Faculty of Cognitive Sciences and Human Development

IMPLICATIONS OF LISTENING TO SURAH AL-FIL

Zurratul Aina Binti Mohd Zahidin

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IMPLICATIONS OF LISTENING TO SURAH AL-FIL

ZURRATUL AINA BINTI MOHD ZAHIDIN

This project is submitted
In partial fulfilment of the requirements for a
Bachelor of Science with Honours
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The project entitled ‘Implications of listening to surah Al-Fil’ was prepared by Zurratul Aina Binti Mohd Zahidin and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfillment of the requirements for a Bachelor of Science with Honours (Cognitive Science)

Received for examination by:

ZURRATUL

(ZURRATUL AINA BINTI MOHD ZAHIDIN)

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ABSTRACT

The potential of music in improving various cognitive functions leads to the extensive use of music in the treatment of psychiatric and neurological disorders. However, there are limited studies on religious music such as Quran recitation. Most of the research done discussed the effects of listening to the Holy Quran on the patients' physiological response using Quantitative Electroencephalography (QEEG). There is no known analysis of the sound frequencies of the selected verses from the Quran. Different Quranic verses might be appropriate for certain diseases. As Surah Al-Fil is believed by the Muslims to cure cancer, this study aims to identify the dominant brainwave of individuals when listening to Surah Al-Fil and to explore the correlation between the sound frequency of Surah Al-fil and human brainwaves. The brainwaves of a cancer patient and a healthy participant were compared in this study. A MUSE headband was used to record the participants' brainwaves. The participants were asked to listen to the first audio (Surah Al-fil by Misyari Rasyid Alfasy) three times. Upon the completion of each task, the participants were allowed to rest. Then, the second audio (Surah Al-Fil by Saad Al-Ghamdi) was played three times. An in-depth interview is then used to gain information from the participants of his or her experience when listening to Surah Al-Fil. The results show that the alpha wave is the most dominant in the cancer patient. Whereas in healthy participant, delta wave is the most dominant. The findings show that Surah Al-Fil gives a calming effect to the cancer participant by increasing alpha waves. While Abdurrochman, Wulandari and Fatimah (2007) suggest that the delta wave in the healthy participant may be used to treat sleep disorders.

CHAPTER 1: INTRODUCTION

1.1 Introduction

At present, Muslims would not only seek medical treatment regarding their health, but they also believe the Quran can cure their sickness. Reciting Al-Quran is a Muslim practice because they trust it to be a way to relieve tension and heal from diseases. This belief is one of the reasons why cancer patients in Malaysia regularly choose Islamic healing for treatment. Suhami, Muhamad and Krauss (2016) found that 80% of Malaysians prefer to go to traditional healers or bomoh for health issues. Amy, a thyroid cancer patient, was declared cancer-free after surviving for almost two years. She shared in a blog post that she practiced Surah Al-Fil as an alternative to treat cancer. It is a tip from Ustaz Raflis Sabirin, who has experience in cancer treatment using the Holy Quran for 27 years. Quran recitation produces a significant calming effect that releases hormones and chemicals responsible for relaxation (Abdullah and Omar, 2011). Nayef and Wahab (2018) claimed that the Holy Quran recital is a piece of mystical music that simulates physiological and psychological responses. The Quran is full of verses that emphasize relaxation and a means of achieving tranquillity. It tells stories about people placed in stressful situations with specific strategies on how to overcome stress. These characteristics led the World Health Organization to advise Islamic countries in the Regional Mental Health Summit held in 1998 in the Eastern Mediterranean Region to prepare a booklet containing mental health-related Quran verses (Nayef & Wahab, 2018). The anecdote of Quran verses, specifically Surah Al-Fil, can cure cancer had been claimed by the patient named Ayu. However, there is no known scientific study on the effects of listening to surah Al-Fil among cancer patients. Therefore, this research aims to explore the effects of listening to Surah Al-Fil to an individual.

