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The Role of Medical Technology in Enhancing Quality of Life and Developing Health Care

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Abstract:
Electronic devices play an important role in medical science and are characterized by the possibility of continuous updating. They have also contributed to building new, more advanced guidelines. Therefore, medicine and medical technology have become an inseparable duo that aims to diagnose and treat diseases. This requires building a team of doctors with scientific and technological skills and the ability to analyze and innovate. Through this study, we discuss medical technology that has made a difference in medical science, whether in diagnosis or treatment. The problem with the study is that we believe that the responsible authorities in the Ministry of Technical Education do not focus on the importance of the role assigned to faculty members in the medical technology colleges in Benghazi, and it is an attempt to convey information about the role of medical technology in developing society.

Keywords:

Introduction:

Diagnosis, treatment or prevention of diseases depends on the most important methods, the most important of which is knowing the causes and various mechanisms. Recently, many effective methods and treatments have been advanced through technological methods based on research and discovery [1], and a new era has begun in which the physical sciences depend on information technology (IT) and artificial intelligence (AI) [2], biocompatible materials and minerals, medical imaging, Nanoscience and modelingand simulation [3]. This is what prompts us to say that engineering innovation in medical technologies is based on the basis of previous medical inventions and continues to develop and includes many fields, and contributes to most health care and medical specialties, starting from pediatrics to geriatrics, and therefore there are many ways and methods of using technology. Medical. To include remote diagnosis and treatment using health information technology, which contributed to the development of the entire health system, including the doctor, the patient, the administrations of medical institutions, associations for the care of people with special needs, and health insurance institutions of all kinds [4], which led to improving the quality of life and enhancing diagnostic and treatment processes, In addition. Increasing the efficiency and effectiveness of the health care system in terms of performance and cost [5]. Through this research, we work to present innovations in medical technology and the medical industry, which have been considered a breakthrough in health care systems. Through the introduction of medical technologies, the expected positives of operating these systems can be enhanced and applied to develop and invest in human resources, and succeed in managing the development of a policy based on the quality and efficiency of the health care sector.

Method and methodology

Technological progress in medical sciences has remained a dream for scientists, researchers, and doctors, and through this research we give an overview of the importance and necessity of this trend as a shift towards a more prosperous lifestyle. The research begins by presenting a summary of medical inventions and technological progress in medicine in all its specialties, and including the numerous discoveries of researchers and specialists in various branches of science and knowledge such as medicine, engineering, physics, chemistry, pharmacy... etc. Therefore, this paper seeks to focus on the most influential and effective medical

technologies. The most important issues were identified through a review of the literature related to medical innovations and medical technology. In this study, we follow the descriptive approach, as it is the most appropriate to achieve the research objectives, as it is compatible with the nature of the study, which requires following up on intellectual production on the subject of generating technological knowledge in the field of medicine and health care services, through reviewing relevant studies.

Results

In medicine, innovation is considered a process through which a new concept, design, service, process, or product is presented for the purpose of improving diagnosis, treatment, awareness, prevention, education, and research [6], and contributes to developing plans to enhance quality, efficiency, safety, and costs. In addition to the development of chemistry, which plays an important role. In the past, equipment was used to diagnose diabetes, anemia, diphtheria, and syphilis. Healthcare science turned to be a measure of quality of life through improvements in chemistry, techniques, and laboratory equipment, which led to a deeper understanding of infectious epidemiology and the science of bacteriology and viruses. Consequently, medical sciences radically transformed into Directly subjective from the patient in the form of objective analyzes acquired from mechanical and technological devices [6]. Therefore, discoveries are credited in many medical sciences, with some technological breakthroughs leading to accelerating the pace of medical innovations, and contributing to giving greater hope in clinical diagnosis, or in other words. Reach to better results with less invasive, safer and more accurate procedures, changes that increase the demand for diagnosis, monitoring and treatment in its new form. In the past, the design of surgical operations led to the invention of medical tools such as forceps and surgical needles, and with acceleration, we find that at the present time the discovery has led to the unbelievable: antibiotics, vaccines, and heart stents. In addition, an industry based on a close relationship between biology and engineering [7], which would not have been possible without the early discoveries in the field of medical technology such as the thermometer, stethoscope, microscope, ophthalmoscope, laryngoscope, and x-rays, all of which worked to enable these devices to help... Doctors provide accurate diagnosis and treatment as an important example, the stethoscope is the first medical device used in diagnosis and obtaining information about the lungs and heartbeat [8]. It is a tool that opened a wide field in the medical industry during the 1930s, which makes us conclude that equipment and innovations in medical devices contribute In diagnosing, understanding and treating Various diseases developed during this era to include the artificial heart, robotic catheter, portable medical scanner, bone injector drill, dialysis device, lens implants, and artificial joints. Advances in medical technology have enhanced diagnosis and treatment using electrocardiograms, X-rays, nanotechnology therapy, electrical health records, health information technology, artificial intelligence, interventional radiology, laser surgery, magnetic resonance imaging (MRI), and ultrasound. Acoustic (US), organ transplantation, skin antennae, and pharmacology of drug therapies.

