

De Facto of Drugs in our Drinking Water

Many years have passed since my grandmother's drugs that she collected from the hospital are still lying on the shelves. Most of these drugs have expired and need to be disposed off immediately. The question that occurred to me as soon as my eyes saw these drugs was why are they still lying on the shelves?

Most People in Ghana rarely dispose of things which are of no use or have expired. We prefer to keep them and use them sometimes as decorators in our room. Do we also need to keep drugs as decorators on our shelves? NO. Drugs need to be disposed of immediately if they are of no use or value to the consumer. The big question that always comes into my mind and I guess yours to as well is how can we properly dispose of unused or expired drugs in our country?

The most simple and common ways of disposing drugs worldwide according to research is through flushing them down the toilet or throwing them into the waste bins in our homes. These forms of disposal have been proven to be an unsafe way to dispose of drugs. These waste bins and sewage systems are pathways of drug compounds into our environment.

Scientific research carried out in developed or advance countries has confirmed the presence of drug active ingredients or pharmaceuticals in our environment. The research has further proved that our water bodies i.e. lakes, rivers, sea, lagoons, ground water resources and more recently drinking water sources have been the reservoir for most of these drugs and chemical compounds. The concentration level of these compounds has increased over a period of time due to the improper disposal of drug waste.

The sources of contamination have always been the healthcare institutions, pharmaceutical and chemical industry and our homes too. I guess most of us are really surprised that we are also major contributors to the contamination of our environment with pharmaceuticals. Yes we are! Scientific research has shown that approximately up to 70% of drugs that we take in are not absorbed in our body and therefore come out together with the faeces and urine.

Others are entering the environment directly when we just throw away unused drugs. These wastes usually end up in the household sewage system which is later transported to our rivers, lakes and the sea which has been the case in most of our urban and coastal cities. Drug compounds can also easily be infiltrated through the soil to contaminate our ground water resources.

In Ghana for instance, most rural dwellers use the pit latrine sanitation system and also depend on ground water as a source of drinking water. However the tendency of contaminating our ground water table with drugs and other chemical compounds can be very high. Lack of information and data on the concentration levels of drugs and chemicals in our aquatic bodies make the problem more alarming.

I will also like to raise the issue that the concentrations of these pharmaceuticals are very tiny, measure in quantities of parts per billion or trillion, far below the levels of a medical dose. However, recent laboratory research has found that small amounts of medication have caused human cells to grow abnormally for example breast cancer cells grow faster and kidney cells grow slowly.

Also the presence of drugs in our water bodies has caused feminization of male fishes. This could threaten fishing as a source of food. Currently there is still much unknown about this topic. Scientists are sceptical that trace concentrations will ultimately prove to be harmful to humans.

There is also growing concern that certain drugs or combinations of drugs may affect humans over decades because water, unlike most specific foods is consumed in sizable amounts everyday. In Ghana our heavy dependence on surface waters like rivers, lakes and ground water as drinking water sources as well as for agricultural purposes should be a sign of worry.

Wastes channelled into these water bodies are polluted and mostly untreated. For example the Korle Lagoon has been the reservoir for most liquid waste coming from the Korle-Bu Teaching Hospital and other industries sited along the lagoon. These liquid wastes contain chemical compounds which are very dangerous to the human

health and existing aquatic animals in the lagoon. Even though the level of human activities that goes on in this lagoon have been reduced drastically in recent times, there are still some few people who carry out human activities like fishing, and bathing. There are also numerous examples of water bodies that are being contaminated through sewage disposal from both domestic and industrial activities.

Drinking water running through our pipes in our homes is largely believed to be clean and safe. However we cannot escape the presence of drug compounds in our drinking water. To keep it as clean as possible we should not contaminate it with unused or outdated drugs and other chemicals. Several studies have shown that conventional water purification and treatment system cannot completely remove drugs. Although I have not yet measured to prove that drug compounds are present in our drinking water supply. However, I can conclude based on scientific research that at least we have some very minute quantities of drug compounds in our water.

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