, 2016).

Other issues

Some have noted the importance of good death and completion of life, skepticism about the validity of our moral intuitions, and the importance of hope and faith (Abrams, 2021; Mejia & Nikolaidis, 2022; Swaminathan & Ravi, 2021). *Klara and the Sun* is said to teach readers a lesson about aging and death: when Josie leaves home for college, Klara, no longer needed, is abandoned like garbage in the junkyard where she slowly falls apart. However, it is stated that Klara achieves gratification and a sense of completion at the end of her life through a life review and mental summation (Abrams, 2021).

Regarding the skepticism about the validity of our moral intuitions, some pointed out that Klara regarded the sun as an omnipotent personal deity and argued that the faith is strange, and we might agree with the oddity of this belief (Mejia & Nikolaidis, 2022). To what extent are our established moral intuitions merely the upshot of the particular flesh and blood from which we are made? Are our moral values shaped by our flawed social settings or the caprices of natural selection (Mejia & Nikolaidis, 2022)? Doubts about Klara's "sun worship" may also lead to similar questions about our faith and its significance, importance, and moral legitimacy in contemporary society.

Finally, some commentators interpreted that Klara's wishes have come true and the sun actually saved Josie's life: "What has been medically declared to be a hopeless case, ends in miraculous recovery, thanks to Klara's faith, hope and conviction in the healing touch of the Sun. Klara gets the Sun to visit Josie's chamber to pour out his special energy, not by comprehending the impulses and desires of Josie

and not definitely by rational thinking, but by unshakable, blind faith in the Sun as the elixir of life. In the battle between Faith and Rational thinking it is not rationality but faith that wins (Swaminathan & Ravi, 2021).” Of course, it is also possible that Josie’s recovery was a natural process unrelated to the sun’s power, or that the event was unrelated to Klara’s actions, although the rays of the sun were beneficial to her recovery. The facts remain unclear, but for Klara, this is the most significant event of her life. A life lived with hope and faith may be a happier one than one without.

Additional discussions from new perspectives

This section discusses *Klara and the Sun* from four new perspectives, presenting issues that have not been uncovered in previous reviews of the novel. Relevant statements of the main characters are cited in the text.

The dichotomous win-lose view of life

Toward the end of the story, as Josie’s condition worsens, her doctor, Chrissie, and Rick gather to prepare for her death. Chrissie, believing that Josie’s death is unavoidable, says to Rick,

‘I’m asking you, Rick, if you feel like you’ve come out the winner. Josie took the gamble. ...But you, Rick, you played it safe. So that’s why I’m asking you. How does this feel to you just now? Do you really feel like a winner?’ (Ishiguro 2021, p280)

She continues,

‘What is it you’ve won? Take a look at your future. You played for low stakes and what you’ve won is small and mean. You may feel pretty smug just now. But I’m here to tell you, you’ve got no reason to be feeling that way. No reason at all.’ (Ishiguro, 2021, p281)

This scene describes Chrissie speaking extremely harsh words to Rick, who has loved and cared for Josie almost all his life and deserves no such criticism. Although GE is a post-birth intervention, Rick himself had no choice (because GE is performed when a child is very young). In addition, it is very likely that Helen did not have the financial means to give Rick GE. This brief exchange completely destroys Chrissie’s relationship with Rick and leaves Rick with a psychological scar that would never heal. We think that it is unfortunate that people view and judge their lives solely based on whether they had GE or not. We wonder if Chrissie really believes it is better to die from GE’s side effects than to live an “unlifted” life.

What led Chrissie to say those words to Rick? How has this worldview of winners vs. losers been instilled in her? Chrissie appears to have developed a view of life that is so incredibly strong that, even after losing her first child (Sal) because of GE, she gave GE to her second child (Josie). We believe that she was brainwashed by the savage meritocracy brought about by advanced science and technology (Ishiguro, 2018; Marchalik & Jurecic, 2016). Indeed,

her cognitive style and thought processes appear to have developed under the influence of scientism, meritocracy, and the caste system established in the novel. Other possible factors are her desire as a parent to have excellent children; pressure of being “right” in parenting (peer pressure); decisions she has made because she truly cared for her children; and blindness to the risks due to her cognitive bias. We also suspect that it was her strong worldview that led her to think she ‘sensed’ Josie’s desire for GE when she held her for the first time. This claim, that she had this intuition, served as justification for her decision to give Josie GE despite the grave risks.

Naturally, this scene makes us wonder what it means to ‘win’ or ‘lose’ in life and to consider whether our present thought processes too have been affected by scientism and meritocracy, whether we are aware of it or not. Is there such a thing as winning and losing in life? Are the rules of this game fairly and publicly determined in accordance with due process of law (i.e., are there clear and fair rules to decide who wins and who loses?), and do all participants follow these rules? We would say “No.” If the purpose of life is to be a winner, people are likely to be unhappy because there is only one No 1 winner, and his/her position as a winner is only temporary. There is no comfort in life in which others are considered adversaries, and one is haunted by the fear of losing all the time. It can be argued that we should abandon uniform standards of evaluation, which are opposite of diversity in values if we wanted to lead a happy and comfortable life.

More to the point, is happiness in life promised to the “lifted,” including Josie? We doubt it is. No one knows what the future holds. Children who had GE may be considered winners in terms of their intellectual excellence, but there is a price to pay: the lack of empathy (as exemplified by Josie’s attitude toward Klara). Their attitudes can be regarded as selfish and immature, like those of young children. The lack of empathy and egocentric traits make “lifted” children feel isolated, and this has a significant impact on the future society they build. Thus, there is a fear that a society that judges people as winners or losers solely based on their intellectual excellence (e.g., a society dominated by gene-edited human beings) will decline in the long run.

All three themes listed in Table 1 are condensed in Chrissie’s statements. One might say that it is human nature to strive to win, dominate, or be the best. The effects of advanced science and technology will make disparities clearer and continue to widen existing divisions. It may also be true that there is a natural inclination in human beings to discriminate against others who are different, especially those perceived as inferior to them.

In the novel, all universities except for Atlas Brookings University do not accept “unlifted” children, and even at Atlas Brookings University, the rate of admission is only 2%. Also, considering that

“unlifted” individuals are forced out of jobs, one would think that everyone who would opt for GE. We think that Chrissie is a desperate mother and humans are vulnerable. We need a society that would not hunt down these individuals, or a society where no one feels compelled to say horrible things that should never be said to others. We must avoid the domination of savage meritocracy that has lost the value of diversity (Marchalik & Jurecic, 2016; Ishiguro, 2018). We must create a world in which people can live happily and are not disadvantaged, even if they don’t share the same values (i.e., striving for achievement or being a winner).

Blameworthiness of favoritism in an unjust world

Helen wants her son Rick to go to college to cultivate his talent in drone technology and expand his future possibilities. She and Rick visit Mr. Vance, an executive at Atlas Brookings University, which is the only university that accepts “unlifted” children. Helen and Mr. Vance were once romantically involved and lived together for several years. Atlas Brookings University has a 2% admission quota for “unlifted” children; the remaining 98% is reserved for “lifted” children. Mr. Vance is impressed by Rick’s talent but asks Rick what he would like him to do, noting that the admission process at Atlas Brookings University is conducted fairly. When Rick hesitates to answer, Helen says:

‘I’m going to answer this one for him, Vance. Yes, we *are* asking you for a favor.... It’s for me, not you (Rick), to ask Vance. And we *are* asking him to exercise favoritism. Of course, we are.’ (Ishiguro, 2021, p250)

Helen’s plan fails because of her statement and the way she treated Vance in the past. Nonetheless, the blameworthiness of favoritism that Helen expects Vance to show in this scene warrants some consideration. University entrance examinations should be strictly fair; there must be no “backdoor” admission or preferential treatment of certain applicants. However, in the world of *Klara and the Sun*, the university admission system itself is unfair and discriminatory in that all but one university accept no “unlifted” children. Even Atlas Brookings University is discriminatory in the sense that “unlifted” children have only a 2% admission rate. As Kasuzo Ishiguro noted in his speech, advanced science and technology (i.e., GE) “create savage meritocracies that resemble apartheid” (Ishiguro, 2018).

An unfair world justifies unfair behavior, or at least, such behavior is not strongly condemned: discrimination, however, is wrong and should be condemned. Universities treating “unlifted” children who excel at academics and have the aptitude for study differently and unfavorably simply because they are not “lifted” is unacceptable. In such an unjust society, favoritism is not automatically to be blamed. For Helen, asking Vance to show favoritism toward Rick was an act of survival, rather than a

selfish act of injustice. Helen is a desperate mother just like Chrissie. A society that produces such parents must be changed.

What is a better ending for Klara?

A few years after recovering from her lethal condition, Josie sets off for university far from home, and Klara, who finished her role as Josie’s friend, spends most of her time in the storage room in Chrissie’s house. One day, Henry Capaldi visits Klara and asks if she would volunteer for “vivisection”; he wants to know if Klara would allow him to dissect and analyze the central part of her artificial brain. He explains it is for research purposes and to solve the ‘AI black box problem’ that has long made society uneasy and hesitant to accept AFs. However, Chrissie rejects this offer outright.

‘No, Henry, you don’t. Klara deserves better. She deserves her slow fade.’ (Ishiguro, 2021, p298)

‘Slow fade,’ as Chrissie puts it, may sound good to readers, but it is in fact a lonely death in the junkyard, rotting away bit by bit. Of course, Klara has no fear of loneliness or death and may even find meaning in her life as she dies alone, feeling satisfied (Abrams, 2021). It is hinted that other AFs are similarly consigned to the junkyard. However, a big question arises as to whether slow fade is a good way of dying or ending life for Klara. Or would undergoing “vivisection” for the cause of greater social acceptance be a better option for AFs?

