COLLABORATIVE INTELLIGENCE AND INTELLECTUAL PROPERTY: HUMANS AND HUMANOIDS IN THE LIGHT OF HEALTH CARE SYSTEM

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Abstract

Our intelligence is what make us humans unique and Artificial Intelligence is an extension of that quality which makes them as humanoids. By 2029, an estimation of 95% of human interactions will be supported by Artificial Intelligence technologies. Humans have dynamic existence in the world, an existence which excesses in knowledge, analysis, expression, ideas and many more. With the rapid development of computer science and data technological dependence, it has been observed that Robots and Artificial Intelligence are making their way to get fit into the human world as a Humanoid Versions. Subsequently, they are even trying to support the present Health Care structure across the world and wanted to be present among the Doctors, Nurses, Hospitals and many other to solve and assist in the medical errands. Currently, both patient and health professionals are based on human interactions which forms the natural foundation of health care. Field of Health-care is data-intensive which leads it to perform complex tasks and compare and analyse huge volume of data and try to classify it. This paper gives an immense dimension to the Collaborative Intelligence that means involvement of both Human and Artificial mankind in the Health sector. So, when new inventions and discoveries are coming up, we know that Intellectual Property comes into the picturesque as it protects and give some bundle of monopolistic rights to the true owner or inventor. This paper gives comprehensive analysis to the Human Intelligence vs. Artificial Intelligence in the context of legality and acceptance from the lens of the society. This paper also highlights about mapping the Artificial Intelligence in the health care sector in regards with an outlook of Intellectual Property subject-matter. This paper also reflects an idea about Technology transfer and Know-How move towards AI-based medical machines and technologies from the Indian health care perspective. This paper concludes with the necessary improvements in AI or Human Assisting Machines as well.
1. Human Intelligence v. Artificial Intelligence: Legality and Acceptance in The Society

1.1. Human and Origin of Intelligence

It’s very difficult to comprehend and understand how human species, have managed to evolve their intelligence to not only to think complex ideas but to shape them in reality and go beyond natural basic human functioning. It is difficult to comprehend as to how did we come to be so intelligent. There have been many research and theories with respect to assessing human intelligence and its evolution, which is very challenging. Some studies try to establish the interface of psychology, anthropology, biology, archaeology and cognitive science, while behavioural, artefactual, anatomical/neurological measures, are being employed to analyse and infer the different intellectual capacities of humans. It is difficult to study and find out the intellectual divide between humans and other species. There has been study to understand and learn more about Non-Human Intelligence, and it is surprising to find out that the abilities which was previously thought to be possessed by human alone, are not unique to humans only. Many have attempted to specify what marks the intellectual divide between humans and other species. The more we learn about Non-human Intelligence, however, the more we find that abilities previously thought to be uniquely human are not. For example, there was a presumption that only human beings are capable of making tools, but then a study carried out by Jane Goodall (1963) established that the chimpanzees are also able to make and use tools, with the capability of being taught to produce even complex tools.

1.2. Origin of Artificial Intelligence (herein referred as AI)

It is next to impossible to have a universally accepted definition of intelligence. However, intelligence may be defined as “the ability to reason, plan, solve problems, think abstractly, comprehend ideas and language, and learn.” Until computers and wireless communication technology was made a reality, it seemed like a science fiction. Similarly with artificial intelligence, it was considered a myth in late 1800s. The seed for the idea behind artificial intelligence, is a thought by Mr. Alan Turing during 1950s, that as humans store information

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1 Gabora, L., & Russon, A. (2011). The evolution of human intelligence. In R. Sternberg & S. Kaufman (Eds.), The Cambridge handbook of intelligence (pp. 328-350). doi:10.1017/CBO9780511977244.018, available at https://arxiv.org/ftp/arxiv/papers/1308/1308.5034.pdf
2 https://pubmed.ncbi.nlm.nih.gov/18763477/
3 https://www.sciencedaily.com/terms/hominid_intelligence.htm
and process them to make a decision, can a similar feat be achieved by machines? Earlier, computers were only limited to process commands and not store information. In the next 20 years, there was a revolution in machine learning algorithms and computers became more equipped to store information and solve problems. One major milestone with respect to artificial intelligence was achieved in 1997 when a computer (IBM’s Deep Blue) could defeat a grand master in the game of chess which requires massive ability of decision making. Speech recognition software, developed by Dragon system during the same time which makes our life and home smart and easy, which also paved the way for AI being induced in our daily life.

