

Impact of 'E-waste pollution' on Right to Health: A Critical Analysis

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Abstract:

E-waste or electronic waste is a major problem resulting from the increase in consumer electronics in the past decades around the world. With the rapid pace of technology innovation and obsolescence that leads to shortened product lifespan of various gadgets, the growing demand for electronics and its resulting waste poses a significant challenge in present.

Electronic equipments contain many hazardous metallic contaminants such as lead, cadmium, and beryllium and brominated flame-retardants. The fraction including iron, copper, aluminum, gold, and other metals in e-waste is over 60%, while plastics account for about 30% and the hazardous pollutants comprise only about 2.70%. Of many toxic heavy metals, lead is the most widely used in electronic devices for various purposes, resulting in a variety of health hazards due to environmental contamination. Lead enters biological systems via food, water, air, and soil. Children are particularly vulnerable to lead poisoning - more so than adults because they absorb more lead from their environment and their nervous system and blood get affected.

The hazardous nature of e-waste is one of the growing problems of the world related to environment. The ever-increasing amount of e-waste is also associated with the lack of awareness and appropriate skill in engaged personnel is enhancing the problem. A large number of workers are involved in crude dismantling of these electronic items for their livelihood and their health is at high risk; therefore, there is an urgent need to plan a preventive strategy in relation to health hazards related to e-waste handling among these workers in India. Required information should be provided to these workers engaged in treating this e-waste regarding safe handling of e-waste and personal protection. For e-waste management many technical solutions are available, but to be adopted in the management system, prerequisite conditions such as legislation, collection system, logistics, and manpower should be prepared.

Keywords: E-waste, Health, Legislative and Judicial Responses.

Introduction

E-waste or electronic waste is one of the fast growing problems of the world. E-Waste broadly covers waste from all electronic and electrical appliances and comprises of items such as computers, mobile phones, digital music recorders/players, refrigerators, washing machines, televisions and many other household consumer

items. Included in this definition are small and large household appliances; information technology and telecommunications equipment; lighting equipment; electrical and electronic tools, toys, and leisure and sports equipment; medical devices; monitoring and control instruments; and automatic dispensers. Components of electrical and electronic equipment such as batteries, circuit boards, plastic casings, cathode-ray tubes, activated glass, and lead capacitors are also classified as e-waste. This includes used electronics which are destined for reuse, resale, salvage, recycling, or disposal.

E-waste or electronic waste is a major waste stream resulting from the boom in consumer electronics in the past decades. With the rapid pace of technology innovation and obsolescence that leads to shortened product life spans, the increased demand of electronics and its resulting waste poses a significant challenge in every stage of its life-cycle from the utilization of raw materials, production and ultimately leading to waste management. The major root of E-waste is the changing technology. E-waste which is also known as Waste Electrical and Electronic Equipment (WEEE). It is one of the serious outcomes of the growth of Information Technology, but there is no standard definition of E-waste.

Definition: Electronic Waste (E-waste)

Electronic waste or e-waste is defined as discarded electrical or electronic devices, used electronics which are destined for reuse, resale, salvage, recycling or disposal. In India, E-waste is covered in Schedule 3 of "The Hazardous Wastes (Management and Handling) Rules, 2003". Under Schedule 3, E-waste is defined as "Waste Electrical and Electronic Equipment including all components, sub-assemblies and their fractions except batteries falling under these rules."

Definition of Health:

As defined by World Health Organization (WHO), it is a "State of complete physical, mental, and social well being, and not merely the absence of disease or infirmity." Health is a dynamic condition resulting from a body's constant adjustment and adaptation in response to stresses involved and changes in the environment for maintaining an inner equilibrium called homeostasis.

So, today we can say, three types of definition of health seem to be possible used. The first is that health is the absence of any disease or impairment. The second is that health is a state that allows the individual to adequately cope with all demands of daily life (implying also the absence of disease and impairment). The third definition states that health is a state of balance, an equilibrium that an individual has established within himself and between himself and his social and physical environment.

