

## The Effect of Different Verses and Reading Styles of Quran Recitation on Relaxation Among University Students

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### ABSTRACT

**Purpose** – Despite the predominance of Muslim students at Universiti Malaysia Pahang, the psychological effects of Quran recitation on stress and relaxation remain insufficiently investigated using scientific measures. Therefore, this study addresses this gap by examining the relaxation effects of Quran recitation through biofeedback analysis.

**Design/methods/approach** – Repeated measures mixed quasi-experimental design was conducted in this study. For heart rate variability (HRV) test, thirty undergraduate students who participated in this test were divided into two groups: good Quran reciters group and weak Quran reciters group based on recitation test. And for breathing behavior (BB) test, six undergraduate students are good Quran reciters who are involved in this test.

**Findings** – Pre–post test score means differences comparison showed significant differences in HRV, when all p-values < 0.05 for both groups. And the results between good reciters group and weak reciters group also shows a clear significant difference in HRV data when all p-values < 0.05. So, students who are proficient in reciting the Quran can more easily control their psychological signals than those who are not, which tends to promote relaxation.

**Research implications/limitations** –The emWave PC tool and the CapnoTrainer have been used to measure HRV and BB.

**Originality/value** – this research is to examine the effects of Quran recitation and reading styles (Tajweed, Story, Theme, and Understanding) on the Heart Rate Variability (HRV) and Breathing Behavior (BB) among undergraduate university students and their relaxation.

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## Introduction

The *Quran* is the revelation to Prophet Muhammad (PBUH) that began with the word “*Iqra*”. The Prophet (PBUH) established five principles of Quranic teaching and learning, which his companions and subsequent generations continue to follow to this day. The model consists of (good and fluent recitation), (knowing and understanding the meaning), (appreciation and implementation of the teaching in daily life), (memorising some verses for practice and reciting during prayer), and (reciting the *Quran* with a good voice and proper rhythm) (Noh et al., 2014).

Listening to different kinds of music can have various effects on a reader's or listener's emotions and moods. Music is used to promote health, reduce stress, distract patients from painful symptoms, and induce positive emotions (Ahmad & Rana, 2015; McCraty et al., 1998; Saarikallio, 2007; Xiao Hu, 2010). Similarly, the *Quran* has different effects on a listener's state of mind. Spiritual and physical relaxation can be attained through the recitation of the *Quran*. This method of watching, reading, and listening to the *Quran* may require the full functionality of the whole-body system. The human brain controls all actions. In this regard, the body system is relaxed/refreshed, and exhaustion, boredom, and tiredness are removed (Moulaei et al., 2023). This physiological biofeedback manner brings provisions to the spirit. Hence, it can be used in hospitals for patients with mental disturbances and those affected by depression, to relax soldiers, to refresh students, to cool down workers in industry, and to entertain passengers on buses and aeroplanes (Khan et al., 2010).

Listening to a melodious *Quran* recitation has therapeutic effects; even for someone who cannot comprehend the verses' interpretation, it can serve as sound therapy (Mahmoudvand, 2025). Moreover, reciting Quranic verses can positively affect interpersonal relationships and learning (Tumiran et al., 2013). The *Quran* has audible beauty. By hearing it, listeners feel its hypnotic, emotional, and beautiful effects, even if they do not understand the language. The music of the *Quran* is akin to a magic that can profoundly change people's hearts and emotions (Nakhavali & Seyedi, 2013).

Several studies have examined the effects of listening to *Quran* recitation. A study investigating the influence of *Quran* recitation on the mental health of Iranian medical staff found a positive effect of *Quran* recitation on the mental health of medical staff at Mazandaran University of Medical Sciences in Iran. This finding suggests that engaging in Quranic recitation within Muslim communities can enhance individuals' cognitive performance. Given the close connection between students and staff at the University, understanding the *Quran* can improve staff satisfaction in carrying out their duties with greater optimism (Nursyah & Apriliawati, 2025). This showed a positive effect on students' psychological well-being, suggesting that *Quran* recitation can improve psychological comfort and emotional well-being among both Muslim students and staff (Darabinia et al., 2017).

Found that listening to and reading Quranic verses is an accessible, simple, affordable, effective, and primarily drug-free technique to minimise anxiety and stress in athletes before the tournament (Mottaghi et al., 2011). Analysed human heart signal ECG

and human brain signal EEG when listening to a recitation of the Quran as compared to ordinary music (Alshaikhli et al., 2014). The EEG signal category reflected that the participants were more refreshed when listening to a recitation of the Quran. Furthermore, the ECG results showed that the heart rate remained stable during Quranic recitation, indicating the participants' calmness (Abdullah & Omar, 2011). This investigation revealed that people can perceive calmness and relaxation when listening to a recitation of the Quran, compared to listening to ordinary music or resting.