What about limitation of the computing power of AI to process data with increase in data every day? Moore’s Law\(^4\) comes to rescue and according to its principle, memory and speed of computers doubles every year which will help us even in the age of Big data\(^5\). The European Commission's Communication on Artificial Intelligence (European Commission, 2018a) defines artificial intelligence as follows:

“Artificial Intelligence (AI) refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g. advanced robots, autonomous cars, drones or Internet of Things applications).”\(^6\)

Now AI has become a reality and is being used, commercialized and industrialized massively in every possible aspect of human life. Everyone, from policy makers to CEOs of giant organizations echoes the same concern about recognizing and regulating AI. Currently AI, whether implemented either in the form of a software package or embedded with a hardware component (robot) has wide ranging applications across varied fields and industries. It is difficult for policy makers around the world to keep up the pace of advancement in AI systems, making traditional regulatory approach ineffective and existing regulations stay relevant. In the absence of a uniform regulatory mechanism, soft law frameworks such as the Asilomar AI

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\(^4\) Carla Tardi, Moore’s Law, 24 February 2021, Moore's Law Definition, History, & Impact (investopedia.com)

\(^5\) https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/

\(^6\) https://www.europarl.europa.eu/RegData/etudes/STUD/2020/634452/EPRS_STU(2020)634452_EN.pdf
Principles\textsuperscript{7} and Singapore’s Model AI Governance Framework\textsuperscript{8} have been helpful for organizations to implement AI responsibly.

1.3. Legal Personality for AI

There has been a popular demand to accord legal personality to AI, which will help in regulation of AI, especially, the liability concerns. Most of the legal systems across the world, recognizes legal persons in the categories of natural persons and juridical persons. Natural persons are human beings while juridical persons are given a legal personality, such as, corporations, religious entities, etc., for convenience and governance of legal regulations. Can AI be considered as a legal person? There has been a lot of study and debate about recognizing AI as a juridical person. Some countries contemplate of including AI as a legal entity, without having legislative provisions and few planning to introduce AI within their current and prospective legislation, while others might introduce AI, equal to a person, and not regulated by separate legal principles. But there will be challenges in whatever method one chooses to regulate AI by giving it a legal personality\textsuperscript{9}. For instance, Saudi Arabia granting citizenship to robot, Sofia\textsuperscript{10}, is contrary to its own legal principles of citizenship.

Policies and strategies with respect to AI has been initiating by major countries - Canada, Japan, China, Russia etc. The European Commission’s Communication on Artificial Intelligence (European Commission, 2018a), released its first international strategy on AI in 2018, which looks very promising\textsuperscript{11}. India joining the wagon came up with AI for All\textsuperscript{12}, which includes setting up of Centres of Research Excellence for AI, ‘Centres for Studies on Technological Sustainability’. There has been increase in international initiatives for AI striving to establish an uniform framework for AI, which clearly paves the way ahead and establishes the fact that we all are embracing AI and its legal status.

2. Mapping AI in the IP world: Reverberation and Repercussions

\textsuperscript{7}https://futureoflife.org/ai-principles/
\textsuperscript{8}https://www.pdpc.gov.sg/-/media/files/pdpc/pdf-files/resource-for-organisation/ai/sgmodelaigovframework2.pdf
\textsuperscript{9}https://www.ersj.eu/journal/1245/download
\textsuperscript{10}https://www.dw.com/en/saudi-arabia-grants-citizenship-to-robot-sophia/a-41150856
\textsuperscript{11}https://www.oecd.org/going-digital/ai-intelligent-machines-smart-policies/conference-agenda/ai-intelligent-machines-smart-policies-huet.pdf
\textsuperscript{12}https://ai-for-all.in/#/home
2.1. Significance of Human Intelligence in the IP World (Recognition Under Copyright Act and Patents Act)

Creative works are the essence of copyright. In the colloquial sense, an artificial intelligence (AI) is a machine capable of completing tasks though the use of processes typically associated with human cognition (Russell & Norvig, 2010). Sometimes, AI players defeat humans in complicated games. Although many might consider artistic expression a singularly human attribute, AI have proven capable of producing works that, at the very least, mimic the characteristics of human-created works. AI generated works could have an enormous potential commercial value. AI’s are now capable of creative writing which has also reached for publication.

