ISSN: 1813-4890

The intersection of Biomedicine and communication technology

Peidong Tian

Sichuan University, Chengdu 610000, China.

*Corresponding author Email: 2926339891@qq.com

Abstract

Biomedicine, a seemingly professional term, but in fact, it is very close to us, and we can even say that we can't live without it every day. Why do you say so? Human itself is a senior animal, can also be seen as a part of the big concept of biology, from the moment we appear, it is no longer inseparable from it, people always live and die, although most of the ancient monarch fantasy of immortality, but no matter how long time, tried how many ways, after all, but in this process, People tend to experience a lot of thinking and consideration, people always have a great desire for life, people are eager to convey their desire to live, at this time, it is necessary to convey their will through a way, when an individual wants to convey their own will to another individual, this has actually completed an early "communication", why so? Communication, in essence, is to pass a certain way to convey a message to the other party, in this process to achieve the timeliness and value of information, can be called "let the information live", and at this moment, in essence, "biomedicine" has met "communication technology", and about the story between them, is still very long.

Keywords

Life-saving, healing, physiological needs, religious color, organic integration of science and technology, integrated development.

1. Text

Biomedicine, a seemingly professional term, but in fact it is very close to us, we can even say that every day is inseparable from it, why say so? Human itself is a senior animal, can also be seen as a part of the big concept of biology, from the moment we appear, it is no longer inseparable from it, people are always born and die, although most of the ancient monarch fantasize about immortality, but no matter how long it takes, how many ways have tried, after all, but in the process, People tend to experience a lot of thinking and consideration, people always have a great desire for life, people are eager to convey their desire to live, at this time, it is necessary to convey their will through a way, when an individual wants to convey their own will to another individual, this has actually completed an early "communication", why so? Communication, in essence, is to pass a certain way to convey a message to the other party, in this process to achieve the timeliness and value of information, can be called "let the information live", and at this moment, in essence, "biomedicine" has met "communication technology", and about the story between them, is still very long.

The initial biomedicine may only stay in a simple cognitive aspect, which is why? Because man is a social animal, living together from birth, forming a group, and different individuals in this group must have some differences in physical and psychological aspects, with the change of time and space, some basic conditions of different individuals may also change, in this process, they may need some help, This requires some kind of physical or linguistic help from other individuals. Behind this seemingly simple process is an early social labor in which human beings continue to evolve. With the development of the brain and the progress of The Times,

ISSN: 1813-4890

human cognition is gradually improved, and the consciousness to be conveyed will become more and more powerful. They no longer simply express their will, but express it in a more advanced way. For example, when they get sick, they will look very ugly or have some symptoms that they did not have before. In essence, they become a subject of conveying information. The early "communication" was shown, and an individual accepted the fact. They no longer remained at a loss or indifferent in the early days, but conveyed the disease to the gods in some way. People in this period were deeply influenced by theology, they would not attribute the disease to the natural law, but believed that it was a supernatural force of the gods. They chose the object of "communication" as a supernatural force, and combined some of their own consciousness with this object, and through some ritual made it deeply trusted by the original subject, this is the combination of the two in ancient times, and this period has been accompanied by people's thoughts for a long time. In modern times, with the progress of people's cognition, people's cognition of "man" is getting deeper and deeper. In the West, "Renaissance" and "Enlightenment" appeared, and "divinity" gradually replaced "humanity". Meanwhile, during this period, human productivity also developed rapidly, and various industrial products also came into People's Daily life. For example, Bell, who is well known to us, invented the telephone in 1876. This invention greatly updated our means of communication, enabling us to have more, more convenient and fast means of communication, which can quickly convey effective information in a very short time. At the same time, Edison invented the electric light in 1879, the change of daily necessities also boosted the development of medicine. At the same time, the rapid development of western natural disciplines such as chemistry and biology also greatly promoted the development of medicine. People are no longer affected by traditional theological concepts, and are no longer limited to praying for God or wororing nature. But believe in the power of human and science, these are to varying degrees to promote the development of "biomedics" and "communication technology", but also let the two to a certain extent combined and linked more closely, such as someone is sick, people will immediately pull to the hospital, and as soon as possible with the phone to notify the family, instead of sitting in front of the patient silently praying. A careful study of this process will not be difficult to find that the common development of the two benefit from the development of society and the progress of The Times, it is this force to promote the improvement of productivity and the self-awakening of human cognition. When human beings' self-cognition is enhanced and their self-awareness is gradually awakened, they will gradually shift their attention to human beings themselves, so they will have more demands and want to meet their growing needs through various products or projects. It is the needs of this "advanced animal" that give rise to the development of related scientific and technological fields and industries such as "communication technology". This can be understood as "biomedicine" to promote the development of "communication technology". At the same time, "communication technology" has greatly promoted the development of "biomedicine". It is precisely because of the communication technology that more and more people can convey their urgent needs to the hospital, so that the hospital can save the dying and heal the wounded through various instruments and technologies, which greatly meets people's physiological and psychological needs and greatly improves human health. Also let human life continues to grow, with the growth of human life, human will have a lot of new needs continue to appear, there will be a lot of new wishes and preferences, which from the opposite to promote the growth of "communication technology", it is this kind of conductive such as the chain general cycle of the virtuous chain reaction to promote human history continues to move forward, occur again and again constantly change. With the improvement of productivity level and the progress of The Times, to the modern society, the United States in the late 1960s to the early 1970s carried out the world's leading "Internet revolution", successfully led the world to the future, so that people's perspective is more three-

