Sustainability in health and health care provision

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**I. INTRODUCTION**

 We live in a world where there is development and growth in all aspects. These developments come with their own consequences. With the increase in population, there is increase in consumption of food items as well as increase in waste generation. The earth is deeply affected by this development. Utilization of natural resources is leading to its depletion. Waste generation from all areas is leading to environmental population. The increasing rise of temperature in the earth is one of the result of environmental pollution. The increase in development can be deeply felt by all creatures on earth.

 Thus, the people have started to realise the importance of maintaining the earth and preparing for the future. Some people have started to realise the importance of a green earth. Environmental friendly methods have replaced traditional methods. This led to the development of the term sustainable. Though this concept has been understood since the 17th century, it has never been widely used as in the present days.

**II. DEFINITION AND CONCEPT**

The United Nations World Commission on Environment and development, in 1987 published a report ‘Our Common Future’. This was known as the Brundtland Report. The Brundtland Report defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs [1]. This definition is now widely used to define sustainable development. Thus we can say that sustainable development is the utilization of the resources for the requirements of the present generation while finding the middle ground to maintain the resources for the future generation.

 The concept of sustainable development developed in the 17th and 18th century when people understood the importance of forest and the need to conserve it. Writers, philosophers, scientist, artist and many others brought attention to the loss of environment through their publications and works in their respective fields. With the advent of time, the focus shifted from environmental conservation to social as well as economic conservation.

With the ending of the term of the Millennium Development Goals in December, 2015, the United Nations, General Assembly adopted the Sustainable Development Goals. These goals are a call to all the countries of the world to work together for a green planet [2]. All the goals are interconnected and should be achieved by 2030. It encompasses all aspects of development and leaves no one behind. For example goal number 6 is ‘clean water and sanitation’. If this goal is achieved, the goal number 3 ‘good health and well being ‘will automatically be realised.

The United Nations adopted the word ‘sustainable’ for a reason. The Webster Dictionary defines sustainability as “lifestyle involving the use of sustainable methods” or “a method of harvesting or using a resource so that the resource is not depleted or permanently damaged” [3]. This is a principle where the present generation’s needs are met without compromising the needs of the future. The Nations are to find a balance between development and well being and protection of the environment. It is co-existence of humans and the creation.

Sustainability has three dimensions viz. social, economic and environmental.

**Fig 1: Dimensions of Sustainability**

 The three dimensions are also known as the pillars of sustainability. The idea is to that there should be a balance between the three dimensions.

 Environmental sustainability means living in harmony with nature by protecting the environment from overuse. People have just started realising the importance of harmony with nature and hence have started planting more trees and maintaining a green earth by reducing waste generation. But this accounts for a very small percentage in respect with the destruction of the environment from human activities. Activities such as saving water, using renewable sources of energy, recycling etc. should be encouraged.

Equal work for all, equal wealth for all will lead to economic sustainability. Resources should be distributed equally among all without any discrimination of sex, colour or creed. But this is yet to be achieved. There is an increase rise in ethnic clashes in the present day as evidenced from news reports we can see daily. This has led to some groups abusing their power and discriminating the other smaller groups. This will only lead to instability in the economy of the world. If this continues sustainability in economy is far from our reach.

Social sustainability can be achieved only by gender equality, development of the culture of each community, integrating traditional knowledge and scientific knowledge etc. Basic needs i.e. food, clothing and shelter needs to be met to maintain social sustainability. Democracy is a must to the people. They should be able to live freely and exercise their rights to freedom.

**III. NEED**

Sustainability is not a new concept but an old one which is gaining recognition in the present days. Let us further discuss a few points why there is a need for sustainable development.

1. **Overexploitation of natural resources**: Most of the animals are becoming extinct due to the decline in forest area. There is a 60% decline in the marine fisheries. 1 million species are in the verge of extinction [4]. The natural reservation of resources is slowly depleting. The main cause is population explosion. The United Nations Population Fund (UNFPA) in the State of World Population Report states that the world population have reached 8 billion as of November 2022. [5]
2. **Scarcity of resources**: Due to population explosion, natural resources are being consumed at an accelerated rate. There is a lack of access to clean usable water in more than half of the world’s population. Food production is not adequate as per the requirement of the people.
3. **Climate change**: The Polar Regions are melting due to the increase in the earth’s atmospheric temperature. Thus, there is a rise in the sea level from all the melting waters flowing to the rivers. This is a threat to small islands and is one of the main causes of floods. The change in the climate affects the health of people leading to the development of new diseases caused by different strains of viruses and bacteria.

These are some of the main reasons why there is a need for sustainable development.

**IV. SUSTAINABILITY PROVIDING HEALTH CARE**

 Health is a necessary state for all the people living on the earth. It is important not only for the wealthy but for the poor as well, not only for the uneducated but for the educated too. Providing health care is a right of every living creature. But the health for all comes with certain effects to the environment.

