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Electromagnetic Radiation (EMR) of Human Body Before and After Jogging

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ABSTRACT

The research is on the electromagnetic radiation of human body before and after jogging. 30 healthy students from UiTM with an age range of 23-25 years old volunteered. The seven locations of chakra points were measured. The body frequency (in MHz) is captured using frequency detector by taking the reading of the frequency 5 times at each point at the same location; hence, the average value is calculated for data analysis. This frequency measurement is recorded two times which is before and after jogging with a consistence protocol for all participants. The data in terms of frequency (Hertz) is converted into 15 colours of bio-energies representing the health level. The finding shows that 63.3% of participants' health level improved after jogging. While 33.3% of participants had decrement in their health level. The results also indicate improvement in bio-energies score for five out of seven chakra points after jogging.

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1. INTRODUCTION

Research by Hakuhodo showed that jogging is a number one Malaysian favourite sport during leisure time [1]. This is influenced by the research that indicate physical activity such as jogging can prevent from cardiovascular diseases, some types of cancer, osteoporosis, high blood pressure, depression, stress and anxiety but the benefits are only significant to a person who participate in high and moderate intensity exercise that require at least 30 to 60 minutes exercise three times a week [2]. So, there is a huge jogging impact between non-active joggers and active joggers in term of health prospective. There is also a research that classified jogging as a one of vigorous exercise since it gives more impact on knees, hips and other joints. It also gives more positive impact on health. There are evidence that indicate jogging is significant for overweight women to lose weight [3].

This study focuses on the bio-energies effect after jogging to the joggers' health. The objective of this research is to analyse the changes of human body radiation after jogging. A research in 2012 reported that jogging is ranked number one as the famous physical activity in Malaysia [1]. Based on World Health Organization Journal on physical activity, there is a direct relationship between physical activity and metabolic health including lower risk of chronic diseases and help preventing weight gain [3]-[5].

Nowadays, most research indicate the benefits of jogging in term of health improvement [3], [4], [6]. Some research reveal that the health benefits only effective for moderate and high intensity of exercise which correlate to longer and regular duration time of exercise [3], [7], [8]. However, the research on radiation of human body before and after jogging which can also interpret the health level of joggers is not found. There is also no evidence that indicate short-term exercise could improve health level. Thus, this study is conducted to compare the difference of human body radiation before and after jogging for five minutes.

2. LITERATURE REVIEW

Radiation of human body is the bio-energies that circulates in our vortexes system. The energies sources comes from the centres of vortex which also known as chakras [9]. Basically, human body emits light, heat and acoustics energy in term of electrical and magnetic form. Since the energies field has dynamic and enormous characteristics, the energies can be influenced by any field of nearby object or organism [10] [11]. There are some research conducted to measure the frequency of the electromagnetic radiation from human body [10]. It was found that chakra's energies can be improve through some activities and have indirect relation to the human health [9], [10]. Human beings also have been found to release radiation into the space surrounding their body. This radiation encloses the physical body and can be defined as endogenous energy fields produced by and contained within the body [12]. The frequency detector is a non-contact hand held electronic devices which can used to display the energies in terms of frequency. The different distances of the antenna give two significant conditions whether it can be used to measure physiological level or health level of human body based on energy signal. From the frequency, the energies can be interpreted into colours and bio-energies score [13].

Chakra symbolizes the energy located vertically along the backbone of human body [14]. There are seven major chakras located at the frontal centre of a body with difference colours and characteristics. A chakra can also be defined as energy centre in human being which represented as the focal points to receive, absorb and transmit the energy in human body. It indicates a point of intersection concerning mind and body, related to psychological and physiological state of a body [15], [16]. There are 7 chakra points in human body as shown in Figure 1, namely, base chakra, sacral chakra, solar plexus chakra, heart chakra, throat chakra, forehead or third eye chakra and crown chakra [15], [17]. All points have specific roles that are usually related with their position in the body. MATLAB is high level language for numerical or mathematical application. Basically, it can be used to build program related to mathematical modelling design or computer graphic. MATLAB is employed in this research to convert colours into bio-energies score. By using programming tool, the processes of analysing data become easier, fast and accurate.