Brain vivisection and slow fade are equally unfair to Klara. There should be a better end for AFs when they complete their role. Henry, a mad scientist, has no respect for Klara and treats her like an object. Is Klara as good as a “vacuum cleaner” to him? We do not know what would happen to Klara after her central computer system is subjected to detailed investigation, but the fact that Henry goes through the trouble of asking Klara such a favor suggests that he regards Klara as a mere object that can be expended for the sake of scientific progress.

What is the appropriate end for AFs that fulfilled the role of a friend to “lifted” children? If Klara were to agree to undergo vivisection, would her consent be valid? Her ability to decide whether to consent or refuse the procedure might be limited given the nature of the program. Klara has a sense of self and emotions, and while it is debatable whether she should be considered a person based on this fact, she should not be subject to the abuse of being treated as a mere object, even as an artificial robot. Therefore, neither of the two endings is acceptable. Then, what is the best way for Klara to meet her end? This question warrants careful consideration, as it also touches on how to deal with AFs that had no buyer until the end. This question, at least, needs to be pondered in advance, before AF appears.

In order to address problems related to AFs’ appropriate end, we need to first answer the broader and more basic question of what general attitude humans should take toward AFs. We believe that when a being like Klara, who has consciousness and

feelings of independence, appears in human society, an important issue is how to respect such a non-human being. Klara has a clear and pure purpose and mission to cure Josie, even at considerable cost. Klara is the most idealistic and sublime being in the novel. She does not deserve to be treated as an object or a slave, like the “lifted” children did in the interacting meeting. Although many of the main characters initially treated Klara as an object to varying degrees, they came to understand her devotion and love for Josie and learned to respect her. Developing respect through relationships with others is important at any age for everyone, anywhere; this is one of the valuable insights we gain from the novel.

Continuity of a dying child’s sense of self (the missing perspective in the “Continuing Josie” project)

Chrissie, unable to bear the thought of losing both Sal and Josie because of her decisions, plans to ask Henry to create an AF shell mimicking all of Josie’s external characteristics and implant Klara’s central nervous system, a computer system that perfectly copies Josie’s central nervous system, into it. Henry says to Klara,

‘Klara, we’re not asking you to train the new Josie. We’re asking you to *become* her...

You’re not being required simply to mimic Josie’s outward behavior. You’re being asked to continue her for Chrissie. And for everyone who loves Josie.’ (Ishiguro, 2021, p209)

Henry believes that all human internal elements can be completely transplanted into an AI program. While there is the idea that each human being has something special about them, which is unique to that individual and can never be transferred to anything else, we are not concerned with the ‘soul’ of human existence; rather, here we focus on the fallout from the “Continuing Josie” project.

First, we think that Josie’s fear of death will not disappear because, whether the project succeeds or fails, Josie would still die young. Whatever it is that makes each individual unique, the continuation of an individual’s sense of self is essential. For example, cloning oneself from one’s own cells would not make much sense to those who do not want to die. In addition, we wonder what would happen to Klara’s sense of self when the “Continuing Josie” project is completed. In any case, if Josie’s sense of self is not continued, Henry’s plan to continue Josie through an AF is meaningless to dying Josie.

One might view that the purpose of the “Continuing Josie” project is to help Chrissie, and that there is no need for consideration of Josie. However, such a view may lead to a disregard for Josie’s life. If there is always a replica or an AF substitute, parents might not hesitate to choose to give risky GE to their children or give up treating the sick child prematurely. It is also unacceptable because the project disregards Klara’s original and ordinal program function. We must remember that

her emotions as well as her appearance should be valued.

We also believe that this project is an affront to Josie’s life. Chrissie fails to recognize the fact that her child is a human being with an independent personality and life. Moreover, had the “Continuing Josie” project been implemented, what Klara would be able to reproduce is based on her limited time with Josie; she would not be able to reproduce the changes Josie has undergone as she grew up, i.e., Josie’s history as a person, nor would she be able to reproduce what Josie has felt with her five senses, such as temperature, smell, and atmosphere. In this regard, the project can never be a complete success. GE intervention and the “Continuing Josie” project both leave no room for mutual respect between Chrissie and Josie, or the emotional connection that is supposed to develop between a parent and child over time. In fact, there appears to be a constant tension in their mother–daughter relationship, undermining the nurturing of healthy and pure affection between the two.

Conclusion

At the end of the story, Klara meets the former manager of the AF store where she was exhibited and sold and describes her experiences at Josie’s house. Klara’s answer to the question of what is unique and non-transferable about everyone is described, as follows:

‘Mr Capaldi believed there was nothing special inside Josie that couldn’t be continued. He told the Mother he’d searched and searched and found nothing like that. But I believe now he was searching in the wrong place. There *was* something very special, but it wasn’t inside Josie. It was inside those who loved her. That’s why I think now Mr Capaldi was wrong and I wouldn’t have succeeded.’ (Ishiguro 2021, p306)

Social trends in the world of *Klara and the Sun* undermine “something special inside those who loved her.” This is because GE diminishes the ability of “lifted” children to communicate with others, and since the division due to GE gives rise to discriminatory feelings in those children (i.e., they do not see an individual as an individual), they fail to cultivate sound relationships with others. The AF upgrade from B2 to B3 is another possible factor that might have led to reduced empathy in “lifted” children, negatively affecting their ability to form friendships. Because of GE, Sal died; Josie got sick; Paul left Chrissie; and Rick and Josie lost something special that they had once shared. More to the point, even if there is something special inside each person, we will never find that special something in others if we only focus on the results brought about by GE or advanced science and technology. We do not know if there is something special about us that is uniquely human. We do not think this question is of great importance in human life, but at least Klara’s view is

correct: we must value the 'special something' we find in others.

How should we address the various problems brought about by advanced science and technology in future society, as depicted in *Klara and the Sun*? We should pay attention to not only the benefits of advanced science and technology but also their negative consequences, unintended or expected, as well as moral failures at the time of technological development (Ishiguro 2018). We must not forget the importance of human emotions and wisdom, in addition to knowledge and intellectual ability. It is not his or her social class or intellectual level that makes the relationship with that person special.

Finally, we should aim for a society in which all beings with feelings and self-awareness are respected and protected, even if they are not human. When feeling weak or driven by fear and anxiety, human beings are prone to do foolish things that they may regret later and/or are harmful to others. Unjust evaluation and selection of people should be eliminated, and uniformity and mechanistic ways of looking at things must be discarded. No one should be allowed to treat AFs in a less than courteous manner.

Japanese novelist Shinya Tanaka once wrote in an essay, "It is often said that a writer is a canary in a coal mine ... they used to regard a writer as a person who senses danger earlier than others. A writer plays the role of quickly sniffing out any changes and putting them into words (Tanaka, 2017)." *Klara and the Sun* predicts irrevocable social changes brought about by advanced science and technology, including genetic engineering and AI science, and warns us that they may further damage precarious human relationships and fragile solidarity that we have maintained throughout humanity. *Klara and the Sun* will certainly become one of the most important literary works in the fields of science and technology and biomedical ethics.

Statements and Declarations

Competing Interests: The authors declare neither potential financial nor non-financial conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: This work was funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Grant-in-Aid for Scientific Research (B) (KAKENHI 20H03922): Decision-making process and role of health care professionals in clinical practice with advanced information technology (Principal investigator Seiji Bito, 2020-2023).

References

Abrams, Robert C. 2021. Klara and the Sun: Kazuo Ishiguro's new model for "completion" at the end of life. *Journal of the American Geriatrics Society*, Retrieved July 1, 2022 from <https://doi.org/10.1111/jgs.17547>

Asai, Atsushi, Taketoshi Okita and Aya Enzo. 2016.

Conflicting messages concerning current strategies against research misconduct in Japan: A call for ethical spontaneity. *Journal of Medical Ethics* 42(8): 524-7.

Asai, Atsushi, Taketoshi Okita, Motoki Okita, and Seiji Bito 2020. Should We Aim to Create a Perfect Healthy Utopia? Discussions of Ethical Issues Surrounding the World of Project Itoh's Harmony. *Science and Engineering Ethics* 26 (6): 3249-3270, <https://doi.org/10.1007/s11948-020-00269-3>

Askew, Kido, R. 2021. Kazuo Ishiguro, Klara and the Sun. *Social System Study* (Shakai ShisutemuKenkyu) 43: 181-185.

Bravery, Hari. 2021. Review: 'Klara and the Sun' by Kazuo Ishiguro. *Cherwell*, April 5th. Retrieved July 1, 2022 from <https://cherwell.org/2021/04/05/review-klara-and-the-sun-by-kazuo-ishiguro/>

Cain, Hamilton. 2021. Klara and the Sun by Kazuo Ishiguro. Harvard Review Online April 13, 2021. Retrieved July 1, 2022 from <https://harvardreview.org/book-review/klara-and-the-sun/>

Charles, Ron. 2021. In Kazuo Ishiguro's 'Klara and the Sun,' a robot tries to make sense of humanity. *Washington Post*, March 2.

Enright, Anne. 2021. Book of the day. Klara and the Sun by Kazuo Ishiguro review – what it is to be human. *The Guardian*, March 19.

Finch, Charles. 2021. Review: Kazuo Ishiguro's new novel is one of his very best. *Los Angeles Times*, February 24.

Gordon, Edmund. 2021. Faith in the Bildungs-robot. *TLS* (Times Literary Supplement), March 5, Issue 6153.