This above fact proves that AI are capable of autonomously generating their own works which endangers the question ownership pf the copyrighted work. Who gets the right of ownership, with whom does the idea of originality subsists and how it can lead to competing claims is a major question involved? There is a constant struggle as to- firstly, the AI’s creator might own the copyright in the AI’s code and lay claim to ownership in any works derived from that AI. Secondly, a separate AI user may claim ownership in the copyright on the basis that they have selected the data and parameters around which to apply AI’s algorithmic processes. Finally, the investor or owner of the AI may constitute a third entity with a claim to ownership in the AI’s works.\(^\text{13}\)

Intellectual Property is all about innovativeness and creativity. The laws in relation were created to incentivize humans who create and define new characteristics. The application of Intellectual property to upcoming technologies in par with the world needs. Artificial Intelligence is one such innovation, where the human involvement can be least and still would be accurate enough in identifying, tracking, understanding, diagnosing etc. With this also comes questions of how AI innovation and creation strikes a balance with valuing or incentivizing humans for their contribution. AI is taking up the world forum and it is directly hitting the existing IP systems and it also shows how existing IP framework. For the first time ever in India, the copyright office has recognized an artificial intelligence tool – RAGHAV Artificial Intelligence Painting App – as the co-author of a copyright-protected artistic work.

\(^{13}\) https://www.cba.org/CBAMediaLibrary/cba_na/PDFs/Sections/IP-Copyright-of-AI-created-works-AODA.pdf
Ankit Sahni, an IP lawyer who owns the AI-based app, is the other author and is registered as the copyright owner. Recently, he commissioned the painting which was surrounded with bunch of questions i.e., ‘Suryast’ and even believes that India might be the first country to have acknowledged AI Co-authorship in a copyrighted work.
2.2. AI in Health Sector Inventions All Over The World: Challenges and Prospects

The field of healthcare is data-intensive which leads it to perform complex tasks and compare and analyse huge volume of data and try to classify it. Digital medicine, where the technology is researched and developed to make the patient doctor interface more user friendly and accessible is one of the growing fields. Few new technologies where the voice recognition devices are now paired up with medical databases for helping and prescribing medicines for health-related issues. The AI inbuilt can measure the intensity of the voice or coughs and suggest different cough drops for use. Detecting early cancers, kidney diseases, sleep cycle. Each assistant will however vary in results depending on their skills downloaded and access to different databases in exclusivity. Thinking of the advancements like this, are our activities monitored constantly and how far is it safe to conclude that AI in medical fields is for our good. This Non-Human Interaction also poses a lot of threat to the data. The growth of Tele-Medicine has taken shape in the healthcare system. Each app of Tele-Medicine is again integrated to other applications. The ease of access enables useful features like text and video chat, screen sharing, and file transfer for the patients online. Electronic Health records are thereby stored and analysed and refer to access existing health information giving the doctor a complete idea of the past health record. The forthcoming questing is how far are we comfortable with such ailments. The potential of AI is unimaginable as machine learning can transform the delivery of healthcare system in countries. From streamlining workflow processes to improving the accuracy of diagnosis and personalising treatment, as well as helping staff work more efficiently and effectively. During the pandemic they also helped in facial recognition, thermal screening, CT Scan analysis, etc However, the high cost definitely creates a setback, the risk of data biasness as it is a machine, and above all the high risk of losing private sensitive information. The innovations have set their goals to productivity, efficiency and best possible performance, however are always susceptible to unprecedented disruptions.

2.3. Public Interest and Ministry of Health along with Ministry of Science and Technology and Industry Contemplate on Implementation of Intellectual Property on AI- Based Assistance and Human- Based Assistance

Numerous AI-powered health applications designed for personal use have been shown to improve patient outcomes, building predictions based on large volumes of granular, real-time, and individualized behavioral and medical data. The government has definitely encouraged AI
Based assistance and recognizing AI’s as a part of Intellectual property, however due to lack of legislation and jurisprudence the ambiguity can always be challenged in the court of law.

