



Faculty of Cognitive Sciences and Human Development

**SOUND THERAPY USING QURANIC VERSE IN INCREASING THE
CALMNESS AND REDUCING STRESS ON FINAL YEAR STUDENTS
IN UNIMAS**

Normardina Binti Abdul Rahim

**Bachelor of Science with Honours (Cognitive Science)
2015**

NORMARDINA BINTI ABDUL RAHIM

BSc Hons (CogSc) 2015

UNIVERSITI MALAYSIA SARAWAK

Grade: _____

Please tick one

- Final Year Project Report
- Masters
- PhD

DECLARATION OF ORIGINAL WORK

This declaration is made on the 26 day of JUNE year 2015.

Student's Declaration:

I, NORMARDINA BINTI ABDUL RAHIM, 39901, FACULTY OF COGNITIVE SCIENCES AND HUMAN DEVELOPMENT, hereby declare that the work entitled, SOUND THERAPY USING QURANIC VERSE IN INCREASING THE CALMNESS AND REDUCING STRESS ON FINAL YEAR STUDENTS IN UNIMAS is my original work. I have not copied from any other students' work or from any other sources with the exception where due reference or acknowledgement is made explicitly in the text, nor has any part of the work been written for me by another person.

DATE SUBMITTED

NORMARDINA BINTI ABDUL RAHIM (39901)

Supervisor's Declaration:

I, ASSOCIATE PROFESSOR DR. NORSIAH FAUZAN, hereby certify that the work entitled, SOUND THERAPY USING QURANIC VERSE IN INCREASING THE CALMNESS AND REDUCING STRESS ON FINAL YEAR STUDENTS IN UNIMAS was prepared by the aforementioned or above mentioned student, and was submitted to the "FACULTY" as a *partial/full fulfillment for the conferment of BACHELOR OF SCIENCE WITH HONOURS (COGNITIVE SCIENCES), and the aforementioned work, to the best of my knowledge, is the said student's work.

Received for examination by: _____ Date: _____
(Assoc. Prof. Dr. Norsiah Fauzan)

I declare this Project/Thesis is classified as (Please tick (√)):

- CONFIDENTIAL** (Contains confidential information under the Official Secret Act 1972)*
- RESTRICTED** (Contains restricted information as specified by the organisation where research was done)*
- OPEN ACCESS**

I declare this Project/Thesis is to be submitted to the Centre for Academic Information Services (CAIS) and uploaded into UNIMAS Institutional Repository (UNIMAS IR) (Please tick (√)):

- YES**
- NO**

Validation of Project/Thesis

I hereby duly affirmed with free consent and willingness declared that this said Project/Thesis shall be placed officially in the Centre for Academic Information Services with the abide interest and rights as follows:

- This Project/Thesis is the sole legal property of Universiti Malaysia Sarawak (UNIMAS).
- The Centre for Academic Information Services has the lawful right to make copies of the Project/Thesis for academic and research purposes only and not for other purposes.
- The Centre for Academic Information Services has the lawful right to digitize the content to be uploaded into Local Content Database.
- The Centre for Academic Information Services has the lawful right to make copies of the Project/Thesis if required for use by other parties for academic purposes or by other Higher Learning Institutes.
- No dispute or any claim shall arise from the student himself / herself neither a third party on this Project/Thesis once it becomes the sole property of UNIMAS.
- This Project/Thesis or any material, data and information related to it shall not be distributed, published or disclosed to any party by the student himself/herself without first obtaining approval from UNIMAS.

Student's signature: _____ Supervisor's signature: _____
Date: 26 JUNE Date: 26 JUNE

Current Address:

[Click here to enter Address Line 1.](#)
[Click here to enter Address Line 2.](#)

Notes: * If the Project/Thesis is **CONFIDENTIAL** or **RESTRICTED**, please attach together as annexure a letter from the organisation with the date of restriction indicated, and the reasons for the confidentiality and restriction.

SOUND THERAPY USING QURANIC VERSE IN INCREASING THE CALMNESS AND
REDUCING STRESS ON FINAL YEAR STUDENTS IN UNIMAS

NORMARDINA BINTI ABDUL RAHIM

This project is submitted
in partial fulfilment of the requirements for a
Bachelor of Science with Honour
(Cognitive Science)

Faculty of Cognitive Sciences and Human Development
UNIVERSITI MALAYSIA SARAWAK
(2015)

The project entitled “Sound therapy using Quranic verse in increasing the calmness and reducing stress on final year students in Unimas” was prepared by Normardina Binti Abdul Rahim 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:

Assoc. Prof. Dr. Norsiah Fauzan

Date:

Grade

ACKNOWLEDGEMENT

I would like to take this chance to thank the following individuals for their support and guidance throughout the way to accomplish this final year project. I would not have accomplished this project without their precious contribution of time and effort.