ISSN: 1813-4890

dimensional, intuitive, clear, people no longer just through the voice to convey some information, But through a more three-dimensional and intuitive three-dimensional space carrier, it sets sound, images, text is equal to one, greatly facilitated people's lives, people are no longer limited to face-to-face transmission of information, but can quickly convey information more accurately through the screen, the process is more convenient and effective, can be said to open up a new era in the field of "communication technology". "Biomedical" technology has also made significant progress in this period, different from the ancient "look, smell, ask and cut" and modern "the right medicine", modern "biomedicine" can be combined with the actual condition of the patient to carry out some simple surgery, that is, you can use some tools to meet people's more different needs, more convenient and safe. After the initial formation of the two prototypes, human beings' pursuit of a happy life is far from stopping, but they want to combine the two perfectly, so that they can overcome more difficult diseases and better protect people's life and right to health. Under the guidance of this thought, the real sense of "modern surgery" was born. Before surgery, people often have to find out the cause of the disease by various means, such as: CT, nuclear magnetic, etc., these examinations all rely on the development of science and technology and the application of communication technology, the use and operation of some large surgical instruments are also inseparable from communication technology, it can be said that the two in modern society have been more closely and organically combined, which is also to a large extent more beneficial to human development!

With the outbreak of the novel coronavirus pneumonia, human beings are facing challenges from nature and disease, and today's world is facing great changes unseen in a century. This has sounded the alarm for us, and also inspired us to think more deeply: telemedicine. As one of the hottest emerging sciences in recent years, telemedicine integrates the fields of medicine, communication and information, and is of great strategic significance in promoting the development of China's medical and health services. Telemedicine can effectively improve the skewed distribution of medical resources in hospitals, and support medical interaction and consultation to reduce the requirement of time and space. The development of 5G systems has greatly shortened the distance between patients and hospitals. With the advent of 5G era, telemedicine will be promoted to a deeper state of development. In addition to remote video consultation, remote consultation and health care system for individual patients and family patients, remote surgery has also become a research hotspot in the field, and mobile health care will also become an indispensable part of the subsequent development trend. Telemedicine refers to the modern communication technology, the two-way transmission of data, voice, image and other information as a means to achieve the ultimate long-distance medical service without space restrictions; Telemedicine is a new type of medical service which closely integrates signal transmission, communication technology and medical professional technology. Through remote medical information collection, transmission, processing, storage and query, remote patients to make treatment, diagnosis, health care, consultation, follow-up; To complete continuing education, consultation, teaching and other training for remote medical personnel. Through remote communication technology and holographic imaging technology, professional medical technical services can be provided, giving full play to the advantages of large-scale medical union technology and equipment, and providing medical services for areas with poor medical and health conditions. The construction of telemedicine service system is an important part of the construction of China's medical and health information engineering, allowing medical experts to provide medical technical guidance across regions, time and space through information technology. Therefore, we should make full use of modern information technology, build a telemedicine service system, build a medical service platform of the medical union, and promote the regional sharing of high-

ISSN: 1813-4890

quality medical resources, which has epoch-making significance. According to the process, the core components of the telemedicine system are as follows:

(1) Medical service providers, that is, large medical centers with rich medical resources and diagnosis and treatment experience

(2) The demand side of medical services, that is, local medical institutions that cannot meet a certain level of medical care or lack a certain level of medical equipment, may also be families and individual patients

(3) Communication networks and diagnostic and treatment equipment that connect (1) and (2).

