



HEALTH HAZARDS OF MODERN LIVING - A PERSPECTIVE STUDY

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ABSTRACT

We are living in an era where modernization became the most important part of life. On the other hand, Modern life style becomes more and more an important factor influencing health state of most developed countries. Modern day living is a multifaceted compendium of evolving technology. In contrary, changing societies and rapid technological development have produced an ever-increasing variety of products, gadgets, agents and circumstances whose consequences are partly unknown, difficult to predict and capable of posing irreversible risks to human health. Despite the benefits offered by technology, it has a major drawback – its negative impact on our health. Therefore, there is an urgent need to bring a change in the lifestyle of people. Emphasis should be on health rather than comfort. People should be made aware about the health risks that are posed by the comfort and the lifestyle they prefer.

KEYWORDS: Modern living, technology, serious health hazards, precautionary approach, commitment.

INTRODUCTION

Modern Living is a way used by people, groups and nations and is formed in specific geographical, economic, political, cultural and religious text. It includes day to day behaviors and functions of individuals in job, activities, fun and diet. In recent decades, life style as an important factor of health is more interested by researchers. According to WHO, 60% of related factors to individual health and quality of life are correlated to lifestyle. Millions of people follow modern lifestyle. Hence, they encounter illness, disability and even death. The relationship of lifestyle and health should be highly considered. The use of modern technology makes living better and brings certain advantages to people. Every day a new machine/product/ gadget is invented for human use to ease their lives. This means that technology can bring us luxuries, but at the same time it can also be health hazardous leading to many health problems.

Sick Building Syndrome

Sick building syndrome due to internal pollution generated by noise from water on air cooler, air-conditioner, generator, printer etc. in homes or offices causes breathing trouble, deafness, sleeplessness, tiredness, headache, eye burning etc. Air conditioning units and the pollution within the atmosphere from both inside and outside the building are believed to be the main contributors. This pollution is then circulated

around the build, which has a negative effect on the Indoor Air Quality (IAQ), because of high numbers of air contaminants such as gases like CO, CO₂, VOCs and particulates. Chemical rays from paint, varnish, nail polish, boot polish, mosquito liquid / gas pesticide and Carbon monoxide from fuel burning cause lung diseases. Long working on computer causes breathing trouble, deafness, sleeplessness, tiredness, headache, eye burning etc. Air freshener, deodorant, hairspray, varnish, polish, wood-binder (resin) etc. spread irritant gases in air which are the possible causes of sick building syndrome.

Use of Cosmetics

Historically, cosmetics began to be used 6.000 years ago and its use has spread throughout the world. Many advances in the cosmetic industry have increased our ability to enhance youth and beauty. Cosmetics and skin care products are currently consumed worldwide, with frequent use, increasing the exposure of the human body to the various chemical compounds. The use of these products is increasing around the world and a variety of chemical compounds used in the manufacture of these products grows at the same time. In this way, the risk of intoxication, allergic processes, prolonged chemical exposure, side effects and indiscriminate use are also increased. The side effects derived from the use of cosmetics pose health risks mainly due to exposure to numerous chemical substances. Its consequences can range from a simple mild hypersensitivity reaction to an

anaphylactic process or even a lethal intoxication. Currently, the cosmetic industries have increased the use of compounds with preservative action, surfactant, fragrances, stains, etc. in the formulation of cosmetic products. The indiscriminate use of cosmetics may present itself as an emerging issue of public health.

In front of the arising use of cosmetic products and the larger exposure to the formulas compounds for a large time and frequency, the side effects of these products become more frequent in the population around the world. Women and men all over the world use large amount of cosmetic products in pursuit of everlasting youth, ignoring the probable health risks. National Institute of Occupational Safety and Health of London said that 900 chemicals used in cosmetics are toxic. Most of the cosmetics contain toxic and flammable substances like benzene, formaldehyde, coal tar, lanolin (wool grease), phenylenediamine, phenoxyethanol, paralence etc. which may look nonhazardous when tested but they become hazardous when entered in skin or become old. They are used in eye shadows, shampoo, skin-cream, blushers, lipsticks, mascara, hair spray, perfumes, moisturizer, toothpaste, soap etc.