 The health sector generates a large amount of waste that has a huge impact on the environment. A study by Klangsin & Harding showed that medical waste is one of the top sources of air, water and soil pollution and is a major factor affecting disease spread. [6] The hospital generates different types of waste right from the least harmful bio-degradable waste to the most dangerous or hazardous waste. We can say that, it is in fact the measures to bring health, which affects the health of the people. Thus, a multidisciplinary approach is required to address the various aspects of sustainability in heath care.

We can define sustainability in health care as the best quality health care delivered to the people at a minimal cost which is affordable to them and with very less impact on the environment. The needs of the present are met without affecting the futuristic needs. Some of the approaches which may be adopted in order to maintain sustainability in health care are as follows:-

1. **Sustainable prevention**: With the change in the lifestyle of people and the improved healthcare facilities, the pattern of diseases has changes. We can see the shift from communicable disease to non-communicable diseases. People are suffering more from NCDs. We can also see the trend of these diseases appearing in people as young as 30 years. These diseases can be prevented if we focus on primordial prevention. Primordial prevention will help to reduce the waste generation from factories making drugs and other medical equipments. It will also reduce the waste generated from laboratories. Since all the people are healthy, there is no need for hospitalization. Hence resources such as water, light will not be required and hence can be stored for future use. Waste generation from hospitals and clinics will also be reduced.
2. **Sustainable diagnosis and treatment**: Treating diseases at an early stage is another step of a sustainable health care. Requirement of resources will be at a minimal since the disease is at an early stage. Early diagnosis and treatment is a must. The lives of the people will be more comfortable and secure if they can recover without any complications.
3. **Sustainable practice**: We all know that hospitals generate a large amount of waste. Examples include expired medicines, expired surgical items, bio medical waste like surgical dressing, cotton, single use disposable item such as syringe, etc. Most of the waste is disposed by incineration and some by burying and some by other methods of disposal. To maintain sustainability, we need to educate the workers regarding minimization of waste. Unnecessary usage of cotton, gauze, etc. proper indent of drugs and medical items will help to minimize waste. Proper disposal method of waste generated is also very important. Waste should not be dump careless without treating them to avoid further destruction to the earth and its living beings.
4. **Sustainable social security**: The people working in the healthcare needs to be recognized for their contribution. All workers at all levels have their own function. They need to be provided equal pay for their work without discrimination. The security of the people needs to be met to reach sustainable development.
5. **Sustainable e-practices**: Electronic health practices can be adopted to reduce the impact of waste generation from hospitals. For example, a person visiting a hospital for a consultation needs to travel by a vehicle. The vehicle will emit smoke which will pollute the air. But if the person instead of visiting the hospital consult the doctor via e-health practice, the emission fo harmful gases from the vehicle to be used is reduced.
6. **Sustainable use of natural resources**: Water and a electricity are some of the natural resources which are a necessity in the hospital healthcare setting without which the hospital cannot function. These resources need to be used wisely. Some methods to save the energy are switching off fans and lights when not in the room, using water efficient faucets and showers to save water, upgrading the lighting system to a more efficient energy saving type.

**V. BARRIERS**

 People have understood the need to preserve the natural resources and to conserve the environment. They have understood the importance of respecting the creation. But implementing the measures of sustainability is very difficult. Some points that hinder the implementation of these measures are:-

1. **Lack of political will**: Countries need to develop new laws and regulations to bring about sustainable development. The focus should be on all people without discrimination. Equal opportunities should be given to everyone in the healthcare sector. Their basic human needs should be met.
2. **Lack of resources**: To maintain a hospital which is moving towards sustainable development comes at a very high cost. The lack of resource is one of the main cause which blocks sustainable development. Many healthcare sectors do not have the money, man or material to function at that level.
3. **Lack of expertise**: It is not easy to find new measures because there is lack of expertise. New diseases such as the COVID 19 emerge and without proper research, it is very difficult to treat such diseases. Since he concept of sustainable development has just recently started evolving, many of the people are not well aware of the term. There are very few expert in this field. Hence this becomes a barrier to maintaining sustainability.
4. **High cost of implementing sustainable measures**: Healthcare is a necessity for all. It needs to be provided to all without discrimination and possibly at the same cost. Healthcare needs to be affordable by all. Maintaining a hospital which adapts to the rules of sustainable development is very costly. This poses as a barrier especially to the under developed and developing countries.

**VI. CONCLUSION**

Healthcare is a major contributor to the environmental pollution as well as a major consumer of natural resources. More research should be done to identify the contribution of healthcare sector to green house gases and proper guidelines should be given to bring down the emission of these gases from the healthcare sector. Sustainability in all dimensions needs to be addressed so that the future generations may lead a healthy and prosperous life.

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