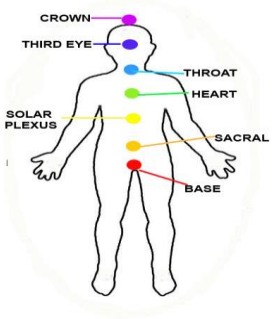

Figure 1. The position of seven chakras

Table 1. Bio-Energies and Scores [18]

Categories	Colour	Score
Excellent	Gold, Silver	5
Good	White, Orchid, Cyan	4
Satisfactory	Rose, Purple, Blue	3
	Navy, Green, Yellow, Orange	2
Unsatisfactory	Black, Burgundy	1
	Red	0

3. METHODOLOGY

The measurement is conducted at the field nearby Kolej Mawar in UiTM Shah Alam during a suitable ambiet temperature [19]. Firstly, the samples answer the questionnaire form before data was collected. This questionnaire consists of 11 items including demographic data and questions comprising exercise habits. There are precaution that the researcher must follow in order to get accurate result and to prevent unexpected incident from happening. The precaution as follow:

1. The participants must be in healthy condition during data acquisition.
2. All participants must undergo the same procedure.
3. The place of data taken is also same for all participant to make sure the accuracy of data.

4. The researcher wear lab coat and glove during taking the measurement to prevent researcher's body radiation effect the measurement.
5. The antenna placement is placed parallel to the chakra points and the antenna is placed 2-5cm from the measurement point.
6. The frequency counter is set to 3GHz during data acquisitions.

The data acquisition procedure is as follow:

1. Sample rest for 5 minutes before taking the measurement.
2. Make sure sample standing up during measurement process.
3. Record 5 times of frequency display at each chakra point.
4. Sample warming up for 2 minutes.
5. Sample jog for 5 minutes.
6. After jog, sample cooling down for 2 minutes.
7. Then, the sample rest for 10 minutes.
8. Repeat step 3

Figure 2 shows the process of data collection. The data acquisition procedures will be performed wirelessly using the detector which was placed parallel to the ground on horizontal position to the human body. The length of the antenna was fixed on the 7th segment position [20] and the reading of the frequency was collected 5 times at each point at the same location, thus, the average value will be calculated for analysis. In order to collect the frequency reading correctly, the participants are advised to limit their body movement. Firstly, the apparatus was set and measurement process was outlined to validate and calibrate the frequency detector. Secondly, the frequency of EMR was recorded consistently at particular points as shown in Figure 1. Next, the raw frequency data was validated to verify that the values collected were in acceptable range. Finally, the data was analysed to observe their pattern and behaviour. Figure 3 showed the flow of research that was conducted in order to complete this investigation.

Figure 2. During the data acquisition measurement

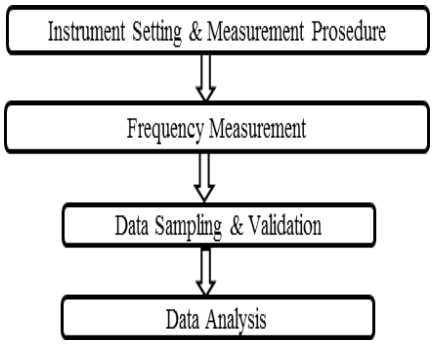

Figure 3. Flowchart of the research

4. RESULTS AND DISCUSSION

4.1 Questionnaire Analysis

A questionnaire was designed to analyse some demographic aspect that may give impact to the results. From the investigation through questionnaire, the researcher can realize that all samples do not have an athletic background and the majority of participants are the students from faculty of electrical engineering. The sample's age is between 23 and 25 with mean age of 23.9. The other questionnaire findings are as shown in Figure 4, 5, and 6.

Table 2. BMI Classification [21]

BMI (kg/m²)	Description
Less than 18.5	Underweight
18.5 to less than 25	Normal
25 to less than 30	Overweight
30 or more	Obese
40 or more	Morbidly Obese

