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Health Parameters Measurement System

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Abstract - *Health maintenance is one of the major aspects for human beings to live with utmost efficiency. At any time, if there is any illness or disease, then the patients get cured through various medications and treatments. Out of these, many medications are not completely safe and good for health. This paper would be giving the information about Pranic Healing, and a few health parameters, which could be healed, through the method of Pranic Healing. This paper also provides information about the development done on various health parameters measurement systems.*

Key Words: Pranic Healing, frequency radiation, North Atlantic Treaty Organisation (NATO), Integrative Medicine (IM), Internet Of Things (IoT), Acupressure, Acupuncture, Reinforcement Learning.

1. INTRODUCTION

There are a lot of causes for illness and unwellness in a human body. Some of these are headache, shoulder pain, back pain, muscle pain, over-stress, minor bone injuries, etc. Their cure is to use medicines and undergo treatment. Pranic Healing is such a method to heal the patient's body, which consists of no touch, no medicine, and intake of any matter. It works on the principle of transferring positive electromagnetic energy from the surroundings to the patients' body.

Pranic healing is an unique method of healing a patient. Founded and promoted by Grand Master Choa Kuk Sui (1952-2007), this technique has become very widely known by millions of people around the globe. Each body part has its own electromagnetic energy, and together, a human body has a certain standard electromagnetic energy. When any part of the body gets hurt, the electromagnetic energy differs from the standard energy (generally taken as frequency radiations). Pranic Healing is the method, that heals the body part, by getting back the frequency radiations to the normal levels. This paper is based on observing the changes in the electromagnetic radiations, through various devices.

In this paper, it has been explained how one can use telescopic antenna and pulse sensor, to measure the frequency radiation of the body parts, and the pulses of the patient, respectively.

1.1 Related Work

Development Of Physiological Parameters Monitoring System Using The Internet Of Things[1] propose the idea of having communication between the patient and the doctor so as to keep a record and trace of the health status of the patients. As it is known, internet has been an extraordinary invention in the field of modern technology, and hence, it could be very well used for the health measurement of human bodies. At many places, due to lack of proper medical facilities, many human lives are lost. But due to this utilisation of tracing the severity and level of the diseases and the illnesses, many lives can be saved. These precious lives can hence be saved using appropriate precautionary measures and methods to cure a patient's body. This system would include microcomputers, physiological sensors, corresponding pre-processor circuits, and wireless transmitting modules. Many parameters like blood oxygen, blood pressure, ECG, QRS, etc. can be measured and observed using these modules. Hence, this system would help to monitor the health of the patients using the Internet Of Things (IoT).

Portable Device To Monitor Vital Health Parameters [2] propose the idea of designing a portable device to measure the health parameters and detect the diseases or illnesses of the human body. According to them, most of the diseases are curable, if detected at proper time. It is not always sure that doctors are present in and around the patients. So there should be some system, to help the patients measure and detect their health issues, so as to take required precautionary measures. In this system, parameters like, blood pressure, pulse rate, body temperature, and pulse oximetry are measured and monitored. The design is done taking the microprocessor Raspberry Pi and other appropriate ICs. For sharing data, it also consists of blue-tooth module. Hence, this system aims on developing a cost-effective, user-friendly health system to serve the patients and the elderly people.

Integrative Health And Healing Practices Specifically For Service Members: Self-Care Techniques[3] propose an idea of self health care for North Atlantic Treaty Organization (NATO) Service members. This paper gives a lot of information on self health care techniques. It mainly stretches its concern on rapidly increasing use of Integrative Medicine (IM) by patients to maintain their health. As the NATO Forces are always deployed in some or the other parts of the world, they have to be completely fit for all challenges and situations. For this, they usually try to avoid the medications, having side affects and other negative impacts. The members may use IM to increase their stamina, operational performance, and capacity to work. This paper also related the IM Method to acupuncture and acupressure points of the patients, which also gets related to Pranic Healing. The paper also explains the energy practices, which gets completely related to the Pranic Healing method. Due to these reasons, Pranic healing becomes useful for military health care purposes too. This way, IM would be very efficient to maintain the health of the members.

