Healthcare Management in India: Issues, Challenges and Prospects

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ABSTRACT

Healthcare management in India faces numerous challenges due to the country's size, population, and socio-economic diversity. The issues include inadequate funding, insufficient infrastructure, scarcity of healthcare professionals, and high out-of-pocket expenses, among others. These challenges have a significant impact on healthcare accessibility, quality, and affordability. Despite the challenges, healthcare management in India presents several prospects. For instance, the government is increasing healthcare spending, introducing new policies, and promoting public-private partnerships to address the challenges. Additionally, there is growing interest in telemedicine, digital health, and medical tourism, which can enhance healthcare accessibility and affordability. Healthcare management in India faces significant challenges, but with strategic planning and investment, there are opportunities for improving healthcare accessibility, quality, and affordability. The Purpose of this paper is to explore the Evolution of Healthcare, Growth of the Healthcare Sector, Contribution of Ayurveda, Charaka Samhita and Yoga to Healthcare, Drivers of Healthcare Sector, Challenges to Healthcare Sector and Prospect of Industry 4.0 and Healthcare Sector.

Keywords-- Healthcare Industry, Healthcare, Challenges, Prospects, Digitalisation, Ayurveda, India

I.   INTRODUCTION

व्यायामात् लभते स्वास्थ्यं दीर्घायुष्यं बलं सुखं।
आरोग्यं परमं भाग्यं स्वास्थ्यं सर्वार्थसाधनम्॥"

(Health is the biggest wealth in one's life. It is the only thing with which all the other things can be achieved in life. With exercise, one can achieve perfect health, happiness, longevity and strength).

Health is being one of the most important assets for any human being, which decides the growth of an individual. Healthy society is a symbol of the prosperity of the nation. Healthcare sector is most predominant industry in the nation. The Indian healthcare industry has emerged as one of the fastest-growing sectors in recent years, driven by a combination of factors such as increasing demand for quality healthcare services, a growing population, rising incomes, and advancements in medical technology. The industry encompasses a broad range of players, including hospitals, clinics, diagnostic laboratories, medical equipment manufacturers, and pharmaceutical companies. India has made significant progress in improving healthcare outcomes in recent years, with the government's initiatives like Ayushman Bharat, which aims to provide health insurance coverage to more than 100 million families, and National Health Policy 2017, which seeks to increase healthcare spending to 2.5% of the country's GDP by 2025. Healthcare management in India faces numerous challenges due to the country's size, population, and socio-economic diversity. The issues include inadequate funding, insufficient infrastructure, scarcity of healthcare professionals, and high out-of-pocket expenses, among others. These challenges have a significant impact on healthcare accessibility, quality, and affordability.

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II. EVOLUTION OF HEALTHCARE IN INDIAN CONTEXT

a. Hindu Mythology and Healthcare

आगादुदगादयं जीवानां व्रातमण्यगात् ।

अभूदु पुत्राणां पिता नृणां च भगवत्तमः ॥

O Medicinal Plant! Let this human get life with your blessings and be included in the group of living beings as well as become the father of his progeny and let him remain blessed and fortunate throughout his life. (Atharva Veda 2.9.2)

Ayurveda (the science of life), which is regarded as an Upa Veda (supplementary subject) of the Atharva Veda, is said to be an encyclopaedia for medicine "Interalia" in the Atharva Veda. The term "Veda of Magical Formulas" is occasionally used, but scholars do not agree with this description. It is a collection of 20 books that includes hymns, chants, spells, and prayers. It deals with topics including illness healing, life extension, black magic, and rituals for curing ailments and easing anxiety. The "Atharva Veda," in contrast to the other three Vedas, focuses more on the day-to-day issues that Vedic people face.Ashwini Kumaras, also known as Dev Vaidya, is mentioned in the Rigveda, the earliest surviving chronicle of ancient Indian civilisation, as one of the most prominent surgeons. The first plastic surgery to reunite the saint Chyavana's head and trunk after Dakshya severed it was among the few, fabled surgical procedures they were credited with undertaking. Additionally, they operated on Reejashva's eyes, reinstated the elephant's head after Lord Shiva had severed it, and gave Ganesh's toothless mouth Phushna's teeth.