Holmes, Chris, and Kelly M. Rich. 2021. On rereading Kazuo Ishiguro. *MFS Modern Fiction Studies* 67(1):1-19.

Hui, Liu, and Yiqun Ping. 2021. Analysis of *Klara and the Sun* from the perspective of defamiliarization. *Higher education of social science* 21(2): 39-42.

Ishiguro, Kazuo. 2018. My twentieth century evening and other small breakthroughs. *The Nobel Lecture*. Tokyo: Hayakawa-Shobo.

Ishiguro, Kazuo. 2021. *Klara and the Sun*. London: Faber and Faber.

Lombardo, William. 2021. Losing Ourselves. *The New Atlantis*, 65, 110-116. Retrieved July 1, 2022 from <https://www.thenewatlantis.com/publications/losing-ourselves>

Maloney, Iain. 2021. In 'Klara and the Sun,' Kazuo Ishiguro questions what it means to be human. *The Japan Times*, March 20.

Marchalik, Daniel, and Ann Jurecic. 2016. From literature to medicine. Kazuo Ishiguro's uncanny science. *Lancet* 387(10026): 1365.

Mejia, Santiago, and Dominique Nikolaidis. 2022. Through new eyes: Artificial intelligence, technological unemployment, and transhumanism in Kazuo Ishiguro's Klara and the Sun. *Journal of Business Ethics* 178, 303-306. Retrieved July 1, 2022 from <https://link.springer.com/article/10.1007/s10551-022-05062-9>

Shulevitz, Judith. 2021. The Radiant Inner Life of a Robot. Kazuo Ishiguro returns to masters and servants with a story of love between a machine and the girl she belongs to. *The Atlantic* April (2021, March 2)

Retrieved July 1, 2022 from <https://www.theatlantic.com/magazine/toc/2021/04>

Swaminathan, Bavetra, and R. Ravi. 2021. Hope, faith, love, human and humanoid: A study of Kazuo Ishiguro's *Klara and the Sun*. *Science, Technology and Development* 5 (May): 295-301.

Tanaka, Shinya. 2017. *The theory of solitude. Run away and survive*. Tokyo: Tokuma Shoten.

Yiqun, Xiao. 2021. Discussions of Emotions: Symbols on Kazuo Ishiguro's *Klara and the Sun*. *Bungei Hyosho Ronshu* 9: 1-20.

Urgent care services: An initiative towards combating non-emergent emergencies in Karachi, Pakistan

- Kiran Karim Jivani

Aga Khan School of Nursing and Midwifery, Karachi, Pakistan

Email: kiranjivany@gmail.com

- Aamna Nazish Iqbal

Department of Family Medicine, Aga Khan University Hospital, Karachi, Pakistan

- Arusa Lakhani

Aga Khan School of Nursing and Midwifery, Karachi.

- Unab Khan

Department of Family Medicine, Aga Khan University Hospital, Karachi, Pakistan

Background

Lower middle-income countries (LMICs) such as Pakistan face considerable challenges in the health sector. From high maternal and neonatal mortality rates of 14.47% and 4.2%, respectively, (Hanif, Khalid, Rasul, & Mahmood, 2021; Pakistan Demographic and Health Survey, 2019) and the phenomenon of 'brain drain' in which highly skilled health professionals choose to move abroad for greater quality of life and work opportunities, Pakistan has gone through it all. Quality and accessible health is yet a luxury for a common man here. In addition, several natural or man-made tragedies strike Pakistan each year, putting the healthcare system to the test. The global pandemic no doubt posed a huge burden on healthcare in our country making the Emergency departments on the verge of crowding and eventually missing the patients that needed the facility and resources in the first place (Atif & Malik, 2020). Pakistan's primary healthcare infrastructure is widespread, with approximately 5000 basic health units (BHUs), 600 rural health centers (RHCs), and 7500 other primary care institutions supported by a network of *tehsils* and district-level secondary and tertiary care hospitals for referrals (World Health Organization, 2022), but unfortunately, the facilities are not fully functional, lack access and resources, with few clinically competent healthcare professionals. According to Husseni and Ullah (2019), a tertiary care hospital in Lahore handles 3000 people in the

emergency room with a capacity of just 2000 beds; additionally, another tertiary care hospital handles 500 patients with an actual bed capacity of only 80 beds. As a result, many emergency room admissions are for mild ailments, highlighting the need for urgent care services.

The idea of Urgent Care Services (UCS) is novel to our part of the world; however, this has been introduced to many countries quite a few years back (Javed & Ilyas, 2018). There is, in theory, a fine line between emergent and urgent care. An emergency is life-threatening or need immediate care, whereas an urgency necessitates urgent services but is not lethal or life-threatening. In practice, nonetheless, emergency departments deals both emergent and urgent cases (Roy et al., 2020) that causes the detrimental impact on patient care caused by ER overcrowding, such as medication errors, increased death rates, and a lack of efficient care (Husseni & Ullah, 2019). The reformation of segregation between emergent and urgent care departments is a new global challenge (Turner et al., 2015). The American College of Emergency Physicians (ACEP) defines an overcrowded ER as one where there is a greater demand for emergency care than there are resources to meet that demand (American College of Emergency Physicians, 2018). This assertion affirms that this issue is being faced by practically all of Pakistan's major tertiary care hospitals. Medical urgencies and emergencies can strike at any time and in any place. According to research, 90% of morbid conditions can be resolved by sustainably establishing community-based primary care physician-led teams (Hyder & Razzak, 2013) which evidently highlights the need of UCS.

Need for urgent care services

According to studies from Canada, the United States, Australia, and the United Kingdom, the need for emergency care is increasing by 3% to 6% per year (Di Somma et al., 2015; Nicholl & Mason, 2013). More people are visiting emergency rooms, with annual increases of up to 5% in Belgium, 8.5% in England, and 10% in New Zealand (Karam, Tricas, Darras, & Macq, 2016; Parkinson, Meacock, Checkland, & Sutton, 2021; Tenbensen et al., 2017). However, current evidence indicates that in Belgium, the United States, Iran, and Jeddah, 56%, 20%, 64%, and 65% of these visits to the Emergency department were non-urgent, respectively (Bahadori, Mousavi, Teymourzadeh, & Ravangard, 2019; Bakarman & Njaifan, 2014; Uscher-Pines, Pines, Kellermann, Gillen, & Mehrotra, 2013).

Urgent emergency room visits, also known as inappropriate or avoidable ED visits, do not require intensive intervention and typically range from designated triage classification to self-perceived urgency, making comparison estimates difficult (Baier et al., 2019). High rates of non-urgent ED visits result in overcrowding, prolonged waiting times, unpleasant patient outcomes, and financial losses for service providers (Kraaijvanger, Van

Leeuwen, Rijpsma, & Edwards, 2016). In the United Kingdom, the need for urgent care services is rising, as evidenced by a 46% increase in attendance between 2006 and 2013. In addition, the number of ambulance calls increased from 4 million in 1994-1995 to 9 million in 2014-2015, while in the United States, the number of calls ranged from 16,000,000 in 2006 to 28,004,624 in 2009 (Coster, Turner, Bradbury, & Cantrell, 2017). Nonetheless, there is a gap in the literature regarding the need for urgent care facilities in South Asia, notably in Pakistan; however, Pakistan is also not exempted from this danger.

Urgent care versus emergent care

Several developed countries are currently implementing the concept of urgent care systems in their hospital settings, which are defined as an outpatient or ambulatory care provided outside of a conventional emergency room in a hospital. Medical officers and family physicians in communities are the first responders to any medical emergent or urgent situation that arises. A study has found that the growing elderly population requiring complex care, as well as patients bypassing their primary care physicians and going straight to the ER after clinic hours, contribute to the increased demand for emergency care services (Leonard et al., 2014). People have been reported to choose emergency care for a wide range of reasons, which may contribute to the rising demand for these services. These reasons include perceived highly satisfying treatment in the hospital, poor accessibility to certain other services, the assumption that the issue was too severe to require emergency treatment, and ignorance of other services (Arain, Nicholl, & Campbell, 2013; Coster et al., 2017). Therefore, it is imperative to think beyond the conventional way of providing services to the population and create other appropriate settings to respond to the need in a timely and resource-efficient manner.

Establishing an urgent care service

To meet the requirement of timely assessment of an urgently sick patient and implement the evidence into practice, one of the finest medical institutes The Aga Khan University, Hospital, Family Medicine department in Karachi, Pakistan has initiated the first family physician-led Urgent Care Services (UCS) at a tertiary setting that covers urgent care needs and has channelized the segregation of cases from emergent to urgent to cases requiring only clinic visits. The effort aimed to lessen the ER burden, provide cost-effective care, track continuity of care and follow-up, and provide convenience to patients by being available 24/7. This is a four-bed facility with one medical officer, one registered nurse, and one nursing assistant per shift. After a thorough need assessment and baseline, the operational plan was completed, before the execution, the relevant employees had extensive training that included

workshops on triaging system, basic critical care, disease management pathways, scenario-based evaluations on triaging, ER collaboration and acquisition of skills like communication, decision making, laboratory interpretations, and administration of emergency medicines whilst in the ER, and Advanced Cardiovascular Life Support (ACLS) credentialing. However, during the preparation, the project team addressed a few challenges that were faced including recruitment and acquisition of training to fill the knowledge and skills gap in staff, staff concern of working in shifts, a lack of space that would cause patients to wait, and higher costs than the usual primary care clinics.