Many factors affect the HRV and BB of the human body (Al-Zaben et al., 2014). Emotions are an inescapable aspect of human mental states. Some bad situations cause stress and lead to various forms of suffering. One cannot avoid the problem, but one can be aware when the body feels stress or other emotions (Sharma & Kapoor, 2014). Quran recitation produces significant relaxation, which may be due to the Quran's specific effect on the human heart, altering hormones and chemicals responsible for relaxation.

HRV, a marker of subjective resilience, is strongly associated with good physiological and psychological performance. It is calculated from the intervals generated by the RR wave in electrocardiographic data. In a healthy person, heart rate varies during rest due to changes in the frequency properties of parasympathetic and sympathetic neural modulation of heart rate (PNS/SNS). Thus, HRV provides evidence of a balance between parasympathetic and sympathetic activities. Reduced HRV can be attributed to several psychological imbalances, including inadequate behavioural flexibility and emotion regulation, as emotional pliability is expressed through both behavioural and autonomic reactivity. Moreover, HRV assesses individual emotional pliability, or the way a person responds to emotional situations and produces provisional, dependent emotional reactions (Fujimura & Okanoya, 2012). Figure 1 illustrates the research framework, which represents the relationship between HRV and the recitation of the Quran.

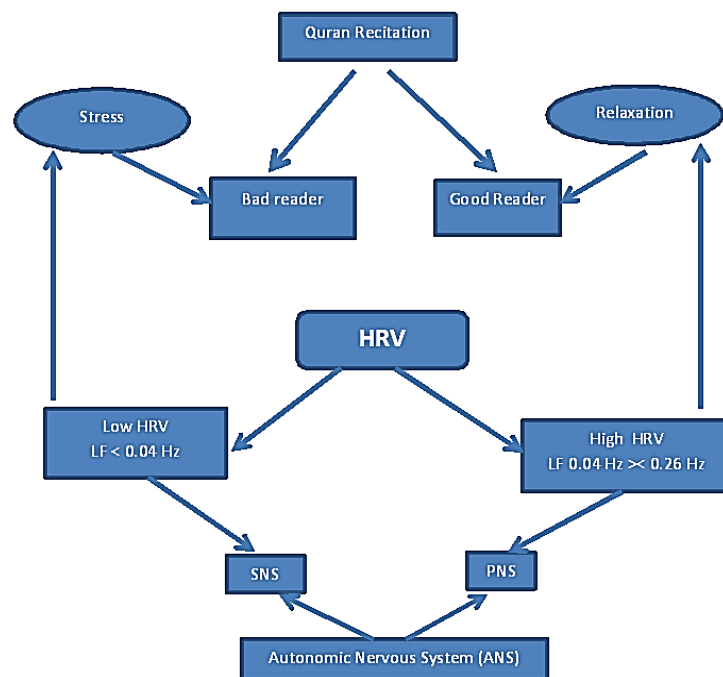


Figure 1. Relationship between Quran recitation and HRV.

The Quran even includes some of the discoveries. According to the Quran, Allah created both disease and its treatment. Prophet Mohammad (PBUH) is reported to have said that for every disease, there is a treatment, and when the treatment becomes apparent, the disease is cured with the permission of Allah (Al-Bukhari, 1996). Therefore, people are encouraged to pray and also seek treatment. Anything that harms the body, mind, and soul must be treated. It is for this reason that physicians were highly valued members of the community, and Mohammad called upon them to treat illnesses. This demonstrates that Islam was compatible with medicine; the need for medical treatment was accepted and required.

In the *Quran* and Hadith, two forms of treatment are found: spiritual healing and physical healing. Some verses discuss divine healing. The medium through which this healing occurs is the teachings and revelations of the *Quran*, a scripture revealed as “*mercy and healing to those who think*”. This form of healing treats explicitly the heart, as Allah removes “*rage from their hearts*” (Loukas, Saad, Tubbs, & Shoja, 2010).

The research questions for this work will include the following: What is the effect of Quran recitation on the HRV and Breathing Behaviour among university students (good and weak reciters)? And the second question is: what is the relationship between the different verses and reading styles (Tajweed, Story, Theme, and Understanding) of Quran recitation and relaxation among students?

## Methods

### General Background

This section of the research includes the research method, instruments, population, participants, and the study’s data collection and analysis procedures. This section also includes procedures for HRV and BB data collection, as well as the results from the preliminary research. Mixed quasi-experimental methods that involve creating a comparison group are most often used when randomising individuals or groups into treatment and control groups is not possible. First, an initial assessment has been made to classify students into two groups: good reciters and weak reciters.

These groups are formed without random assignment (non-equivalent groups). A pretest has been conducted, followed by Quran recitation (baseline for both groups). Then an intervention has been implemented using Tafsir-based understanding of verses for both groups, followed by a post-test using Quran recitation again. Each student in this study undergoes several measurements. Therefore, a research design incorporating a mixed-methodology approach was employed. The goal of this study is to examine pre- and post-session HRV and BB data from each session to identify changes in emotion during Quran recitation. This study employed a combination of convenience selection and random assignment sampling methods. In this study, the researcher selected specific Surahs and verses from the Quran, focusing on Tajweed, stories from certain Surahs, themes (e.g., heaven and hell), and understanding.

