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The Correlation of Super Brain Yoga (SBY) on Human Electromagnetic Radiation (EMR) using Frequency Detector

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***Abstract*- This research is concerned with the investigation of the human body Electromagnetic Radiation (EMR) before and after performing Super Brain Yoga (SBY). SBY or *ketuk ketampi* is performed by crossing hands, with the thumbs and the forefinger holding onto the earlobes while doing squats with repetitions. 50 healthy volunteered participants performed SBY with 20 repetitions, in the morning and evening for two weeks at their own conducive and comfortable place. The EMR was captured using a portable, handheld frequency detector with a seven-segment monopole antenna. The frequency measurement was collected twice, firstly, before performing the SBY and secondly, after completion of the SBY. The data was analyzed using statistical analysis software to compare the correlation of EMR before and after SBY. The correlation results show that performing SBY can improve the human body's physical condition, particularly in the brain area.**

***Index terms*—Electromagnetic Radiation (EMR), Super Brain Yoga (SBY), ketuk ketampi, frequency detector**

I. INTRODUCTION

Yoga Exercises were developed in Northern India over 5000 years ago [1]. After some addition and improvement of the exercise, yoga exercise becomes a modern exercise that can boost overall mental and physical human health [2]. Recently, there have been various names of yoga exercises and the most popular are Ashtanga and Hatha Yoga [3]. Most of the exercises had similar benefits of exercise but with different steps.

Traditionally, in Malaysian society, an exercise is known as 'Ketuk-Ketampi' which is being used as a sit-up's punishment done with holding both ears punishment method in schools during the old days. An impressive name had been introduced the punishment called Super Brain Yoga (SBY), suggested and promoted by a Japanese acupressure named Master Choa Kok Sui [4].

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Previous research has scientifically proven that SBY could energize the brain and concentration in the long term [5][6]. However, the scientific evidence in terms of the improvement in the EMR concerning performing SBY was not found. Therefore, the objective of this research is to compare human EMRs before and after performing SBY with a specific design protocol. Consequently, this research also aims to design a protocol for SBY that can benefit the human body through EMR analysis and correlation results

II. LITERATURE REVIEW

A. Super Brain Yoga

SBY was proven to improve brain control and increase physical body balance. It has more benefits for children and teenagers compared to adults and older [7][8]. It also helps human anxiety and balances the central body's energy [7]. SBY steps and techniques are very important to develop clear flow energy through the human body called chakras [5]. *Fig. 1* shows the steps and techniques for performing the SBY.

Fig 1. Steps and techniques in performing the SBY [7].

SBY is an exercise that is performed by crossing hands to pinch both earlobes using thumbs and forefingers; while squatting repetitively. Performing this exercise regularly, can improve concentration and energize the brain based on the principle of the ear acupuncture technique. It can also be seen as a healing treatment for the brain [4][9].

B. Human body Electromagnetics Radiation (EMR)

EMR is a field radiating around living things, also known as auras and bio-energies that is emitted from the human body [10]. This energy propagates through free space and in the form of electromagnetic waves [11]. Previous researchers state that non-living things and living things such as humans will produce different signs of energy or EMR depending on their exercise or daily activities [10][12][13]. This EMR can be detected using an electronic device called a frequency detector [13].

C. Frequency Detector

Fig. 2 shows the device equipped with a seven-segment monopole antenna called a frequency detector, used to accurately measure the EMR around the human body [11][14][15]. This device measures the frequency in Megahertz (MHz) around the body at various points and distances. One previous research used the frequency detector to investigate the EMR before and after intense exercise [14].

Fig 2. Frequency Detector [14].

D. Correlation

Several techniques could be used to perform correlation analysis such as Pearson, Kendall, and Spearman. One of the most popular techniques is the Pearson Correlation. It is a statistical technique that shows how strongly two variables are related to each other [16][17] calculated using Equation 1 as follows:

$$r = \frac{1}{n-1}\sum_{i=1}^{n}\left(\frac{X_i-\bar{X}}{s_X}\right)\left(\frac{Y_i-\bar{Y}}{s_Y}\right) \quad (1)$$

where $\bar{X}, s_X$ and $\left(\frac{X_i-\bar{X}}{s_X}\right)$ are the mean, standard deviation, and standard score respectively [18]. The higher the correlation value shows positive effects compared to the lower correlation value [19].

III. METHODOLOGY

The overall methodology is shown in Fig. 3. Before participants proceed to perform SBY, they are required to fill in a demographic declaration form to gather information such as name, age, weight, height, and health condition. Then, the EMR of each participant was captured before performing SBY, regarded as 'before'. Afterward, the participants were asked to perform SBY twice a day, 20 times in the morning and the evening for 14 days at their own conducive and comfortable place. After two weeks of SBY, the EMR reading was measured again, regarded as 'after'. The collected data was analyzed using statistical analysis to compare the correlation of EMR before and after SBY. Hence, the results were discussed and the conclusions were drawn.