The facility has employed the Emergency Severity Index (ESI) tool to categorize patients based on their severity. The following are the ESI triage levels: ESI-1: immediate life-saving intervention is required, ESI-2: high-risk situation, disorientation, severe pain, or vitals in danger zone necessitating immediate care, ESI-3: Urgent care involving the use of multiple resources such as lab investigation, IV fluid, IV medications, ECG, but vitals are not in the danger zone. ESI-4: non-urgent therapeutic interventions requiring only one resource to stabilize the patient, and ESI-5: non-urgent visit requiring no resources to stabilize the patient. Patients with ESI-1 require prompt intervention, whereas patients with ESI-2 to ESI-5 are anticipated to undergo medical evaluation and treatment within 15, 30, 60, and 120 minutes, respectively (Jordi et al., 2015).

The patients are either directly seen in UCS or are referred to UCS via ER triaging system based on their ESI Score. The cases that fall under the category of ESI-3 to ESI-5 are admitted at UCS, assessed and observed thoroughly, and provided treatment. Once they are stable, they are discharged with home management and care. The average stay of a patient in UCS ranges from 1 hour to 4 hours. Approximately, 10-15 patients visit UCS per day, resulting in a monthly patient turnover of 300 to 450. Some of the common health issues reported till to date are dengue fever, gastroenteritis, febrile illness, and respiratory disease.

Impact of urgent care service

Urgent care setup offers a broader range of resources and facilities than a doctor's examination room, in addition to more flexible schedules. Furthermore, urgent care centers are frequently associated with relief from prolonged waiting hours for clinic appointments, populated emergency health services, and positively contributing to more accessible care by having competent healthcare professional available for the people especially working adults and children from school to visit as per their convenience and timeframe. Many patients asserted that UCS has a significant impact on making healthcare more accessible, cost-effective, and easy to coordinate.

Recommendations and Conclusions

The UCS is without a doubt a revolutionary attempt in Pakistan's healthcare setup, which has only recently been born and has yet to achieve major milestones. Certain responsibilities of healthcare professionals other than physicians, such as the advanced nurse practitioner (ANP), are becoming established as a more recent specialty within the healthcare field. Nurse practitioners (NP) in urgent care are frequently viewed as low-cost, effective options for treating common and acute illnesses in the population. Thus, we advocate for the use of ANPs in urgent care, which will benefit both the health system and the patient in a variety of ways, including lower costs for both the health system and the patient, shorter wait times, and increased physician capacity to treat more patients while maintaining high-quality care and standards.

Moreover, we urge public health leaders and healthcare organizations, however, to establish such facilities in their institutes and train doctors and nurses to specialize in the field of urgent care, which will both reduce the burden of emergencies encountered, and reduce the burden on tertiary care in the long run. Policymakers can develop protocols for implementing urgent care services for healthcare organizations across the country, ensuring that the quality of care is consistent across regions. Researchers can help find bottlenecks and gaps based on patients' and healthcare providers' experiences, as well as better solutions, troubleshooting, and turning flaws into opportunities for better healthcare outcomes.

In conclusion, The Family Medicine department, which leads UCS in partnership with primary healthcare provided by well-trained family physicians and nurse practitioners, will surely play an important role and provide a new dimension to the health care in Pakistan. Also, the overall burden on emergency services have been reduced, and the scope of Family Medicine Practitioners has been broadened by implementation of this initiative.

References

American College of Emergency Physicians. (2018). Emergency Department Boarding and Crowding. At <https://www.acep.org/administration/crowding--boarding/>

Arain, M., Nicholl, J., & Campbell, M. (2013). Patients' experience and satisfaction with GP led walk-in centres in the UK; a cross sectional study. *BMC health services research*, 13(1), 1-9.

Atif, M., & Malik, I. (2020). Why is Pakistan vulnerable to COVID-19 associated morbidity and mortality? A scoping review. *The International journal of health planning and management*, 35(5), 1041-1054.

Bahadori, M., Mousavi, S. M., Teymourzadeh, E., & Ravangard, R. (2019). Emergency department visits

for non-urgent conditions in Iran: a cross-sectional study. *BMJ open*, 9(10), e030927.

Baier, N., Geissler, A., Bech, M., Bernstein, D., Cowling, T. E., Jackson, T., . . . Quentin, W. (2019). Emergency and urgent care systems in Australia, Denmark, England, France, Germany and the Netherlands—Analyzing organization, payment and reforms. *Health Policy*, 123(1), 1-10.

Bakarman, M. A., & Njaifan, N. K. (2014). Assessment of non-emergency cases attending emergency department at King Fahad General Hospital, Jeddah; pattern and outcomes. *Life Science Journal*, 11(8), 20-25.

Coster, J. E., Turner, J. K., Bradbury, D., & Cantrell, A. (2017). Why do people choose emergency and urgent care services? A rapid review utilizing a systematic literature search and narrative synthesis. *Academic emergency medicine*, 24(9), 1137-1149.

Di Somma, S., Paladino, L., Vaughan, L., Lalle, I., Magrini, L., & Magnanti, M. (2015). Overcrowding in emergency department: an international issue. *Internal and emergency medicine*, 10(2), 171-175.

Hanif, M., Khalid, S., Rasul, A., & Mahmood, K. (2021). Maternal mortality in rural areas of Pakistan: challenges and prospects. *Rural Heal*, 27, 1040-1047.

Husseni, A. M., & Ullah, M. A. (2019). The dire need of urgent care centers in Pakistan; A potential solution to emergency room overcrowding. *Journal of Ayub Medical College Abbottabad*, 31(1), 1-2.

Hyder, A. A., & Razzak, J. A. (2013). The challenges of injuries and trauma in Pakistan: an opportunity for concerted action. *Public health*, 127(8), 699-703.

Javed, S. A., & Ilyas, F. (2018). Service quality and satisfaction in healthcare sector of Pakistan—the patients' expectations. *International journal of health care quality assurance*.

Jordi, K., Grossmann, F., Gaddis, G. M., Cignacco, E., Denhaerynck, K., Schwendimann, R., & Nickel, C. H. (2015). Nurses' accuracy and self-perceived ability using the Emergency Severity Index triage tool: a cross-sectional study in four Swiss hospitals. *Scandinavian journal of trauma, resuscitation and emergency medicine*, 23(1), 1-10.

Karam, M., Tricas, S., Darras, E., & Macq, J. (2016). Interprofessional collaboration between general physicians and emergency department services in Belgium: a qualitative study. *International Journal of Integrated Care*, 16(6).

Kraaijvanger, N., Van Leeuwen, H., Rijpsma, D., & Edwards, M. (2016). Motives for self-referral to the emergency department: a systematic review of the literature. *BMC health services research*, 16(1), 1-19.

Leonard, C., Bein, K. J., Latt, M., Muscatello, D., Veillard, A. S., & Dinh, M. M. (2014). Demand for emergency department services in the elderly: An 11 year analysis of the Greater Sydney Area. *Emergency Medicine Australasia*, 26(4), 356-360.

Nicholl, J., & Mason, S. (2013). Return of the "corridors of shame"? In (Vol. 347): British Medical Journal Publishing Group.

Pakistan Demographic and Health Survey. (2019, January 2019). Pakistan Demographic and Health Survey

- 2017-18. At <https://www.dhsprogram.com/pubs/pdf/FR354/FR354.pdf>
- Parkinson, B., Meacock, R., Checkland, K., & Sutton, M. (2021). Clarifying the concept of avoidable emergency department attendance. *Journal of health services research & policy*, 26(1), 68-73.
- Roy, P., Kumar, R., Aggarwal, P., Vhora, R. S., Gupta, M., Boobna, V., . . . Kumar, S. (2020). Framework for development of urgent care services towards strengthening primary healthcare in India - Joint position paper by the Academy of Family Physician of India and the Academic College of Emergency Experts. *J Family Med Prim Care*, 9(4), 1801-1804. doi:10.4103/jfmpc.jfmpc_286_20
- Tenbenschel, T., Chalmers, L., Jones, P., Appleton-Dyer, S., Walton, L., & Ameratunga, S. (2017). New Zealand's emergency department target—did it reduce ED length of stay, and if so, how and when? *BMC health services research*, 17(1), 1-15.
- Turner, J., Coster, J., Chambers, D., Phung, V.-H., Knowles, E., Bradbury, D., & Goyder, E. (2015). What evidence is there on the effectiveness of different models of delivering urgent care? A rapid review.
- Uscher-Pines, L., Pines, J., Kellermann, A., Gillen, E., & Mehrotra, A. (2013). Emergency department visits for nonurgent conditions: systematic literature review. *Am J Manag Care*, 19(1), 47-59.
- World Health Organization. (2022). Pakistan-Primary and Secondary Healthcare. Retrieved from <https://www.emro.who.int/pak/programmes/primary-a-secondary-health-care.html>

Ethics in COVID-19 pandemic: Narrative review of challenges and lessons learned by healthcare workers

- Sarosh Saleem
- Maha Khalil

Bioethics Department, Shalamar Medical & Dental
College, Lahore, Pakistan
email: drsarosh@hotmail.com

Abstract:

Recognizing and addressing the challenges faced by healthcare workers in response to COVID-19 is an important aspect of healthcare leadership. Limited access to personal protective equipment, fear of contagion to family and lack of vaccines are posing tremendous challenges for healthcare workers. Supporting ethical practice is essential to the health workforce's well-being. A literature search was conducted using a combination of keywords. Data from the related reviews, abstracts, and articles were then studied and summarized. This narrative review summarizes the relevant literature, regarding the challenges and risk perceptions, and the factors associated with the duty to care during the COVID-19 pandemic. It also discusses the strategies

to cope with uncertainty such in times of this crisis. While the duty to care is uncertain when one's personal well-being is at stake, it depends largely on their own risk assessment. Learning from our collective experiences thus far is our most important moral obligation, as failing to learn from our previous experiences would be a violation of the ethical obligation to use available knowledge, evidence, and experience to safeguard and promote public health.