E-waste pollution and its impact on Health

During the 1990's there has seen a enormous growth in the Information Technology Industry of India. Due to this there is problem of E-waste in India. Sixty-five cities in India generate more than 60% of the total E-waste generated in India. Ten states generate 70% of the total E-waste generated in India. Maharashtra ranks first

followed by Tamil Nadu, Andhra Pradesh, Uttar Pradesh, West Bengal, Delhi, Karnataka, Gujarat, Madhya Pradesh and Punjab in the list of E-waste generating states in India. Among the top ten cities generating E-waste, Mumbai ranks first followed by Delhi, Bangalore, Chennai, Kolkata, Ahmedabad, Hyderabad, Pune, Surat and Nagpur. The recycling of E-Waste is not proper in India. India is also a dumping ground of the E-waste of developed countries as they sell their obsolete electrical and electronic waste in Indian Markets.

Electronic components are not totally benign. They often contain a blend of hazardous materials that pose adverse health and environmental impacts at the point of extraction to the production of the component. Some of the most common toxic chemicals associated with electronics are as follows:

- ✚ **Arsenic**- Arsenic is present as gallium arsenide found in light emitting diodes (LEDs). Chronic exposure to arsenic can result to various skin diseases and can decrease nerve conduction velocity.
- ✚ **Barium**- Barium can be found in spark plugs, fluorescent lamps. Exposure to barium could lead to brain swelling, muscle weakness and damage to the heart, liver and spleen.
- ✚ **Lead**- Lead is one the mostly used metal. It is commonly found in electronic and electrical equipment such as batteries. Lead can cause vomiting ,diarrhea, convulsions and damage to the kidney and reproductive system, anemia, increased blood pressure, and induce miscarriage for pregnant women, brain disorders.
- ✚ **Beryllium**- A known human carcinogen, beryllium is used for x-ray machines and mirrors.Its alloys are also used in televisions, calculators, computers and other electronic devices. It can settle as dust in the air, exposure to which may lead to chronic beryllium disease. People exposed to beryllium can also cause a form of skin disease.
- ✚ **Brominated flame retardants (BFRs)**. Flame retardants are used in electrical and electronic appliances to lend them flame resistant qualities. The combustion of these halogenated compounds releases toxic emissions including dioxins which can lead to severe hormonal disorders, as well as cancer.
- ✚ **Mercury**- Mercury is used in switches, thermostats, batteries and fluorescent lamps. Like lead, it accumulates in the body and targets the central nervous system. Chronic exposure to mercury can also cause kidney damage.
- ✚ **Cadmium**- Cadmium can be found in some rechargeable batteries, semiconductor chips and in the phosphor coating of CRT monitors. Once released in the environment, it can accumulate in the bodies of aquatic organisms and agricultural crops. Continuous, low-level exposures to cadmium causes kidney disease and bone brittleness.

Children are particularly vulnerable to more health risk that might result from e-waste exposure and need more specific protection as they are still growing and there body organs are more vulnerable to catch more infections as compared to adult. In addition, children's immune system, digestive system, reproductive system, central nervous systems are still developing and exposure to toxic substances can lead to dangerous diseases. The health effects of these toxins on humans include birth defects, brain, heart, liver, kidney and skeletal system

damage. They will also significantly affect the nervous and reproductive systems of the human body. Furthermore, their bodies' functional systems such as the central nervous, immune, reproductive and digestive system are still developing and exposure to toxic substances, by hampering further development, may cause irreversible damage.

Legislative Response at International Level

➤ **Right to life**

Under Article 6 of the ICCPR, *“Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life.”* In addition, Article 6 of the Convention on the Rights of the Child (CRC) also recognizes that *“every child has the inherent right to life” and that the survival and development of the child is ensured to the “maximum extent possible”*.

➤ **Right of children and adults to the highest attainable standard of health**

Article 12 of the International Covenant on Economic, Social and Cultural Rights (CESR) states that *“The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health”*. Furthermore, the covenant also recognizes the right of workers to healthy working conditions.

With respect to the rights of children, Article 24 of the CRC recognizes, *“the right of the child to the enjoyment of the highest attainable standard of health [...] taking into consideration the dangers and risks of environmental pollution”*.

Article 10 of the CESCR also calls for *“special measures of protection and assistance to be taken on behalf of all children and young persons without any discrimination”*.

➤ **Right to Food**

According to Article 25 of the Universal Declaration of Human Rights and Article 11 of CESCR *“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food”*. The right to adequate food and water is established also in the Food and Agriculture Organization (FAO) Voluntary Guidelines to support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security, and the *“access to, and consumption of, adequate, safe and nutritious food”* (emphasis added) has also found protection under the Food Assistance Convention.