First and foremost, I would like to express my thankfulness to Allah S.W.T for blessing me throughout the completion of this project. I am sincerely grateful for the abundant love received.

Most of all, I would like to thank my supervisor, Associate Professor Dr. Norsiah Fauzan for his professional guidance, advice, time and patience while assisting me for this final year report. She was very optimistic and caring person who helps me a lot in completing this research.

Besides that, I would also like to thank my seniors, Kiki and Nain for assisting and guiding me to complete this research. I would also like to take the opportunity to thank my beloved parents and friends for the encouragement and resources that they have provided for me. I am so blessed to have you in my life.

Last but not least, I wish to express my gratitude to the participants of this research that had been given time and cooperation in this study. Your assistance very much appreciated. Once again, thank you all very much.

TABLE OF CONTENTS

LIST OF TABLES.....	v
LIST OF FIGURES.....	vi
ABSTRACT.....	vii
ABSTRAK.....	viii
CHAPTER 1.....	1-12
CHAPTER 2.....	13-21
CHAPTER 3.....	22-27
CHAPTER 4.....	28-45
CHAPTER 5.....	46-51
REFERENCES.....	52-55
APPENDIX A STRESS INVENTORY ITEM.....	56-57
APPENDIX B QEEG FORM.....	58
APPENDIX C NEUROFEEDBACK SESSION NOTES.....	59
APPENDIX D EYES OPEND ACTIVITY.....	60
APPENDIX E EYES CLOSED ACTIVITY.....	61
APPENDIX F QEEG MACHINE.....	62
APPENDIX G LISTENING TO QURANIC VERSE ACTIVITY.....	63

LIST OF TABLES

Table 1 Average for single electrode for Delta, Theta, Alpha, Beta and Gamma in Eyes Closed Activity for Pre-test QEEG.....	30
Table 2 Average for single electrode for Delta, Theta, Alpha, Beta and Gamma in listening to the Quranic verse for Pre-test QEEG.....	32
Table 3 Pre-test brain topography of all subjects for eyes closed activity and listening to the Quranic verse.....	34
Table 4 Average for Delta protocol.....	36
Table 5 Average for Beta protocol.....	36
Table 6 Average for single electrode for Delta, Theta, Alpha, Beta and Gamma in Eyes Closed Activity for Post-test QEEG.....	39
Table 7 Average for single electrode for Delta, Theta, Alpha, Beta and Gamma in listening to the Quranic verse for Post-test QEEG.....	41
Table 8 Post-test brain topography of all subjects for eyes closed activity and listening to the Quranic verse.....	43

LIST OF FIGURES

Figure 1 Surah Al-Fatihah.....	19
Figure 2 International 10-20 System.....	29
Figure 3 Average graphs for Delta Protocol.....	37
Figure 4 Average graphs for Beta Protocol.....	38

ABSTRACT

SOUND THERAPY USING QURANIC VERSE IN INCREASING THE CALMNESS AND REDUCING STRESS ON FINAL YEAR STUDENTS IN UNIMAS

NORMARDINA BINTI ABDUL RAHIM

The research aims to evaluate the efficacy of neurofeedback training as a sound therapy using Quranic verse. Five students were purposely selected for this research. A quasi experimental research involving a series of observation and interpretation of results from a data acquired from QEEG recording and neurofeedback training sessions was used to observe the effect of the treatment on the participants that have stress. An average of 14 sessions of neurofeedback training has been conducted in this study. For delta protocol, the reward frequency was delta, as low inhibit was beta and high inhibit was hi beta. This protocol was used in the 1st session to 4th session. While for beta protocol does consist of theta as the low inhibit, beta was the reward frequency and hi beta as the high inhibits frequency. This protocol was used in the 5th session until 14th session. Before the neurofeedback training session is conducted, pre-test QEEG was conducted to determine the appropriate protocol and placements of electrode for the purposed of neurofeedback training. Post-test QEEG was conducted after neurofeedback training sessions to look the changes in brain wave patterns and the effectiveness of al-Quran verses as sound therapy.