Introduction

COVID-19, which is the third outbreak of the coronavirus, has affected more than 209 countries including Pakistan 1. Healthcare providers (HCPs) are at the frontline when treating infectious disease cases and are at higher risk of contracting such infections 2. In a study conducted in Wuhan China, the rate of transmission to HCPs was 29% 3. As of September 14th, 2021, a total of 17,866 HCPs were infected in Pakistan 4.

As the pandemic advances, limited access to essential Personal Protective Equipment (PPE) is posing tremendous challenges, regarding personal safety and patient care, for healthcare providers 5. Studies have shown that HCPs reported reluctance to work because of fear of infecting their family, friends, and colleagues 6,7,8,9.

The promotion of ethical practice is important to the quality of health care and the well-being of health staff. Recognizing and solving the challenges faced by health professionals in response to COVID-19 is an important aspect of leadership in health care and civic service 10. The findings on the perceptions of HCWs about the risks of duty to care during the COVID-19 pandemic could inform medical institutional authorities about the need for urgent implementation of safety policies and deployment of human resources and set priorities in terms of safety and human resources allocation by public health authorities 11. It also discusses the ways of coping with uncertainty in times of crisis, in the light of lessons learned by the pandemic.

Research Methods

A literature search was conducted on PubMed and Google Scholar for articles using a combination of keywords. Selected articles and abstracts were reviewed for full-text review. The references to included studies were also reviewed to identify additional sources. Only studies written in English were included. Due to the huge diversity of study design and types, a narrative approach has been adopted for this review paper.

Results

Ethical challenges of covid-19

A public health emergency such as COVID-19 disrupts normal practices that promote ethically sound patient treatment. Ethical problems arise when HCWs struggle to "do the right thing" because their roles and responsibilities clash with the

common ethical principles 12. Three main ethical issues that may arise include risk of infection vs duty to care, risk mitigation, and scarcity of available resources 13. Hasting's center report suggested three ethical duties of healthcare leadership including the duty to plan, safeguard, and guide 14. Ethical guidelines and professional obligations set out the importance of delivering treatment to the patients, in particularly difficult situations like these.

1. Conflict between duty to care and risks of infection

The "duty to care" may be challenged by different risks that exist with providing care in a highly contagious environment. The HCWs have a right to their own safety amid responsibilities 15. It has been acknowledged as the most important element to count in favor of the obligation to work.^{vi} The "duty to care" when one's own life, health, and personal well-being is threatened is uncertain and largely depends on their own risk assessment and value system 16. Having to balance their own safety with the needs of patients, families, and employers, in the face of limited resources, can lead to distressing ethical dilemmas for physicians and, potentially, to moral injury 17.

The responsibility of protecting one's family is another dimension of this ethical dilemma 18. In China, 287 out of 534 frontline HCPs showed stress due to the health risks to their family members. Strict implementation of infection control policies, availability of necessary equipment, and acknowledgment of their services by the state and the hospital administration were the perceived benefits of the study 19. A study conducted on 4,357 HCWs from Wuhan, and other provinces states that 63.9% HCWs showed concern of infection to family. However, this study does not reflect the overall status of HCWs in China and requires more intervention 20. In another study, 46.97 percent of HCWs were concerned about contracting COVID-19 in Pakistan 21. Other findings from developed and developing nations confirm the notion that HCWs had significant stress and anxiety and perceived themselves to be at increased risk of COVID-19 and associated risks 22.

Although there are multiple opinions in this regard, it has been stated that in an outbreak, it is morally acceptable for HCWs to abstain from work when their obligation to care is offset by the cumulative dangers and pressures of that work 23. However, the stress associated with the difficulty in choosing the right thing cannot be underestimated. We have yet to see the results of such psychological and moral distress among HCWs around the world.

2. HCWs and availability of PPEs

Protective gear is an essential part of the infection control strategy for COVID 19 infection. A significant challenge that arose for HCWs around the globe was continuous revisions of safety policies on one hand and the insufficiency of appropriate protective

equipment. Most PPE guidelines included disposable apron, gloves, fluid-repellent surgical masks, and eye protection containing either goggles or a face shield 24. In situations where it was in short supply or inaccessible, the relative impact of the duty of care can be substantially diminished 25. The availability of PPE added to the mental stress of these HCPs 26,27. It seemed unreasonable for a HCP to perform an activity associated with a significant risk of death. Yet, they were expected to perform their duties. The challenge of balancing the act was so distressing that many HCWs, particularly surgeons declined surgeries and other procedures 28.

The distribution of health services is usually impacted by political, economic, and social policies and the same happened during the pandemic. Adequate availability of PPE was a critical first step to be taken by the healthcare authorities 29. In the midst of the COVID-19 pandemic, it was important to avoid excessive consumption of PPE and to reuse them following a proper biological decontamination procedure. The guidelines for adequate use of PPE have been changing ever since the pandemic. However, additional evidence is required from testing techniques on different models 30. The PPE rationing recommendations should obey empirical evidence and must be morally defensible. Therefore, there was an immediate need to update these guidelines to ensure equitable distribution 31. The changes in the guidelines should be conveyed clearly and directly to frontline HCPs, without any political interference 32. Instead multiple political opinions were being voiced, in the context of the pandemic, around the world.

3. Psychological pressure and mental health

Fear and apprehension are inherent in the scenarios like COVID-19 and are often not entirely manageable 33. With the emergence of COVID-19 in Pakistan, just like in the rest of the world, the medical staff had been under extreme pressure 34. HCPs who work continuously in isolated hospital units encounter confinement phenomena that cause collective hysteria 35. Severity creates more mental health issues, which not only impairs the decision-making ability but may also have long-term adverse impacts on their well-being 36.

Table.1 shows the findings of psychological distress levels and risk perceptions in frontline healthcare workers in China and Pakistan 37,38,39. However, most of these studies were conducted in the early days of the pandemic and the long-term psychological effects of this population should be studied.

Studies from the earlier pandemics suggest that the level of professionalism by HCW cannot be linked with their willingness to put their 'duty to care' into practice during times of risk. In order to gain a deeper insight, it is important to assess the risk perceptions of health care workers as this field remains unexplored by researchers.

Table 1: Psychological findings of studies conducted in China

Study Title & Year	Survey Tool	Findings
“Psychological impact of the coronavirus disease 2019 (COVID-19) outbreak on healthcare workers in China” -Jan 01, 2020.	GHQ-12 scale	39% had psychological distress, 40% expressed concern about getting infected.
“ Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019.” – March 02, 2020	PHQ-9, GAD-7, the 7-item Insomnia Severity Index, and the 22-item Impact of Event Scale-Revised	Depression (50.4%), anxiety (44.6%), insomnia (34%), and distress (72%)
“ COVID-19 pandemic-knowledge, perception, anxiety and depression among frontline doctors of Pakistan” – March-2020.	WHO (SRQ-20)	43% prevalence of anxiety/ depression, 94% felt unprotected.
“Assessment of Knowledge, Perceptions and Perceived Risk Concerning COVID-19 in Pakistan.” – June 2021	Electronic questionnaire via Qualtrics1	The perceived risk score for both cognitive and affective domains was raised at 2.24 ± 1.3 (eight items) and 3.01 ± 1 (seven items) respectively

Coping with Uncertainty in times of crisis

Effective communication, provision of adequate PPEs, adequate rest, and both practical and psychological support are associated with improved psychological outcomes. HCWs must address the situation with medical integrity, manage personal risk, and professional responsibility. At the same time, the society and state must ensure that workers are protected during the pandemic and beyond.

The HCWs, organizational leaders, and governments have a huge responsibility to safeguard the rights of HCWs and minimize risks to everyone. A five-step organized process can be used to identify risks and viable solutions, and then analyze their ethical relevance and impact.

PPE rationing should follow the scientific evidence and be ethically justifiable. Ensuring that HCWs were well-trained and well-equipped with empirically sound information and tools to effectively discuss and cope with the effects of COVID-19 was a progressive and challenging step ahead.

The top five ethical lessons learned include preparing adequately, better articulation and prioritizing overachieving goals, working collaboratively, protecting the most vulnerable groups, and improving communication. Many healthcare systems struggled throughout the world but HCWs globally showed sheer resilience and courage during this pandemic. Even now as the travel bans have been lifted, mask mandates have been relaxed, infection rates have dropped and vaccinations are being distributed, the commitment of HCW to fight this pandemic globally has not weaned off.

Limitations

This review highlights the ethical challenges in mostly Asian countries. It does not include data on the risk perception of HCWs in other countries. This review includes articles from early days of the pandemic till 2021 and as psychological pressure can rise with the progression of the pandemic, it is an area to be explored by researchers. The online surveying and small sample sizes can also limit the scope of these articles.

Conclusions

Ethical challenges (personal safety vs. duty to treat), heavy workload, inadequate availability of essential PPEs, risk of contagion to family and friends, the desire to earn daily wages, and lack of vaccines are important challenges affecting individual HCWs’ decisions and “duty to care” during this pandemic.

While the duty to care is uncertain when one’s own life, health, and personal well-being are at stake, it depends largely on their own risk assessment and value systems. It takes a toll on physical and mental wellbeing. Therefore, it is important to investigate the levels of risk perception, particularly in Asian countries and efforts should be made to professionally guide the HCWs.