The government has quote “Rendering protection to creations by AI will go a long way in recognizing and protecting the interests of those who develop such AI applications, and will ensure that they are appropriately incentivized.” It also extended its arms during the recognition of first AI as a copyright holder in India quoting “While the existing legislation has its own set of limitations, the act of granting recognition to an AI program as co-author of an artistic work marks the beginning of an era of change that governments across the world will be working on.” Policymakers encourage interdisciplinary collaboration between developers and health care providers. This could result in AI tools that are easier to implement and use within an existing workflow. The major concern still lies on ensuring data representation, transparency, and equity. Interdisciplinary education and policy changes can be pathbreaking.

2.4. Patenting and Market Demand for Such Technologies: Pros and Cons

Patient outcomes, predictions, understanding behavioral pattern of the patients etc are all a part of AI-powered health applications. Telehealth technologies in few instances has been of critical part during the COVID-19 pandemic, countries have benefited from AI software focused on natural language processing, which enabled identifying and addressing patients based on urgency and type of illness. The AI’s do not limit themselves to patient communication but remarkable help patients to maintain glucose level and detect cases of any artery congestion. There sensors are smartphone enables helping give approximate results and tracking location of the patient if embedded, thereby alerting clinicians of any further substance use that needs immediate attention and intervention. The need of the hour is patenting these market demand innovative AI technologies.
3. Technology Transfer and Know-How of AI-powered medical machines in India

“Technology transfer is the movement of one organization to another of innovation, information, materials, knowledge or trade secrets”. The technology transfer is a process which it is directed by different strategies, procedures, expenses of every organization engaged with the cycle. According to PWC the Artificial Intelligence will contribute to the world economy an additional 15.7 Trillion by 2030 and the most effective impact will in the part of the healthcare system. Which is why we need to facilitate the technology transfer of AI in the field of healthcare sector. Technology transfer in the case of pharmaceutical companies or industries make efforts for improving and maintaining the health department of the receiver countries by providing AI powered medical technology.

Intellectual property play an vital role in protecting new technologies and innovation through different types of IPR such patents, trade mark, trade secret etc. Stronger IPR regime helps to create more opportunities in developing countries. As it encourages to create more innovation and giving profit on investment in the research and development. Developing countries do not have much patented technology upon which they can rely on research and development. LDC also argued that it will be difficult for providing access to pharma drugs and other health care items if there is an stronger patent protection. Developed countries view is that stronger IPR will promote R&D within developing country. A sufficient IPR security can bring about huge effect on innovation diffusion and relies upon country's assets for domestic advancement and improvement. Relying on IEPMA companies, as they have more experience, the solution for the effective pharmaceutical technology depends upon the activities conducted in the country level or national level, with the help of many types of associations and good dedication from the industry.

To make AI based technology as it is difficult without understanding process of production hence transfer of the know-how technology is an important form. Technology transfer is done in various ways such as Foreign Direct Investment (FDI) is play an vital role in TT however the market mechanisms like licensing agreement, join venture, royalties are important channels for transferring R&D for pharmaceutical innovation; licensing is another essential part of TT

14 TWI, What is Technology Transfer, (July 19, 5:20 PM), https://www.twi-global.com/technical-knowledge/faqs/what-is-technology-transfer
15 Peter Magic, International Technology Transfer & Intellectual Property Right. Nov 30, 2003
16 Ugo Pagallo, Colette Cuijpers, Massimo Durante, New Technologies and Law. Jul 6,
as it helps developing counties for profit and enhance welfare. It is process where the owner or
the inventor of the technology gives the right the use the technology for certain period of time
to the receiver. There are three different modes for TT such joint venture, collaboration and
spin off. Joint venture is business venture that embraced joint by two or more parties,
Collaboration is an action of working with somebody to create something. And spin off is the
formation of an Autonomous company through distribution of the parent company.\textsuperscript{17}

WHO provides many guidelines in the pharmaceutical industries or sectors on the transfer of
technology, especially today due to the global pandemic caused by the COVID-19. However,
these guidelines need more up-gradation for the betterment of society. Technology transfer is
one of the legal methods for maintaining the procedure of the transfer along with its documents.
This also involves the development areas and the testing process of the transfer. For transferring
the pharmaceutical products from one place to another, the procedure can be followed before
or after finding the regulatory marketing authorizations only. Pharmaceutical product transfers
can be made during developments and manufacturing too.\textsuperscript{18}