ABSTRAK

TERAPI BUNYI MENGGUNAKAN AYAT AL-QURAN DALAM MENINGKATKAN KETENANGAN DAN MENGURANGKAN STRESS TERHADAP PELAJAR TAHUN AKHIR DI UNIMAS

NORMARDINA BINTI ABDUL RAHIM

Kajian ini bertujuan untuk menilai keberkesanan latihan neurofeedback sebagai terapi bunyi menggunakan ayat Al-Quran. 5 orang pelajar telah dipilih dalam kajian ini. Kajian ini menggunakan kaedah eksperimen quasi yang melibatkan satu siri pemerhatian dan tafsiran keputusan daripada data yang diperolehi daripada rakaman QEEG dan latihan neurofeedback digunakan untuk memerhatikan keberkesanan rawatan ke atas subjek yang mengalami masalah stress. Sebanyak 14 sesi latihan neurofeedback telah dijalankan dalam kajian ini. Untuk protokol delta, reward frequency adalah delta, low inhibit adalah beta dan high inhibit adalah hi beta. Protokol ini telah digunakan dalam sesi 1 hingga sesi 4. Manakala bagi protokol beta terdiri daripada theta sebagai low inhibit, beta sebagai reward frequency dan hi beta sebagai high inhibits frequency. Protokol ini telah digunakan dalam sesi 5 sehingga sesi ke-14. Sebelum sesi latihan neurofeedback dijalankan, pre-test QEEG dilakukan untuk menentukan protokol yang sesuai dan penempatan elektrod semasa sesi latihan neurofeedback. Post-test QEEG dilakukan selepas latihan neurofeedback untuk melihat perubahan corak gelombang otak dan keberkesanan ayat Al-Quran sebagai terapi bunyi.

CHAPTER 1

INTRODUCTION

This research was conducted to describe the brainwave pattern of the effect of sound therapy in increasing the calmness and reducing stress on Final Year students in UNIMAS. Before starting the research, Stress Inventory Checklist has been distributed to Final Year students in UNIMAS. In this Stress Inventory Checklist there are three levels of stress, such as Mild Stress, Moderate Stress and Severe Stress. Only students that have scored for severe stress was selected as a participant in this research. The brainwave pattern can describe using the Quantitative Electroencephalogram (QEEG). The data obtained may as well be used in determining the sound therapy could be reducing the stress experience of the Final Year students in UNIMAS. Quranic verse such as *Surah Al-Fatihah* was used in this study as a sound therapy.

This study was conducted the pre and post-test QEEG session. The data on the pre-test brain topography from the QEEG session is used to determine the appropriate protocol and placements of the electrode for the purposed of neurofeedback training after neurofeedback training was done. Meanwhile participant undergoes with QEEG session again to look the changes of brainwave pattern. Besides that, the approach of using neurofeedback training with the combination of cognitive task in this study attempts to describe the changes on brainwave pattern before and after the training. This study focused on the Neurofeedback Training by using sound therapy as a technique to reduce stress. Activity of opening and closing the eyes is the controller activity in this study.

Sound Therapy Using Surah Al-Fatihah

Stress is not a disease that is stranger to humans. Naturally the mind, emotions and body have a very close relationship. All activities of thought and emotion will directly affect the functions of internal and external of our body. When we are stressed, the muscles will tense, blood circulation was uncertain, breathing is disrupted and harmon in the body begins to produce toxins that would be detrimental to the body.

But stress can be overcome by using Quranic verses such as *Surah Al-Fatihah* as sound therapy meditation. Use of the Quranic verse as a sound therapy is a relaxation can form a passive attitude thinking person who suffering from stress. Listening to the Quranic verse with repeated will cause a relaxation response that respondents will feel calm because nerve activity in our body will become more active and bio-electric energy increased. The relaxation response combined with a confidence level of respondents can generate the relaxed state.

According to previous studies, PET scan tests can measure the levels of activity of the human brain unconsciously. In this study, respondents are required to read each list of things one by one and associate the list of things with words related verbs. This study found that some parts of the brain and nervous activity posted the improvements when respondents repeat the same list repeatedly, the brain nerve activity spread to other areas and enable to actives the other nerves. This study proves scientifically that the repeated act like listening to the Quranic verse repeatedly has been proven to improve the mind concentration (The magazine Scientific American, December 1993).

