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Original Article

The role of IRBs in the Climate Change Response in the Field of Health and Climate Research

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Abstract: Many discussions have been held on the impact of climate change, infrastructure development, minimizing displacement, and resilience in developing countries, including Bangladesh. Climate change is one of the risk factors for vulnerability. Nevertheless, the role of the IRB (Institutional Ethics Board) regarding climate change issues during protocol review is lacking. Currently, the Bangladesh Bioethics Society (BBS) has organized workshops on IRB and climate change in health research. This initiative represents a new episode for Bangladesh. This article highlights information about the current awareness programme that may be of interest to readers, and the policy guidelines. The perceptions and expectations of IRB members regarding workshops were captured through qualitative assessments to improve future workshops on climate change.

Key words: IRB, EC, health research, climate change, bioethics

Introduction: The global health system is based on the germ model, emphasizing disease diagnosis, treatment, and prevention[1]. The concept of the germ model was developed to eradicate the cholera outbreak in England in 1854. A concept was hypothesized that the

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germ is the main culprit of health risks and the main cause of disease [2]. "Eradicates germs, eradicate disease" motto has influenced the advancement of various ethical guidelines of modern medicine and research[1]. However, the current ethical understanding suggested that the well-established germ model no longer applies effectively in modern medicine in the context of climate change[1].

Critics argue that the germ model inadequately addresses the social, environmental, and structural determinants of health, which are increasingly influenced by global climate change[1,3]. Studies showed that rising global temperatures, biodiversity loss, and environmental degradation contribute to the spreading of infectious diseases, malnutrition, and extreme weather events that directly and indirectly impact human health[4]. The pandemic of COVID-19, Ebola, and Zika, Bird Flu highlights the critical links between environmental degradation, wildlife habitats, and human health [5]. Simultaneously, urbanization and deforestation contribute to the rise of vector-borne diseases, such as malaria and dengue fever, highlighting the complex interplay between environmental changes and public health[6]. The impact of climate change on human health has been well documented in the IPCC (Intergovernmental Panel on Climate Change) report [7].

However, according to the WHO (World Health Organization), the risks associated with temperature rise to 1.5°C by 2030 are not well projected [8]. Although the research of sciences and technologies, and health systems contribute approximately 5% of global greenhouse gas emissions[9] yet, total greenhouse gas emissions pose risks of extreme weather events, heatwaves, air pollution, storms, vector-borne diseases, water scarcity, biodiversity loss, etc. for planetary and individual health, including mental health[10]. These ecological stressors disproportionately affect vulnerable populations, including those in low- and middle-income countries (LMICs), who often lack resources and infrastructure to adapt to such challenges [11].

From an ethical perspective, the germ model has been criticized for failing to address global justice, equity, and solidarity issues in the healthcare delivery system, particularly in climate change. Discussions among IRB members at the World Summit of Ethics Committee, a WHO satellite meeting, revealed that current international frameworks only partially address the challenges of climate change[12]. Likewise, the Global Forum on Bioethics Research (GFBR) highlighted that the ethics of climate change were not adequately applied to health research[13] and emphasized the need for ethical frameworks that integrate climate change in health research governance for equitable outcomes[14]. The IRB plays an important role in scrutinizing the risks and burdens faced by human research participants to protect their rights, dignity, and welfare. How IRBs address research on climate change issues remains a big question, as there is no awareness and capacity-building of IRB members on this shift. Therefore, the Bangladesh Bioethics Society organized sensitization and capacity enhancement workshops on climate change in collaboration with RHOPHY (Right to Open Future) and Université Libre de Bruxelles (ULB), Belgium. This article highlights the perception and anticipation of the participants regarding these workshops.

Methodology: This qualitative study involved an in-depth interviews. Workshops included ten IRBs, selected randomly from the non-government medical colleges/institutes in Bangladesh. Six participants from each IRB were selected purposively. A total of 6X10=60 IRB members were designated for the workshops. Among them, certain IRB members were randomly nominated for in-depth interviews to capture their perceptions and expectations of the workshop after the training programme. The interview lasted for 30 minutes each. Thematic analysis was done using NVivo (Version 15). Ethical clearance was obtained from the Ethics Committee of the Bangladesh Bioethics Society; the ethical clearance no. was 2025/0004-36/2025. The report of the Bangladesh Bioethics Society (BBS) on workshops was also evaluated.

