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Evolving lifestyle "changes and challenges" to medical fraternity

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"**Lifestyle**", a simple, yet not so simple 9 letter word introduced way back in the 1950s to denote roughly the way of life of a person, has undoubtedly undergone terrific changes over the decades. Sociology defines lifestyle as "the interests, opinions, behaviors and behavioral orientations of an individual, group, or culture." Looking into the medical aspects of lifestyle, it essentially means all the activities or tasks the person indulges himself into, which somehow directly or indirectly, influence his body functions.

India is a country of traditions and culture, a nation where, lifestyles vary from state to state as per the variations in terrains or occupation. Going back to the pre-gadget era, where man was not so dependent on the inventions of technology as he is today, their lifestyle was way different and in many ways, better than today. Strenuous physical work daily, walking for long distances easily, eating healthy home cooked meals everyday, engaging in lively sports and other recreational habits daily- all these habits of the past have been taken over by the modern world. No doubt technology is a boon to mankind, but it has also brought various drawbacks.

Comparing the past and the present, it is wise to admit that man has indeed become a slave to the machine. Countless examples of this change in our modern 21st century lifestyle would prove that these are the forerunners of the so called modern epidemics- the non communicable or lifestyle diseases.

All these factors, together or singly, have lead to the development of lifestyle disorders- they are named as such because they are the outcome of today's modern lifestyle. A list of the most common lifestyle diseases are:

- Atherosclerosis, coronary heart diseases, Hypertension
- Ischemic Heart Disease (IHD)
- Type 2 diabetes mellitus
- Asthma
- Chronic obstructive pulmonary disease
- Liver cirrhosis
- Metabolic syndrome
- Chronic renal failure
- Stroke
- Osteoporosis
- Obesity
- Depression, Alzheimer's disease
- Some types of cancer
- Accidents
- Blindness

Chronic Non communicable diseases (NCDs) / Lifestyle diseases account for over 60% (35 million) of global deaths annually. Almost 80% (28 million) of these deaths occur in low and middle income countries. As the population will age, annual deaths due to NCDs are projected to rise substantially, to 52 million in 2030. Ischemic heart disease is the largest cause of deaths worldwide, followed by hypertension and diabetes mellitus, causing significant mortality. India too is experiencing a rapid health transition with a rising burden of NCDs.

Various modifiable and non-modifiable risk factors responsible for causing these lifestyle disorders are:

Modifiable risk factors	Non-modifiable risk factors	Miscellaneous
Sedentary life style	Genetic predisposition	Maternal DM
Changing Food habits	Age	Malnutrition
Obesity	Sex	Marital status
Addiction (tobacco smoking, alcohol)	Ethnicity	Environmental factors
Hypercholesteremia	Type A Personality?	Occupational factors
Hormones		
Oral Contraceptive Pills		
Sleep disturbances		
Stress		

This wide array or spectrum of risk factors acts either alone or synchronously in groups to wreak havoc in the human body systems. One would tend to think that, being caused by such risks known by all today, these non communicable diseases would be easily recognized and not so tough to treat. But here lies the glitch- despite the greatest advances in medicine and technology, the medical fraternity is forced to admit that, hardly 1% of the population is screened or diagnosed with the disease, and of them, the numbers undergoing treatment are even lesser. In a country like India, almost 2/3rd of the population is either at high risk of or already suffering from one lifestyle diseases

or another, but the challenges in bringing each one of these under medical diagnosis and treatment are many.

Perhaps the biggest challenge is to screen and diagnose those at risk from the vast population. Epidemiology in Community Medicine talks about the concept of the "ICEBERG Phenomenon" of disease. Only the tip of the iceberg is visible to the naked eye, whereas the major portion of the same is submerged and remains unseen. While this model holds for many infectious diseases, it also applies to the lifestyle diseases- whatever number of cases the physician sees in his clinics or government hospitals constitute only the tip of the iceberg, whereas the actual numbers of high risk individuals or groups or those suffering from the diseases but are asymptomatic constitute the submerged portion of the iceberg. So, the next big challenge turns out to be that of SCREENING out the susceptible population, and diagnosing and treating timely and correctly those with the disease. In developed countries, although 1/3rd population suffers from lifestyle disorders, the delay in diagnosing and treating the disease is significantly lesser than the developing the world.