The process involved during listening to Quranic verse

Attention is very important in the process of memory. This is because in the understanding of a problem, the process of the mind or the human brain will produce a divided attention. Memory skills of someone disturbed because of divided attention. Divided attention, selective attention, of course will increase in strength of memory. When individuals focused on one information then the information, there will be slightly interference from other information. Impaired attention is influenced by various elements of the human environment (Clara Casco, 1998).

According to Abdurrochman, Wulandari & Fatimah (2007) stated that one of the elements that influence an individual attention is the emotional factor. Through listening to Quranic verse, this may affect the focus of attention. Someone who listens to the Quranic verse requires a more complex process than listen to common music. When listening to Quranic verse we will more concentrate and focus on what we are listening. It can make an individual more concentrated during the listening Quranic verse.

The affected areas during the process of listening Quranic verse is the primary auditory area and auditory association areas that are in the temporal lobe. Research by Abdurrochman (2007) found that listening to Quranic verse could increase the calmness. This was evident because of an occurred significant increase in delta wave. The research at a clinic in Florida, United States, successfully to prove just by listening to Quranic verse, a Muslim, whether they are fluent in Arabic or not, can feel a huge physiological change. The sound moves from the ear to the brain will affect brain cells. Scientists recently discovered that the sound of Al-Quran readings have amazing healing powers (Madrasah Nur As-Salam, 2015).

Brainwave Pattern

The brain waves can be measured using an electroencephalograph (EEG). EEG will be easy to detect eye movements and muscle movements, and both movements will generate the larger brain waves. Each frequency associated with different waves of brain function. There are five brainwaves in order of highest frequency (lowest amplitude) to lowest frequency (highest amplitude) are as Gamma (40Hz-100Hz), Beta (12Hz-40Hz), Alpha (8Hz-12Hz), Theta (4Hz-8Hz), and Delta (0Hz-4Hz).

The human brain waves vary according to the situation and the activities conducted. This is because the brain cells produce the electrical charge to perform the different tasks. Listening to Quranic verse not only showed brain wave state of someone who is experiencing stress, but can also be stimulated to change a person's mental condition. The electrical responses move throughout the brain allows one to hear the Quranic verse well. When the brain receives the stimulus while listen repeated of Quranic verse, the brain will responds to the tone of the sound. An individual who listens to the Quranic verse usually will produce the alpha waves. Alpha waves produced by a process that causes the mind to become calm as the listening process of Quranic verse.

When the mind is in alpha waves, the condition of our body was calm and stress will be reduced. When this condition occurred, the potential of brain capacity can be used that can make a person can focus their mind on something. Alpha waves can also open the individual mind to produce the creative ability to solve a problem.

Problem statement

A previous study has studied “*The effect of sound therapy in increasing calmness and reducing stress on working Muslim women in Malaysia*”. This study investigated the level of calmness and stress of working women who are married. Their level of calmness and stress were measured before and after they were given two types of sound therapy. The first being the sound of nature and the second is a recitation of Quranic verse. Both types of the sound show the significant in the reduction of their stress level, but the second type of the sound therapy by using the recitation of Quranic verse show the better result than the first type of the sound therapy (Dini Farhana and Melati, 2011). However, this study focused on the effect of the sound therapy in reducing stress.

Besides that, there are previous studies on “*Sound Therapy through Quranic Recitation in Dealing with Emotional and Verbal Motor Skills Problems of Children with Autism*”. The study associated the sound therapy, which involves reading the Quran as a medium to help the autistic children to stabilize their emotions and improve their speaking skills. The results of this study indicate hearing the Quran to autistic children can stabilize their emotional problems and speech. This is because every sound produced from hearing the Quran has a vibration that is capable of forming a special signal to be sent to certain parts of the brain through the auditory system (Siti Patonah Mohamad et al., 2013). However, this study focused on hearing the Quran to autistic children.

The next study is about “*Sound Therapy Induced Relaxation: Down Regulating Stress Processes and Pathologies*”. This study investigates the use of music as a means of inducing positive emotions and subsequent relaxation. This research revolves around the use of music as a

means of reducing feelings of anxiety and stress as well as aiding in the relief of numerous pathologies. The use of music as a means of inducing positive emotions and subsequent relaxation has been studied extensively by researchers. This research revolves around the use of music as a means of reducing feelings of anxiety and stress as well as aiding in the relief of numerous pathologies. This study proposes that nitric oxide is the molecule chiefly responsible for these physiological and psychological relaxing effects. Nitric oxide has been determined to aid in the development of the auditory system and participate in cochlear blood flow. Emotions that variability in the central nervous system were explained how the introduction of music can mediate its effects through nitric oxide (Elliott Salamon et al., 2002). However, this study focused on nitric oxide signaling system is the primary and fundamental method by which music acts as a relaxation device.