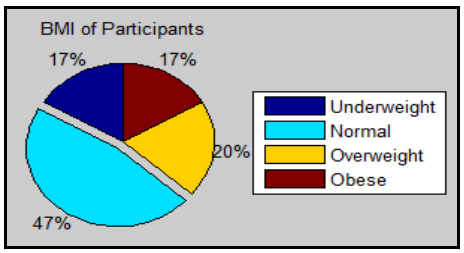

Figure 4. BMI of samples

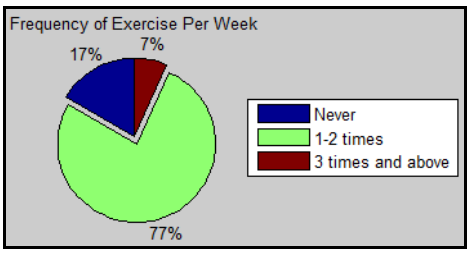

Figure 5. The regularity of exercise among participants

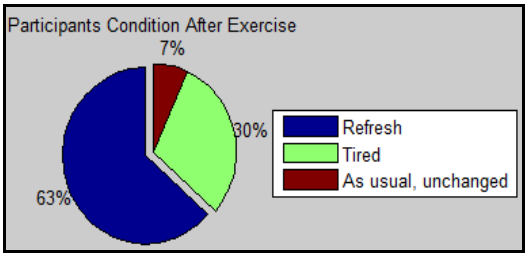

Figure 6. The participants feeling after exercise

Figure 4 shows that 47% of the participants have an ideal BMI. While others are in group of underweight, overweight and obese. This also indicate that more than half of the samples is characterized having non-ideal BMI. The group is created based on WHO (World Health Organization) BMI classification as in the Table 2. Figure 5 shows the majority of the samples regularly exercise between 1 to 2 times per week, a few samples do not engage in exercising, while minority of the samples exercise three times and more per week. From Figure 6, 63% of the samples indicate that exercise make them feel fresh. While 30% feel tired after exercise. Only a few of them do not feel any changes after exercising.

4.2 Data Collection Analysis

After collecting the frequencies data, the raw data was processed using MATLAB program where the mean frequency of data before and after jogging is calculated and converted into 15 colours of bio-energies which then will be match to Table 1. Figure 7 shows that 63% of the samples have improvement in their health level after jogging, while 33% had decrement and only 3% of the participants is in group unchanged. This finding shows that there is high possibility of health improvement after jogging. This results is congenial with a conclusion that declare exercise can sustain and improve health and fitness of human body [3].

The result from crown chakra in Figure 8 shows 43% of samples with improvement even after 5 minutes of jogging, however, 33% of them show no improvement. According to [22], this area shows a good reaction from pituitary gland which produce a hormone called endorphins. This hormone naturally helps block pain perception and improving mood of jogger. Hence, jogging could reduce stress.

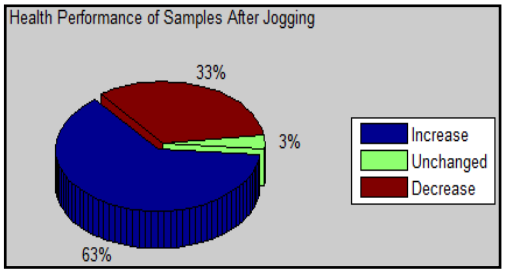

Figure 7. Health changes of samples

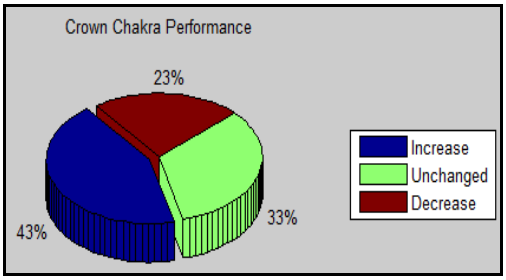

Figure 8. Crown chakra analysis

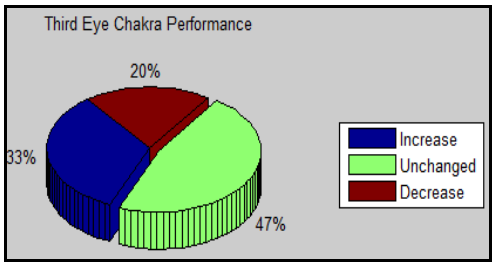

Figure 9. Third eye chakra analysis

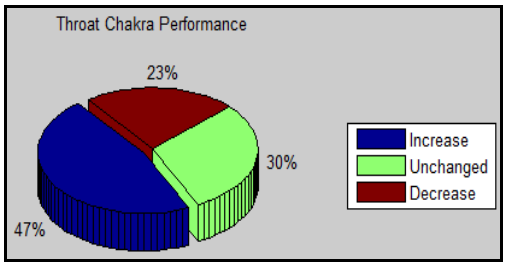

Figure 10. Throat chakra analysis

For third eye region as shown in Figure 9, 47% of samples show unchanged result and 33% of sample are showing increment after jogging. One finding explains that endurance exercise could help to improve cognitive function; furthermore, prevent diseases such as Alzheimer's and Parkinson's [22]. Since all samples only jog for 5 minutes, this activity is categorized as light intensity exercise because it is performed for less than 30 minutes and do not increase endurance of joggers. So, it do not give high impact on health [3], [7]. In Figure 10, the pie chart shows health increment of sample in this area achieves 47% associated with the pineal gland that produces thyroid hormone. Thyroid gland has high sensitivity to environmental. Jogging affects the body temperature due to improvement of blood circulation in blood vessel. Thus, it could help to maintain body temperature and preserve body's acid level [22].