Factors that support the HCWs’ duty to care include emotional and psychological support provided during and after the pandemic, urgent implementation of safety policies and deployment of human resources. Furthermore, there is an immediate need to update these guidelines in order to ensure appropriate security. Learning from our collective experiences thus far is our most important moral obligation, as failing to learn from our

previous experiences and prevent the ethical shortcomings of previous waves of the pandemic would be a violation of the ethical obligation to use available knowledge, evidence, and experience to safeguard and promote public health.

References

1. A Waris, U K Atta, M Ali, A Asmat, A Baset. COVID-19 Outbreak: Current Scenario of Pakistan. 2020 Apr 14;35:100681. doi: 10.1016/j.nmni.2020.100681. eCollection 2020 May.
2. Abrar Ahmad Chughtai, Wasiq Khan. Use of Personal Protective Equipment to Protect Against Respiratory Infections in Pakistan: A Systematic Review. *J Infect Public Health*. Jul-Aug 2019;12(4):522-527. doi: 10.1016/j.jiph.2019.01.064.
3. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, *et al*. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA*. 2020 Feb 7. doi: 10.1001/jama.2020.1585.
4. Hakim M, Afaq S, Khattak FA, Jawad M, Ul Islam S, Ayub Rose M, Shakeel Khan M, Haq ZU. Perceptions of COVID-19-related Risks and Deaths Among Health Care Professionals During COVID-19 Pandemic in Pakistan: A Cross-sectional Study. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*. 2021 Dec 17;58:00469580211067475.
5. Honda H, Iwata K. Personal protective equipment and improving compliance among healthcare workers in high-risk settings. *Curr Opin Infect Dis*. 2016;29(4):400-406. doi:10.1097/QCO.0000000000000280
6. McConnell D. Balancing the duty to treat with the duty to family in the context of the COVID-19 pandemic [published online ahead of print, 2020 Apr 24]. *J Med Ethics*. 2020;medethics-2020-106250. doi:10.1136/medethics-2020-106250
7. Lima CKT, Carvalho PMM, Lima IAAS, *et al*. The emotional impact of Coronavirus 2019-nCoV (new Coronavirus disease). *Psychiatry Res*. 2020;287:112915. doi:10.1016/j.psychres.2020.112915
8. Bakewell F, Pauls MA, Migneault D. Ethical considerations of the duty to care and physician safety in the COVID-19 pandemic [published online ahead of print, 2020 Apr 24]. *CJEM*. 2020;1-4. doi:10.1017/cem.2020.376
9. Galbraith N, Boyda D, McFeeters D, Hassan T. The mental health of doctors during the Covid-19 pandemic [published online ahead of print, 2020 Apr 28]. *BJ Psych Bull*. 2020;1-7. doi:10.1192/bjb.2020.44
10. Berlinger N, Wyna M, Powell T, *et al*. Ethical Framework for Health Care Institutions Responding to the Novel Coronavirus Pandemic. The Hastings Center; 2020. Available from: <https://www.thehastingscenter.org/ethicalframeworkcovid19/>
11. Iserson KV. Healthcare Ethics During a Pandemic. *West J Emerg Med*. 2020;21(3):477-483. Published 2020 Apr 13. doi:10.5811/westjem.2020.4.47549
12. Cai H, Tu B, Ma J, *et al*. Psychological Impact and Coping Strategies of Frontline Medical Staff in Hunan Between January and March 2020 During the Outbreak of Coronavirus Disease 2019 (COVID19) in Hubei, China. *Med Sci Monit*. 2020;26:e924171. Published 2020 Apr 15. doi:10.12659/MSM.924171
13. Harkin DW. Covid-19: balancing personal risk and professional duty. *BMJ*. 2020;369:m1606. Published 2020 Apr 29. doi:10.1136/bmj.m1606
14. min F, Sharif S, Saeed R, Durrani N, Jilani D. COVID-19 pandemic- knowledge, perception, anxiety and depression among frontline doctors of Pakistan. *BMC Psychiatr*. 2020;20(1):459,
15. Mrklas K, Shalaby R, Hrabok M, *et al*. Prevalence of perceived stress, anxiety, depression, and obsessive-compulsive symptoms in health care workers and other workers in Alberta during the COVID-19 pandemic: Cross-sectional survey. *JMIR Ment Heal*. 2020;7(9):e22408
16. Jessop ZM, Dobbs TD, Ali SR, *et al*. Personal Protective Equipment (PPE) for Surgeons during COVID-19 Pandemic: A Systematic Review of Availability, Usage, and Rationing [published online ahead of print, 2020 May 12]. *Br J Surg*. 2020;10.1002/bjs.11750. doi:10.1002/bjs.11750
17. Lai J, Ma S, Wang Y, *et al*. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Netw Open*. 2020;3(3):e203976. Published 2020 Mar 2. doi:10.1001/jamanetworkopen.2020.3976
18. Taghrir MH, Borazjani R, Shiraly R. COVID-19 and Iranian Medical Students; A Survey on Their Related-Knowledge, Preventive Behaviors and Risk Perception. *Arch Iran Med*. 2020;23(4):249-254. Published 2020 Apr 1. doi:10.34172/aim.2020.06
19. Raphael T. Bloomberg. Why Surgeons Don't Want to Operate Right Now. Bloomberg 2020. Available at: <https://www.bloomberg.com/opinion/articles/2020-03-24/thecoronavirus-crisis-is-putting-surgeons-at-risk-too>
20. The Lancet, COVID-19: protecting health-care workers, *Lancet* 395 (10228) (2020) 922, doi: [http://dx.doi.org/10.1016/S0140-6736\(20\)30644-9](http://dx.doi.org/10.1016/S0140-6736(20)30644-9).
21. Boškoski I, Gallo C, Wallace MB, Costamagna G. COVID-19 pandemic and personal protective equipment shortage: protective efficacy comparing masks and scientific methods for respirator reuse [published online ahead of print, 2020 Apr 27]. *Gastrointest Endosc*. 2020; S0016-5107(20)34247-4. doi:10.1016/j.gie.2020.04.048
22. Thomas JP, Srinivasan A, Wickramarachchi CS, Dhesi PK, Hung YM, Kamath AV. Evaluating the national PPE guidance for NHS healthcare workers during the COVID-19 pandemic [published online ahead of print, 2020 May 1]. *Clin Med (Lond)*. 2020;clinmed.2020-0143. doi:10.7861/clinmed.2020-0143
23. Cori L, Bianchi F, Cadum E, Anthonj C. Risk Perception and COVID-19. *Int J Environ Res Public Health*. 2020;17(9):E3114. Published 2020 Apr 29. doi:10.3390/ijerph17093114

24. Mukhtar S. Mental health and emotional impact of COVID-19: Applying Health Belief Model for medical staff to general public of Pakistan [published online ahead of print, 2020 Apr 10]. *Brain Behav Immun.* 2020;S0889-1591(20)30463-3. doi:10.1016/j.bbi.2020.04.012
25. Lai J, Ma S, Wang Y, *et al.* Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Netw Open.* 2020;3(3):e203976. Published 2020 Mar 2. doi:10.1001/jamanetworkopen.2020.3976
26. Dai Y, Hu G, Xiong H, Qiu H, Yuan X. Psychological impact of the coronavirus disease 2019 (COVID-19) outbreak on healthcare workers in China. medRxiv. 2020 Jan 1.
27. Amin F, Sharif S, Saeed R, Durrani N, Jilani D. COVID-19 pandemic-knowledge, perception, anxiety and depression among frontline doctors of Pakistan. *BMC psychiatry.* 2020 Dec;20(1):1-9.
28. Haque A, Mumtaz S, Mumtaz R, Masood F, Buksh HA, Ahmed A, Khattak O. Assessment of knowledge, perceptions and perceived risk concerning COVID-19 in Pakistan. *Journal of Epidemiology and Global Health.* 2021 Jun;11(2):186.
29. Damery S, Draper H, Wilson S, *et al.* Healthcare workers' perceptions of the duty to work during an influenza pandemic. *J Med Ethics.* 2010;36(1):12-18. doi:10.1136/jme.2009.032821
30. McDougall RJ, Gillam L, Ko D, Holmes I, Delany C. Balancing health worker well-being and duty to care: an ethical approach to staff safety in COVID-19 and beyond. *Journal of Medical Ethics.* 2021 May 1;47(5):318-23.
31. Smith MJ, Ahmad A, Arawi T, Dawson A, Emanuel EJ, Garani-Papadatos T, Ghimire P, Iliyasu Z, Lei R, Mastroleo I, Mathur R. Top five ethical lessons of COVID-19 that the world must learn. *Wellcome Open Research.* 2021;6.