The requirements necessary for the fulfilment of a technology transfer project are as follows:

1. An elaborate risk management.
2. An inclusive and broader gap synthesis that must also contain due diligence.
3. The paperwork of the project including the relevant segments of the plan.
4. Enough trained personnel with appropriate skill, intelligence, and experience.
5. Perfect setup of the process and product awareness should also be there.
6. The capability between the SU and RU must be measured, and this should not be limited
to the types of equipment used.
7. The difference has to be recognized between the SU and RU by viewing the
maintenance strategies, their risk, etc.

\textsuperscript{17} Denis Kuzniatsou, Technology Transfer Methods, DENIS KUZNIATSOU’S PERSONAL BLOG (July 20,
2021, 1:22 PM), http://innodigest.com/technology-transfer-methods/
\textsuperscript{18} WORLD HEALTH ORGANIZATION, WHO Guidelines on the Transfer of Technology in Pharmaceutical
Manufacturing, April 2021, https://cdn.who.int/media/docs/default-source/medicines/norms-and-
standards/current-projects/qas20_869_transfer_of_technology.pdf?sfvrsn=552e10bd_13
The technology transfer process is divided into 3 most important aspects-

1. Production Part:
   As per the technical experts, the information must be passed so that the transfer process can be made properly. An agreement must be made by the parties. All the important activities must be recognized.

2. Quality Control Part:
   It is also known as the analytical method. Here, the pharmaceutical products have to be tested. This method has been prepared by considering both parties: the sender and the receiver. This part makes sure those responsibilities, operations are written properly. A system must be made available for the risk management plan.

3. Documentation Part:
   The documentation of the Master plan of the technology must contain the title, the scope of the transfer, its objectives, address, and all the rest responsibilities that are required.

AI in health care sector is actually benefiting by enforcing cognitive technology in order to record large amount of medical data and in order to perform any power diagnosis for example “nuance”. It is a production service provider which provides AI-powered solution to the doctors to help to improve reporting quality and minimizing documentation time. It provide insights so that can you improve customer retention. This product uses AI and machine learning to predict the intention of the particular user so that company can make better decision and better action that enhance the customers experience and overall it will benefit the company.

Another frequent example which is being used by most the population is the AI based wearable health trackers such as Fitbits, Apple watch, Garmin and others. This wearable trackers monitor the heart rate and bloop pressure level to prevent heart attack. Apple watch uses the tagline to promote its watches is that “precaution is always better that cure”. Apple watch keeps the record of the health of any person who is wearing the watch by collecting like heart beat speed, sleep cycle, breathing rate, bloop pressure level, etc. which can predict the risk of heart attack.

AI based surgical robots can decrease the case to case variation and also help for the improvement of the efficiency of the surgeons. A surgical robot name “da vinci” allows the surgeons for performing various complex procedure with greater flexibility, reliability and also control the conventional approaches. It also provide rich magnified, 3D high definition views of the surgical area for performing the surgery in a proper manner. It is basically an instrument that helps in performing surgeries.
4. Improvements in Artificial Intelligence or Human Assisting Machines in the Health Care Structure

The rapid growth of economic costs and worsening consequences of machine based technologies, various health care systems across the globe are suffering and struggling a lot. Over the survey of 1.3 billion people and considering the second largest inhabited country in the world, India witnesses and meets new challenges in the health sector every time. Generally, health is comprehended as a crucial basis for defining a person’s state of well-being. This sector not only cover medical aspect but also various other categories like biomedical, quality and cost, etc., In India, it is presumed that four criteria makes an ideal health care system and those are- universal and adequate access, fair distribution of costs and quality, competent health service providers, and finally special attention and initiatives for vulnerable group of public.