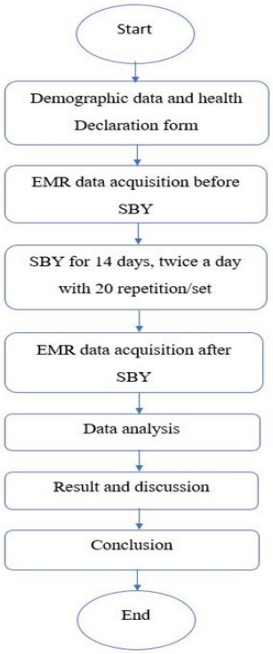

Fig 3. Research flowchart.

A. Protocol to perform SBY and Data Collection

50 healthy volunteered participants were involved in this research. The participants were required to ensure their bodies were free from any material that could affect and interfere with the EMR reading such as electronic devices, watches, and jewelry. To avoid interruptions and errors, the participants need to remain calm and steady during the EMR measurement.

Referring to Fig. 4 and Fig. 5, the EMR was collected 5 times at each point with a total of 23 points around the human body including the chakra points. Fig. 5 shows the human body chakra consists of 7 points which are the Crown, Third Eye, Throat, Heart, Solar Plexus, Sacral, and Root Chakras which have their specific function [19][20].

Consequently, the average frequency was calculated for each point to obtain a more accurate analysis. The EMR data were analyzed using SPSS software and Microsoft Excel to compare the correlation before and after performing SBY. The steps in performing SBY are as follows [7][8][12]:

i) Stand up straight.
ii) Place your tongue on the roof of your mouth, directly behind your teeth. Keep this placement throughout the activity.
iii) Move your left hand across your upper body. Reach for your right earlobe with your thumb and forefinger, keeping your thumb in front.

iv) Move your right hand across your upper body and reach for your left earlobe. Again, keep your thumb in front of your forefinger.
v) Gently press against both earlobes. Make sure your left arm is close to your chest and tucked inside your right arm.
vi) Inhale deeply through your nose while moving down towards the ground in a squat position.
vii) Hold your breath for a beat or two. Move back into a standing position, and then exhale.
viii) Repeat this process for 20 times in the morning and evening

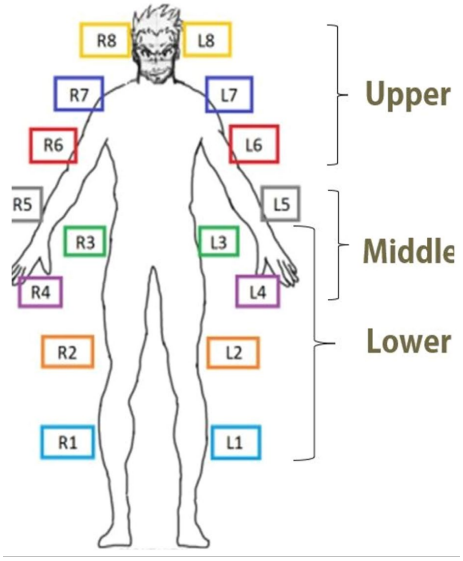

Fig 4. 16 points around the human body and segmentation [14].

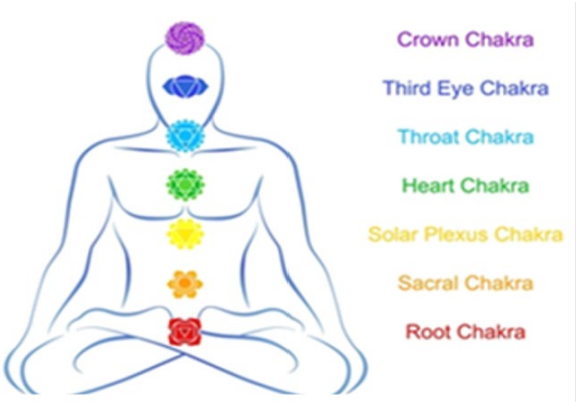

Fig 5. 7 parts of the human body chakra [14][21].

B. Data Analysis

Fig. 6 shows the process of data analysis. The raw data were keyed into a Microsoft Excel Spreadsheet to calculate the average frequency. Hence, the correlation before and after SBY was calculated according to the categories below:

i) The right side and the left side correlation for each point.
ii) The left-right correlation
iii) The Upper, Middle, and Lower part correlation
iv) The Chakra-part correlation

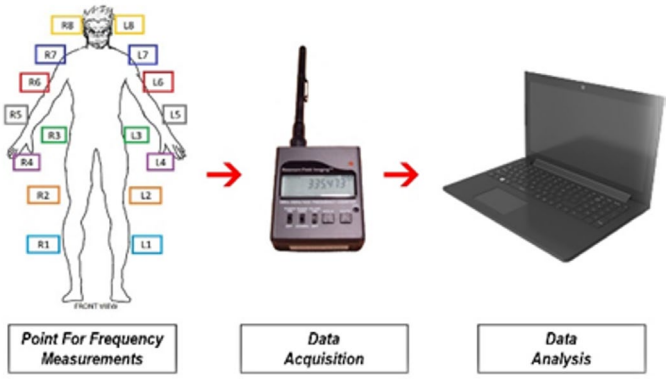

Fig 6. Process of data analysis [8][9][14].

