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| **Role Of Science in Effecting Social Changes - In Promoting Health And Hygeine,Population Control ,Eradication of Diseases and Removal of Superstitions**  The advancement of science and technology is surely one of the greatest organized creative activities of humankind today. The material world that we see around us, and the way society functions today are direct manifestations of these advances.  The origin of science lies in the evolution of the human brain, and the intrinsic sense of curiosity in human beings to explore, to know, and to understand nature and the world around. Historically, the origins of science go back to the beginning of civilized existence. From its earliest days, science has been embedded in society, there has been a continuous learning process in society as a whole, based on day-to-day experiences and this can become the body of the knowledge from which applications and understanding have grown.  Sir Francis Bacon wrote: "Human knowledge and human power are coextensive, for ignorance of causes prevents us from producing effects. Nature can only be ruled by being obeyed; for the causes which theory discovers give the rules which practice apply". Bacon’s words bring out the purpose of scientific activity. It is to discover the laws of nature to widen humankind’s perspective and understanding of the world we live in, to increase the basis of our material existence, and to help us fight the physical and biological calamities that beset us in our progress through life.  The modern age is the age of science, technology, knowledge and information. All these are the interrelated and different aspects of the same thing. Explosion of knowledge and information, based on breathtaking advancement in the field of science and technology, has bestowed on manpowers enviable even for gods. It has helped man conquer space and time. Now he has unraveled many mysteries of nature and life and is ready to face new challenges and move forward in the realm of the unknown and the undiscovered.  **Role of Science in Effecting Social Changes**  Science is part of almost every aspect of our lives. Although we rarely think about it, science makes extraordinary things possible. At the flick of a switch, we have light and electricity. When we are ill, science helps us get better. It tells us about the past, helps us with the present, and creates ways to improve our future. Scientific endeavor is as much about us as it is for us. Its place in society, therefore, is not to unfold quietly at the sidelines but to become a fundamental part of the game. Now more than ever, science must engage with us, and we must engage with science.  Science and technology have had unprecedented impact on economic growth and social development. Knowledge has become a source of economic might and power. This has led to increased restrictions on sharing of knowledge, to new norms of intellectual property rights, and to global trade and technology control regimes. Scientific and technological developments today also have deep ethical, legal and social implications. There are deep concerns in society about these. The ongoing globalization and the intensely competitive environment have a significant impact on the production and service sectors.  **Role of Science in Promoting Health and Hygeine**  Health is the level of functional or metabolic efficiency of a living organism. In humans, it is the general condition of a person's mind and body, usually meaning to be free from illness, injury or pain (as in "*good health*" or "*healthy*").Good health is a valuable asset to man. It brings him happiness and prosperity. It is not merely the absence of disease. It includes the full development of physical, mental, aesthetic, and spiritual power of man. Sound health is the greatest of all blessings and is a condition for joyful and energetic life. Therefore, it is very much essential for the people to acquire knowledge of diseases, its causes and prevention of diseases and hygiene.  Organized interventions to improve health based on the principles and procedures developed through the health sciences are provided by practitioners trained in medicine, nursing, nutrition, pharmacy, socialwork, psychology, occupationaltherapy,physical & other health care professions. Clinical practitioners focus mainly on the health of individuals, while public health practitioners consider the overall health of communities and populations. Workplace wellness programs are increasingly adopted by companies for their value in improving the health and well-being of their employees, as are school health services in order to improve the health and well-being of children.  Several campaigns are conducted in rural areas throughout India to educate the people about balanced diet, sanitation, nutrition in order to acknowledge the importance of health and proper hygiene. The initiatives taken by Government to educate the people in rural areas regarding cleanliness and sanitation have succeeded in controlling the outbreak of contagious diseases and other health problems.  Swachh Bharat Abhiyan (Hindi: स्वच्छ भारत अभियान, English: Clean India Mission) is a national level campaign by the Government of India, covering 4041 statutory towns to clean the streets, roads and infrastructure of the country.This campaign was officially launched on 2 October 2014 at Rajghat, New Delhi, where Prime Minister Narendra Modi himself cleaned a road. The campaign is India's biggest ever cleanliness drive and 3 million government employees and schools and colleges students of India participated in this event. The mission was started by Narendra Modi, the Prime Minister of India, nominating nine famous personalities for this campaign, and they take up the challenge and nominate nine more people and so on(like the branching of a tree). It has been carried forward since then with famous people from all walks of life joining it.  This campaign aims to accomplish the vision of 'Clean India' by 2 October 2019, 150th birthday of Mahatma Gandhi and is expected to cost over [INR](http://en.wikipedia.org/wiki/Indian_rupee)62000 [crore](http://en.wikipedia.org/wiki/Crore" \o "Crore)s. The campaign was described as "beyond politics" and "inspired by patriotism".  