➤ **Right to access information**

Under Article 19 of the ICCPR, *“everyone has the freedom to seek, receive and impart information and ideas of all kinds”*. Gaining access to information is especially essential when human rights are violated due to

unwarranted exposure to toxic chemicals. Several countries have recognized the people's right to know about the toxic chemicals in the environment where they live and work in. Governments are increasingly recognizing the right to access information about toxic substances in products. The ILO's Chemicals Convention (c.170) recognizes that workers have right to information about the hazards of chemicals used in the workplace, and employers have a duty to inform workers in this regard. Under Article 17 of the CRC, State Parties *"shall ensure that the child has access to information and material from a diversity of national and international sources, especially those aimed at the promotion of his or her physical and mental health."*

➤ **Workers Rights**

In addition to the rights of workers mentioned previously, including the right to information, under Article 18 of ILO c.170 *"workers shall have the right to remove themselves from danger resulting from the use of chemicals when they have reasonable justification to believe there is an imminent and serious risk to their safety or health."* In addition, workers also have the right to *"information on the identity of chemicals used at work, the hazardous properties of such chemicals, precautionary measures, education and training."*

➤ **ILO Convention on the Worst Forms of Child Labor**

Article 3(d) of the ILO Convention on the Worst Forms of Child Labor specifies such labor as including *"work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children."* ILO described working with e-waste recycling, by its nature and circumstances, likely to harm the health, safety and morals of children, and that the conditions in which the work is carried out exert an extremely negative impact on a child's health status.

Right to Health and Indian Constitution

Right to health is not included directly in as a fundamental right in the Indian Constitution .The Constitution maker imposed this duty on state to ensure social and economic justice. Part four of Indian constitution which is DPSP imposed certain duty on States. If we only see those provisions then we find that some provisions of them has directly or indirectly related with public health and welfare. The Constitution of India not provides for the right to health as a fundamental right but through judicial pronouncement it is enshrined in Fundamental Rights. The Constitution directs the state to take measures to improve the condition of health care of the people. Thus the preamble to the Constitution of India, inter alia, seeks to secure for all its citizens justice-social and economic. It provides a framework for the achievement of the objectives laid down in the preamble. The preamble has been amplified and elaborated in the Directive Principles of State policy.

- **Directive Principle of State Policy**– Article 38 of Indian Constitution impose liability on State that states will secure a social order for the promotion of welfare of the people but without public health we cannot attain it all. Thus it means without public health welfare of people is impossible to achieve. Article 39(e) related with workers to protect their health. Article 41 imposed duty on State to provide public assistance basically for those who are sick and disable. Article 42 makes provision to protect the health of infant and mother by maternity benefit.

In the India the Directive Principle of State Policy under the Article 47 considers it the primary duty of the state to improve public health, securing of justice, human condition of works, extension of sickness, old age, disablement and maternity benefits and also contemplated. Further, State is also having a duty to prohibit consumption of drinking intoxicating materials and drugs which are injurious to health. Article 48A ensures that State shall Endeavour to protect and impose the pollution free environment for good health.

- **Fundamental Rights**–The Supreme Court of India has brought the right to health under the preview of Article 21. The scope of this provision is very wide. It prescribes for the right of life and personal liberty. The concept of personal liberty comprehended many rights, related to indirectly to life or liberty of a person. And now a person can claim his right of health. Thus, the right to health, along with numerous other civil, political and economic rights, is afforded protection under the Indian Constitution.

The question surrounding the implementation of the human right to health is fresh and full of possibility for the developing world. In fact, Indian has been able to create a legal mechanism whereby right to health can be protect and enforced. The early of 1970s, witnessed a watershed in human rights litigation with the Keshwanand Bharti Vs State of Kerela¹ ushering in a unprecedented period of progressive jurisprudence following the recognition fundamental rights. The Constitution guarantees the some fundamental rights having a bearing on health care. Article 21 deals with “No person shall be deprived of his life or personal liberty except according to procedure established by law.” Right to live means something more, than more animal existence and includes the right to live consistently with human dignity and decency.

In 1995, the Supreme Court held that right to health and medical care is a fundamental right covered by Article 21 since health is essential for making the life of workmen meaningful and purposeful and compatible with personal dignity. The state has an obligation under Article 21 to safeguard the right to life of every person, preservation of human life being of paramount importance. The Supreme Court has in the case of Parmanand Katra vs Union of India², held that whether the patient be an innocent person or be a criminal liable to punishment under the law, it is the obligation of those who are in charge of the health of the community to preserve life so that innocent may be protected and the guilty may be punished.