Lord Dhanvantari

Lord Dhanvantari is a Hindu god who is considered to be the god of medicine and healing. He is often depicted holding a conch, a discus, a pot of Amrit, and a leech. He is also associated with Ayurveda, which is an ancient system of medicine that originated in India. According to Hindu mythology, Lord Dhanvantari emerged from the ocean during the Samudra Manthan (churning of the ocean) by the Devas (gods) and Asuras (demons). He is believed to have brought with him the nectar of immortality or Amrit, which he used to cure the Devas of their ailments and restore their health. Lord Dhanvantari is revered as a divine healer and is worshipped by those seeking good health and relief from illnesses. His birthday is celebrated as Dhanteras, which falls on the 13th day of the Hindu month of Ashwin, typically in October or November. In addition to being worshipped for his healing powers, Lord Dhanvantari is also revered as the founder of Ayurveda and is often depicted with the Ayurvedic texts in his hands. His teachings and principles have had a profound influence on the practice of Ayurveda, which continues to be a widely used system of medicine in India and other parts of the world.

b. Healthcare Management in Ramayana

According to the Indian epic Ramayana, when Lakshmana, the younger brother of Lord Rama, was severely injured during the battle with the demon king Ravana, the monkey god Hanuman was tasked with finding a cure for his injuries. Hanuman traveled to the Himalayas in search of the Sanjeevini plant, a powerful medicinal herb that could heal Lakshmana's wounds. However, he was unsure which herb was the Sanjeevini plant, so he carried an entire mountain of herbs back to the battlefield. As Hanuman flew back to the battlefield with the mountain, some of the herbs fell off and landed in different places, thus creating several medicinal plants across the subcontinent. Finally, when he arrived at the battlefield, Hanuman gave the Sanjeevini plant to the physician Sushena, who used it to heal Lakshmana's wounds. This story of Lord Hanuman bringing the Sanjeevini plant has become a symbol of hope and the power of faith in the face of adversity. The Sanjeevini plant is also considered to have healing properties, and many people in India continue to use it for medicinal purposes.

III. HISTORY OF INDIAN HEALTHCARE

Hospitals have been around in India for a very long period. Hospitals to care for the impoverished and the disabled existed even in the 6th century BC, during the time of Buddha. At that time, King Ashoka's hospitals were among the best in India. (273–232 BC). Around the year 600 AD, books published by Arab and European explorers indicate that India was at the height of its medical knowledge. Lack of encouragement caused the native vaidyas' enthusiasm for studying the Indian flora to wane. When foreigners invaded in the 10th century AD, they introduced their own doctors, known as Hakims. With the entrance of European missionaries in the 16th century, the Allopathetic system of medicine was first used. There was advancement in hospital construction throughout the British era. The nineteenth century saw the beginning of organised medical education.

1. Vedic Period

The Aryan culture was integrated into the Indus valley culture because it was so advanced, despite the fact that the Aryans brought their own gods and knowledge of medicine. The four Vedas are the primary sources of information about Aryan culture and medicine. (Rig, Sama, Yajusa, and Atharva Veda). The Atharva Veda is replete with hymns and prayers that offer guidance on how to shield people from various ailments and natural disasters. According to Yajur Veda, individuals in the Vedic era genuinely cared about the physical and mental components of well health, which means that the world should be free of diseases and

(everyone should have) a healthy mind. The Ayur Veda is the science of life (Ayush = life, Veda = knowledge). The Ayur Veda discusses ways to extend life. Ayurveda is the foundation of traditional medicine. It was refined further by Charaka, a royal physician for King Kanishka. Sushruta, the renowned surgeon of his time, received many of the therapeutic techniques that were started by Dhanvantari, the patron god of Indian medicine.

2. The Buddhist Period (563–477 BC)

Lord Buddha himself showed a strong interest in advancing medical research. However, the ideology of Ahinsa had a negative impact on Indian surgery at this time. Lord Buddha used to take care of the sick personally. Taking care of the sick was regarded as a noble endeavour. Buddha established Buddhist Viharas (monasteries) while travelling to spread Buddhism, and at each Vihara, special emphasis was placed on providing for the ill and promoting medical knowledge.

3. Post-Buddha and Muslim Period

All around the nation, numerous hospitals were built by Emperor Ashoka. Middle Eastern doctors trained in the Unani system had a mark with the rise of Muslim power starting in the 10th century. The curative method had the biggest impact. During his reign (1555–1605), Emperor Akbar (1555–1605) promoted the fusion of the Unani and Ayurvedic systems. The translation of medical texts from Arabic into Persian and then into Urdu was the most notable accomplishment. The effects of Muslim supremacy were blatantly seen. Following the Portuguese conquest of Goa in 1510, it began to deteriorate.

4. Christianity and Medical Care

Hospitals were included inside monasteries and churches. All missionaries, including nuns and monks, were trained in medicine because it was regarded as a form of religion. To care for persons with illnesses and injuries from conflict, as many as 19,000 hospitals were established in Europe between AD 1100 and 1300. Despite the expansion of medical knowledge between 1300 and 1800, hospital care was not of a high calibre. Up to the middle of the 19th century, hospitals were frequently overcrowded and infected. Hospital operations were revolutionised by Florence Nightingale, marking the start of the "Better Patient Care" era.

