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# Ethical Issues on Environmental Health Study

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## Abstract

**Purpose:** Adequate public input and participation in environmental health research must be provided to ensure accurate results from studies involving human exposure to potentially hazardous substances. By addressing these ethical issues associated with environmental health research, this study can help reduce risks for individuals participating in studies and whole communities affected by their impactful findings. **Research design, data and methodology:** The current research should have followed the rule of qualitative textual research, searching and exploring the adequate prior resources such as books and peer-reviewed journal articles so that the current author could screen proper previous works which are acceptable for the content analysis. **Results:** The current research has figured out four ethical issues to improve environmental health study as follows: (1) Lack of Guidance for Collecting and Utilizing Data Ethically, (2) Insufficient Consideration Is Given to Vulnerable Populations When Conducting Studies, (3) Unclear Standards Exist for Protecting the Privacy Of Participant's Personal Information, and (4) Conducting Socially and Religiously Acceptable Research in Various Communities. **Conclusions:** This research concludes that future researchers should consider implementing anonymization techniques where possible so that findings are still accessible, but the risk posed by disclosing identifying information remains minimized during the analysis/publication stages.

**Keywords :** Environmental Health, Research Ethics, Green Behavior

**JEL Classification Code:** C02, C35, O35

## 1. Introduction<sup>2</sup>

R Environmental health is an important aspect of public health which mainly focuses on recognizing and preventing environmental factors that may adversely affect human health. The description includes a range of regulatory and control activities that help conserve the environment (Yassi et al., 2001). The result end is a more conducive environment for human beings to thrive in and live healthily. These controls and regulations involve limiting environmental contaminants, managing natural resources,

promoting healthy built environments, providing safe drinking water, and reducing air pollution levels. Legislations are also crucial in protecting the environment and the people who live in it (Conti et al., 2021). Despite these efforts to protect populations against potential harm from environmental exposures, ethical issues continue to arise in the study and implementation of policies related to environmental health.

One such ethical issue is balancing individual rights with public good when it comes to regulating substances or behaviors that negatively impact human health or the

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environment. For example: Should smokers be allowed their right to smoke if it causes secondhand smoke exposure for others? How does one decide what type or level of exposure should be considered safe for those living near hazardous waste sites? Another issue is ensuring equitable access regarding who benefits from improved environmental conditions due to socioeconomics. This includes affluent neighborhoods getting preferential access to clean air protections while people living in poorer communities are left with higher levels of contaminants which can increase the risk of diseases like cancer and other illnesses caused by pollutants present atmosphere. Such disparities can also lead to increased healthcare costs as those exposed to less expensive preventive measures may experience more severe consequences, leading to costly medical interventions later in life and earlier death than expected age range individuals same demographic group who had better protection start with.

A third concern involves conflicts of interest between industry government agencies tasked with protecting the environment while recognizing the need for industry growth, jobs creation revenue generation area they serve the community as a whole. These stakeholders must navigate complex tradeoffs to ensure adequate regulations reduce risks without placing an unreasonable burden on businesses preventing them from economically viable long-term basis producing goods and services society needs. This kind of research requires scientists' investigators to consider deeply ingrained values surrounding a given subject matter before making recommendations, policy changes, and possible solutions to problems posed research project itself since part process is understanding the involved parties' positions therein in order to craft a strategy accordingly designed benefit all parties equally much possible situation at hand.

Unfortunately, there are still many ethical issues that remain unresolved. For example, researchers lack guidance for collecting and utilizing data ethically; insufficient consideration is given to vulnerable populations when conducting studies, and unclear standards exist for protecting the privacy of participants' personal information. In addition, potential misuse or misinterpretation of results by industry or other stakeholders can occur if appropriate communication between researchers, local communities, and government agencies does not take place. Finally, adequate public input and participation in environmental health research must be provided to ensure accurate results from studies involving human exposure to potentially hazardous substances. By addressing these ethical issues associated with environmental health research, this study can help reduce risks for individuals participating in studies and whole communities affected by their impactful findings.