The main objectives of this campaign are:-   1. To eliminate open defecation 2. Conversion of insanitary toilets to pour flush toilets 3. To eradicate manual scavenging 4. 100% collection and scientific processing/disposal reuse/recycle of municipal solid waste 5. To bring about a behavioural change in people regarding healthy sanitation practices 6. To generate awareness among the citizens about sanitation and its linkages with public health 7. To strengthen urban local bodies to design, execute and operate systems 8. To create a supporting environment for private sector participation in capital expenditure and Operation & Maintenance (O&M) costs   **Strategies for Inculcating Health Values in Students**  The welfare of the individual and the general good of the society depend largely upon the physical efficiency of our children. It can be realized by organising health and cleanliness programme in the schools. It is seen that most of the students suffer from malnutrition, enlarged tonsils and adenoids, defective vision, decay of teeth etc. Therefore, medical inspection of the students is absolutely necessary. The actual health conditions of the whole school-going population, their height, weight, nutrition, mental condition etc must be ascertained and recorded. The school medical officer will be able to find out the physical defects which prevent the child from obtaining a full education. Teachers should be oriented about hygiene and practical medicine. To orient the students about good habits, picnics should be organised The programmes of Safai may be organised to develop a sense of cleanliness among the students. Students should be encouraged to undertake enough outdoor exercise.  **Population Control**  Population growth is the rate of increase in the size of a given area, such as a city, country or continent. One of the gravest development issues most developing countries in the world are facing is population. Population explosion is the main obstacle to the smooth development of the Indian economy. Since this problem is getting intense day by day, it is obvious to take appropriate measures to keep it under control by lowering the birth rate.  Studies conducted by several people helped to understand that excessive population has various adverse effects including undue pressure on natural resources. More people mean more consumption which in turn means more exploitation of fixed and exhaustible resources. Advancement in science has brought up several ways to control population. They are:-   1. **Spread of Education**   Illiterate people regard children as the gift of God and are not conscious about the evils of population growth. To remove illiteracy and blind belief, spread of education is very much essential. An educated man can rightly understand the benefit of a small family norm.  **2. Women Education and Employment**  In India, only 65 percent of women are literate and many are unemployed. The Government, therefore, should take effective steps to spread women education and create employment opportunities for them so that they can understand the evils of population growth and control it by themselves.  **3**. **Family Planning Facilities**  In India, family planning facilities are available only in the urban centres and semi-urban areas. So poor people of rural areas don’t get these facilities easily. Therefore, family planning centres with trained personnel should be set up in rural areas to prove this facility at their doorstep. This can very much help in lowering the birth rate.  **4. Publicity**  The message of family planning should reach the people of rural areas. For this there should be widespread publicity in the new paper, radio and T.V. People should be educated about natural methods of birth, and also that small family is a happy family.  **5. Contraceptive methods**  Another important way to limit population growth is to increase the rate of contraception among the population. Several methods like tubectomy and vasectomy, diaphragms etc are developed by scientific methods for birth control. Contraception, while not infallible, drastically reduces fertility rates, often with minimal expense. Contraception and education about using contraception is widely available in India.  **Eradication of Diseases**  As time passes by, the progress in science is so great that several technologies have been developed, which rapidly gained life expectancy, which incorporated with social change and public health. There have been major achievements in the biomedical sciences in improving the health of society. Such developments and effects on medical practice in both industrial and developing countries are extensive.  In India, the efforts taken by Government to deal with Tuberculosis are widely advocated. The WHO-recommended Directly Observed Treatment, Short Course (DOTS) strategy was launched formally as Revised National TB Control programme in India in 1997 after pilot testing from 1993-1996. Since then DOTS has been widely advocated and successfully applied. DOTS are the most effective strategy available for controlling TB.       The five key components of DOTS are:-   * 1. Political commitment to control TB;   2. Case detection by sputum smear microscopy examination among symptomatic patients;   3. Patients are given anti- TB drugs under the direct observation of the health care provider/community DOT provider;   4. Regular, uninterrupted supply of anti-TB drugs; and   5. Systematic recording and reporting system that allows assessment of treatment results of each and every patient and of whole TB control programme.   Technological advancements aided in studying the causative agents, epidemiology, and the nature of the particular disease, and thereby coming up with new drugs and vaccines to combat with diseases. The emergence of NDM-1 (New Delhi Metallo-beta-lactamase) enzyme that rendered certain bacteria resistant to drugs a few years ago, raised a storm with both the Ministry of Health and corporate healthcare industry terming it as an attack on India’s medical tourism business. A five-year blueprint prepared by medical societies, Chennai Declaration, on curbing misuse of antibiotics in 2012 finally jolted the government into some action. As a first step, 46 antibiotics and anti-TB drugs have been placed under category of restricted drugs, meaning they can’t be sold over the counter. We are yet to see any impact of this measure which was taken in March 2014.  