5. Pre-Independence

Modern Period of Medicine: Between 1510 and 1515, the Portuguese established the Royal Hospital in Goa, and later, the Jesuits added a basic universal medical school system. This was transformed into a school of medicine and surgery in 1842. Although the Portuguese were the ones who originally introduced modern medicine to India, the first hospitals were actually founded in 1664 and 1668 by the French and the British, respectively. Calcutta saw the beginning of the first medical school, which was followed by Madras in 1846. Local authorities promoted the opening of dispensaries at the district and subdivision levels as British rule spread throughout the nation. Provincial hospitals were transformed into teaching facilities connected to medical schools. Slow advancement persisted; on the eve of independence, there were 7400 hospitals and dispensaries with 1,13,000 beds nationwide, or 0.24 beds per 1000 people. At that time, the nation had 47,000 physicians, 7000 nurses, 19 medical schools, and 28 medical colleges. The Health Survey and Development Committee, led by Sir Joseph Bhore and composed of nineteen other members, was established by the Government of India in 1943. The growth of hospitals and India's healthcare system prior to 1947 is only accurately shown in this document.

6. Post-Independence

India's healthcare system has undergone significant changes since gaining independence in 1947. The country's healthcare infrastructure was initially underdeveloped, and healthcare services were primarily limited to urban areas. The government's focus was on providing basic healthcare services and expanding healthcare services to rural areas. One of the significant milestones in India's healthcare post-independence was the launch of the National Rural Health Mission (NRHM) in 2005. The program aimed to improve healthcare accessibility and affordability in rural areas, increase the number of healthcare professionals, and enhance the quality of healthcare services. In 2017, the government launched the National Health Policy (NHP), which aimed to provide comprehensive healthcare services to all citizens by 2025. The policy focused on strengthening the primary healthcare system, improving healthcare infrastructure, increasing healthcare spending, and promoting the use of technology in healthcare. Despite these initiatives, India's healthcare system continues to face numerous challenges, including inadequate funding, shortage of healthcare professionals, and low healthcare accessibility and affordability. The COVID-19 pandemic further exposed the weaknesses of the healthcare system, highlighting the need for significant improvements in healthcare infrastructure, technology, and workforce.

IV. INDIA'S CONTRIBUTION IN MEDICAL AND SURGERY FIELD

Since the beginning of human migration to the Indian subcontinent, knowledge of the medicinal and toxicological effects of plants, minerals, and other substances has existed. Several pieces of evidence suggested that dental work and trepanation were performed in the Indian subcontinent as early as 7000 BCE. Ayurvedic traditional medicine still uses plants that were used as medicines in the Middle Gangetic region as early as the second millennium BCE, according to recent archaeo-botanical digs. Many different ethnic groups make up the population of India, and each one has its own religion, worldview, culture, language, and dialects. Different medical systems have developed as a result in this field. Additionally, several medical systems

from other countries were introduced to and improved upon in India. Since ancient times, Indian civilization has relied on regionally used traditional medicinal practises. The widespread demise of Indian traditional medicine can be attributed to the advent of allopathic pharmaceuticals during the British era and the neglect of Indian traditional medicine by British rulers. The spread of traditional medicine is also hampered by modern infrastructure and the rapid scientific improvement of allopathic medicine. However, traditional medicine continues to be the major form of care for approximately 70% of India's rural residents.

Ayurveda

Indian-born Ayurveda is a thorough scientific medical system. The phrase Ayurveda, which is made up of the Sanskrit words ayu (life) and veda (knowledge), means "knowledge of life." (knowledge or science). The Four Vedas, which are thought to be the earliest works of Indian literature (5000–1000 BC), provide knowledge on herbal cures. Ayurveda was developed into a complete medical system.The Charaka Samhita, which focuses on internal medicine, and the Susruta Samhita, which focuses on surgery, were both meticulously recorded and are regarded as classical texts of Ayurveda. Astanga Sangraha and Astanga Hrdaya were updated in addition to compiling the most important information from Charaka Samhita and Susruta Samhita. Other ancient classics that contain some Ayurvedic material include the Madhava Nidana (which focuses on sickness diagnosis) and the Bhava Prakasa (which focuses on further knowledge on plants and diet). Sarngadhara Samhita (concentrating on dosage and formulation).Eight major clinical subdivisions of Ayurveda were identified, including Kayacikitsa (internal medicine), Salya Tantra (surgery), Salakya (diseases of supra-clavicular origin), Kaumarabhrtya (pediatrics, obstetrics, and gynaecology), Bhutavidya (psychiatry), Agada Tantra (toxicology), Rasayana Tantra (rejuvenate)

Siddha

The Siddha system of medicine is regarded as a magnificent invention and a representation of Tamil culture, which has its roots in Southern India. Dravidian culture gave rise to Siddha medicine, which has been around since the Indus Valley Civilization. Siddha alchemy is thought to have been heavily influenced by Chinese alchemy, Taoism, and Taoist Patrology. The method is thought to have been created by 18 siddhar (a group of Tamil sages) in the past. Siddha medicine is similar to Ayurveda in many ways, but it also has its own philosophy, holistic approach, and lifestyle-oriented interventions.