## 2. Literature Review

The previous work discussed environmental health as a branch of public health that focuses on protecting people from environmental hazards and risks. The book successfully identifies what is needed to prevent, assess, control, and manage environmental diseases. Environmental health looks at both natural environments (forestry, water sources) as well as built environments (urban centers) (Moeller, 2011). The article identifies that common areas of concern in environmental health include air pollution, water contamination, and sanitation issues. Moreover, there is also a great emphasis on radiation exposure which can lead to poisoning, indoor air quality issues such as mold contamination or poor ventilation, food safety concerns, and the promotion of hygiene practices. Moeller (2011) also identifies that there is currently a great war against unsafe agricultural practices that may result in food-borne illnesses and low quality of life for individuals. Environmental factors can also contribute to a variety of health and physical conditions negatively affecting the quality of human life.

These conditions include allergies, asthma attacks, and various n cancers (Kagan, 2003). Environmental Health Professionals work with governments and local state/provincial levels in order to protect communities from exposure to environmental hazards. Through developing regulations around industrial practices and ensuring the environment is ever protected, cases of environmental hazards have been reduced significantly. Moreover, conducting risk assessments, sampling, and analysis campaigns help achieve public education campaigns which are usually crucial in informing community members about how they can take steps to protect their own personal well-being while living within an area.

Sharp (2003) explains the various ethical implications and issues that may arise in environmental health research. The complexity of environmental health usually involves complex study designs, methodologies, and sensitive topics (Keune, 2012). The field is connected with social concerns about the environment; hence, ethical issues are inevitable. The methods involved may also affect communities differently, offering another challenge and ethical concern. Different communities must be approached in different ways with an understanding of the needs and norms of each community (Israel et al., 2005). The primary ethical concern in this type of research is the potential for harm or exploitation of vulnerable populations involved. Subjects may not fully understand or appreciate the possible risks of HER study participation (Ragas, 2011). This might be unable to give informed consent due to language barriers, cognitive impairments, etc., making them particularly vulnerable to exploitation through experiments conducted without adequate safeguards (Sharp, 2003). To avoid such

scenarios, researchers must adhere to rigorous standards when recruiting participants and obtaining informed consent forms that provide explicit knowledge of the nature and purpose of their study as well as potential risks involved before any data collection begins (Flory et al., 2004). Another major issue facing environmental health researchers is confidentiality protection for participants' medical records or other personal data collected during studies (Sharp, 2003). Alongside ensuring participant anonymity throughout all phases of a project (including publication), this necessitates stringent protocols governing how participant data can be accessed by third parties - including other researchers - in order to ensure privacy compliance throughout its lifecycle management process (from initial collection through eventual destruction/archiving). A final important ethical consideration relates to conflicts of interest between investigators conducting environmental health studies and outside organizations funding these projects (e. g. corporations). This can lead to bias if sponsors attempt to push agendas that favor their own interests while overlooking public safety concerns or overall benefits/risks associated with specific interventions being studied; thus, it's important for scientists conducting such research to remain independent from those external sources which could potentially skew results one way another.

The article "Ethical issues in international environmental health research (EHR)" by Lavery et al. (2003) discusses environmental health research ethical concerns in an international context. The article identifies that environmental risks are experienced disproportionately by people all over the world. Developing countries face different challenges when compared to either poor or developed countries. Since the research highly depends on human subjects in order to get the most accurate analysis and assessment. Environmental health researchers must understand various ethical issues that may impede research at an international level (Lavery et al., 2003). Ethical concerns internationally may arise in the documentation process of participants involved in environmental studies. Moreover, the biological responses of these participants are often overlooked. The unavoidable risks associated with EHR offer ethical concerns on how to handle them (Lavery et al., 2003). Researchers are often left in a dilemma on what to compromise when dealing with different communities. Moreover, what is acceptable in various communities may be detested in other communities. In order to successfully research the issue, community partnerships are needed, which also poses a risk of ethical issues arising if these partnerships go wrong (Haynes et al., 2011). Political interests also not only hinder EHR but also lead to ethical concerns and risks.

With the emergence of the internet, it is important to

acknowledge that it can be used as a means of research. Nonetheless, using the internet as a means of research is still in its infancy stages, with a lot of biases involved (Rodham & Gavin, 2006). The research is inaccurate, and the data retrieved from the internet is not always as accurate as traditional research methods. There is a lack of evident frameworks on how one can utilize the research and data they retrieve from the internet for research purposes. The internet may also expose participants to the risk of getting their information leaked out to unauthorized personnel (Rodham & Gavin, 2006). This goes against the ethical laws that protect participant data.