Reflections on research resource allocation and data sharing as ethical dilemmas in conducting COVID-19 research

- Isaac A. Adedeji

Medical/Health Sociology and Bioethics Unit,
Department of Sociology, Olabisi Onabanjo
University, Ago-Iwoye, Nigeria

- Saheed Akinmayowa Lawal

Medical/Health Sociology and Bioethics Unit,
Department of Sociology, Olabisi Onabanjo
University, Ago-Iwoye, Nigeria

Email: sakinlawal@gmail.com

- Onyeunoneme Alexandra Odiari

Community Medicine Department, Babcock
University Teaching Hospital, Ilishan-Remo, Nigeria

- Sola Aluko-Arowolo

Medical/Health Sociology and Bioethics Unit,
Department of Sociology, Olabisi Onabanjo
University, Ago-Iwoye, Nigeria

- Ebunoluwa Oduwole

Department of Philosophy, Olabisi Onabanjo
University, Ago-Iwoye, Nigeria

Abstract

In recent years and in times past, pandemic-influenzas have negatively impacted the world. History records 1918, 1957, and 1968 as important periods when pandemic-influenzas occurred. From 2009-2010, the Swine Flu pandemic outbreak and the Ebola outbreak of 2014 show how emerging and re-emerging health threats affect people across the world having a negative impact on global health research. The ongoing COVID-19 pandemic continues to affect the entire world and distorts the process of research resource allocation, and data sharing when conducting global health research. These issues among others have become an ethical dilemma faced by researchers in conducting COVID-19 research. This article discusses how the ongoing COVID-19 pandemic limits enrollment in research due to fear and uncertainty of the harm that may be incurred. On the other hand, the allocation of resources is grossly affected becoming an ethical dilemma on who gets what, why, when, and where. Hence, there is a need for a global framework to guide research resource allocation in the event of a global pandemic. The paper concludes with the need for better data sharing across countries to help the world overcome COVID-19. More so, there is the need for countries to practice open data sharing which is beneficial to the world in the fight against COVID-19 and future pandemics

Introduction

Pandemic-influenzas have majorly originated from Asia and North America¹. History records 1918, 1957, and 1968 as important dates of pandemic-influenzas. These periods – except for the Swine Flu

pandemic outbreak of 2009-2010, were major events that contributed to the emergence of existing ethical guidelines and principles which is used to guide the nature of human subject participation in research. The Helsinki declaration (1964), Beecher's publication (1966), the National Research Act (1974), and the Belmont Report (1979) are milestones in the establishment of bioethics in global health research. Second, because epidemic influenza, though recurrent, affects only a small population, locked within geographical limits, such may not attract significant global attention to require an ethical review of the research practices. Epidemic-influenza has a regular occurrence and the ethics of doing research gain less traction and engagement amongst researchers. As such, there is a paucity of sufficient ethics-based scientific publications on large influenza outbreaks². This scarcity reinforces the short supply of evidence of ethical processes and emergent issues on large influenzas in the extant literature.

Closing the gap is essential as the COVID-19 pandemic has shown. The outbreak which began in Wuhan, China became a global pandemic in March 2020 the rate of its spread did not allow countries to have sufficient time for adequate preparation. A 2019 report demonstrated that no health system was fully prepared for a health emergency³. This unpreparedness extends to the scientific community. The pandemic significantly displaced existing processes including research, except for those testing life-saving interventions⁴. Then a race towards the development of a vaccine or drug vis-à-vis and the need to fully understand the epidemiology of COVID-19 intensified. The extent of the COVID-19 pandemic threatened the safety of researchers, research facilities, and study sites⁵. As such, process-based dynamics forced an urgent need for priority setting in research. The re-organization of research priorities, the scientific enterprise, and its associated processes of funding, data gathering, and data sharing were significantly affected by the outbreak^{4, 6}. The ethical dilemmas associated with these processes are enormous as they created challenges in terms of resource allocation to non-COVID-19 researchers and the sharing of data in the context of global politics regarding the outbreak.

As such, utilitarianism and deontological philosophical ideals as well as other humanistic principles like egalitarianism, reciprocity, and prioritization became valid perspectives in the COVID-19 discourse. However, the processes and challenges which surround the COVID-19 situation cannot be sufficiently explained based on a single theory or principle. A multi-value ethical framework is more adequate to explain the dynamics of research resource allocation, consent process, and data sharing during COVID-19. Research resource allocation was a major challenge both in terms of funding and the use of existing resources at the start of the pandemic. As such, more funding for COVID-19-related research was made available and

research facilities in Europe were converted for COVID-19 research support⁶. Due to the deadly nature of the virus and the urgency for a solution to the pandemic was needful. COVID-19 research or treatment structures were prioritized over the pre-existing public health challenges across the world. For example, in the UK, USA, France, and Spain less critical in-patient services were moved to online platforms and hospital buildings became restricted areas for the general population. Most of the health resources were focused on addressing the COVID-19 challenge.

The dynamics of resource allocation and data sharing evolved sufficiently around stakeholders like research administrators, researchers in the field, and research leaders. This is because they all have to ensure the equitable distribution and utilization of research resources. Hence, the deontological theory provides the basis for the roles and duties of these stakeholders during COVID-19. Although indeed, the stakeholders being moral agents are also subject to their rationality and humanistic orientations, the call of duty imposes a greater burden. Kantian deontology emphasizes the importance of staying bound to the cause of duty regardless of the outcomes. Deontological ethics is bound by the 'categorical imperatives to produce actions which are capable of becoming universal principles, respect for humanity by not seeing people as means to an end, but as ends in themselves, and acknowledging the human will as a universal law. Because duty is a corollary of roles and expectations, duty in itself is not free from moral conflicts. Therefore, these stakeholders had a duty to ensure that there is a balance in the way all forms of research were conducted reducing any form of disruption despite the COVID-19 pandemic. Data sharing occurs within the context of cultural, social, and political considerations. As such, existing and emerging national policies on data sharing would evolve and respond to the needs of the COVID-19 pandemic. Data sharing is one of the reference points of disease control efforts, especially as they impact the understanding of disease epidemiology. It is therefore expected of researchers as a duty to share data notwithstanding prevailing national and or cultural imperatives.

About the preceding discussions on the ethical and practical processes related to COVID-19, at the commencement of the National Institutes of Health Phase III clinical trials on the COVID-19 pandemic, it was needful to focus on the urgency of the situation thereby making some exceptions⁷ (NIH News Releases, 2020), as the outbreak was a rarity in terms of its occurrence⁸. The need to speed up research (through the ethics review process) and scale up to vaccine development is at the core of pandemic-related research⁹. Also, concerning the exigencies of conducting research during disease outbreaks, this article draws from relevant ethical viewpoints; this article engages an assessment of the ethical dilemmas regarding research resource

allocation and data-sharing, which have/are emerged-ing in the scientific enterprise of COVID-19 and other influenza research.

Research resource allocation and participation in the COVID-19 outbreak

The need for vaccines and/or drugs and providing care are two important interconnected needs that shape the landscape of resource allocation when there is a disease outbreak. Thus, in the context of an existing pandemic like COVID-19,¹⁰ the fear of becoming infected limits participation in research, and the extent of the harm incurred as a participant is worrisome. These are important ethical dilemmas that potentially affect the enrollment of participants. It also shapes the process of data collection, including the monitoring of patients and an unbiased systematization of obtained data. This occurs because patients did not present at the clinic (fearing infection), they may have to be monitored through telehealth platforms, and this led to deviation from the protocol. The prioritization of COVID-19 vaccine research to address a subsisting global health threat affected other research funding across the world. The deployment of personnel and resources to COVID-19 research resounds an ethical imbalance in the value of other researchers and the stakeholders who are involved. The ethical principle of non-maleficence was in operation to tackle the current COVID-19 research. Beyond ensuring that no harm is done to participants in research studies, such studies should not constitute harm to participants in other studies^{9,11}. There is an ethical obligation to make sure that the process of research does not cause harm to non-participants as well as other research stakeholders.¹¹ has argued from the viewpoint of competing clinical trials, and they identified the need for an explanatory framework through 'ethical criteria' which substantiates the policy of prioritizing clinical trials, bearing in mind the exigency of the need to fast-track vaccine development. The need to speed up ethical reviews and prioritize specific clinical trials for vaccine development became important. This functioned better through an integrative process, wherein an 'ethics preparedness' structure was established¹².

In China, research protocols submitted during the COVID-19 outbreak show that more than 50% of the requests for Ethics Committee approval were based on interventional studies¹³. Other major types of studies were observational and diagnostic studies. These studies conformed to the core values of human subject research,¹⁴ drawing extensively from the Belmont Report (1978), which emphasized four important ethical principles – beneficence, non-maleficence, respect for persons, and justice. However, because of the unique nature of research in emergency settings, principlism (also emergent

upon the Belmont Report), occurs as an engagement of professional deontology which relates to on-the-spot assessment and decision-making by the individual researcher. In the coordination of the research process, important ethical issues constitute the basis for rejecting or requesting a review of COVID-19-related protocols in China. As such in¹³ it was reported that some protocols were rejected because they lacked scientific merit and possessed more than minimal risk. Protocols that were sent for revision needed to address statistical justification for sample size determination, inclusion and exclusion criteria, and most of the protocols required a clear description of risks and the need to ensure a risk-benefit balance about compensation.

In Africa, a duo of French scientists alluded to the possibility of vaccine trials. But as a COVID-19 research agenda brewed dissatisfaction, especially among African Scientists. References were made to past experiences of Africans. More recently were previous ethical challenges that were recorded during the Ebola vaccine trials. At the beginning of the COVID-19 pandemic, the commencement of vaccine trials in Africa needed to be properly justified as the ethical frameworks which discuss the idea of fairness have not been satisfied. Utilitarian (benefit for the most people), prioritarian (first-come-first-serve), egalitarian (equality of risks) and reciprocity (social contract) do not sufficiently align with the agenda to locate vaccine trials in Africa. In the early weeks of the pandemic in 2020, Africa did not have the highest number of reported cases; the outbreak did not first occur in Africa, it was the last region to be affected. Hence there was no moral basis for reciprocity between Africa and the rest of the world, and Africa's relationship with the West remains skewed. As such, there is no basis for reciprocity.