Unani

The Unani medical system is a synthesis of modern traditional medical systems from Egypt, Syria, Iran, Iraq, China, India, and many other east Asian nations. Its development began in Greece and moved to Arabic. Unani medicine was introduced to India by Arab and Persian colonists in the 11th century; throughout the Mughal era, the practise gained acceptance and was expanded.

Amchi

Another well-established traditional medical system that dates back to antiquity is Amchi, also known as Sowa-Rigpa. It was widely used in Tibet, Mongolia, Nepal, Bhutan, the Himalayan region of India, some sections of China, and the former Soviet Union. There are disagreements on the origin of Amchi medicine; some people think it came from China, others think it came from the Tibetan region or India. Amchi and Ayurveda are quite similar, however there are additional influences from Tibetan folklore and Chinese traditional medicine in this system.

Folk-Medicine

For a vast number of individuals who belong to rural, indigenous, or ethnic communities, uncodified folk medicine also plays a crucial role in maintaining health and curing diseases in addition to the codified traditional medicinal system. This kind of knowledge is passed down verbally from ancestors instead of being properly documented. In India, rural and ethnic tribes use about 25,000 efficient plant-based medicines and close to 8000 plant species for folk medicine.

Homeopathy

Homeopathy is a system of medicine that originated in Germany in the late 18th century. Homeopathy involves the use of highly diluted substances to stimulate the body's natural healing processes.

These ancient healthcare systems are an essential part of India's rich cultural heritage and have played a significant role in maintaining the health and well-being of its people for centuries. Today, these traditional systems of medicine are recognized by the Indian government and are integrated with modern medicine to provide comprehensive healthcare services to the population.

Contribution of Ayurveda to Healthcare

Ayurveda is a traditional system of medicine that originated in India more than 5,000 years ago. It is based on the principles of balancing the body, mind, and spirit to maintain good health and prevent disease. Ayurvedic medicine uses natural remedies, including herbs, minerals, and other plant-based substances, to treat a wide range of ailments. Ayurveda plays a significant role in healthcare management in India and has several benefits, including:

Holistic Approach

Ayurvedic medicine takes a holistic approach to healthcare, focusing on treating the whole person rather than just the symptoms of the disease. Ayurveda emphasizes the importance of maintaining a healthy lifestyle, including diet, exercise, and meditation.

Personalized Treatment

Ayurvedic medicine recognizes that each person is unique and therefore requires personalized

treatment. Ayurvedic practitioners consider a person's individual constitution, lifestyle, and environment when developing a treatment plan.

Prevention of Diseases

Ayurvedic medicine emphasizes the importance of preventing diseases by maintaining a healthy lifestyle and balancing the body, mind, and spirit. Ayurvedic practitioners use natural remedies, including herbs and lifestyle modifications, to prevent diseases from developing.

Complementary Treatment

Ayurvedic medicine can be used alongside modern medicine to provide complementary treatment. Ayurvedic remedies, including herbal supplements and lifestyle modifications, can be used to support modern medical treatments.

Safety and Minimal Side Effects

Ayurvedic medicine is generally considered safe and has minimal side effects when used correctly. Ayurvedic remedies are natural and less invasive than modern medical treatments, making them a safe option for many people.

Contribution of Charaka Samhita to Healthcare

An very old Sanskrit text is known as the Charaka Samhita (translated as "treatise compiled by Charaka"). It is an explanation of Ayurveda, which is the science of life and is known for understanding the origins of illness, how to treat it, and how to maintain good health. (Sutra 1, 23). The history of medicine, the underlying causes of conception, birth, and physical abnormalities are also covered. The treatise contains a detailed classification and nomenclature of diseases, their Vyakhya (definition), Vyutpatti (etymology), Nidana (etiology), Poorva Roop (prodromata) and Roop (clinical picture), Samprapti (pathophysiology), Sadhya-asadhyata (prognosis), Chikitsa Sutra (line of treatment), Aushadha (drugs), Anna (diet) and Vihara (practices) etc. This intellectual framework and methodology are startlingly comparable to modern medicine.

