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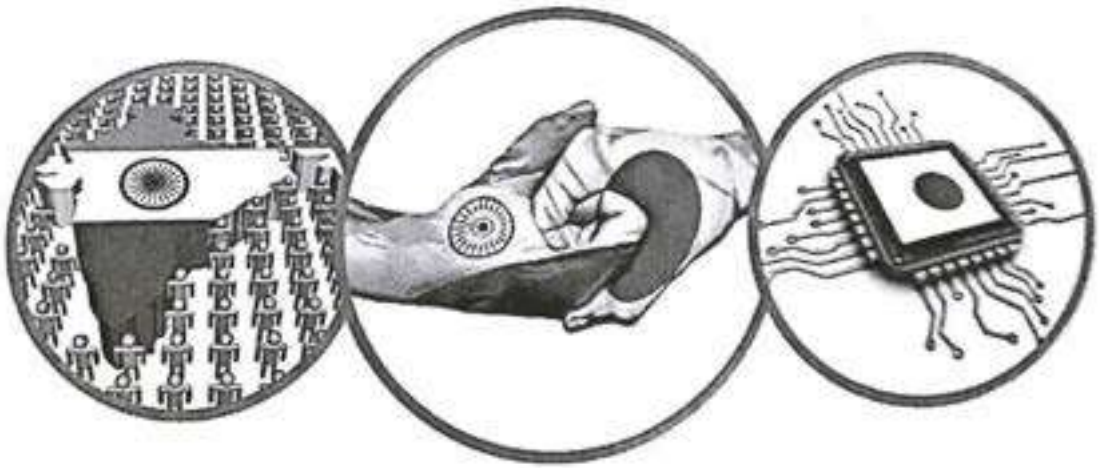
SUSTAINABLE DEVELOPMENT

Environmental Sensitivity and Sensitivity and Sustainable Development

Department of Science and Nursing



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A Review: Impacts of Environmental Sensitivity on Reproductive L

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Abstract

Environmental exposures adversely impact human reproductive function. Chemical exposures in the workplace, home and ambient environment have demonstrated effects on human reproductivehealth. Physical factors such as the increased global temperature and radiation exposure as well as the biologic factors such as the contamination in the environment can detrimentally affect male reproductive function. These effects can result in, not only a reduction in sperm concentration, but also alterations in sexual behavior, mood disorders and the presence of genital cancers. This paper contributes to current knowledge of environmental sensitivity impacts on reproductive life.

Keywords: Environmental sensitivity, Reproductive health, Genital cancers, Radiation

Introduction

Environmental health is broadly defined as the aspects of human health determined by physical, chemical, biological and social factors in the environment and encompasses the assessment and control of those factors[1]. As most humans develop In a predictable fashion growing from fertilized egg to fetus, newborn toddler, child, adolescent and adult, there is little doubt that environment is a powerful modifier of the human reproduction and development[2]. Exposure to environmental contaminants result in permanent damage to a fetus and may have lifelong impacts in health. However disorder related to female reproductive health may develop during sensitive windows throughout fetal development childhood adolescence or adulthood. Reproductive health exquisitely sensitive to characteristics of an individual's environment including physical, biological, behavioral, cultural and socioeconomic factors. The relative effects of these features may vary in different parts of the world or even within a country[3]. Reproduction and development can be affected by exposures to a wide variety of agents including dioxins, poly-chlorinated biphenyls (PCBs), phytoestrogens such as isoflavones, heavy metals, chlorination disinfection by products in water, organic solvents, poly-aromatic hydrocarbons, particulate air pollution, substances emitted from landfill sites and caffeine[4].

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Infertility in Females

Environmental contaminants may act as endocrine-disrupting chemicals (EDCs), interfering with normal hormone production and signaling. EDCs can block endogenous hormones, interfering with normal hormone-receptor binding and impairing the expression of target genes for estrogens and androgen hormone. A study in young girls found that higher exposure to bisphenol A (BPA) was associated with hypomethylation of particular genes involved in immune function and inflammation[5].

Infertility in Males

The effect of environmental factors on male fertility has been a special focus, stimulated in part by the dramatic damage inflicted by the pesticide DBCP on testicular function. Radiation and other toxic substance found in war environments negatively affect sperm quality compared to other body organ the testes are very sensitive to radiation[6]. Men who are regularly exposed to some chemical substances are more likely to be infertile then men who are not.

Conclusion

A thorough exploration of environmental effects on fertility will require the expertise of demographers, epidemiologists, clinicians, biologists, wildlife researchers, geneticists, molecular biologists, exposure assessment specialists, toxicologists, and others. The challenges are enormous but a cutting-edge tailored approach may help to set priorities for future reproductive health research, monitoring, and surveillance activities and for potential risk assessment or risk management follow-up efforts.

References

1. Estimating the prevalence of infertility in Canada Bushnik. Human reproduction (2012) vol. 27, No. 3 738-746.
2. Epigenetics: A key paradigm in reproductive health. Bunkar N. Pathak N, Lohiya NK, Mishra PK. Clin Exp Reprod Med. (2016);43 (2);59-81
3. The potential impact on women from environmental exposures.Burg JA, Gist G. J Women's Health. (1997);6(2):159-161
4. Dioxin and endometrial progesterone resistanc Bruner-Tran, K.L., T. Ding and K.G. Osteen. Seminars in Reproductive Medicine (2010) vol. 28, No. 1 :59-68
5. Bisphenol A –associated epigenomic changes in prepubescent girls: a cross-sectional study in Gharbiah, Egypt'' Kim, J.H. Environmental Health Perspectives(2013) vol. 12: 33
6. Contribution of environmental factors to the risk of male infertility. Oliva, A. Spira, A. Multigner. Human Reprod. (2001);16(8):1768-76

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