Nail polish also contains very hazardous chemicals like Acetone, Sprit, Methyl benzene. Phenol, Formaldehyde. These chemicals destruct natural shining of the nails and if ingested through fingers and mouth, they damage stomach and liver and may cause cancer if taken excessively or repeatedly. Individual level of such chemical may be less than the 'permissible limit' as claimed by the manufacturers but their synergistic or total effect due to prolonged use can cause allergic reactions and serious damage to body hormones and make us ugly or sick or weak after some time. Daily use of lipstick amounts approximately 60 kg during lifetime of the user.

Exceeding use of hair-dye also increases lead level in blood; It reduces memory, adversely affects CNS and brings unconsciousness sometimes. Not only eye or skin sensation but they also cause cancers. Over the past several decades, a significant amount of work has been dedicated to understanding the possible long-term side effects associated with hair-dye use, specifically looking at cancer risk. Chemicals contained in hair dyes, particularly aromatic amines, are mutagenic and carcinogenic and able to penetrate human skin. In addition, hair dye products containing 4-chloro-m-phenylenediamine, 2,4-toluenediamine, 2-nitro-p-phenylenediamine, and 4-amino-2-nitrophenol have also been found to exhibit dermal penetration in humans and have produced carcinogenic effects.

Consumer Guidance Society of India, Mumbai has warned the women regarding their *Sindur* and *Bindiya* that they are now poisonous. The sticker bindis are made up of circular discs of polyvinylchloride (PVC) and the adhesive material contains para-tertiary butyl phenol

(PTBP), the concentration of which may be as high as 80%. These agents cause depigmentation through their melanocytotoxic effect. The commercially prepared kumkum has been shown to contain Brilliant Lake Red R, Sudan I, aminoazobenzene, canaga oil, fragrances, groundnut oil, tragacanth gum, turmeric powder] thimerosal, gallate mix, PPD, Kathon CG, benzotriazol, tert-butyl hydroquinone, parabens, [*chandan*], chalk powder colored with various azo dyes and other dyes (coal tar dyes, toluidine red, erythrosine, and lithol red calcium salt). The red-colored powder "*sindoor*" contains mercury and the black paste lead sulfide.

Use of Flavours and Fragrance

Flavours and Fragrance has also been poisoned by chemicals. Artificial flavours and fragrance of strawberry, raspberry, mango, apple, guava, banana, sandalwood, soaps, shampoos and even of milk are manufactured from various chemicals like Amyl acetate, Amyl butyrate, Amyl valorate, Ethanol, Anisyl formate. Benzyl acetate. Benzyl isobutyrate. Butyric acid etc. Nevertheless, there is a strong body of evidence to support the existence of health risks associated, especially, with overconsumption and with certain artificial colorings and preservatives. Lesser known to the public are risks involving chemical and microbial contamination from containers, production equipment. The most popular types of soft drinks are as follows: (i) ready-to-drink essence-flavored beverages; (ii) ready-to-drink beverages containing fruits or fruit juice; (iii) beverages ready-to-drink after dilution.

Plastic bottles have other chemicals that can contaminate the beverages they contain. One example is bisphenol A (BPA) which can affect the natural communication system of hormones when ingested. Phthalates also leach into the bottled water we drink after as little as 10 weeks of storage, or much faster if the bottles have been left in the sun. Phthalates are used as plasticizers to increase the flexibility of plastics, including PVC. Exposure to phthalates can be detrimental to human health. The larger molecular weight phthalates, di(2-ethyl-hexyl) phthalate (DEHP), di-n-butyl phthalate (DBP), diisononyl phthalate (DiNP), are suspected carcinogens and are known to be toxic to the liver, kidneys, and reproductive organs.

It is also reported that milkshake contains alcohol. French-fries (potato wafers) are fried in cow tallow and freeze by compressed Ammonia gas. Six months stale items are also sold after refrying. Health effects of such junk food or fast food is to spoil our stomach, CNS, liver and kidney. They cause acidity, hypertension and food poisoning. They increase fat and weight, which in turn invite other diseases.

Dangerous Dry Cleaning Chemicals

Perchloroethylene is the chemical most widely used in dry cleaning which increases 25% more chances of cancer and adversely affect tongue, lungs, neck and

blood pressure; it is so reported by the National Centre of Occupational Health and Safety at Cincinnati, USA.