In developing countries like India, most of the population dwells in the periphery and remote areas where there is paucity of quality health care. Added to this, there are the 3Ds- Delay in seeking health care, Delay in transport to a health institute and Delay in consulting the right doctor once inside a health institute.

Another major hurdle is the lack of availability of accurate, highly sensitive and specific screening and diagnostic tests for lifestyle diseases, which greatly impair further planning and effective management of services. This is because, India spends only 3% of its Gross National Product on health care, major chunk of which is utilized in combating infectious diseases (example: tuberculosis- AKT free of cost for all patients), vaccination against VPDs(vaccine preventable diseases) and providing certain drugs to the poor free or at low cost in government hospitals. All this greatly reduces the amount of funds required to be spent on NCDs. Another important aspect is the unawareness among the population, especially those living in villages and peripheries about these lifestyle disorders and their lack of interest in seeking health care even if they suffer from the symptoms, probably due to cost issues, transport problems and poor motivation due to lack of education among households.

Poverty is also closely linked with NCDs. Vulnerable and socially disadvantaged people get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food, and have limited access to health services.

In low-resource settings, health-care costs for cardiovascular diseases, cancers, diabetes or chronic lung diseases can quickly drain household resources, driving families into poverty. The exorbitant costs of NCDs, including often lengthy and expensive treatment, being lifelong in most of the diseases, namely diabetes mellitus (insulin pumps/pens, or oral anti-diabetics), hypertension, etc. and loss of breadwinners, are forcing millions of people into poverty annually, stifling development. Harmful practices like alcohol addiction, unhealthy diet and modern lifestyles occur both in higher and lower income groups, however, high-income groups can access services and products that protect them from the greatest risks while lower-income groups can often not afford such products and services.

Recognizing the impact of NCDs on morbidity and mortality, the United Nations has formulated the Sustainable Development Goals, in succession to the Millenium Development Goals, to combat the health issues related to them an achieve reduction in morbidity and mortality by 2030.

Targets of Sustainable Development Goal 3 are:

1. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
2. Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

The challenges to the medical fraternity in aspect to NCDs do not end here. One of the greatest problems faced in treating these patients is their lack of Compliance. Reluctance to come for regular checkups n monitoring of BP, blood sugar, etc. and lesser inclination towards injectable drugs (insulin is preferably avoided as they wish to adhere to oral medication as far as possible, despite the fact that insulin offers better glycaemic control), inability to stick to the schedule of daily drug dose, all are difficult to tackle at the grass root level.

What then, should be done to prevent and control non communicable diseases?

To lessen the impact of NCDs on individuals and society, a comprehensive approach is needed that requires all sectors, including health, finance, foreign affairs, education, agriculture, planning and others, to work together to reduce the risks associated with NCDs, as well as promote the interventions to prevent and control them.

An important way to reduce NCDs is to focus on lessening the risk factors associated with these diseases. Low-cost solutions exist to reduce the common modifiable risk factors (mainly tobacco use, unhealthy diet and physical inactivity, and the harmful use of alcohol) and map the epidemic of NCDs and their risk factors. Other ways to reduce NCDs are high impact essential NCD interventions that can be delivered through a primary health-care approach to strengthen early detection and timely treatment. Evidence shows that such interventions are excellent economic

investments because, if applied to patients early, can reduce the need for more expensive treatment. These measures can be implemented in various resource levels. The greatest impact can be achieved by creating healthy public policies that promote NCD prevention and control and reorienting health systems to address the needs of people with such diseases. The **NPCDCS** (National programme for prevention and control of diabetes, cancer, cardiovascular disease and stroke) launched by the Government of India is an effective step towards management of these diseases. IEC (Information Education Communication) activities, posters, banners, advertisements in all languages on television, radio are all ways of providing health education to the masses.

Lower-income countries generally have lower capacity for the prevention and control of non communicable diseases. High-income countries are nearly 4 times more likely to have NCD services covered by health insurance than low-income countries. Countries with inadequate health insurance coverage are unlikely to provide universal access to essential NCD interventions.

Apart from the intensive drug therapies aimed at controlling NCDs, various non pharmacological approaches are the key factors in helping to reduce the burden of these diseases. They also offer the advantage of being easy to perform, free of cost and related to a person's daily routine.