Therefore, there are few previous studies have been conducted regarding sound therapy in reducing stress. However, previous studies pay scant attention to analyze brainwave patterns before and after the sound therapy sessions. The previous study was also lack of explanation about the training or protocol during the sound therapy. Hence, this study was described and analyzes the changes in brain wave patterns before and after the sound therapy using Quranic verse namely *Surah Al-Fatihah*.

Research Objective

The objective of this study was to determine the brainwave pattern of the effect of sound therapy on stress in increasing the calmness and reducing stress on Final Year students in UNIMAS. To evaluate the efficacy of the sound therapy, we observed their performance before, during and after the Neurofeedback Training and also the pattern of the brainwave using electroencephalogram (QEEG).

General Objective

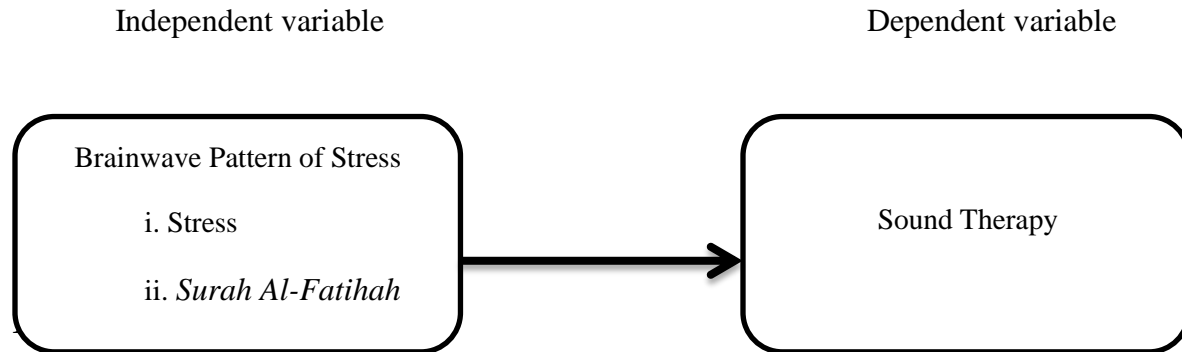
The general objective of this research was to observe the changes brain wave pattern using sound therapy to reduce the level of stress performance of Final Year students before, during and after training.

Specific Objective

This is the study of brainwave patterns of stress using sound therapy to reduce stress on Final Year students. The study also wants to observe their performance before, during and after.

- i. To analyze the brainwave pattern of stress among Final Year students.
- ii. To describe the brainwave pattern of stress among Final Year students.
- iii. To describe the effect of *Surah Al-Fatihah* on stress using Neurofeedback device.
- iv. To describe the brainwave pattern of stress after Neurofeedback training.
- v. To observed the changes brain wave pattern of stress after Neurofeedback training.

Conceptual Framework



Definition of term

Brainwave Pattern

Conceptual Definition

Brain waves are activity is collected from millions of cells. These brain cells produce electrical charge to perform different functions or tasks. There are five major brain waves which are Delta (0-4Hz), Theta (4-8Hz), Alfa (8-12Hz), Beta (12-40Hz) and Gamma (40-100Hz). Each frequency has a connection with the different waves from brain function. Brain waves can be measured using Electroencephalograph (Jemmer & Patrick, 2009).

Operational Definition

Brain waves generated by cells known as neurons that represent the basic components of the brain. There are five main categories of brainwaves that includes waves with the highest amount of activity (high frequency, low amplitude), until the waves with a slight amount of activity (low frequency, high amplitude). Each category varies in terms of amplitude and frequency.

Stress

Conceptual Definition

Stress is a state of distress, whether in the physical or psychological. Stress occurs when the mind and body react to a situation of real or imagined (Chaplin, 2002).

Operational Definition

Stress is a something that causes people to feel depressed. Stress is caused by an imbalance of individuals to resolve problems between expectations and reality desired by an individual.

Sound Therapy

Conceptual Definition

According to (Elliott Salamon et al., 2002) the used of music as a sound therapy has consistently been found to reduce stress. He investigated that the use of sound therapy could reduce stress levels after listening to music when compared to patients who were not exposed to this treatment.