The text describes the human body as composed of three doshas or energies - vata, pitta, and kapha and emphasizes the importance of balancing these energies to maintain good health. It also provides detailed descriptions of various herbs and minerals used in Ayurvedic medicine, as well as their medicinal properties and uses. Charaka Samhita also includes information on diet and lifestyle, emphasizing the importance of a healthy diet and regular exercise in maintaining good health. It also provides guidance on the use of yoga and meditation as tools for promoting mental and physical well-being. The text has been translated into several languages and is still widely studied and used today. It is considered an essential reference text in Ayurvedic medicine and has influenced the development of other traditional medical systems around the world.

According to Charaka, Ayurveda has eight branches (Sutra 30/28)

1. Kaya-Chikitsa (Internal medicine & therapeutics)
2. Shalakya (The science of management of diseases of eye, ear, nose, throat and head)
3. Shalyapahartrika (Surgery)
4. Visha gara vairodhika prashamana (Toxicology)
5. Bhuta vidya (Psychiatric knowledge)
6. Kaumarabhritya (Pediatrics)
7. Rasayana (Rejuvenation)
8. Vajikaran (Virilification)

For the discussion of the above topics the treatise is divided into eight sections. (Sutra 30/35).

1. Sutra Sthana deals with general principles, philosophy etc.
2. Nidana Sthana deals with causes of diseases
3. Vimana Sthana deals with taste, nourishment and general pathology etc.
4. Sharira Sthana deals with anatomy and embryology
5. Indriya Sthana deals with diagnosis and prognosis
6. Chikitsa Sthana deals with treatment of diseases
7. Kalpa Sthana deals with pharmacy
8. Siddhi Sthana deals with the cure of disease.

There are 120 chapters covering various subjects in total. As the redactor constantly acknowledges at the conclusion of each chapter, there have been some later modifications and interpolations in certain areas. In fact, Dradhbala claims that he was forced to rework and finish the final section of Siddhi Sthana using the resources at his disposal (Siddhi Sthana 12/55).

Sushruta Samhita takes a similar stance to Charaka Samhita, but places more of an emphasis on surgery, which Sushruta considers to be the most important specialty. He has talked about fractures, unintentional wounds, burns, and different phases and forms of inflammation. In addition to plastic surgery like rhinoplasty, crushing and extracting the foetus, delivering the foetus by an abdominal operation, amputating limbs, and removing foreign bodies, Sushruta recounts several significant abdominal procedures for intestinal obstruction, bladder stones, etc.

V.   CONTRIBUTION OF YOGA TO HEALTHCARE

योगस्थः कुरु कर्माणि सङ्गं त्यक्त्वा धनञ्जय।

सिद्ध्यसिद्ध्योः समो भूत्वा समत्वं योग उच्यते।।

Gita-2.48

(You should be sincere in performing your everyday duties. You should abandon your attachment to success and failure. Such balance can be achieved through Yoga.)

Yoga is a traditional Indian practice that has been widely recognized for its numerous health benefits.

The practice of yoga involves various physical postures (asanas), breathing exercises (pranayama), and meditation techniques. Yoga has been incorporated into the Indian healthcare management system as a complementary and alternative therapy to conventional medicine. The contribution of yoga to Indian healthcare management can be explained as follows:

Physical Health Benefits

The practice of yoga has been found to improve physical health by increasing flexibility, strength, and balance. It also helps in reducing chronic pain and improving cardiovascular health.

Mental Health Benefits

Yoga has been found to reduce stress and anxiety levels, improve sleep quality, and enhance overall mental well-being. It is also effective in managing depression and other mental health disorders.

Prevention of Diseases

Regular practice of yoga has been found to boost immunity, which helps in preventing diseases such as colds, flu, and infections.

Rehabilitation

Yoga is also used as a complementary therapy for patients recovering from various illnesses, injuries, and surgeries. It helps in improving their strength, flexibility, and overall well-being.

Cost-effective

Yoga is a low-cost therapy that does not require any special equipment or medication. It is easily accessible and can be practiced anywhere, making it an affordable and effective healthcare management tool.

The practice of yoga has made a significant contribution to Indian healthcare management by promoting physical and mental health, preventing diseases, and supporting rehabilitation. The integration of yoga into the Indian healthcare system has been beneficial in providing cost-effective and holistic care to patients.

VI. GROWTH DRIVERS OF INDIAN HEALTHCARE SYSTEM

The healthcare sector in India is growing rapidly, driven by various factors. The growth of the healthcare sector has been fueled by demographic changes, an increase in the incidence of lifestyle-related diseases, the growth of the medical tourism industry, and advancements in medical technology. Here are some of the key growth drivers of healthcare in India:

Demographic Changes

India has a large population with a significant proportion of young people. This demographic dividend is expected to fuel the growth of the healthcare sector as the population ages and demand for healthcare services increases.