1.2 Background of the study

Brain development is influenced by the interaction between genes and the external environment. Any alterations or manipulations in this interaction can lead to modifications in the neural circuitry (Chaudhury, Nag, Jain & Wadhwa, 2013). Sensory stimulation, such as visual and auditory that received by the sensory receptors, is passed to the brain as information. Then, the brain interprets the input and decide the appropriate response to the sensory stimuli. Sound acts as an auditory stimulus to trigger brain function at an optimum level for a short period. According to Chaudhury et al. (2013), sound stimulation can change neural connectivity for higher cognitive function in early postnatal life and fix the secondary impairment in various neurological and psychiatric disorders. The sound has significant effects on several brain parts, such as activating emotional signals in the amygdala (Wallentin et al., 2011).

Emotions play an important role in shaping human personality as it can affect action, thinking, and mood (Alsolamyl, 2016). Nayef and Wahab (2018) declared that emotions control human focus, affect their desire to learn, change their learning methods, and influence their self-regulation. They also stated that personality growth, psychological health, and physical health are affected by emotions. Emotions that people usually look for are relaxation and calmness. One of the ways people used to lessen their stress level is by listening to various types of relaxing music. This alternative, known as music therapy, has been introduced into a clinical situation for cancer patients. This is due to receiving treatments such as chemotherapy and radiotherapy often leads them to get unpleasant side effects such as anxiety and stress. According to Stanczyk (2011), listening to music can help patients cope with a high level of stress, fear, and sense of loneliness caused by the treatment.

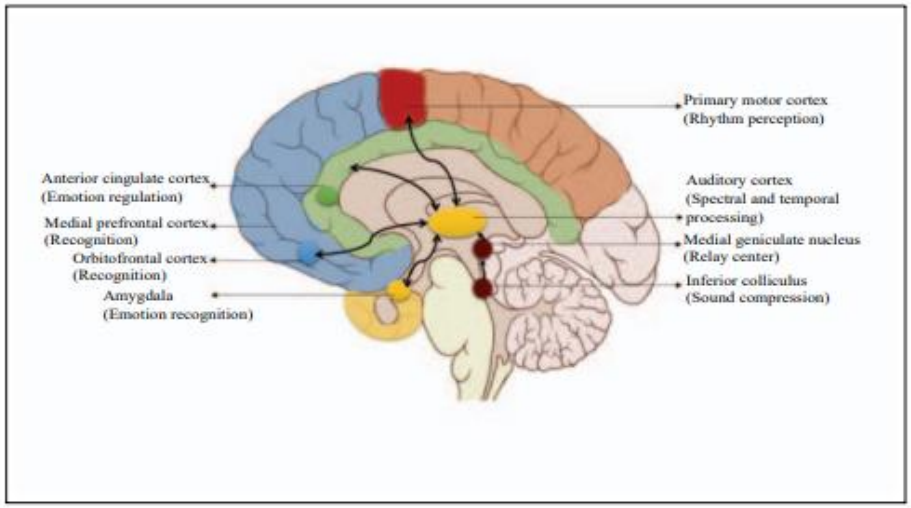

Figure 1. Saggital section image of brain (Singh & Balasubramanian, 2018)

Figure 1 depicts the lobes and regions involved during music processing. The lobes are depicted in different colors: frontal lobe (blue), temporal lobe (yellow), parietal lobe (orange), and limbic lobe (green). Sound processed at the cochlear level reaches the thalamic level (medial geniculate nucleus), which projects it to the primary auditory cortex. From the auditory cortex, interactions can be seen with the primary motor cortex for rhythm perception, the orbitofrontal cortex for recognition, amygdala, cingulate, and limbic system for emotion recognition. Amygdala is a central structure within the limbic or paralimbic neural circuitry, which plays a major role in emotional and social processes. According to Arjamand, Hohagen, Paton and Rickard (2017), the generation of emotion in subcortical regions of the brain such as the amygdala leads to hypothalamic and autonomic nervous system activation and release of arousal hormones, such as noradrenaline and cortisol. Music is also related to mood enhancement, and listening to music releases the pleasure hormone 'dopamine' (Singh & Balasubramanian, 2018). The potential of music in improving various cognitive functions leads to the extensive use of music in the treatment of psychiatric and neurological disorders.

