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Perspective

Electronic Waste Recycling of Toxic Products and their Negative Impacts on Human Health

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DESCRIPTION

E-waste is discarded electric appliances that contain toxic materials and valuable minerals. In this process of the extracting of these materials after shredding the e-waste into tiny pieces could be reused in new products. E-waste recycling has benefits for human health, the environment and the economy. However, it also faces challenges such as manual sorting, complex processing and low recycling rates.

E-waste can have harmful effects on human health and the environment. Some of these effects are exposure to toxic substances such as lead, mercury, cadmium, and brominated flame retardants that can damage the brain, heart, liver, kidney, nervous system, reproductive system, and immune system. It affects the development of unborn children by causing low birth weight, premature birth, stillbirth, and neurological and behavioral problems. Releasing of toxic chemicals into air, soil, and water that can pollute the environment and affect the health of plants, animals, and humans. Depletes natural resources and contributes to greenhouse gas emissions and climate change.

Some ways to reduce e-waste are:

- Re-evaluate your need for new gadgets and buy only what you need.
- Maintain your electronics and repair them if possible.
- Buy energy-efficient and environmentally friendly electronics.
- Donate or sell your old electronics to others who can use them.
- Recycle and dispose of your e-waste properly at certified facilities.
- Store your data online instead of using physical storage devices.
- Repurpose your old electronics for creative or educational purposes.

Electronic waste is a problem because it was a fastest-growing waste stream in the world, with 53.6 million tons generated in 2019 and only 17.4% recycled properly. It contains toxic substances that can harm human health and the environment, especially in developing countries where e-waste is often dumped or processed unsafely. It depletes natural resources and contributes to greenhouse gas emissions and climate change by requiring more mining and manufacturing of new products. It wastes valuable materials that could be reused or recycled, such as gold, copper, and rare earth metals. It reduces the lifespan and functionality of electronic devices due to consumer demand, technological trends, and lack of repair options.

Some of the disadvantages of e-waste are:

- It contains harmful chemicals such as lead, mercury, cadmium, and flame retardants that can damage human and environmental health.
- It can release toxic substances into the air, soil, and water when burned or dumped.
- It can cause cancers, miscarriages, neurological damage, and diminished IQs in workers and communities exposed to e-waste.
- It can lead to a loss of valuable resources such as metals and lithium that could be reused or recycled.
- It can increase the risk of illegal trade and crime in the waste sector.

The root cause of e-waste is the rising demand for electronic products and the rapid obsolescence of existing devices. Some of the factors that contribute to this are: Consumer preferences for new and upgraded models of electronic devices that offer more features and functionality. Lack of repair options or incentives for consumers to fix the broken or malfunctioning devices. Low cost and availability of new electronic products that make them more affordable and accessible than repairing or reusing old ones. Short lifespan and durability of electronic devices that make them prone to damage or failure. Lack of awareness or education among consumers about the environmental and social impacts of e-waste and the benefits of recycling or reusing it.

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CONCLUSION

The negative impacts of e-waste releases toxic chemicals, such as mercury, lead, cadmium, and dioxins, into the air, soil, and water when e-waste is informally disposed by burning, melting, or using acids. These chemicals can cause respiratory problems, cancers, neurological damage, and birth defects. Polluting ecosystems and harming wildlife when e-waste is dumped in landfills or other non-dumping sites. E-waste can also contaminate food chains and affect biodiversity. Wasting of valuable materials, such as gold, silver, copper, and rare earth metals that could be recovered and reused if e-waste has been recycled properly. These materials have economic value and environmental benefits.