Fig. 4 also shows the three body segmentations: the upper, middle, and lower parts of the human body. The upper part consists of point 6, point 7, and point 8 where these points are close to the brain. The middle part consists of point 4 and point 5 which concern the torso area. Meanwhile, the lower part is point 1, point 2, and point 3 which focus on the leg area.

From the correlation analysis, the finding will determine which segments of the human body are affected the most after performing SBY.

IV. RESULTS AND DISCUSSIONS

The results were divided into four parts which are:

A. The right side and the left side correlation for each point.
B. The left-right correlation
C. The Upper, Middle, and Lower part correlation.
D. The Chakra-part correlation

A. The right side and the left side correlation for each point

The correlation for each point before and after SBY for the right side and left side of the body is shown in Table I and Table II, respectively. For example, the correlation value at point L1 before and after SBY. For this analysis in Part A, the lower correlation value shows the bigger difference in the reading before and after SBY while the higher correlation value shows the smaller difference in the reading before and after SBY. The results show that the highest correlation value is at point R1 for the right side and L2 for the left side, with readings 0.734 and 0.737 respectively. In contrast, the lowest correlation value is at point R6 on the right side with a reading of 0.569 and L1 on the left side with a reading of 0.349. From Table 1, R6, R7, and R8 show the lower correlation for the right side. These 3 points are associated with the brain, showing the improvement in the brain area. However, on the left side, the correlation values do not show any significant changes.

TABLE 1. RIGHT SIDE CORRELATION BEFORE AND AFTER SBY

POINT	CORRELATION
R8	0.613
R7	0.574
R6	0.569
R5	0.622
R4	0.614
R3	0.720
R2	0.622
R1	0.734

TABLE II. LEFT SIDE CORRELATION BEFORE AND AFTER SBY

POINT	CORRELATION
L8	0.684
L7	0.698
L6	0.482
L5	0.525
L4	0.677
L3	0.724
L2	0.737
L1	0.349

B. The left-right correlation

The correlation result for this part is the comparison before and after SBY for both sides, for example, the correlation between R8 and L8, as shown in Table III. All points show improvement in correlation value except for point 6. The highest improvement of the correlation value is at point 8 which is from 0.753 to 0.894 with a 0.141 increment. It proved that SBY provides benefits to the improvement of the whole body in particular the brain area.

TABLE III. LEFT-RIGHT SIDE CORRELATION BEFORE AND AFTER SBY

POINT	BEFORE SBY	AFTER SBY
8	0.753	0.894
7	0.834	0.869
6	0.824	0.764
5	0.751	0.807
4	0.821	0.856
3	0.780	0.871
2	0.782	0.896
1	0.799	0.805

C. The Upper, Middle, and Lower part correlation.

Table IV shows the upper, middle, and lower parts correlation values of the body. It shows the increments in the upper and middle parts of 0.025 and 0.007 respectively. The highest increase is in the brain area (upper part). This result is in line with the finding in Part A and Part B that SBY benefits most in the brain area. On the other hand, the lower part shows decrement in the correlation value. This decrement could be due to some factors such as weather, lack of stamina, or the participant's unstable Body Mass Index (BMI) [22].

TABLE IV. THE UPPER, MIDDLE AND LOWER PARTS CORRELATION BEFORE AND AFTER SBY

POINT	BEFORE SBY	AFTER SBY
UPPER	0.807	0.832
MIDDLE	0.453	0.460
LOWER	0.789	0.537

D. The chakra-part correlation

The correlation for each point before and after SBY for the chakra part is shown in Table V. For example, the correlation value at point Crown before and after performing SBY, means, the correlation is compared to the same chakra point (itself). In this part, the lower correlation shows the higher improvement and vice versa which is similar to Part A. Referring to Table 5, the lower correlation is at the crown and eye part, showing that the brain area is the most improved after performing SBY. This finding is also consistent with the results from the previous parts (Part A, Part B, and Part C).

TABLE V. THE CHAKRA-PART CORRELATION

PART	CORRELATION
CROWN	0.620
EYE	0.635
THROAT	0.660
HEART	0.718
SOLAR	0.706
SACRAL	0.660
ROOT	0.607

V. CONCLUSION

This study has successfully compared the correlation of the human body Electromagnetics Radiation (EMR) before and after performing the SBY with specific design protocols. The overall results have been analyzed using the statistical analysis software. All four analyses performed show that the substantial improvement after performing SBY is in the brain area. Overall, the result shows that performing SBY can improve the human body's physical condition by improving the left and right correlation of the EMR. The most significant benefits of performing SBY are shown in the upper part of the human body which is near the brain with 3.1% improvement. Similarly, the

brain area also has the most improvement in the Chakra part analysis, In conclusion, the SBY could be one alternative technique to improve the physical condition of the human body in particular the brain part. This finding is in agreement with the previous research that discovered that performing SBY could improve short-term memory [23].

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