Nevertheless, there are limited studies on religious music. The previous research suggests that religion and religious music may have a positive effect on mental health. For example, the

Quran is the Holy book of Muslims; it covers all aspects of human life. Nayef and Wahab (2018) claimed that the Holy Quran's recitation is a form of mystical music that gives a calming effect to the listener. Hence, due to the growing interest in non-pharmacological interventions by focusing on religion among researchers, this study was performed to explore the effect of listening Quran recitation, specifically Surah Al-Fil, on individuals.

1.3 Problem Statement

Most of the research done by (Al-Galal, Alshaikhli, Rahman & Dzulkifli, 2016; Londhe & Borse, 2018; Norsiah, Siti Naqiah & Nur Hurunain, 2014; Shekha, 2013; Vaghefi, Nasrabadi, Hashemi Golpayegani, Mohammadi & Gharibzadeh, 2019) discussed on the effects of listening to Holy Quran on the patients' physiological response using Quantitative Electroencephalography (QEEG). There is no known analysis of the sound frequencies of the selected verses from the Quran. Each of the Quranic verse might be appropriate for certain diseases. For example, listening to Surah Al Fatihah might increase the Alpha wave for calmness and inhibit high beta, which is dominant among depressed and bipolar disorder patients. So, it is important to analyze each of the verses to optimize the treatment of disease since every sound has different frequencies.

1.4 Objectives

- To identify the dominant brainwave when listening to Surah Al-fil.
- To explore the correlation between sound frequency of Surah Al-fil and human brainwaves.

1.5 Research Questions

- Which brain wave is dominant when listening to Surah Al-Fil?
- What is the correlation between the sound frequency of Surah Al-Fil and brainwaves?

1.6 Definition of Terms

Quran is a Muslim holy book that encompasses all aspects of human life (Mirghafourvand, Shafaie, Mohammad-Alizadeh-Charandabi, & Jabbari, 2016). It is the central religious text of Islam, which Muslims believe to be a revelation from God (Allah) that can give can solve life problems includes health related issue. Al Fil means "Elephant". It is the 105th chapter in Quran and consists of five verses

Emotion means complex phenomena that modulate and guide behavior as a collection of biological, social, and cognitive components (Deak, 2011). It is a feeling such as happiness, love, fear, anger, or hatred that caused by the situation or people.

EEG is defined as a non-invasive brain imaging tool that is widely used to measure the electrical activity of large, synchronously firing populations of neurons in the brain with electrodes placed on the scalp (Light et al., 2010).

Quranic sound therapy is an alternative to sound therapy, which uses Quranic verses, with specialized messages or contents, have added values to the one who is listening (Tumiran et al., 2013). It is the use of The Quran melodious sound vibration and frequency for therapeutic effect.

1.7 Significance of Study

This project provided valuable information regarding the appropriate verse for patients' training or therapy. This is the first study to undertake a scientific research of Surah Al Fil to treat cancer patient. The findings make an important contribution to future researcher in terms of method and instruments used.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter is a literature summary that discusses related articles from previous research.