Intelligent Transmission Of Patient Sensor Data In Wireless Hospital Networks[4] propose the idea of having wireless communication of health status between the patient and the doctor. As it becomes very difficult to have efficient data transmission in hospitals, this paper proposes, Reinforcement Learning based queue management and scheduling scheme. One of the major issues is, that the traffic of the data transmission becomes more crowded in hospitals. So, to avoid this chaos of traffic, this system uses an approach, where the patients compete for transmission resources by assigning different utility values to the data packets. The factors, on which these values are dependent are the criticality and deadline of transmission of the data. Together, these factors decide the priority of the data to be transmitted. In comparison to a data-type based scheme, the simulation results of the method used in this paper gives an organised transmission of data, which makes it a better method that can be used for this purpose.

Detecting Vital Health Signs With Wearable Sensors[5] propose that, as the world is becoming rich in technology, there should be such mobile systems that could continually monitor the health of the individuals. The conventional health-care systems can be replaced by wearable health-care systems. These wearable health-care systems can give continuous and better information regarding the general health status of the individuals. Hence, this system would decrease the health care costs by taking certain preventive measures and would also enhance the quality of living of all the user individuals. This paper gives information on non-invasive monitoring technologies for chronic disease management. The system is designed to analyse the parameters such as, blood pressure, cardiac activity, glucose levels and respiratory activity. For carrying out measurement of these parameters, various wearable and on-body sensors are used. This system has applications in sports, medicine and security. In the conclusion, the paper has explained that there are many challenges in designing continually health monitoring system with non-invasive nature. But, there is a great scope of development for such systems.

Measuring Overall Health System Performance For 191 Countries[6] propose the idea of measuring and maintaining the health of huge number of people around the globe. According to them, it is an initiative taken to measure the health system performance of 191 countries. They have used a few specific goals, to measure the performance of the country. Hence, the performance of the countries was measured using specific goals. They consisted the parameters like, health, responsiveness, fairness in financing, which totally explains the efficiency of the country's health performance. They have also stressed on the parameter of improving health of population. Further, the estimation methods included composite index, methodology, model specification, data, minimum frontier, and uncertainity. Together, these factors decided the performance of a country's health system. There are many more interesting results shown in their paper, which explains completely about the health system performance of 191 countries. This measurement of the performance gives us great idea about the amount of work that is done and much more needs to be done to improve the quality of the health of the people around the globe.

Physics Of Wound Healing[7] have given the information on wound healing through various energy considerations and observations. According to them, the process of wound healing is a complex process on a macroscopic level. Their observations and findings are mainly on these three factors: A) The rate of wound healing, B) Time-scale for wound healing, C) Prediction of maximum wound mass. They have compared their results with experimental results for ranges of different conditions of wounds. By this, they are able to provide better results and explanations of the observations. On this level, their model is capable of yielding insights, both into question of local metabolic rates and possible therapeutic aspects.

1.2 Comparison

PAPER TITLE	SENSING METHOD	SENSED/MEA-SURED PARAMETERS	SYSTEM COMPLEXITY	COST EFFICIENCY	RELIABILITY
Development Of Physiological Parameters Monitoring System Using The Internet Of Things	Physiological Sensors	ECG & Body Temperature	Moderate	Moderate	Moderate
Portable Device To Monitor Vital Health Parameters	Integrated Sensor ICs	Blood Pressure, Pulse Rate, Body Temperature, Pulse Oximetry	Moderate	Low	Moderate
Integrative Health And Healing Practices Specifically For Service Members: Self-Care Techniques	Self Realisation	Depends On The Patient	Moderate	Moderate	High
Intelligent Transmission Of Patient Sensor Data In Wireless Hospital Networks	Sensors and Medical Instruments	ECG, Blood Pressure, Pulse, Respiration	High	Low	High
Detecting Vital Health Signs With Wearable Sensors	On-Body Sensors, Wearable Sensors, RF Sensing	Blood Pressure, Cardiac Activity, Glucose Levels and Respiratory Activity	Moderate	Low	High
Measuring Overall Health System Performance For 191 Countries	Model Specification , Data	Health, Responsiveness, Fairness In Financing	High	Moderate	Moderate
Physics Of Wound Healing	Self Realization	Wounds	Moderate	Moderate	Moderate