Vulnerable populations include communities that have limited access to resources and mostly live in poor conditions. It is evident that when researching such communities, it is crucial to ethically make special considerations since they are disproportionately affected compared to other communities. These communities or populations may include those with physical and mental disabilities, older people, and pregnant women (Soskolne, 1997). These groups can be particularly vulnerable to environmental exposures due to a variety of factors such as economic disadvantage, lack of knowledge or understanding about risks associated with a given exposure, physical limitations, or susceptibility due to age or disability status (Soskolne, 1997).

As a result, their needs should be explicitly taken into account when conducting any environmental health study so that an accurate assessment can be made regarding the effects on these groups specifically. Unfortunately, though this is not always done effectively, these groups are often excluded from environment-related studies altogether, even though they may be disproportionately affected by certain exposures (e.g., lead poisoning in low-income housing). There is also evidence suggesting that some vulnerable communities may experience higher rates of environmental hazards due in part because they tend not to have access to necessary resources for preventative measures like proper waste disposal systems, for instance, which could reduce the risk associated with hazardous waste materials penetrating their living spaces. That's why researchers need to consider any potential biases towards vulnerable populations when developing study designs and provide them adequate representation within sample sizes so results will reflect realities faced by these types of people accurately. This can all help ensure findings will benefit most relevant population segments adequately while helping avoid possible disparities between different social classes, too, if done properly.

### 3. Results in the Literature

#### 3.1. Lack of Guidance for Collecting and Utilizing Data Ethically

The lack of guidance for collecting and utilizing data ethically is a major concern among researchers when conducting environmental health research. This lack of guidance could lead to many ethical violations, such as exploiting vulnerable populations or leaking confidential information. According to the study (Rodham & Gavin, 2006), there are no evident frameworks in place for using the internet to collect qualitative research data, leaving many researchers uncertain about how best to proceed with safely conducting studies online (Sugiura et al., 2017). Furthermore, Lavery et al. (2003) identified that political interests could sometimes impede international environmental health research (EHR), resulting in ethical issues arising during study design and implementation processes. In order to avoid such risks associated with EHR projects, all stakeholders involved must adhere strictly to rigorous standards (Collier et al., 2015).

This starts when recruiting participants and also when obtaining informed consent forms while ensuring participant anonymity throughout all phases - including publication. Moreover, strict protocols governing access control over participant data must be established by third parties like other researchers. Security compliance should always adhere, as discussed by the prior study (Karie et al., 2021), which involves the careful protection of participants' data from unauthorized access. Moreover, there should be regulations that address any potential biases towards vulnerable populations who might not have access to necessary resources for preventative measures during study designs so results will reflect realities faced by those people accurately, too, once finalized correctly. This can help ensure findings will benefit most relevant population segments adequately while helping avoid possible disparities between different social classes if done properly (Kagan, 2003).

#### 3.2. Insufficient Consideration Is Given to Vulnerable Populations When Conducting Studies

Environmental health research can benefit society when conducted correctly and ethically. Unfortunately, there is evidence that insufficient consideration is often given to vulnerable populations when conducting environmental health studies. These vulnerable populations include those with physical or mental disabilities, older people, and pregnant women who may be disproportionately affected by certain environmental exposures. This is majorly due to economic disadvantages and lack of knowledge about risks

or physical limitations (Soskolne, 1997; Benevolenza et al., 2019). A slight climate upset could risk vulnerable populations' health (Akerlof et al., 2015). As a result of this insufficiency in consideration for these groups, they are not always adequately represented in sample sizes leading to an inaccurate assessment of their exposure levels as well as possible disparities between different social classes (Haynes et al., 2011). Furthermore, some communities may have limited access to resources, affecting their ability to take preventative measures (Benevolenza et al., 2019). These include proper waste disposal systems that could help reduce the risk of hazardous materials penetrating living spaces (Sexton et al., 1999). Therefore, researchers must consider any potential biases towards these groups when designing study protocols so results accurately reflect the realities they face regardless of socioeconomic status. This will ensure findings benefit relevant population segments appropriately while avoiding potential disparities between different social classes, too, if done properly.

#### 3.3. Unclear Standards Exist for Protecting the Privacy Of Participant's Personal Information

The privacy of participants' personal information is an important ethical concern in environmental health research. Unfortunately, no clear standards outline the best practices for protecting the data of individuals involved in these studies. While governments and other public bodies may set certain laws or regulations to protect participants' rights, there is not always adequate enforcement of such rules or consistent guidance on how to effectively protect participant privacy when conducting environmental health research. This can be a particular issue when involving vulnerable populations with language barriers that limit research (Kang & Hwang, 2020).