2.2 The effects of listening to Quran recitation

Shekha (2013) examined the physiological responses to resting, listening to Quran, soft and hard music during open and closed eyes using EEG signals. Eleven healthy students from the Department of Biology took part in the study. The students were asked to rest and listen to a Quran recitation, soft and hard music for three minutes in opening and close eyes to obtain the results. EEG signals were recorded at all sessions. A statistical analysis using graph pad prism software was used to see which session showed the highest magnitude of alpha waves. Based on the test result, the highest magnitude for alpha waves are achieving 5.465, 3.952, 3.768, 3.379, 3.952, 2.753, 2.451, 1.640 μV during Resting Opened (RO), Resting Closed (RC) Quran closed eye (QC), Quran Opened (QO), Soft Closed (SC), Soft Opened (SO), Hard Closed (HC) Hard Opened (HO), respectively. The magnitude of the alpha wave during listening to Quran sound with closed eyes was higher than listening to slow, hard music, and resting. Alpha waves oscillating between (8 to 13 Hz) are often correlated with meditation that can generate calmness and relaxation (Dudley, Mills, Guzlecki & Kozuch, 2017). This study concluded that Quran recitation produced significant relaxation effects on the listener by increasing alpha waves (Sheka, 2013).

Furthermore, the changes in an alpha band when the subject is listening to Quran compared to music also be measured by Jalaudin, Kamal and Amin (2019). The behavior of the mind of six healthy subjects was measured for three minutes when listening to Quran recitation and music. Five of them are Muslims, while one is a non-Muslim. The researchers observed the changes in the brain from time to time through ERP Analysis, and the data were analyzed using

Matlab software. Few electrodes have been selected to determine the alpha power, which are Pz, P1, P2, P3, P4, P5, P6, Poz, Po3, Po4, P9, P10, P07, and P08. The selection was based on the previous study that stated Pz, P3, and P4 (according to 10-20 systems) have a higher level of relaxation at these electrodes (Jalaudin, Kamal & Amin, 2019). The results indicate that four out of six subjects have proven that the alpha power is higher when the subject is listening to Quran recitation compared to music. The increases of alpha power demonstrated that the subjects were in high relaxation state of brain activity. Therefore, listening to Quran recitation influences the relaxation of the mind. It was mentioned in the verse of the Quran: "Verily, in the remembrance of Allah do hearts find rest" (Surah ar'Ra'd 13:28). Hence, it can be concluded that the hypothesis of this project correlates with the Quranic verse and affirms the parallels of science and the Quran (Jalaudin, Kamal & Amin, 2019).

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2.3 The healing effects of Quran recitation

Nasiri, Shahdadi and Mansouri (2017) conducted a clinical trial on 30 patients admitted in the Intensive Care Unit (ICU). The purpose of the study is to investigate the helping effect of the voice Quran on vital signs and level of consciousness of ICU patients. Patients were given a headphone that played Surah Yusuf with a swinging rhythm for 15 minutes daily in 10 days. The physiological parameters such as respiration, pulse, systolic, and diastolic blood pressure and consciousness level were measured for two rounds. First, physiological parameters were measured five minutes before patients listened to Surah Yusuf. The second round was conducted after patients completed listening to Surah Yusuf broadcast. To analyze the data, SPSS software version 22 was used. The result showed significant differences observed ($p<0.0001$) in the rate of vital signs in which the systolic, diastolic, heart rate, and respiratory rate declined after the intervention. There was a significant difference between the level of consciousness before and after the intervention ($p<0.0001$), where the level of consciousness increased after the intervention. There is no significant relationship between age, sex, marital status, and Quranic history of patients with values of vital signs and level of consciousness after the intervention ($P <0.05$). These results indicate that Quran verses help reduce vital signs and increase the level of consciousness for all patients in ICU even if they have no previous record of the Quran (Nasiri, Shahdadi & Mansouri, 2017).