Recent studies indicate that people breathe low levels of this chemical both in homes where dry-cleaned goods are stored and as they wear dry-cleaned clothing. Dry cleaners recapture the perchloroethylene during the dry-cleaning process so they can save money by re-using it, and they remove more of the chemical during the pressing and finishing processes. Some dry cleaners, however, do not remove as much perchloroethylene as possible all of the time. Taking steps to minimize the exposure to this chemical is prudent. If dry-cleaned goods have a strong chemical odor when picked up, do not accept them until they have been properly dried. If goods with a chemical odor are returned to you on subsequent visits, try a different dry cleaner.

If Dry cleaner uses Perc (Perchloro-ethylene), be sure to let the clothes air out before putting them in the closet. When buying new clothes, read the care labels and choose garments that can be machine washed or hand-washed.

Use of Non-Stick Cookware and Ceramic Vessels

Warnings about increasing use of non-stick utensils are also published. Non-stick is often used to refer to surfaces coated with polytetrafluoroethylene (PTFE), a well-known brand of which is Teflon. In the twenty-first century, other coatings have been marketed as non-stick, such as anodized aluminium, ceramics, silicone, enameled cast iron, and seasoned cookware. When pans are overheated beyond approximately 350 °C (660 °F) the PTFE coating begins to dissociate, releasing hydrofluoric acid and a variety of organofluorine compounds which can cause polymer fume fever in humans. Concerns have been raised over the possible negative effects of using PTFE-coated cooking pans. People around the world use nonstick pots and pans for their everyday cooking as they need less oil, the food does not stick to the vessel and therefore less labour to clean them. Reports have been published that this coated chemical (black or brown) is very toxic and its poisonous effect is found in the blood samples of 90% of the users.

Glaze (lustre) of **ceramic vessels** (e.g. cup-saucer) contains lead. Leaded glazes have traditionally been used on ceramic and glassware products, because they are easy to use, add colour and provide a smooth bright finish. The scientific studies has warned people to know this lead level before using such vessels. It is advised not to store hot and sour eatables for long time in it otherwise excess lead decreases haemoglobin in the blood. Lead poisoning can be either acute or chronic. Manifestations of acute and chronic lead toxicity depend on the severity of lead poisoning. Signs and symptoms are generally nonspecific and can include fatigue, abdominal pain, constipation, arthralgias, myalgias, headache, hypertension, renal impairment and microcytic anemia.

Nanoparticles have been recently discovered as a leaching byproduct of ceramic coatings. Nano titanium dioxide is the most prevalent substance found and is hazardous because it's been shown to cause immune system disruption and pre-cancerous lesions in the gut. Nanoparticles themselves are problematic because their tiny size allows them to enter most areas of the body.

Use of Ultramodern Equipment

The ultramodern equipment can also pose danger. High frequency electromagnetic waves from kitchen microwave, cellular phone, pager, hair drier, washing machine, electric blanket, room heater, personal computer, TV, video display terminal etc. can cause serious health hazards like leukaemia (blood cancer), brain damage, liver damage, bone marrow injury, miscarriage and adverse effect on body cells and DNA.

Nowadays, electronic devices had been used by all country around the world. Electronic device had been one of the most important things that can help human going through their daily life. Almost every house in the world own an electronic device. There are a lot of advantages and disadvantages of using the electronic devices. Electronic devices can easily simplify human task everyday but however it also might give a bad impact towards human in terms of health. Usually radiation is produced a lot by various electronic equipments or electrical appliances like TV, information light, microwave, computer, smartphone and so on. Technological change always results between benefit and harm, including laptop or mobile phone.

Several reports say that 'Excessive use of such electronic equipment (mobile phone, pager, Fax m/c., micro ovens, hair direr, TV, toys etc.) may cause cancer, skin disease, brain or heart trouble etc. due to electro magnetic field'. Incidence of eye cancer is found in mobile phone users. Fluid in eye cavity detects phone wave radiation very fast.