Lifestyle-related Diseases

With changing lifestyles, there has been an increase in the incidence of lifestyle-related diseases such as diabetes, hypertension, and cardiovascular diseases. This has led to an increased demand for healthcare services.

Medical Tourism

`India has emerged as a popular destination for medical tourism due to its low-cost, high-quality healthcare services. This has led to an increase in the number of foreign patients seeking medical treatment in India, contributing to the growth of the healthcare sector.

Advancements in Medical Technology

With the advancement of medical technology, new and innovative treatments are being developed that have the potential to revolutionize healthcare delivery. This has led to an increase in demand for medical technology and related services.

Government Initiatives

The Indian government has launched various initiatives to promote healthcare, such as the Ayushman Bharat scheme, which aims to provide health insurance to 500 million people. Such initiatives have increased access to healthcare services and have also created opportunities for the private sector to invest in the healthcare sector.

VII. MAJOR SECTORS OF THE INDIAN HEALTHCARE INDUSTRY

Hospitals

Government (healthcare centers, district hospitals, general hospitals) Nursing homes, mid-tier, and top-tier private hospitals are all private.

Pharmaceutical

Includes creating, gathering, processing, purifying, and packaging chemical materials for use as human or animal pharmaceuticals.

Diagnostics

Includes companies and labs that provide analytical or diagnostic services, such as bodily fluid analysis.

Medical Supplies and Equipment

Includes businesses that specialise in producing medical equipment and supplies, such as laboratory instruments and surgical, dental, orthopedic, and other tools.

Health Insurance

Includes medical reimbursement services and health insurance, which pay for a person's hospital costs when they become ill.

Telemedicine

Has a lot of potential for addressing the difficulties associated with providing healthcare in rural and distant locations, in addition to having many other uses in health sector administration, education, and training.

Contribution of Healthcare Sector to GDP

According to the latest available data, the healthcare sector's contribution to the Indian GDP has been increasing steadily over the years. Here is a brief

overview of the contribution of the healthcare sector to the Indian GDP over the past few years:

Year	Contribution of Healthcare to GDP (in %)
2018	5.2%
2019	5.4%
2020	5.5%
2021	5.7%
2022	Projected to reach 6.2%

Source: National Skill Development Corporation (NSDC) and KPMG report

As we can see, the healthcare sector's contribution to the Indian GDP is expected to increase to 6.2% by 2022, according to the NSDC and KPMG report. This growth is primarily driven by the increasing demand for healthcare services in India due to the growing population, rising income levels, and changing lifestyle patterns. The report also estimates that the Indian healthcare sector will be worth $372 billion by 2022, with a compound annual growth rate (CAGR) of 22.87% between 2016 and 2022.

Healthcare Expenditure
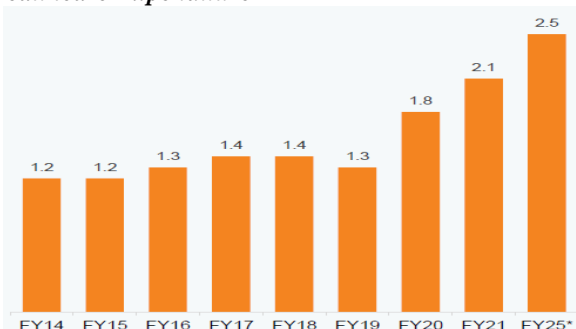
Source: World Bank, Economic Survey FY20

Increased awareness of personal hygiene and health, increased access to high-quality healthcare facilities, and rising income all contribute to India's per capita healthcare expenditure rising quickly. Over the next ten years, it is anticipated that the trend of rising healthcare spending would continue as more people obtain health insurance. The cost of generic drugs on the market is increasing due to economic success. In India, public healthcare spending accounted for 2.1% of GDP in 2021–2022, up from 1.8% in 2020–2021 and 1.3% in 2019–2020, according to the Economic Survey of 2022. The government plans to invest 2.5% of the country's GDP in public health by 2025. The COVID-19 epidemic has, however, had a significant negative influence on India's healthcare system and economy as a whole. Economic growth has decreased as a result of the pandemic, and the healthcare industry has been under tremendous strain as a result of the rise of COVID-19 cases. Despite these obstacles, it is anticipated that the

healthcare industry will continue to contribute more to India's GDP in the years to come due to the increased attention being paid to the construction of healthcare infrastructure and the rising demand for high-quality healthcare services.