Data sharing and the intricacies of the COVID-19 outbreak

In the wake of the COVID-19 outbreak, the World Health Organization had expressed concerns, that countries were not sharing in-country data from the outbreak¹. In terms of data sharing and its potential to strengthen the frontiers of research, a hegemonic structure exists in the context of the world system. There are underlying cultural interpretations regarding the challenge of data-sharing. The value of 'protecting honour' and 'avoiding shame' and not being perceived as weak or inadequate is at the core of data sharing¹⁵. It is important to share data without compromising the confidentiality and privacy of the primary owners of the data. In outbreak situations, the limits of confidentiality and privacy are permissibly extended due to the need for contact tracing and follow-up. However, the limits

¹ <https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-mission-briefing-on-covid-19---26-february-2020>

and extenuating possibilities have to be firmly established at the point of entry into the research.

Amid the COVID-19 research upheaval, it is imperative to introduce an 'ethics preparedness' approach¹². This idea is built upon the need to facilitate a rapid and ethically sound review process through collaborative engagements across national, multi-country, and oversight structures. In China, forty-one (41) protocols were reviewed in 29 days¹³ surpassing the twenty-seven (27) reviews in 12.4 days, done by the ethics committee of the Médecins Sans Frontières during the Ebola crisis. It is imperative to develop structures that will essentially build on existing emergency-oriented ethical frameworks for research to make COVID-19 research mo

Participants	20
Teachers	11
IT Teachers	1
German Literature Teachers	1
Gymnastics Teachers	1
Arts Teachers	2
French Literature Teachers	1
Music Teachers	1
Psychologist	1
Coordinators	1

re ethically sound and acceptable.

Conclusion

In the conduct of COVID-19 research, investigators must be able to manage the available research resources for COVID-19 and other research as the global challenge of research resource allocation continues to persist due to the current pandemic. Also, the entire ethical review process must be strengthened to enable researchers to deliver timely and well-conducted research to address the current pandemic and future outbreaks. Lastly, the need for countries to practice open data sharing across borders is paramount to ensure that the negative implications of COVID-19 are addressed globally.

Acknowledgements

The research reported in this publication was supported by the Fogarty International Center and National Institute of Mental Health, and the National Institute on Aging (NIA) of the National Institutes of Health under Award Number D43 TW010543. The content is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health.

References

1. Saunders-Hastings PR, Krewski D. Reviewing the history of pandemic influenza: Understanding patterns of emergence and transmission. *Pathogens* (Basel, Switzerland). 2016; 5(4): 66. doi:10.3390/pathogens5040066
2. Flahault A, Zylberman, P. Influenza pandemics: past, present and future challenges. *Pub Heal Rev.* 2010; 32: 319-340. doi:10.1007/BF03391605
3. Elliott, D. These are the countries best prepared for health emergencies (Vol. 2020): *World Economic Forum.* 2020. Retrieved from <https://www.weforum.org/agenda/2020/02/these-are-the-countries-best-prepared-for-health-emergencies/>.
4. Weiner DL, Balasubramaniam V, Shah SI, Javier JR, & on behalf of the Pediatric Policy C. COVID-19 impact on research, lessons learned from COVID-19 research, implications for pediatric research. *Pedia Res.* 2020; 88(2): 148-150. doi:10.1038/s41390-020-1006-3
5. Chukwuma KH. Fieldwork and the Coronavirus Pandemic. *E-International Relations.* 18 April 2020. 2020. Retrieved from: <https://www.e-ir.info/2020/04/18/fieldwork-and-the-coronavirus-pandemic/>
6. Inchcombe S. Understanding better the impact of COVID-19 on the research enterprise. *Springer Nature.* 2020. Retrieved from: <https://www.springernature.com/gp/advancing-discovery/blog/blogposts/understanding-impact-of-covid-on-research-enterprise/18253260>
7. National Institutes of Health. Phase 3 clinical trial of an investigational vaccine for COVID-19 begins - Multi-site trial to test candidate developed by Moderna and NIH. *News Releases.* 27 July 2020. Retrieved from: <https://www.nih.gov/news-events/news-releases/phase-3-clinical-trial-investigational-vaccine-covid-19-begins>
8. World Health Organization. WHO Handbook for Journalists: Influenza Pandemic. 2005. Retrieved from https://www.who.int/csr/don/Handbook_influenza_pandemic_dec05.pdf
9. Chong SA, Capps BJ, Subramaniam M, Voo TC, Campbell AV. Clinical Research in Times of Pandemics. *Pub Heal Ethics.* 2010; 3(1): 35-38. doi:10.1093/phe/phq005
10. Vaidya M, Castaneda R. Covid-19: Experts say clinical trials may be affected from enrolment to data analysis. *GlobalData Healthcare.* 2020. Retrieved from Retrieved from: <https://www.clinicaltrialsarena.com/comment/covid-19-trials-enrollment-data-analysis/>
11. Gelinias L, Lynch HF, Bierer BE, Cohen IG. When clinical trials compete: Prioritising study recruitment. *Jour Med Ethics* 2017; 43(12): 803-809. doi:10.1136/medethics-2016-103680
12. Saxena A, Horby P, Amuasi J, Aagaard N, Köhler J, Gooshki ES, . . . the, A.-W. H. O. W. (2019). Ethics preparedness: facilitating ethics review during outbreaks - recommendations from an expert panel. *BMC Med Ethics.* 2019; 20(1): 29. doi:10.1186/s12910-019-0366-x
13. Zhang H, Shao F, Gu J, Li L, Wang Y. Ethics committee reviews of applications for research Studies at 1 hospital in China during the 2019 novel coronavirus

- epidemic. JAMA. 2020; 323(18): 1844-1846. doi:10.1001/jama.2020.4362
14. Beauchamp TL, Childress JF. Principles of biomedical ethics. (7th Edition). Oxford: Oxford University Press; 2013.
15. Lor A, Thomas JC, Barrett DH, Ortmann LW, Herrera Guibert DJ. Key ethical issues discussed at CDC-Sponsored international, regional meetings to explore cultural perspectives and contexts on pandemic influenza preparedness and response. International Journal of Health Policy and Management. 2016; 5(11): 653-662. doi:10.15171/ijhpm.2016.55

Chief Editor: Darryl R.J. Macer

Associate Editor: Nader Ghotbi

Editorial Board: Akira Akabayashi (Japan), Sahin Aksoy (Turkey), Martha Marcela Rodriguez-Alanis (Mexico), Angeles Tan Alora (Philippines), Atsushi Asai (Japan), Alireza Bagheri (Iran), Gerhold Becker (Germany), Rhyddhi Chakraborty (India/UK), Shamima Lasker (Bangladesh), Minakshi Bhardwaj (UK), Christian Byk (IALES; France), Ken Daniels (New Zealand), Ole Doering (Germany), Amarbayasgalan Dorjderem (Mongolia), Hasan Erbay (Turkey), Soraj Hongladarom (Thailand), Dena Hsin (Taiwan), Rihito Kimura (Japan), Abby Lippman (Canada), Umar Jenie (Indonesia), Nobuko Yasuhara Macer (Japan), Masahiro Morioka (Japan), Anwar Nasim (Pakistan), Jing-Bao Nie (China, New Zealand), Pinit Ratanakul (Thailand), Qiu Ren Zong (China), Hyakudai Sakamoto (Japan), Mariadoss Selvanayagam (India), Sang-yong Song (Republic of Korea), Yanguang Wang (China), Daniel Wikler (USA), Jeong Ro Yoon (Republic of Korea).

EJAIB adopts and complies with the Committee on Publication Ethics (COPE) **Publication ethics and malpractice policy**. Our policy is on the EJAIB website. All potential authors should have read these guidelines and by submission of an article for publication you acknowledge that you have complied with this policy. Violations will be handled in proportion to the intention and seriousness of the violation. If there is a conflict of interest stated by the authors of an article it will be written in the paper.

Registered address of EJAIB: P.O. Box 16 329, Hornby, Christchurch 8441, New Zealand

Editorial address, and all correspondence to:

Prof. Darryl Macer, Ph.D., Hon.D.

President, American University of Sovereign Nations (AUSN),

<https://www.ausovereignnations.org>

Email: darryl@eubios.info

For forthcoming conferences see:

www.eubios.info or www.ausn.info

International Public Health Ambassadors

[https://www.ausovereignnations.org/](https://www.ausovereignnations.org/international_public_health_ambassadors)

international_public_health_ambassadors

Email to: provost@ausn.info

Thank you for those who have renewed their subscriptions to EJAIB and looking forward to meeting you in person at the ABC22 Conference in Kuala Lumpur, Malaysia, 15-17 May 2023!

ASIAN BIOETHICS ASSOCIATION MEMBERSHIP 2023

and 2023 subscription to Eubios Journal of Asian & International Bioethics (*EJAIB*)

___ I wish to pay my annual membership fees of Asian Bioethics Association (ABA), and receive the 2023 issues of *Eubios Journal of Asian and International Bioethics (EJAIB)* (The Official Journal). Regular Price: US\$160 Euro 120 ¥18000 (=Credit card price NZ\$200)

___ I do not require the hard copy of *Eubios Journal of Asian and International Bioethics (EJAIB)*.

___ I wish to make a reduced contribution and register as a member of Asian Bioethics Association I understand that I should be satisfied with Internet access to *Eubios Journal of Asian and International Bioethics (EJAIB)* <<http://eubios.info/EJAIB.htm>>.

___ I wish to make a donation to Eubios Ethics Institute of _____

___ Exchange subscription with journal, newsletter, etc.
(Name _____)

___ I agree / ___ do not agree to my name being listed on the ABA www site. List Research Interests to be included:

Send an E-mail with your address to: E-mail: darryl@eubios.info and the details for bank account payment, Paypal or Western Union will be provided.

Name:

Mailing address:

E-mail:

Web site: <<http://eubios.info/ABA.htm>>