As per the protocol in community medicine, there are various levels of prevention- primary, secondary and tertiary.

The most important level of prevention in lifestyle diseases is primary prevention, which aims at ensuing measures to reduce the incidence of the disease in a population by reducing the risk of onset.

Some of the interventions that need to be undertaken promptly are:

1. protecting people from tobacco smoke, banning smoking in public places, warning about dangers of smoking or chewing tobacco in any form, enforcing bans on advertisement of tobacco products, raising taxes on tobacco;
2. restricting access to retailed alcohol, enforcing bans on alcohol advertising, raising taxes on alcohol;

In addition to the above, there should be an aim to bring about changes in lifestyle by low cost-effective and low-cost population wide-interventions like:

1. reduce salt intake and content of food, especially avoiding table salt, and reducing preference of tinned and canned processed meats, and other foods which are surplus sources of salt and trans fat, avoiding frozen and preserved fish(has increased nitrosamine content which is potentially a cancer causing agent) remember, "*If food is your best friend, it is also your worst enemy"*
1. Replacing transfat in food with poly unsaturated fat;
2. Promoting public awareness about diet and physical activity, including through mass media.
3. Nicotine dependence treatment
4. Enforcing drink driving laws (thereby greatly reducing deaths due to road traffic accidents)
5. Restriction on marketing of foods and beverages high in salts, fats, sugar;
6. Food taxes and subsidies to promote healthy diets
7. Nutrition information and counseling in health care
8. National physical activity guidelines(school based physical activity programmes for children and workplace programmes for physical activity and healthy diets)

Apart from these, interventions based on the population en masse include:

- Vaccination against hepatitis B, HPV;
- Protection from occupational exposures to radiation(lead aprons), and other chemicals and dyes by promoting use of personal protective equipments(masks, aprons, special glasses, footwear, etc
- Rehabilitation programmes for alcohol withdrawal and drug abuse patients, support groups, peer group counseling, etc
- Encouraging development of widespread classes for meditation, yoga, aerobics, etc. as a way of recreation, resulting in marked reduction in stress, anxiety and on the other side, advantageous to health in terms of increase in daily physical activity, burning excess calories, staying fit, improving sleep and thereby work performance.

Cancer Screening: adoption of selective or mass screening as per resource availability;

- Screening for breast cancer: highly recommended in all women over age of 40, especially in those with strong family history. Mammography should be made available in most of the health centres, along with other methods of screening like examination by a doctor and FNAC.
- Screening for oral and lung cancers: detection of precancerous lesions like leucoplakia in mouth, trismus, as well as prompt treatment and cessation of tobacco/betel quid/cigarette can help improve prognosis.
- Screening for cervical cancer: although there is limited availability of PAP smear testing in many centres in the country, adoption of simpler and accurate methods like visual inspection with 5% acetic acid (VIA), VIA with Magnification (VIAM) and visual inspection post application of Lugol's Iodine (VILI) are useful alternatives.

Secondary prevention aims at targeted drug therapies which control the disease in its earlier stages and thereby help increase longevity. While excellent

drug therapies are available for diabetes, hypertension and IHD offering excellent prognosis, cancer drug therapies, albeit much advanced, are associated with a somewhat poorer prognosis. Tertiary prevention aims at disability reduction and rehabilitation for those who suffer from impairment or disability due to the disease (eg: provision of prosthesis for patients in whom amputation is carried out in case of diabetic foot, dressing kits for diabetic ulcers, etc.).

In nutshell, there are provisions to combat the disease at every level but the best mode of intervention is at the primary level, or as of today, primordial level (a type of primary prevention where the aim is to prevent the disease before occurrence of signs and symptoms) which is the most ideal way of control of NCDs.

Thus, it can be concluded that, control of NCDs requires an integrated approach over time, and is not something that can be achieved in one day. The famous quote *"The elimination of the cause of illness is the obvious and the only way to healing and health" by* ***Stanley Burroughs*** is indeed true for the prevention and control of lifestyle diseases.

So let us all join hands together and make a move to improvise our lifestyle and make it fit, not for anyone else but for our own sake. Start afresh, go for brisk walks, indulge in meditative or recreational activity/sport of your choice, "eat healthy, stay fit", "don't light the next cigarette", "quit smoking, choose life", and remember that you have only one life, so choose how to spend it wisely.