¹ AIR 1973 SC 1461

² 1989 AIR 2039

Article 23 is indirectly related to health. Article 23(1) prohibits traffic in human beings. It is well known that traffic in women leads to prostitution, which in turn is to major factor in spread of AIDS. Article 24 is relating to child labor it deal with “No child below the age of 14 years shall be employed to work in any factory or mine or engaged in any other hazardous employment.”

Legal Position in India

Although there are legislations to regulate the disposal and management of E-waste in India, there is no proper implementation of these legislations. The various legislations enacted by the Government of India are:-

- The Hazardous Wastes (Management and Handling) Amendment Rules, 2003;
- Guidelines for Environmentally Sound Management of E-waste, 2008; and
- The e-waste (Management and Handling) Rules, 2011.

Judicial Response

In *Consumer Education and Research Center v. UOI*³, the Court explicitly held that the right to health was an integral factor of a meaningful right to life. The court held that the right to health and medical care is a fundamental right under Article 21. The Supreme Court, while examining the issue of the constitutional right to health care under Articles 21, 41 and 47 of the Constitution of India. In its landmark judgment in *Bandhua Mukti Morcha v Union of India*⁴, the court delineated the scope of art 21 of the Constitution, and held that it is the fundamental right of every one in this country, assured under the interpretation given to Article 21. This right to live with human dignity enshrined in art 21 derives its life breath from the directive principles of state policy and particularly clause (e) and (f) of art 39 and arts 41 and 42. It must include protection of the health and strength of workers, men and women; and children of tender age against abuse; opportunities and facilities for children to develop in a healthy manner and in conditions of freedom and dignity. Educational facilities; just and humane conditions of work and maternity relief should also be provided. These are the minimum necessities, which must exist in order to enable a person to live with human dignity.

In *CESC Ltd. vs. Subash Chandra Bose*⁵, the Supreme Court relied on international instruments and concluded that right to health is a fundamental right. It went further and observed that health is not merely absence of sickness: “The term health implies more than an absence of sickness. Medical care and health facilities not only protect against sickness but also ensure stable manpower for economic development. Facilities of health and medical care generate devotion and dedication to give the workers’ best, physically as well as mentally, in productivity.

³ 1995 SCC (3) 42

⁴ 1984 SCC (3) 161

⁵ 1992 SCC (1) 441

In *T. Ramakrishna Rao vs. Hyderabad Development Authority*⁶, the Andhra Pradesh High Court observed: Protection of the environment is not only the duty of the citizens but also the obligation of the State and it's all other organs including the Courts. The enjoyment of life and its attainment and fulfillment guaranteed by Article 21 of the Constitution embraces the protection and preservation of nature's gift without which life cannot be enjoyed fruitfully. The slow poisoning of the atmosphere caused by the environmental pollution and spoliation should be regarded as amounting to violation of Article 21 of the Constitution of India.

Conclusion and Suggestions

The main risks that electronic wastes pose to the right to life stem from the presence of potentially hazardous substances that may be release during recycling and material recovery. Toxic substances can be found in different process emissions or outputs, such as leakages from dumping activities, particulate matter from dismantling activities, fly and bottom ashes from burning activities, fumes from smelting and disordering activities results are the observed high incidence of skin damage, headaches, nausea, gastric and ulcers. E-waste comprises of a multitude of components, some containing toxic substances that can have an adverse impact on human health and the environment if not handled properly. The burden of e-waste not only pollutes the land-fill it is having serious health implications. In India, e-waste management assumes greater significance not only due to the generation of its own e-waste but also because of the dumping of e-waste from developed countries. This is coupled with India's lack of appropriate infrastructure and procedures for its disposal and recycling. Urbanization and a growing demand for consumer goods, has increased both the consumption and the production of electronic goods that results e-waste pollution. The problem of proper disposal and management of E-Waste requires the Government authorities to enact strict regulatory laws. The problem has reached at an alarming stage. There should be proper guidelines and the Government must enact a regulatory body to ensure proper implementation of such guidelines. The E-waste has to be disposed of properly else they will turn out into a menace killing a lot of people and causing serious health problems. It is not only the duty of government but duty of every one to control e-waste pollution to save the earth.

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