Moreover, a lack of access to resources could allow them to understand potential risks associated with participating in a study (Ragas, 2011). As such, it is important for researchers conducting EHR studies to develop stringent protocols concerning how participant data will be collected and stored throughout the course of their project - from initial recruitment through eventual archiving/destruction - as well as mandating rigorous informed consent forms that provide detailed knowledge about the nature and purpose of their study before any data collection begins (Keune, 2012). Researchers should also consider implementing anonymization techniques where possible to minimize any risk (Murthy et al., 2019).

This involves disclosing identifying information during analysis/publication stages while still allowing relevant stakeholders access to needed insights gleaned from said research; this could help prevent potentially exploitative scenarios while simultaneously allowing results to benefit

the broadest number of people they were intended to without introducing extra bias into the equation either.

### 3.4. Conducting Socially and Religiously Acceptable Research in Various Communities

When conducting environmental health research, it is important to consider the ethical implications of any data collection methods used. This is especially true when working with vulnerable populations or communities who have different social and religious norms than other areas. In order to ensure that the data collected maintains respect for those groups, researchers should take extra care in approaching their studies ethically while still providing valid, evidence-based results (Farashahi et al., 2005; Newing et al., 2010). One way this can be achieved is through utilizing community partnerships that understand and appreciate the cultural values of each group being studied (Israel et al., 2005).

Through building these relationships, researchers can strive to introduce methods such as focus groups or interviews that are acceptable within specific religions while also effectively uncovering valuable information on how environmental hazards impact those involved (Ragas, 2011). Additionally, before beginning any research project involving human subjects, researchers must obtain informed consent forms from all participants explaining potential risks associated with participating in a study and how personal information will be safeguarded throughout its lifecycle management process (Sharp 2003).

These measures help protect vulnerable populations from potential exploitation by ensuring they fully comprehend what they are consenting to before agreeing to participate, allowing them greater autonomy over their own lives and decisions regarding exposure/participation in HER studies. All this helps create an environment where safety remains paramount even amidst complicated ethical dilemmas possibly posed by certain interventions under evaluation, which ultimately results in more reliable findings, thanks to improved trust between investigators/sponsors.

## 4. Conclusions

The lack of guidance for collecting and utilizing data ethically in environmental health research, the insufficient consideration given to vulnerable populations when conducting studies, and the unclear standards existing for protecting the privacy of participants' personal information all have serious implications. If left unchecked, these issues can lead to the exploitation of vulnerable populations, inaccurate or biased results due to inadequate sample size,

or a lack of understanding about potential risks associated with participating in a study. As such, researchers must take steps towards better protecting their participants' rights while avoiding any biases due to socioeconomic status when designing EHR projects.

This can be achieved by involving local communities in study designs and utilizing rigorous protocols concerning how participant data will be collected and stored throughout different stages within the project lifecycle management process and mandating strictly informed consent forms before any collection begins too (Brody et al., 2008). Furthermore, researchers should also consider implementing anonymization techniques where possible so that findings are still accessible, but the risk posed by disclosing identifying information remains minimized during the analysis/publication stages (Keune, 2012). All this helps create an environment where safety is prioritized, which ultimately may result in more reliable results when undertaking environmental health research.

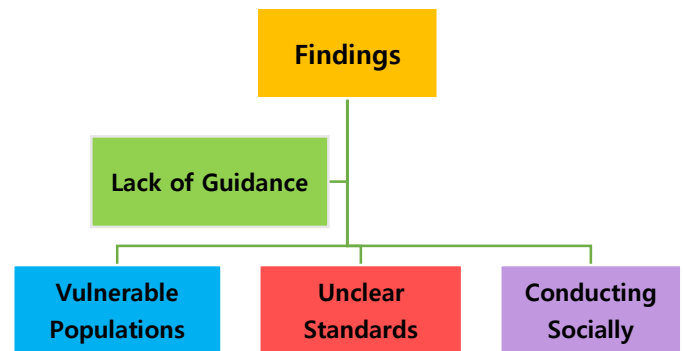


Figure 1: Summarization of the Research

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