Health Risk of Chemicals in Consumer Products

CFC (Chlorofluoro carbon) generated from refrigerator and air-conditioner decreases oxygen level in air and in our body. Its result is hypertension, allergy, asthma and lung diseases. CFCs can cause frostbite on the skin or in the upper airways. Inhalation of high CFC concentrations can cause symptoms of intoxication, reduced coordination, light-headedness and headache, tremors and convulsion, irregular heartbeat.

Detergent powder on clothes or utensils causes skin disease and more damage if ingested unknowingly. Xerox and laser printers liberate ozone gas. Anything which our nose or eye detects and dislikes, is primarily dangerous. Undetectable dangerous chemicals are also to be studied and avoided from our working atmosphere.

A Proposed Framework for Applying Precautions in the Context of Public Health and Future Generations and Sustainable Development

1. Prevention of sick building syndrome :

- a. Increase the ventilation rates and air distribution. The heating, ventilation and air-conditioning systems should be designed to meet ventilation standards in the local building codes. The HVAC system should be operated and maintained properly to ensure that the desired ventilation rates are attained.
- b. Removal or modification of the pollutant source can be carried out by a routine maintenance of HVAC systems, replacing water-stained ceiling tiles and carpets, using stone, ceramic or hardwood flooring, proper water proofing, avoiding synthetic or treated upholstery fabrics, minimizing the use of electronic items and unplugging idle devices and venting contaminants to outside.

2. Safety Monitoring of Cosmetic Products

- a. It is necessary to encourage improvements in the manufacture, marketing and use of cosmetic products by the population, it is necessary to apply a unified cosmetovigilance around the world. This public health strategy are a genuine means of obtaining information on the safety of cosmetic products and their ingredients and preventing the risks associated with using cosmetics that has become a public health problem.
- b. The safety of products launched in the market shall be monitored, documented and be kept on file. The information includes undesirable effect occurred during normal use and improper use, complaints from consumers and follow-up visits.
- c. If there are 2 or more than 2 ingredients that share similar systemic toxicity mechanism in the same product formula, aggregation exposure should be taken into consideration for safety margin calculation, and a specific case analysis should be made.
- d. For products whose formula or technology is brand new, a human patch test or a human use test should be conducted for safety confirmation of local tolerance. Otherwise, safety assessment on the products shall be followed by adopting traditional toxicology tests on finish products.
- e. When hair dyes are used for dying using a boxed product, consider the following safety tips
 - Conduct a test patch on the skin to rule out possible allergic reactions before applying the dye to your hair.
 - Always wear gloves when applying or mixing hair dye.
 - Don't leave dye on the hair for longer than the instructions suggest.
 - Rinse the scalp well with water when done with dying.
 - Never mix different hair color formulations.

- Never attempt to dye eyelashes or eyebrows with hair dye. This can damage the eyes permanently and could even cause blindness.
- To avoid exposure to the chemicals contained in most artificial hair dyes, consider trying a natural substitute like a plant-based henna dye or another all-natural hair color product.
- f. Indian Standards should be prescribed for non-toxic chemicals to be used in such cosmetics

3. Safety aspects of flavours and fragrances in food and beverages

- a. All the ingredients in soft drinks should be approved for use under the appropriate regulations governing the maximal concentrations and acceptable daily doses. Nevertheless, there is a strong body of evidence to support the existence of health risks associated, especially, with overconsumption and with certain artificial colorings and preservatives. As a result, increasing emphasis should be placed on the health properties of soft drinks, by both the industry and the consumers.
- b. All the chemicals listed from the labels considering the health hazards are discovered by review of scientific literature. Thus, one cannot deny the fact that these substances are harming the population in one way or the other.
- c. The aim of colour manufacturers, whether the colour be synthetic, nature identical or naturally derived should constantly support and train the food industry in the correct selection and application of colour. The addition of colour should be often thought as 'last on the list' in the development process.