The policy makers, politicians, clinical entrepreneurs and computer data scientist and analyst put forth their stance that Artificial Intelligence (herein referred as AI) particularly Machine Learning (herein referred as ML) will pave the way ahead and strongly believed that the health care system will be controlled and take over also taken care of by “Robotic Medical Staffs or Humanoid Medical Staffs”. Nevertheless, Health care sector is a blend of human judgement and scientific data. The future of health care system and future growth of AI are deeply interlinked. Various enumerable AI inventions relating to medical sector have shown in envisaging patient health trajectories, recommending treatments, guiding surgical care and supporting efforts to advance the health services of the medical community.

As we are already aware about recent, rapid & upward developments in AI by computer scientist paved the way towards health industry. AI mechanism in heath sector states the usage of computer controlled humanoids where with the health of human health researchers, human doctors and human scientists by using human intelligence inject complex algorithms and big data inputs that are designed to perform certain difficult tasks automatically and also can review, interpret and suggest solutions to complex health problems. With that it helps to reduce the workloads of clinicians, patho-labs and various primary check-ups stations. Usage of AI, ML and Internet of Medical Things (herein referred as IoMT) for the public health awareness and application is already been the helping hand by various technology applications and apps like Fit-bit which encourage and put control towards healthy mental and physical behaviour and a proactive lifestyle. AI or ML has already came up to the market which are being used to
detect acute diseases like cancer in their early stages.\textsuperscript{19} For instance, improving the health conditions and care systems, it requires a proper stimuli and alignment of big health input data from all over the world with accurate and appropriate decisions, predictive analysis of the disease that can support clinical decision-making and actions as well as prioritise other primary administrative errands. When human- human interfaces embedded effectively in the clinical practice then three primary issues need to be looked upon which are: the technical possibilities and limitations; ethnicity, regulatory and legal framework; and finally the governance or management framework.

Various factors were encouraged and determined for the substantial growth and development of AI- Health amalgamation. One of the main and highlighted factor is the belief that the algorithms can make more objective, robust and evidence based decisions (in medical terms the evidences for clinical trials, diagnosis, prognosis, etc.) speedily and precisely than a human health care provider. This ultimately leads to the ability to make evidence based legal decisions in cases like medical negligence which can’t be underestimated because AI tools can way better in analysing the risk factors, predicting the diseases, adverse effects and other infections and monitoring the health related activities and interactions being carried out. But the tug of war between AI or ML being more objective than human intelligence being more subjective, accrued with one of the reason as meaningful decision that means algorithms no doubt can detect a pattern but it is not necessary that it will give the output wisely and logically. Generally, the future benefits of Human Assisting Machines in taking over tasks that are way more standardised, as they cannot imitate the emotional virtues of which human health care providers are capable of. The ultimate goal of AI-Health collaboration or we can say Human Assisting Machines is to create a standardized machine learning formula for the healthcare system where a robotic system is constantly learning from the data inputs that it receives from the computer scientist upon the performance of its interventions.\textsuperscript{20} There are high chances of system destruction or data breaches or data theft where it includes the confidential information or personal information of the patient which means the quality and quantity of data required for a particular Human Assisting Machines may likely to be considered as a dispute matter in the light of the collecting and sharing of patient details and data during the training process and in

\textsuperscript{19} American Cancer Society, a high proportion of mammograms yield false results, leading to 1 in 2 healthy women being told they have cancer; Wired (2016), http://www.wired.co.uk/article/cancer-risk-ai-mammograms
\textsuperscript{20} Codrin Arsene, The Global ‘Blockchain in Healthcare’ Report : The 2021 Ultimate Guide For Every Executive, January 10, 2020; https://healthcareweekly.com/blockchain-in-healthcare-guide/
case the data are mishandled then this will create a huge damage and compensations to all the sectors that are coming under the guise of Human Assisting Machines in the health care system.

Currently, in various other countries apart from India more diagnostic and therapeutic inventions are based on AI-Health collaboration and not the human interventions which encourages to share more and more new algorithms inputs in the field of health which are unknown to the medical community and having a utility. But it can also portray a negative impact on the public as many people don’t have the level of understanding the E-Health facilities, benefits and measures being provided to them at the doorstep. This means it will be toughest task to convince a patient to undergo a treatment with the help of AI- based medical machines as it increases the chance of risks and side effects if so happened anything to them. The use of Machine Learning in the health care decision making seems very straightforward for providing various services and fitting into numerous categories of medical practices but involves many other human dynamic interactions with the public as well and will definitely create chaos and disputes between the health providers and communal people. Let’s have a look on a scenario where a Human Assisting Machine is deciding to sent the patient to Intensive Care Unit (ICU). This is a limited hospital resource and only people who are at risk of losing their lives or suffering from severe harms or injuries are sent there. Such decisions are made by humans with the aim of different factors that includes the likelihood of people surviving if they are sent to the ICU. This underlines an idea that human doctors by applying the human intelligence and professional guidelines will decide upon the matter whereas the AI-based medical machines are oriented and operated according to their values embedded in its coded form.