Completing three full years without reporting any case of polio, India celebrated a landmark achievement in public health on 11 February 2014 – the victory over polio. India has not reported any case of polio since a two-year old girl got polio paralysis on 13 January 2011 in Howrah district of West Bengal. India’s victory over polio paves the way for polio-free certification of the South East Asia region of WHO in March end. This is an unprecedented progress for a country, which reported more than half the global polio cases until the year 2009. Implementing innovative strategies, the programme reaches an incredible 99 per cent coverage in polio campaigns, ensuring every child; even in the remotest corner of the country is protected against polio.  Innovations have paved ways for the discovery of new arrays of drugs. Scientists, the world over, are excited upon this discovery because the new antibiotic is not just the first one to emerge in the past 30 years, but it also promises to tackle the most feared health emergency of the century – antibiotic resistance. Teixobactin, discovered by a team of scientists led by the Northeastern University, is being dubbed a “game changer” because it actually opens up an innovative way of finding antibiotics and thus could spawn a totally new class of antibiotics in future.  Several strategies are undertaken to fight against AIDS and in giving awareness to people regarding the spread of HIV. NACO (National AIDS Control Organisation) and several other organizations are relentlessly working to spread awareness and conduct campaigns regarding HIV and AIDS.  **Removal of Superstitions**  In the 21st century, when technology is governing our lives, when modernity inspires us all, when old traditions disinterest us, when westernization attracts us, we still have something old instilled and inscribed in the deepest domain of our minds – something as fake, as non-existent, as illusionary as superstitions. No matter where mankind may reach, no matter how much we develop, the ghost of superstition still surrounds the minds of most of us. Superstition is having belief in a supernatural power – something that can’t be explained by the laws of nature. And India happens to top the charts in such cases. Now, none of us is unaware of the kind of superstitions followed or believed in India.  In India, every activity of life is associated with some sort of superstition. It is supposed to be bad if somebody sneezes behind or calls back a man who is leaving his home for a journey. He must stop for a while to let the ill-luck pass. It is again ominous if he sees an empty vessel or a broom right in front of the house. The sight of a dead body or a cow feeding her calf or a full pitcher is considered as auspicious while one is on a journey. Stories of ghosts and evil spirits are very common in all the countries of the world and especially in India. After death, a person changes into a ghost. Sometimes, a ghost molests the other members of the family generally, a 'pipal' tree is supposed to be the haunt of ghosts. The fear of ghosts is so great that some people worship them in their homes without giving them any shape and form. The ghosts are offered sweets, cakes, clothes and many such other articles to please them and bribe them against doing any kind of harm to the people.  Generally, the illiterate and ignorant people believe in superstitions. In villages, the people believe that smallpox, cholera and some fevers all are caused by the displeasure of he-ghosts and she-ghosts. The small pox, whenever it spreads in the form of epidemic, is supposed to be the result of the wrath of the Goddess Shitaladevi. Numerous beliefs of this type are prevalent in villages. Sometimes, such miracles take place in the cure of such diseases that one is surprised at and compelled to believe in these superstitions. Hindus believe that souls of the dead persons exist in some form or the other for about eleven days in the family. The family becomes free form the impurity of death on the twelfth day. On this day Brahmins are fed and given charities to give peace to departed soul. These acts of giving charities to the Brahmins and feeding them or repeated every year in the month of 'Kwar'. This observance is called 'Shradha'. People have a great faith in palmistry, astrology and horoscope. There may be some experts in them here and there but generally, we come across, cheats, who exploit innocent persons and befool them.  Superstitions differ from place to place and caste to caste. In South India, the sight of a black cat, crossing the way in front of one is considered to be very inauspicious. In Punjab, the sight of a Brahmin right in the morning is supposed to bring one misfortune for the whole day. But a Brahmin is not looked upon as inauspicious elsewhere. The sight of a cobbler, oilmen or washer man bring ill-lack to one in U.P. but not in Punjab, It should not be surprising that some of English superstitions are very similar to certain superstitions prevalent in India. But in England and India, the following of a dog at night without any apparent cause is supposed to indicate the presence of a spirit nearby. As in Indian villages, people believe in witches, so do the people of England and Wales who live in remote villages.  The only panacea for all the social evils like superstitions is education. To make the backward and superstition minded Indians enlightened, education should be spread widely. Education cultivates reasoning and thinking in a human being and as soon as a person comes under the shelter of reason and scientific outlook, he or she, becomes free from blind beliefs. Indians by nature are fatalists and they do not apply their energy to work for the betterment of their lot. This is the greatest superstition, which has undermined and is still undermining the real prosperity of India. People should be properly educated and should be inspired to be hard working and honest. Then, we should judge everything by the strong light of reason, having firm faith in God. |