A quasi-experimental study was performed by Bayrami and Ebrahimipour (2014) on 60 nulliparous women in Ghamar-Bani Hashem Hospital, Iran, to determine the effect of the Quran sound on the intensity of pain and other parameters during the first stage of labor. Participants were selected and randomly divided into two groups, which are the trial group (n=30) and the control group (n=30). The data collection method used in this study was observation and

questionnaire. The questionnaire was divided into two sections. The first section asked about patients' details and music and the Quran, while the second part was a numerical scale (0-10) for pain assessment. All patients' vital signs and intensity of baseline pain were measured when they entered the labor room. During the active phase of the first delivery stage, Surah Ar-Rahman recitation was played twice; 30 minutes during dilation of 4-6cm and 30 minutes during dilation of 7-10cm. The intensity of pain and vital signs were measured and recorded every 30 minutes for two hours immediately after patients completed listening to the Quran audio. The pain intensity and vital signs of the mothers were monitored in the control group as well. However, no Quran recitation was played in the control group. From statistical t-test analysis, the mean values of vital signs (pulse rate, respiratory rate, and diastolic and systolic blood pressures) showed a significant difference ($P<0.05$) in the control and trial groups, which the vital signs showed improvement. The pain intensity in the first stage of labor between the two groups also showed a significant difference ($P<0.05$). The pain intensity declined after listening to Surah Ar-Rahman. This study concludes that the Quran recitation reliefs the pain of labor and improves vital signs parameters (Bayrami & Ebrahimipour, 2014).

On the other hand, a semi-experimental and clinical trial by Esmaeili (2019) was conducted to investigate the auditory and visual effects of Quran recitation on pain intensity of step of travail among 102 eligible primiparous women. The subjects were randomly divided into two groups, which are the control group and the intervention group. Until the end of the first stage of travail, subjects in the intervention group were given to hear Maryam verses using headphones each hour and watch the displayed verses on the screen. Then, the vital signs and pain intensity were measured. The heart rate of the fetus was recorded too. As a result, there was a significant difference ($p<0.05$) in the cervical dilation during the first to fifth hours of the active phase. The intervention group showed a faster opening of the uterine cavity than the control group. Every patient in the intervention group finished before the seventh hour of the

first stage of labor. For the duration of labor, there was a significant difference ($p<0.05$) in the intervention and control groups. Patients in the intervention group took a shorter time of the first step of trivial (less than 100 minutes) than the control group. Severity pain also showed significant difference ($p<0.05$) in the intervention group and control group which mothers who listened to the Quranic recitation experienced lower pain intensity than the control group. The mean intensity in the intervention group was low ($p<0.05$). Therefore, the researchers concluded that the sound and image of the Quranic is effective in reducing the duration of labor and lessen the mothers' pain. It gives relaxation to mothers during childbirth (Esmaeili, 2019).

There is also research performed on 118 patients among mothers undergo cesarean sections at Women Health Hospital, Egypt (Abbas et al., 2016). Sixty patients were assigned in the Quran group while 58 in the Non-Quran group. After induction of spinal anesthesia to mothers undergoes cesarean sections, the mothers in the Quran group started to listen to Quran recitation by a CD-player through an occlusive headphone and continued immediately after the surgery until first 12 hours post-cesarean section. Pain and satisfaction were measured using the Visual Analog Scale (VAS), and the anxiety level was assessed through a visual analog scale for anxiety (VASA). The results showed no significant differences between the groups for all vital parameters recorded before and after cesarean ($p>0.05$) except for systolic and diastolic blood pressure ($p=0.02$). All visual analog scales' values for pain and anxiety were significantly lower in the Quran group than in the Non-Quran group ($p<0.05$). The mean patient satisfaction scores that were measured 6 hours and 12 hours postoperative in the Quran group were significantly higher than the Non-Quran group ($p=0.0001$). This study demonstrates that listening to Quran recitation decrease the degree of pain and anxiety after cesarean as well as enhance the level of mother satisfaction (Abbas et al., 2016).