Results and Discussion: A two-day workshop entitled "*Sensitization and Capacity Enhancement of Ethics Committee (EC) in Bangladesh on Climate Change-Related Ethical issues and Health Research*" was organized by Bangladesh Bioethics Society in collaboration with Université Libre de Bruxelles (ULB), Belgium, funded by World Health Organization, Geneva, on 19 and 26 April, from 9 am to 2 pm at Army Gulf Club, Karmitola, Dhaka Figure 1 and 2 shows the opening and closing session of the programme.

Figure 1 shows the opening ceremony of programme (N=30).

Figure 2 shows the closing of the programe of workshops (n=30).

Table 1 highlights the attended medical college/institute of workshops. Of 87 % participants, were physicians. 10% had a medical background, physiotherapists in their profession, and 3% participants had a science background.

BBS President Prof. Dr. Taslima Monsoor, retired Professor, Department of Law, Dhaka University and Professor and Advisor, Department of Law, AIUB said, "*BBS was established in 2009 under the auspices of the Regional Unit for Social and Human Sciences in Asia and the Pacific, UNESCO, Bangkok, and UNESCO Dhaka. It was launched to promote strong ethical values, ethical practice, and morality among various stakeholders. As a pioneer of bioethics, BBS endorses the UNESCO Declaration of Ethical Principles on Climate Change (Table 2). She felt that 60 ethics committee members were not enough for sensitization on these new and important issues of climate change. Awareness and capacity of all IRBs in Bangladesh were required".*

Discussing different national and international guidelines for human protection, including the IPCC on human health and the UNESCO Declaration of Ethical Principles for Climate Change (Table 2). Professor Dr. MA Shakur, Chairman of Physical Medicine and Rehabilitation, Bangladesh Medical University (BMU) and Chairman of ERC, BBS said, "*In fact, Declaration of Helsinki (DoH) and the CIOMS (Council of International Organizations of Medical Sciences) guidelines was based on the germ model. The DoH aims at the responsibility of physicians towards participants, and the CIOMS guidelines aim at the participation of community people in health research. The guidelines have not mentioned climate change in health research.*

Table 1: Selected IRBs for the workshops.

1. National Heart Foundation of Bangladesh
2. Ibne Sina Medical College
3. Enam Medical College
4. Bangladesh Bioethics Society (BBS)
5. Universal Medical College
6. TMSS Medical College
7. Ibrahim medical College
8. Bangladesh Health Professions Institute (BHPI), CRP
9. Bangladesh Medical College
10. Bangladesh University of Health Sciences

Table 2 UNESCO Declaration of Ethical Principles in relation to Climate Change[15]

- Prevention of harm
- Precautionary approach-
- Solidarity
- Scientific knowledge in decision-making
- Equity and justice
- Sustainable development

According to the GFBR, climate change poses unique ethical dilemmas for health research, particularly in determining whose health needs are prioritized, whose voices are represented, and whose data are used to inform global health policies[14]. Historically, research agendas have often sidelined the health concerns of LMICs, focusing instead on the priorities of high-income nations. Knowledge gaps and lack of accessibility to advanced technologies might raise concerns about identifying health inequalities mediated by climate change, and in understanding the impact of climate change on health. In parallel, the WHO Ethics Committee has suggested international guidelines that address the dual challenges of climate change and health discrimination [16]. This proposal might establish a global standard of health policies and research, focusing on sustainability, intergenerational equity, and global solidarity.

Turna Mithila, PhD fellow of Nevada, Reno, USA projected that *vulnerable populations, including those in low and middle-income countries, marginalized communities, and indigenous groups, face the most significant health risks from climate change*.

However, studies show that the traditional germ model cannot address the disparities that make these populations more vulnerable[17]. Rising temperatures, extreme weather events, and the depletion of natural resources have significant consequences for human health, particularly in vulnerable populations[18]. For instance, climate-induced food insecurity leads to malnutrition and stunted growth in children, while changing weather patterns increase the spread of vector-borne diseases such as malaria and dengue fever[19]. Therefore, addressing these inequities through comprehensive, climate-sensitive health interventions is urgent.