Operational Definition

Sound therapy produces rhythmic stimulus by the auditory organ and processed by the body nervous system to the brain. Sound therapy is used to determine the condition of stress and relax of an individual.

Quranic Verse

Conceptual Definition

History has proven the ability revelation God has advantages in shaping a person's emotions.

Quranic verse such as *Surah Al-Fatihah*, will affect the mental and the spiritual. The ability of

Quranic verse could generate the alpha wave and be able to give peace to the people who heard it compared to the music (Abdullah and Omar, 2011).

Operational Definition

Quranic verse which is *Surah Al-Fatihah* in this study is the one activity to the remembrance of

God in the hearts of the while experiencing the majesty of His while listening to the short Surah.

Neurofeedback training (NFT)

Conceptual Definition

Neurofeedback is direct training of brain function, by which the brain learns to function more

efficiently. Neurofeedback is also called EEG Biofeedback, because it is based on electrical

brain activity using the electroencephalogram or EEG. Neurofeedback is training in self-

regulation. It is simply biofeedback applied to the brain directly (EEG Info, 2014).

Operational Definition

This study was conducted the sound therapy as a Neurofeedback training to measure the changes

brain wave pattern in reducing stress.

Quantitative Electroencephalogram (QEEG)

Conceptual Definition

QEEG allows digital signals recorded from the scalp, identify certain patterns of electrical waves in each signal and displays the signal patterns on a computer screen. Digital data displayed is stored in microseconds (Kaiser, 2006).

Operational Definition

The brainwave pattern can describe using the Quantitative Electroencephalogram (QEEG). Based on the neurofeedback training, the changes in brainwave pattern can describe using the QEEG.

Significant of study

The significance of study is to study more about the sound therapy using *Surah Al-Fatihah* to reduce stress among Final Year students in UNIMAS. The use of *Surah Al-Fatihah* as a sound therapy is an effective to improve the calmness. In addition, sound therapy can also relieve stress because through the sound therapy can help those who have problems related to emotional. Besides that, this study may increase the suitable brainwave while listening to Quranic verse. When the researchers can find out the appropriate wave while listening to Quranic verse, then they are able to train respondent who suffering stress using the appropriate protocol.

Next, in terms of methodology, researchers in the future are able to use this study as a guideline to continue of their research. Therefore, researchers in the future can gain a better understanding of the dominant brainwave while listening to Quranic verse based on this research and identify the strategic effectiveness to improve the brain wave in increasing calmness.

Limitation of study

The researcher has identified some limitation in this study. First, neurofeedback training is not yet popular in Malaysia. Most of people are not aware of the procedure used in the training process. Thus, most of people are still skeptical in effect of neurofeedback training as sound therapy using Quranic verse to increase the calmness. Therefore, more awareness of the neurofeedback training needed to be done. Second, time constraint also becomes the limitation of the study. There a lot of time needs because we are going to train the participants session by session to observe the improvement of neurofeedback training as sound therapy in increasing the calmness. There is also difficulty in monitoring the changes of brain wave pattern.

Summary

In conclusion, this chapter discusses a little bit about the brainwave pattern and the introduction of neurofeedback training as sound therapy using Quranic verse to increase the calmness. This chapter also discusses details on the problem statement, general and specific objective, definition of terms used, significant and limitation of the study.

CHAPTER 2

LITERATURE REVIEW

Introduction

The purpose of study was to describe the brainwave pattern of the effect of sound therapy in increasing the calmness and reducing stress on Final Year students in UNIMAS. This chapter will provide a review of literature related to the neurofeedback training as sound therapy using Quranic verse to increase the calmness and description of brainwave pattern.

Sound Therapy

Sound therapy is one therapy to the brain. Sound can affect the health of the human brain. Brain working as an electrical that uses the same frequency bands. In other words, the brain was measured using sound frequencies. There are several types of frequency bands which are beta for daily focus, alpha for relaxed, theta for internal relaxation, meditation or solve problem and delta for sleep. All types of wave have a specific function of the human brain. These waves help our brain works when we realize it or not. The function of brain associated with a focus from the body that calm and relaxed. Sound therapy is a form of treatment that of sound to cure various diseases.

Jed Shlackman and Michel Lee (2008) stated that sound therapy refers to therapies in which sound is used to treat physical and mental conditions. One of these therapies is music therapy, which can involve a person listening to music for conditions such as stress. They asserted that music is one component of this therapy was using the brain wave vibrations to treat