Human Intelligence and AI- Health based technologies and tools are having neutral scope but may provide unfair results with the direct involvement of the public at large that emerges risks and diverse ethical concerns specially with regards to the moral responsibility. In machine learning health care system, it is observed that a single AI tools might involve many people for various errands like organising, collecting and brokering data and performing on it by its own coded formula and making this transparent enough. Upon the moral responsibility and lack of clarification, an issue will be put forth in the face of the society as to what is acceptable and preferable along with what’s affordable to them. In order to handle these small and big challenges, the health industry if per se using AI based technologies must come up with both hard and soft mechanism that includes policies, standards and regulations which are drafted based on the existing society moral obligations. Then only, it will balance both the weighing
scales, which means protect the individuals from harm of cyber security as well as provide the health service in a better way. Cut short, our health care system should not be extremely rigid in adopting and introducing the AI based technologies to the combo of health and fitness industry but should be heedful on its impact and aftermath effect to continue the same and can be controlled in a way. When we are reflecting the term ‘policies or standards’ explicitly it means regulating and monitoring various software into the medical devices. In 2020, World Health Organisations (herein referred as WHO) came up with many new medical devices project and also came into effect across the globe which substantially increased its growth in AI-driven technologies. Along with that, it also increased the market demand and country’s economy even in this high frequency of pandemic where the world is placed under the digital realm.\textsuperscript{21} This might not reduce the risk which are associated with the algorithmic tools or AI-powered medical devices or even the online consulting databases.

5. Conclusion

No doubt, Human Assisting Machines have huge potential for achieving the profits from the health and wellness industry, if worked so in India and can be a factor for country’s economy as well. With the expansion of science and technology by the innovators from various categories of field are slowly adopting this concept in their invention as there are many excessive menace features involved while experimenting with AI even with the help of Human Intelligence due to privacy concerns, data integration concerns and data sharing for keeping the Intellectual Property Rights in hand. With this in mind, this topic have covered various concerns related to fetching human-humanoids interfaces in the health care system in a nation of widely populated like India along with various limitations. It also provides several approaches to help the policy makers and legislators for drafting certain set of guidelines and developing evidence based and regulatory frameworks to come up in the near future. Recently the drug discovery is one of the most advance searches in AI regime which cut downs the time and costs of new drugs in the market arena by way of repurposing process.\textsuperscript{22} What we arrived to conclusion is that few capable areas can try for the development of such innovative approach where AI-powered machines come into the picture for leveraging in clinical decision making,

\textsuperscript{21}Management Regulations on Application of Electronic Medical Report under the guidelines of Ministry of Health and Family Welfare, India; https://main.mohfw.gov.in/sites/default/files/17739294021483341357.pdf

\textsuperscript{22}No Longer Science Fiction, AI and Robotics are transforming healthcare; https://www.pwc.com/gx/en/industries/healthcare/publications/ai-robotics-new-health/transforming-healthcare.html
early detection of the diseases and market play that involves costs and quality. It can also provide services and alerts whether or not to continue the medical care for critical ill patients like person entered in coma or having cardiac arrest, etc., by stipulating some measures or alternative options for the treatment purpose. In the tech-savy world, starting from smart phones to fitness band, it is presumed that such technology can produce images or photos and videos of their disease which can be analysed by AI algorithms and in an easier way put it infront of our finger tips. Since, the nation has begun to take step towards building AI software and hardware into their devices which generate more than billions of terabytes of data on a daily basis for providing faster and smarter services. Human Intelligence and AI collaboration will enter into a new revolution in the coming decades by giving powers to the new generation with digital tools and systems in the health care sector in order to keep the motto of being healthy, wealthy and wise.
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