VIII. INDIA'S HEALTHCARE PRE-POST COVID

India's healthcare sector has faced several challenges, both pre-COVID and post-COVID. Here are some of the key challenges:

Pre-COVID challenges

Inadequate healthcare infrastructure: India has a shortage of healthcare infrastructure, especially in rural areas, leading to limited access to healthcare services for a significant portion of the population.

High Out-of-pocket Expenditure

India's healthcare system is primarily dominated by private healthcare providers, resulting in high out-of-pocket expenses for patients and leading to financial burdens for many households.

Poor Quality of Healthcare Services

Despite significant progress in healthcare, the quality of healthcare services in India still remains a concern, with inadequate resources, poorly trained healthcare workers, and lack of accountability.

Inadequate Funding

The healthcare sector in India has been traditionally underfunded, with low public spending on healthcare compared to other countries.

Poor Health Awareness

There is a lack of awareness about preventive healthcare measures, leading to a higher burden of communicable and non-communicable diseases.

Post-COVID Challenges

Overburdened Healthcare System

The COVID-19 pandemic has led to an overwhelming surge in demand for healthcare services, leading to a strain on the existing healthcare infrastructure and workforce.

Shortage of Medical Equipment and Supplies

The pandemic has exposed the shortage of essential medical equipment and supplies, such as personal protective equipment (PPE) kits, ventilators, and oxygen supplies.

Inequitable Access to Vaccines

There has been an uneven distribution of COVID-19 vaccines, with urban areas receiving a higher proportion of vaccine doses than rural areas.

Mental Health Concerns

The pandemic has led to increased levels of stress, anxiety, and depression, highlighting the need for mental healthcare services.

Economic Impact

The COVID-19 pandemic has had a significant economic impact, leading to job losses, income

reduction, and increased poverty, which can lead to reduced access to healthcare services.

India's healthcare sector faces several challenges, both pre-COVID and post-COVID. Addressing these challenges requires a multi-pronged approach, including investments in healthcare infrastructure, improving the quality of healthcare services, increasing public spending on healthcare, promoting health awareness, and strengthening the healthcare workforce. The COVID-19 pandemic has highlighted the need for greater focus on healthcare, and addressing these challenges can help ensure better healthcare outcomes for all.

Post-Covid Indian Health Infrastructure

The COVID-19 pandemic has put a spotlight on the challenges facing India's healthcare infrastructure. While the country has made significant progress in healthcare infrastructure development over the years, there are still significant gaps that need to be addressed.

Here are some of the key developments and initiatives taken by the Indian government and private sector to improve the healthcare infrastructure in the post-COVID era

Expansion of Healthcare Facilities

The Indian government has taken several steps to expand the healthcare infrastructure, including the construction of new hospitals and medical colleges, upgrading existing healthcare facilities, and increasing the number of healthcare workers.

Telemedicine

The COVID-19 pandemic has accelerated the adoption of telemedicine in India, with the government taking steps to promote telemedicine services, including setting up telemedicine portals and launching mobile applications to provide remote consultation services.

Digital Health Initiatives

The Indian government has launched several digital health initiatives, including the National Digital Health Mission (NDHM), which aims to provide a unique health ID to every Indian citizen, and the eSanjeevani telemedicine platform, which has facilitated over 1.4 million teleconsultations since its launch.

Private Sector Investment

The private sector in India has also been investing in healthcare infrastructure, with several large hospitals and healthcare chains expanding their operations and opening new facilities across the country.

Increased Focus on Public Health

The COVID-19 pandemic has highlighted the importance of public health, and the Indian government has increased its focus on public health initiatives, including expanding vaccination coverage, improving sanitation and hygiene, and promoting healthy lifestyles.

Healthcare in Industry 4.0

Industry 4.0 is transforming the healthcare industry in various ways, contributing to the development of more patient-centered, efficient, and effective healthcare systems. Here are some specific contributions of Industry 4.0 to healthcare:

Remote Monitoring and Telemedicine

The development of wearable devices and IoT sensors enables patients to monitor their vital signs, track their medication intake, and receive real-time feedback on their health status. This reduces the need for in-person visits and improves patient outcomes, especially for those with chronic conditions.

Personalized Medicine and Predictive Analytics

Big data analytics and AI can analyze large amounts of patient data to identify patterns and trends that can be used to develop personalized treatment plans for individual patients. Predictive analytics can also anticipate health issues before they occur, allowing for early intervention and prevention.

Robotics and Automation

Robotics can be used to perform surgeries with greater precision and accuracy, reducing the risk of complications and improving patient outcomes. Automation can also improve the efficiency of healthcare processes, from patient admission and discharge to inventory management and supply chain optimization.

Improved Healthcare Management

The integration of advanced technologies enables healthcare providers to manage patient data more efficiently, reducing administrative costs and improving the accuracy and accessibility of patient records. This can also improve communication and collaboration among healthcare providers and improve patient outcomes.