Then, a study was conducted by Nguyen, Nilsson, Hellström and Bengtson (2010) to investigate the effect of music therapy on reducing pain and anxiety of children with cancer

undergoing lumbar puncture. There are 40 children with leukemia who participated in the study, and they were randomly divided into the control group (n=20) and the trial group (n=20). Children in the trial group were asked to listen to music 10 minutes before the lumbar puncture procedure while the other group did not listen to any music. The pain score, heart rate, blood pressure, respiratory rate, oxygen saturation, and anxiety scores were recorded before and after the procedure. Then, the children were interviewed with open-ended questions once the treatment had been completed. As the results, the pain scores during the procedures were significantly lower ($P < .001$) for the music group (mean = 2.35, SD = 1.9) than the control group (mean = 5.65, SD = 2.5). The pain scores after the procedures were also significantly lower ($P < .003$) for the music group (mean = 1.2, SD = 1.36) than the control group (mean = 3, SD = 2). The anxiety scores after 10 minutes of music medicine, in the music group, but before lumbar puncture, were significantly lower ($P < .001$) for the children in the music group (mean = 8.6, SD = 2.78) than for the children in the control group (mean = 13.25, SD = 3.73). These reductions in anxiety scores were also obvious after lumbar puncture in the music group (mean = 8.1, SD = 2.22) compared with the control group (mean = 13.0, SD = 4.17). For the vital signs, there were statistically significant differences in reductions of heart rate ($P = .012$) and respiratory rate ($P = .009$) during the procedure in the music group (mean = 102.7, SD = 9.24 and mean = 25.1, SD = 3.60) compared with the control group (mean = 117.7, SD = 19.49 and mean = 28.5, SD = 3.86). There were also significant differences in respiratory rate ($P = .003$) after lumbar puncture in the music group (mean = 24.45, SD = 3.49) compared with the control group (mean = 28.1, SD = 3.72). However, the SpO2 and blood pressure did not differ between the groups. The interviews' findings were divided into three categories: feelings of fear, feelings of pain, and the enjoyment of music. Nguyen et al. (2010) found that children in the music group expressed less fear than children in the control group. The children in the music

group stated that they felt less pain and calmer during and after the lumbar procedure when listening to music.

Accordin to Dalam et al. (2015), a qualitative study using in-depth interview has been conducted among HIV/AIDS patients to investigate the effectiveness of Ruqyah in HIV/AIDS treatment. Ruqyah therapy ever conducted in the treatment of demon spirits, delicate creatures, emotional disturbances, drug addiction, and cancer. The study found that Ruqyah therapy could not cure HIV disease, but it helps in increasing T4 cells that play roles in protecting the human body from getting ill. Since HIV/AIDS patient is vulnerable to other diseases such as Parkinson and cancer, Ruqyah therapy heals the diseases as well. Furthermore, most of the informants stated that they feel better in terms of mental health too. Patients become calmer and feel motivated to be a better servant to Allah. (Dalam et al., 2015).

The effectiveness of Ruqyah therapy also has been investigated among students with attention deficit hyperactivity disorder (ADHD) in Yayasan Quranic Faqeh, Petaling Jaya. Semi-structured interviews among the mothers of ADHD children were conducted for five months to collect the data and observation. The study showed there are improvements in the behavior of ADHD children after treatment. The children become more focused than before as they can give attention to their teachers' instructions and react to them. They also have better social skills, discipline, patience, and become more tolerant of their teachers and friends. This study showed that Ruqyah therapy or Quran recitation could potentially change the behavior of children with ADHD in terms of mental and emotion (Asilah, Ali & Darusalam, 2016).