4. Stay safe when using Non-stick cookware

- a. All cooks among us are advised to take a precautionary approach to their Teflon frying pans and other non-stick cookware. Avoid high heat cooking in order to keep CFCs, TFA, and PFOs out of the environment and food.
- b. Keep the Teflon surface of the cookware stable (and longer lasting) by avoiding sudden dramatic temperature changes (such as plunging a hot pan into cold water). Gentle, non-scouring handwashing instead of dishwasher cleaning will also greatly extend it's life and durability.
- c. To be little more cautious about the non-stick stuff, invest in a high quality cast iron frying pan and pay careful attention to the included seasoning and maintenance instructions. Properly seasoned cast iron can provide a natural Teflon-like surface free of chemical hazards.
- d. To avoid exposure to chemical hazards out of Teflon coated cookware :
 - Replace Teflon cookware and consider using stainless steel, cast iron, Pyrex or enamel coated cookware instead.
 - Forget fast food. It's likely to be packaged in PFC-coated boxes and paper. PFCs, the chemicals Teflon is made from, are also used in containers for a wide

variety of supermarket foods, including microwave French fries, pizzas and popcorn.

- Any all stainless steel cookware is safe to use, but the amount of metal migration is dependent on stainless steel grade, cooking time, and cookware usage, so we encourage the use of high quality, surgical-grade stainless steel cookware whenever possible, and even the purchase of nickel-free cookware

5. Safety facts while using detergents and cleaning products

- a. There are many things that can be done to minimise the risk of chemical hazards causing any harm. But the most important piece of advice is also the simplest:
 - Always read the label before using a product. The label is full of important information. To use a product safely, follow these steps:
 - Look at the label - Are there hazards (as indicated by symbols and statements)? Read it carefully – and follow the advice.
 - Is this the right product for the job?
 - Are there precautions I should take, like wearing gloves?
- b. Use the product as instructed .Many household products will also carry other symbols, different from the hazard symbols explained. These were devised as a voluntary initiative by manufacturers in most of the countries and help you to see, at a glance, how to use a product safely.

6. Reduce health risk of electronic devices

- a. **Limit Radiation Exposure Time:** Radiation exposure can be reduced simply by limiting the length of your exposure to the sources. Short term exposure may not have the same dire effect to human health as sustained, long-term exposure, but in order to ensure this, you have to make sure that you're reducing your overall exposure to radiation emitting gadgets as well.
- b. As part of this effort, turn gadgets off when they aren't in use, especially when you're asleep. Switch computers off as well. Don't just close your laptop shut, make the effort to turn your laptops off. Take frequent breaks when you're using your devices to reduce your exposure, and avoid bringing your gadgets to bed before you sleep to lower adverse effects.
- c. Keep in mind that radiation's health effects can greatly vary, ranging anywhere from minor symptoms like fatigue or stress, sleep disturbances to skin symptoms, aches and pains to tired eyes. It can also be much worse, such as cancer. In which case, it pays to really be aware of how radiation can affect the body.
- d. To make sure that gadgets and electronics are not disrupting your sleep patterns and causing health issues, make sure you remove as many of your devices from your bedroom as possible. This of

course is easier said than done, but it can also help reduce anxiety and increase peace of mind. It's not just your cell phone you have to worry about. Your laptop or desktop computer are also included in this list, as are your tablets, e-readers (especially if it's WiFi equipped), digital baby monitors and cordless phones.

7. Avoid exposure to chlorinated chemicals from refrigerators and air-conditioners

- a. If older window air conditioners, refrigerators, freezers, or heat pumps are used that use CFCs or drive a car with an air conditioner that uses CFCs, have the CFCs professionally removed and recycled.
- b. Do not allow the skin to come into direct contact with CFCs.
- c. Use household products according to manufacturer's directions.
- d. Make sure you provide plenty of fresh air when using these products.

These preventive precautionary actions ultimately aim at continuously reducing and if possible removing exposures to potentially harmful substances, activities and other conditions. If progress is to be made in this direction, one should:

- Encourage the replacement of dangerous substances and activities with less dangerous substances or technologies where suitable alternatives are available.
- Reconsider production processes, products and human activities so as to minimize significant adverse effects on health and the environment.

CONCLUSION

To sum up, different modern life style patterns affects our health in different aspects physically and psychologically. If the people's awareness about these effects doesn't increase, this may lead to dangerous consequences in the near future. A commitment to safety is a top priority from the time a company begins working on a new product and continues as long as the product is in the marketplace. Companies should evaluate the safety of existing products by talking with consumers, reviewing scientific developments and monitoring product use data that may affect the safety assessment process. Finally, maintaining people's health is a primary goal of any country that probably would make her spend millions of dollars to achieve it as people are the 'real wealth of a country'.

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