2. Proposed Method

The telescopic antenna, being one of the most widely used instrument for transmission and reception of frequency data, can also be used to measure the frequency radiations of the body parts. This antenna, coupled with BNC connector, can be connected to the spectrum analyzer. The tracing of frequency could be done by using the 'max hold' option in the spectrum analyzer. This would give us peaks of the highly detected frequency components. In this way, the

frequency radiation of the human body can be measured, before and after the process of Pranic healing, and hence the changes can be observed.

The SEN-11574 sensor is a simple pulse sensor, which could be interfaced with an Arduino board and software. After simulating the code for pulse sensor, the pulses and the pulse counts can be seen at two different windows in the software. Hence this module gives the pulse measurement of the patient before and after healing.

As it is known, the importance of health is extremely high, and that too, along with efficient methods of healing during unwellness, is a high priority. Healing acute and average level health problems, diseases and illnesses with proper methods having least side-effects are very essential. Pranic Healing is one such excellent method of treating the patient's body. Lots of health parameters can be measured and healed using this technique. Like pulse rate, frequency radiations, and body temperature, many other parameters could be observed and healed. Hence, in this fast growing world of technology and sciences, we could see that there is a great scope in health improvement of humankind, through automation and ease in use of technical devices and instruments.

3. CONCLUSION

Researchers have given great ideas on health parameters measurement system. From the proposed system and the survey, it can be understood that the Health Parameters Measurement System is user friendly and has no side-effects. The measurement of the two parameters, frequency radiations and pulse counts is done through a telescopic antenna and a pulse sensor respectively. This paper gives information on various methods of detecting and measuring the health parameters, and also transmitting them through wireless communication systems. As it is specifically designed to measure the effects of Pranic Healing, the differences in pulse rates and frequency radiations of the patients can be obtained, before and after healing.

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REFERENCES

[1] Haoran Li, Tianhong Pan, Jiangsu University, Zhenjiang, China, "Development Of Physiological Parameters Monitoring System Using The Internet Of Things", Vol. 13, No. 9, 2017

[2] Dipika Vasava, Shripad Deshpande, "Portable Device To Monitor Vital Health Parameters", Vol. 03, Issue: 03, Mar-2016.

[3] Richard P. Petri, Jr., MD, FAAPMR, FAAIM, COL MC, Joan A. G. Walter, JD, PA, and Jon Wright, "Integrative Health And Healing Practices Specifically For Service Members: Self-Care Techniques", Medical Acupuncture, Volume 27, Number 5, 2015.

[4] Danielle Brag, Mira Yun, Haya Bragg, Hyeong-Ah Choi, "Intelligent Transmission Of Patient Sensor Data In Wireless Hospital Networks", Published online on 3 Nov 2012. Link reference of the paper: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3540465/

[5] Tuba Yilmaz, Robert Foster, Yang Hao, "Detecting Vital Health Signs With Wearable Sensors" Published on: 2 December 2010.

[6] Ajay Tandon, Christopher JL Murray, Jeremy A Lauer, Davis B Evans, "Measuring Overall Health System Performance For 191 Countries" at GPE Discussion Paper Series: No. 30, World Health Organization.

[7] S. Peter Apell, Michael Neidrauer, Elisabeth S. Papazoglou, Vincent Pizziconi, "Physics Of Wound Healing".