With the development of the medical industry, the systems currently widely used in clinical practice include Hospital Service System (HSS), Hospital Information System (Hospital Information System), HIS), Laboratory Information System (LIS) and Picture Archiving and Communication Systems (PACS), The core function of the above system is to take all kinds of data information collected in clinical diagnosis and treatment (including but not limited to the medical images generated by CT, biochemical analysis, ultrasound, nuclear magnetic resonance, X-ray, micrograph and other devices), through simulation, DICOM, network and other interfaces, the above information in digital form to achieve mass storage. When necessary, it can be quickly recalled and used in the case of authorization, and some auxiliary diagnostic functions are added. Due to the large bytes of medical image information, transmission requires very high network bandwidth. Even if the 4G communication network is used for transmission, it will cause discontinuous, non-synchronous and unclear information transmission, resulting in lower diagnostic efficiency,affecting the decision-making of treatment programs, and significantly reducing the quality of remote consultation. With the development of 5G technology, problems caused by data transmission quality can be fully alleviated.

The Fifth Generation of Mobile Phone Mobile Communications Standards (5G), also known as the fifth generation of mobile phone mobile communications standards, is an extension of 4G. With a theoretical downlink speed of 10Gitb/s (equivalent to a download speed of 1.25GB/s). It can not only realize the high-quality transmission of three-dimensional images, so as to provide high-quality video services for high-speed mobile users, but also provide data collection, real-time positioning, remote diagnosis and other fusion functions in addition to communication information. In terms of design concept, the core goal of traditional communication system design is to encode and decode information, physical level transmission between dots and other technologies. 5G mobile system focuses on a wide range of multi-point, multi-antenna, multi-user, multi-cell cooperation and mutual networking, and deeply explores difficult points to greatly improve the performance of the communication system. Its core goal is to improve the coverage performance of indoor wireless network and its business support capability; In terms of physical implementation, 5G introduces new wireless transmission technology on the basis of point-to-point physical transmission of traditional communication technology to realize the construction of multi-user regional network, which greatly improves the transmission performance of communication network. Due to the revolutionary changes in design concept and physical implementation, 5G communication technology has the following characteristics: fast speed, wide spectrum and low delay.

On the basis of traditional medical treatment, telemedicine based on 5G communication integrates wireless communication technology of small devices in various modes and high-speed mobile communication technology, which can realize remote surgical operation, wireless remote consultation, patient monitoring and real-time follow-up, command and decision-making of emergency rescue events. Telemedicine supported by 5G technology not

ISSN: 1813-4890

only integrates multimedia network and wireless communication technology, it can support the safe and high-speed transmission of massive multimedia medical data, but also further realize the deep sharing of high-end medical resources. With the development of telemedicine technology, individuals and family patients can obtain high-quality treatment and rescue resources regardless of space and time, and they can also play a unique advantage in emergency rescue in emergencies such as traffic accidents, natural disasters and remote battlefields. Therefore, 5G technology is also widely used in telemedicine: remote surgery, remote video consultation, telemedicine health monitoring, emergency command and so on.

2. Summary

The above measures have made important contributions to the implementation of China's "medical power" policy. It is precisely because of the emergence and development of the above technologies that the regional differences in China's medical level have continued to narrow, greatly improving the convenience of people's medical treatment, and making China's medical level develop in a more balanced direction. In the past, many people in backward areas had to go to developed areas for medical treatment. Now, they can access medical services only in front of a computer screen, which greatly improves people's happiness index, meets people's growing needs for a better life, and enhances people's sense of gain. At the same time, the improvement of the quality and health of the population has also significantly enhanced the quantity and quality of the labor force, and promoted the economic development and economic and cultural construction in different regions. This is of great significance for the construction of socialism with Chinese characteristics, and also has a profound impact on the construction of a social medical security system with Chinese characteristics, which profoundly reflects the concept of "people-oriented", truly "serving the people wholeheartedly", and achieves the ultimate goal of ordinary people's life, so that the people truly experience the actual effect of "two do not worry about three guarantees". However, at the same time, it should be noted that this technology is not very mature, and there are some problems, such as the Internet may have problems in some areas, leading to the instability of the medical process or surgery (such as Tibet, Xinjiang and other regions with poor natural conditions), which indicates that relevant workers still need to work for a long time. We still need to push the technology forward.

References

[1] Hulleylen. Thinking on the Construction of hierarchical diagnosis and treatment System based on Telemedicine [J]. Digital Communication World, 2018 (2): 167.

[2] Chen Guanzhen. Analysis on big data and 5G communication [J]. Communications World,2019, 26(2):67-68.

[3] Wei Qiujian. Design of Integrated Information Communication Platform for Small and Medium-sized Enterprises based on Softswitch Core Technology [J]. IT Times Paper Edition, 2015.

[4] Chen Yukai, SONG Hao. Discussion on the relationship and development trend of Big Data and cloud Computing [J]. Computer Knowledge and Technology, 2017(13).