Reduced Healthcare Costs

Industry 4.0 solutions can reduce healthcare costs by streamlining processes, improving resource utilization, and reducing the need for in-person visits. This can make healthcare more accessible and affordable for patients.

Industry 4.0 is contributing to the development of a more patient-centered, efficient, and effective healthcare system, improving healthcare outcomes and reducing healthcare costs. However, there are also challenges associated with Industry 4.0 healthcare, such as data privacy and security concerns and the need for skilled professionals to manage and operate the new technologies.

IX. GOVERNMENT SUPPORT TO HEALTHCARE SYSTEMS

The Indian government has implemented several policies and initiatives to support the healthcare sector and improve access and quality of healthcare services. Here are some of the significant government support to healthcare in India:

Ayushman Bharat Scheme

Launched in 2018, this scheme aims to provide free healthcare coverage to around 100 million vulnerable families in India. The scheme provides free

hospitalization and medical care up to a certain limit for identified medical conditions.

National Health Mission

This program was launched in 2013 and aims to provide accessible, affordable, and quality healthcare services to all people, especially those living in rural and remote areas.

Pradhan Mantri Jan Arogya Yojana

Launched in 2018, this scheme aims to provide financial protection to around 10 crore families living below the poverty line by providing them with free access to secondary and tertiary healthcare services.

National Rural Health Mission

This program was launched in 2005 and continued to receive support from the government to improve the healthcare infrastructure and services in rural areas of India.

Swachh Bharat Abhiyan

Launched in 2014, this program aims to improve sanitation and hygiene in India, which is essential for reducing the burden of infectious diseases.

National Medical Commission Bill: This bill was passed in 2019, which aimed to reform medical education and improve the quality of healthcare services in India.

National Digital Health Mission

Launched in 2020, this program aims to create a digital health ecosystem in India, allowing individuals to access and share their health records with healthcare providers seamlessly.

Karnataka Government Support to Healthcare

Arogya Karnataka Scheme: Launched in 2018, this scheme aims to provide free healthcare coverage to around 1.43 crore households in Karnataka. The scheme provides free hospitalization and medical care up to a certain limit for identified medical conditions.

Suvarna Arogya Suraksha Trust

This trust was set up by the government of Karnataka to provide health insurance coverage to people living below the poverty line and unorganized sector workers in the state.

Mukhyamantri Santwana Harish Scheme

Launched in 2018, this scheme provides free treatment for road accident victims in government and private hospitals.

Janani Shishu Suraksha Karyakram

This program provides free maternity and newborn care to pregnant women and infants in government hospitals.

Rajiv Arogya Bhagya Scheme

Launched in 2017, this scheme provides free healthcare services to beneficiaries in the state who hold BPL cards.

Yashaswini Scheme

Yashaswini Scheme is a health insurance scheme launched by the Government of Karnataka in 2002. The aim of this scheme is to provide affordable health insurance coverage to people living in rural areas of Karnataka who are engaged in the unorganized sector, such as farmers, weavers, fishermen, artisans, etc.

X. CONCLUSION

In conclusion, the evolution of healthcare has been a continuous process, driven by advances in medical science, technology, and changing societal needs. The growth of the healthcare sector has been remarkable, with a significant contribution from Ayurveda, Charaka Samhita, and Yoga to the development of modern medicine. The healthcare sector faces several challenges, such as rising costs, inadequate infrastructure, and unequal access to healthcare services. Despite these challenges, the healthcare sector has continued to grow, driven by technological innovations, increased awareness of health, and the need for better healthcare outcomes. The prospects for Industry 4.0 in healthcare are promising, with the potential for further transformation of healthcare delivery, improved patient outcomes, and reduced costs. However, the implementation of Industry 4.0 in healthcare will require overcoming several challenges, such as data privacy and security concerns, ethical considerations, and the need for skilled professionals to manage and operate the new technologies. It is important to address these challenges proactively to ensure that the benefits of Industry 4.0 are realized in the healthcare sector. Overall, the healthcare sector has come a long way, and with the integration of advanced technologies, the industry is poised for further growth and development. It is important to continue to invest in the healthcare sector to address the challenges and to ensure that everyone has access to high-quality, affordable healthcare services.

पुनर्वित्तं पुनर्मित्रं पुनर्भार्या पुनर्मही।
एतत्सर्वं पुनर्लभ्यं न शरीरं पुनः पुनः।।"

Everything in life can be regained- wife, kingdom, friend and wealth. The only thing that you can't ever regain is your body. Once your body / health is lost, it can never reach its fullness again. Therefore, it is important to take care of your body on a daily basis.

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