Shamima Parveen Laskar, Professor of Anatomy, Secretary General of Bangladesh Bioethics Society, said, "*Traditionally, the germ model is not connected to the lifestyle of the individual associated with the problem of climate change".*

Still, literature displayed limited capacity of modern medicine to respond to the complex, systemic challenges posed by climate change,

Table 3: Perception of participants.

1. Participants compare the current workshop to previous workshops on IRB that they attended.
2. Participants enjoy the subject matter on climate change.
3. Climate change was a new concept for the IRB.
4. Participants were aware of climate change issues.
5. Participants talked about the climate change issue outside the IRB.
6. The participants wanted to learn the traditional methods of IRB composition, function. How to review a protocol, etc., along with the new concept of climate change in the IRB.
7. No protocol reviewed yet on environment and climate change issues in the IRB.
8. Ethical dilemmas in handling the climate issue in IRB.
9. Cannot well understand how to deal with the ethical issues specially privacy, minimizing harm, and informed consent, in the protocol of climate change.
10. Handling the climate change issues requires sound research ethics.
11. Agreed that climate change has a tremendous effect on health and should be incorporated climate change in the IRB guidelines.
12. This programme made them aware of climate change, but no scope to implement it in the current guidelines.
13. This programme was a good initiative to provide new ideas.
14. PPP should be provided.
15. Food and facilities were satisfactory.

As it fails to account for the interdependence of human, animal, and environmental health[20].

Moreover, the germ model approach is also mainly reactive, focusing on curative measures rather than preventive strategies, considering climate resilience and adaptation. This adaptation might underscore the health inequities and undermine efforts to achieve sustainable, equitable health outcomes[21]. As climate change intensifies, the health impacts have become more layered and multifaceted, requiring solutions beyond biology and individual care[22]. The interdisciplinary strategies based on the identified concerns may upgrade environmental sustainability, social justice, and public policy.

However, in our research, during the workshops, participants were requested to write an article on climate change and IRB. Only 4 IRB submitted the articles. Of 60% non-submission indicated that the subject matter of this programme's was new and a little different from the traditional methods of IRB learning.

In an in-depth interview, also highlight the same perception of IRB Members. They wanted to learn the traditional methods of IRB, such as composition, function, how to review a protocol etc., along with the new concept of climate change and IRB (Table 3). Some participants specified that handling the climate change issues requires sound research ethics (Table 3). Voice of the participants in the qualitative part consisted of more females (70%:30%) than males. Most of them were Professors (60%), followed by Associate Professors (20%), and Assistant Professors (20%), respectively (Table not shown).

Table 4 shows the expectations of the participants. More than half of the participants (60%) proposed the requirements of expert reviewers for reviewing the protocol of climate change. Therefore, they need more workshops regarding climate change and IRB to grasp the subject matter. However, most of the participants (70%) felt that video and case studies should be included in the workshops instead of a lecture only (Table 4). Participants (70%) also need operationalization of ethical issues, such as privacy, confidentiality, risk minimization, vulnerability, and informed consent, which are required in the context of climate change. Most of the participants (80%) emphasized the involvement of different types of stakeholders at the community level in climate health research.

Table 4: Expectation of the

1. Need more workshops regarding climate change and IRB to grasp the subject matter.

2. A three days long duration of workshop is desirable.

3. Not only a lecture-based workshop.

4. Video, case study, and practical example are desirable.

5. Expert reviewers needed to review the protocols.

6. Operationalization of ethical issues, such as privacy, confidentiality, risks and benefits, vulnerability, and informed consent, is required in the context of climate change.

6. Different types of stakeholders at the community level need to be involved in ethical research processes in climate research.

7. An interdisciplinary ethical approach is advocated in health research.

8. Guidelines of the IRB need to be changed to handle the climate issues.

Conclusion: Workshops were more inspiring and motivating to the participants. It is the first-hand introductory workshop on climate change for them in Bangladesh. Need more interactive workshop methodology with a longer duration of time to bridge the new concepts of climate change and IRB.

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