As shown in Figure 11 for the result on heart chakra, 40% of this increment was determined from the finding which indicated that exercise make the heart pumping faster; hence, improved blood circulation to the lungs and other parts of the body. Exercise can prevent chronic diseases such as heart failure, chronic heart disease, stroke and diabetes [22]. Referring to Figure 12, 40% of samples experienced health decrement in the Solar Plexus Chakra area after jogging. This may show that jogging for 5 minutes is not a vigorous activity that affects the dropping of insulin hormone which is produced in the pancreas. Insulin works to usher glucose from bloodstream into cells. Insulin transport glucose more effectively during exercise, so less of this hormone is needed because body is able to draw energy directly from fat [22]. By doing this research, it is shows that short time exercise may not help any dismissal of fat.

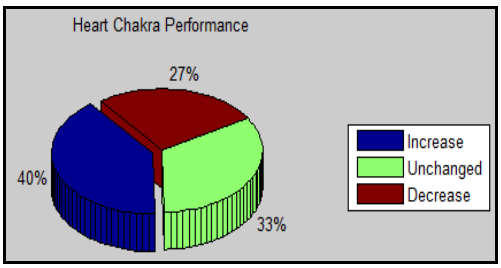

Figure 11. Heart chakra analysis

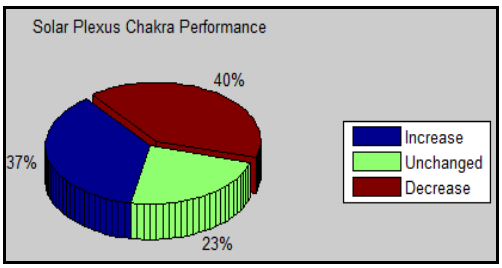

Figure 12. Solar Plexus chakra analysis

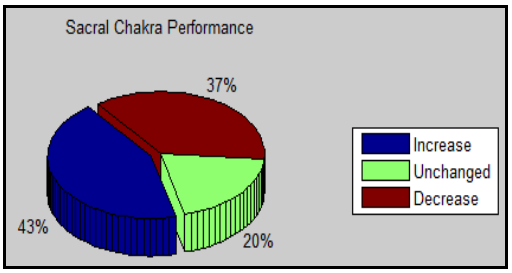

Figure 13. Sacral chakra analysis

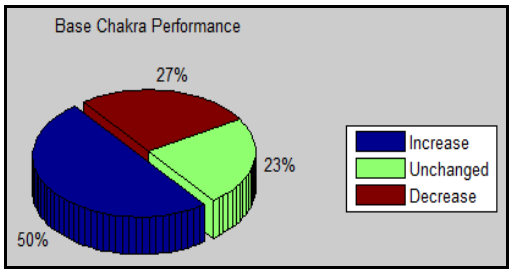

Figure 14. Base chakra analysis

From Figure 13, sacral region shows an increment of 43% after 5 minutes jogging. This is in line with a finding that stated exercise affect the production of epinephrine and norepinephrine hormones. Both of these substance influence physical changes due to the transformation of sugars and fats into energy [22]. The Pie chart in Figure 14 shows 50% increment on sample's health at base region. This is the highest increment region compared to other regions. Researcher had found that exercise affect the level of estrogen which would involve the growth and the development of sexual characteristics such as breast and pubic. So, women who exercise tend to be leaner and free from many cancer diseases [22].

5. CONCLUSION AND RECOMMENDATION

In conclusion, this research shows that the health of human body can be improved after jogging. The health score shows that 63.3% increases while 33.3% decreases before and after jogging. Besides, five out of seven chakras location show an increment in health level. Based on electromagnetic radiation of human body at seven chakra points, it can be concluded that jogging is perhaps a good exercise to improve health level even for a person who do not have athletic background, with non-ideal BMI and do not exercise frequently.

This research can be further improved by increasing the number of participants to enhance the accuracy of the result. Moreover, the duration of jogging can shift from 5 minutes to 20 minutes or more to maximize the effects of jogging. The frequency of jogging can be adjusted to three times per week for an optimum result.

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