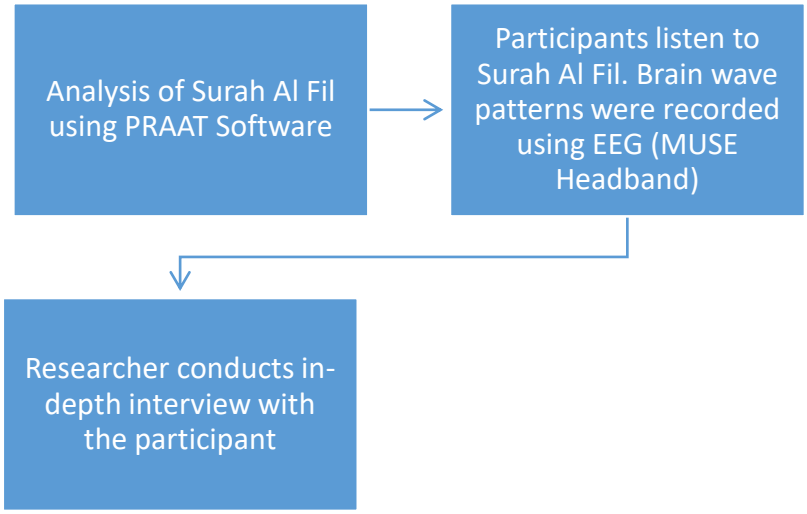
CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter discusses how the study was conducted to achieve research objectives. It consists of research design, ethics of the study, research informant background, instrumentation, data collection techniques, and data analysis procedure.

3.2 Research Design

This research is a mixed-method study integrating quantitative (experiment) and qualitative (a case study) research. Participants' mind behavior utilizing electroencephalography (EEG) was recorded. Then, an in-depth interview is used to gain information from the participants of his or her experience when listening to Surah Al-Fil. Purposive sampling was used for participants selection using the snowballing technique as referrals identified both participants from friends and relatives. The researcher conducted the interviews and observation at participants' homes or residents. It based on appointment and consent from the participants. All interviews were tape-recorded and later transcribed verbatim. Interviews were conducted in participants' local language and later translated to English. Before the interview and observation were conducted, the frequency of Surah Al-Fil from two different reciters was analyzed using PRAAT software. The whole process of this study is as follows:



3.3 Ethics of Study

Participants were contacted to set up an interview date and obtain consent. The participants could withdraw from the study at any time if they felt unable to continue. Names or other personal identifiers were not recorded anywhere in the researcher's data.

3.4 Participants

Two participants volunteered in this research consists of one female and one male. The female participant, aged 50 years old, was diagnosed with lung cancer, metastatic brain tumor, and metastatic pelvic cancer. According to the cancer participant, she has been practicing Surah Al-Fil since May 2019. While the male participant, aged 12 years old, is free from a terminal illness, and he had been practicing Surah Al-Fil since eight years old until now.

3.5 Technique for data collection and analysis.

An important component of the research is data collection and analysis. The two main methods for this data collection are EEG recording and in-depth interviews.

3.5.1 EEG

A MUSE headband (figure 2) was placed on participants' heads. Then, the participants were asked to listen to the first audio (Surah Al-fil by Misyari Rasyid Alfasy) three times. Upon the completion of each task, the participants were allowed to rest. Then, the second audio (Surah Al-Fil by Saad Al-Ghamdi) was played three times. Any changes to the frequency of brainwaves were recorded to compare the data for both participants with two types of recording.

3.5.2 Interview

Additional data were collected by interviewing the participants. The questions asked during the interview were associated with their feelings and thoughts after listening to Surah Al-fil. The interviews were recorded, and the study data were systematically documented. These interview transcripts were then analyzed using Quirkos software.

3.6 Research Instrument

- PRAAT software: A free computer software package for speech analysis in phonetics.
- EEG (MUSE Headband): A wearable device in the form of a headband that senses the electrical rhythms of the brain.
- Interview protocol
- Surah Al-Fil

3.7 Introduction to Surah Al Fil (Ibn Kathir)

Surah Al Fil is the 105th chapter of the Quran and it consists of five verses. This chapter was revealed in Mecca. The name of Surah Al Fil is derived from the word in the first verse, Ashab Al Fil. It is a story portraying the fate of those who tried to attack the Ka'aba. Before Prophet Muhammad (S.A.W.S) was born, the governor of Abyssinia, Abraha Al-Ashram, had