Discussion:

The role of medical technology in enhancing quality of life and developing health care Wilhelm Conrad Röntgen's discovery of X-rays was a catalyst for scientists to pursue a medical technology of some kind. Roentgen rays remained an example for everyone who wanted to write about the subject of medical technology, and the technology of reading the electrical stimulation of the heart (EKG) through electrodes attached to the skin and recording it with an external device was a wonderful development at that time [9], and when it was developed. Mammography with the aim of imaging breasts with X-rays as a type of test with bodyof high-frequency sound waves, as harmful ionizing radiation was replaced by sound waves during medical procedures for examination and testing [21]. Many ultrasound-guided interventions were used, such as biopsies and drainage of abscesses, and it was considered a pioneering shift in routine medical procedures, and is used for triple evaluation. Dimensions of intrauterine growth of

the fetus [22] , and when Mansfield P. and Loterbourg P.C Magnetic resonance imaging (MRI), which was a remarkable discovery in the truest sense of the word, used a magnetic field and pulses of radio wave energy to create images of organs and structures inside the body instead of x-rays. In most cases, they obtained different information about the body's structures than that captured by imaging methods. The other. This technology has succeeded in detecting neurological and musculoskeletal disorders, examining brain tumors, and obtaining clinical images of the movement of cardiovascular structures. Researchers were able to improve contrast agents and identify blood collection points for angiography as an effective non-invasive way to examine vessels. Many researchers are conducting tests and experiments to study new MR sequences, which have evolved to include functional imaging with the aim of obtaining deeper and more accurate anatomical information [11]. With the invention of laser surgery, which is known as light transmitted in one direction. It accelerated procedures and reduced invasiveness and recovery time, and it succeeded in many fields, the most important of which is eye surgery, in a way that represents a breakthrough in medical science [12]. Rutledge was also credited with the discovery of nanomaterials, where it played a major role in medical sciences. Nanotechnology plays an important role in procedures to stop bleeding and enhance the healing of brain injuries using synthetic peptides [13]. Recently, information technology has worked to store health files and thus capture health data, use it, and transfer it through electronic processes to activate it within useful comparisons for medical teams about... The World 14]. Information technology works to increase the quality of medical health care and is described as a complete management of health information through computerized systems and secure exchange between medical service providers and operations teams within medical institutions, government bodies, quality entities and insurance companies in general, and therefore it is a tool. Promising to enhance the quality, safety and efficiency of the health care system [15]. We also mention Harold Ridley, who invented procedures Organ transplantation is one of the most important ideas in medical technology, and he was the first to succeed in implanting an intraocular lens [16]. The scope of transplantation soon expanded and was accompanied by cataract surgery, which led to further development in the design of lenses and other surgical techniques [17]. Such as artificial joints, including hips, knees, and all of them It has achieved remarkable medical progress and has begun to be used Skin antennas via radio frequency communications to help medical devices work together [18]., It is evidence of the development of medical technology and the reality of new procedures, innovations and
educational discoveries for medical technicians and medical engineers that provide them with the ability to perfectly apply technology to obtain better clinical results.

Conclusions:

Pharmaceutical medications and treatments, various diagnostic techniques, and new surgical procedures have helped to provide a better and safer quality of life. Thanks to medical technology, knowledge of the biochemical changes at the initial onset of the disease has led to better diagnosis and treatment of patients. Enhancing medical devices has also provided the ability to intervene and improve the quality of life. Information works to make medical technology available to doctors and enhance its adoption and confidence in it within modern societies. Therefore, the importance of knowing the potential benefits that may follow the use of these systems in medical care is felt, and to direct Policy to enhance the quality of medical technology colleges in Libya. Medical technical education and medical technical colleges play an important role in the development of Libyan society, as building a productive society requires the provision of qualified human resources capable of production and achieving comprehensive development. Hence, countries are keen to place higher and technical education at the forefront of their priorities as it is a pillar for achieving progress and confronting. The challenges of the times in their various forms. Most of the colleges of higher medical technological

education in Libya seek to achieve their goals, achieve their goals, and reach a
distinguished scientific position among the various technological and academic universities of the world through the tasks they advance and the functions they perform with the highest level of efficiency and effectiveness, relying in this on a group of Pillars and Perhaps the most important pillars are its faculty members and the extent of their ability to carry out their responsibilities and tasks in the required manner, and with the multiple goals of universities and their development from an educational institution that plays a role in meeting the professional needs of society, and with the tremendous explosion in the rates of increase in information and knowledge and the increasing use of technologies in production. And daily life, and with the necessity of using the scientific method in developing various community activities, the tasks of the Benghazi Medical Technology College and the tasks of its faculty members have evolved from what they were in the past. The college is no longer only a service institution, but has also become a productive institution that contributes to production directly through research and consultation. In addition Its role in developing human resources can be identified with the most important tasks of the college, which is the dissemination of knowledge, which includes teaching, training, and knowledge development, which includes scientific research and application of knowledge, and includes community service, where teaching, scientific research, and community service, and after we learned through this paper about the importance of medical technology in developing In the community where diagnosis and treatment are concerned, we recommend providing laboratories and capabilities to faculty members at the College of Medical Technology, Benghazi, to advance them and give them opportunities to advance our colleges and universities to the vehicle of tremendous progress in this era. Removing obstacles, providing laboratories, and paying attention to medical technology as one of the most important vital specialties is a national duty that must be adhered to and carefully considered, especially in the stage of building this society.

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