Technological Intervention for Generating Biometric Data for Indian Population

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Abstrct - The purpose of this study is to evolve strategies and conceptual action plans to reach out to every girl child to know about her body functions in relation to hormonal events. Mewar region serves as a 'feeder' channel for girls that come from remote tribal areas, to semi-urban and urban areas. They suffer from lack of information about their body; and have little awareness about their body care health and genital hygiene. Great deal of effort is, therefore, needed to inculcate in them the attitude for those critical parameters that greatly affect their life as a student and the future course that they would pursue in various ways in their life. Diagnosis of their neuron-endocrine health is vital as it affects them profoundly. Neuro-Endocrine glands are "Sensory Power Station" of human body. They control and homeostatically maintain each and every body function, and mechanisms. Any disorder in the body can be measured using breath, sweat, saliva, urine and blood, which shows various dynamics of hormonal cycles as well as of their metabolites. Effective counseling can then be given to them about their mood swings, behavior, fertility, motherhood, etc. on the basis of these hormonal profiles. Sample survey of hormonal parameters of pubertal, post-pubertal, and fertile girls, and those who suffer from pre-menstrual and menstrual syndrome, are thus vital to sensitize them about their body. This would help in micro-psychological counseling too. Genadotropin releasing hormone (GnRH) and FSH-LH cycles are studied along with estrogen and progesterone titers. These results assist in providing baseline information to every girl about their body. This has wide impact on their social, emotional and intellectual quotient. Similar approaches are needed for establishing DNA fingerprinting, karyotypic characteristics and physiognomy for establishing roster of national database about every girl in cities as a startup effort.

KEY WORDS: Technology, Biometric Data, Endocrine Profile, Reproductive Status of Fertile Girls, Expired Ari, Sweat, Saliva, Urine, Blood as too, Hormonal Dynamics, Roaster of National Data Base.

I.INTRODUCTION

Hormones serve wide variety of functions ranging from homeostasis of body's physiological mechanisms to fertility, pregnancy, birth, lactation and behaviour. Hormones can be estimated from various extrinsic exudates like Breath, Sweat, Saliva, Urine and intrinsic fluids like Blood, lymph & mucous:

- **a.** Breath Analysis: It's a non-invasive technology for evaluating hormonal disorders. Exhaled breath contains about 200 volatile organic compounds (VOC). Their identification can serve as biomarkers for hormonal disorders. Heliometers, Breath Analyzers, nanodetectors are analytical instruments which detect small quantities of VOC and form a "biochemical fingerprint" that can be used for detection and diagnosis of such diseases as pulmonary malfunctions, breast cancer etc. [2]
- **b.** Sweat Test: It's done by sweat analyzer, Hormonal disorders responsible for cystic fibrosis (CF) and inherited disorder can be diagnosed by these tests. [3]

CF occurs due to defect in body proteins as defective sweat glands, etc. due to disrupting normal functions of epithelial cells which makes sweat glands in skin, lungs, liver, kidney, pancreas, digestive and reproductive systems secrete abnormally. (*Dorfman*, 1973)

c. Saliva Test: It identifies endocrine, immunologic, inflammatory infections, cushings disease, hypogonadism, allergies, anovulation, HIV, cancer, parasites etc. Saliva is a genetic material and marker of nutritional status as it's a "Valuable Bio Fluid". Saliva test has specific uses in clinical and experimental

psychological settings. It provides insight into human behavior, emotions and development, anxiety, depression, PTSO and other behavioral disorders. As saliva measures cortisol and alpha amylase, indicative of stress levels. Salivary LH is biomarker of ovulation in females. [4],[5],[10]

- **d.** Urine Test: It diagnoses tract infections, kidney disorders, liver problems, diabetes or other metabolic conditions. Metabolites of estrogen (17-B-estradiol) and progesterone (pregnenolone) can be easily quantified biochemically to determine fertility cycles, failure etc. [8]
- e. Blood Test: Androgen and estrogen/progesterone (female hormone) can be easily estimated in blood. Abnormal secretion of these hormones is responsible for anovulatory cycles, infertility, pregnancy troubles. Girls who began to display masculine physical features-hirsutism (increased body hair, deepening of voice), polycystic ovary syndrome (PCOS), uterine endometriosis-causes insulin resistance, diabetes, high cholesterol, high blood pressure and heart diseases. [1], [5]
 - Blood test can be used for monitoring of-
 - **i.** Sex Chromosomes.
 - ii. Genetic Fault (Karyotyping).
 - **iii.** Hypogonadism, prior careful history is taken.

Formal assessment changes in mood, cognitive functions body mass index changes in hair, skin and fat distribution can also be monitored. [7]

As DNA Profile is the characteristic of an individual DNA like human fingerprints, which are detailed, unique,

difficult to alter and durable over the life of an individual. In 2015, the identification of sex by use of fingerprint has been reported by karyotype describes the chromosome count of an organism. Any variation from standard karyotype may lead to develop mental abnormalities. Physiognomy or psycho- physiognomy can find link between personality traits and facial traits as it's of importance of forensic science.. (Unlun hizarc etal, 2012). Technologies are also available for DNA fingerprinting, generating pupillometric and physical and physiologicalbehavioral data.

II.APPLICATIONS

National data base will result eventually lead to covering the entire Indian population (state wise). Many European countries like Germany have taken the lead. Combined DNA Index System (CODIS) is a tried set of data base at the local, state and national level. Such data will be of enormous value in demography, forensic crime detection, science [6], illegal immigration/emigration, health science and in finding clinical solutions. College, universities, research institutes which now number in thousands in India can take part in this national endeavor. This will make India safe, secure, healthy and vibrant.

III.IMPACT

It is logical to add that, generation of such scientific information for biota in an ecosystem is gradually receiving the attention it deserves. This will help in ecorehabilitation, conversation of biodiversity, and in dealing on a species being in the red list. Genome integrity and maintenance would be deeply impacted by such technologies. [9]

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