### Participants and Sampling

In this study, the effects of reciting the Quran on HRV and BB breathing behaviours were evaluated amongst 30 Muslim Malay undergraduate students recruited from the University Malaysia Pahang (UMP). The students were divided equally into good and weak reciters. For HRV data collection, every student received four sessions. Each session lasted approximately 30 minutes to measure HRV while the readers recited specific surahs or verses from the Quran. The session was divided into three parts. Every part of the session included a 2–3-minute baseline to measure students' HRV, followed by about 5 minutes for reading certain Surahs or verses from the Quran, during which the students started reading to measure HRV. And for the breathing behaviour part of this study (B/min), the student participates in only one session to measure his breathing rate per minute; this session lasts about 30 minutes. The first 5 minutes are a baseline to measure breathing behaviour before starting to recite the Quran.

In the first meeting with the students, following the discussion of the objectives and aims of the study, each student filled out demographic information to collect student characteristics that are strongly related to their learning to recite the Quran. Demographic information, including the name of the participants, gender, age, faculty he/she studied in, who taught them to recite the Quran, the place where they learned to recite the Quran, the first time they finished reciting the entire Quran (*Khatma*), and how many Surahs they memorised.

### Instruments

Researchers and scholars (McCarty & Shaffer, 2015; Reyes, 2014; Ross, 2011; Sarwari & Abdul Wahab, 2017) have used various types of HRV biofeedback technology, including the emWave device and software, in their studies on different fields and multiple perspectives, such as health, psychology, education, sports, and the military. Results from their studies confirmed the effectiveness of emWave and other types of biofeedback technology on human performance, enabling individuals to assess their heart's movement and reactions. Figure 2 and Figure 3 show the emWave PC tool and its ear sensor, respectively.



Figure 2. emWave PC tool.



Figure 3. Ear sensor for the emWave PC tool.

Figure 4 shows data recorded by the emWave PC tool as an example of HRV test samples. Figure 5 shows an image of the reciter during the data collection of the heart rate variability (HRV) session. The CapnoTrainer (Figure 6) is a hardware–software system for the live display and recording of exhaled partial pressure of carbon dioxide (PCO<sub>2</sub>) and heart rate data, facilitating learning and teaching of new breathing behaviours. The display signals include PCO<sub>2</sub> ‘raw waveform’ (continuous measurement throughout the breathing cycle), end-tidal PCO<sub>2</sub> (ETCO<sub>2</sub>, peak exhalation), breathing rate, heart rate (HR), HRV, and various averages and derived quantities. The raw data of all types of signals can be saved under a learner’s name, session by session, for subsequent review in assorted formats.

The CapnoTrainer has the client clip a nose tube to the nose and then start breathing. Data will begin appearing on the computer screen, and the client can adjust his breathing to an optimal state. Information on each breathing system is stored and can be compared over time. The CapnoTrainer also allows for the demonstration of how positive and negative thoughts, memories, pain, injury, and discomfort can affect breathing.

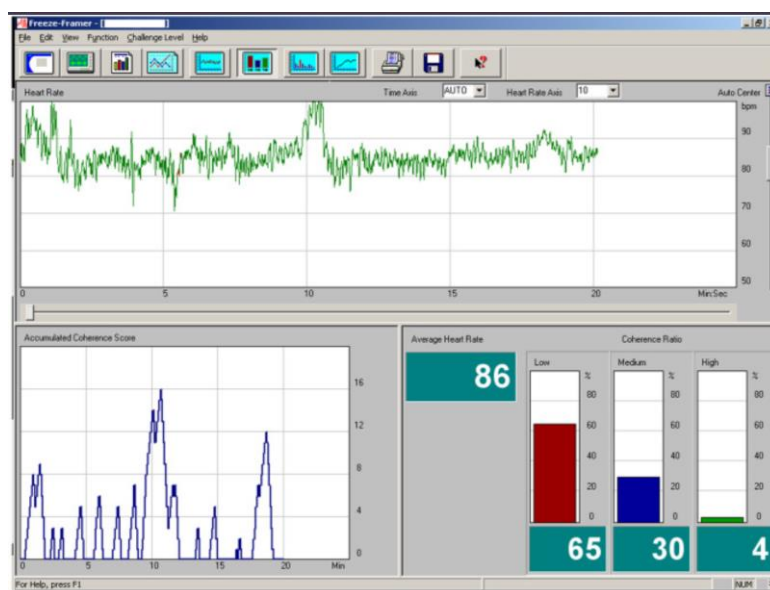


Figure 4. PC screen of emWave.

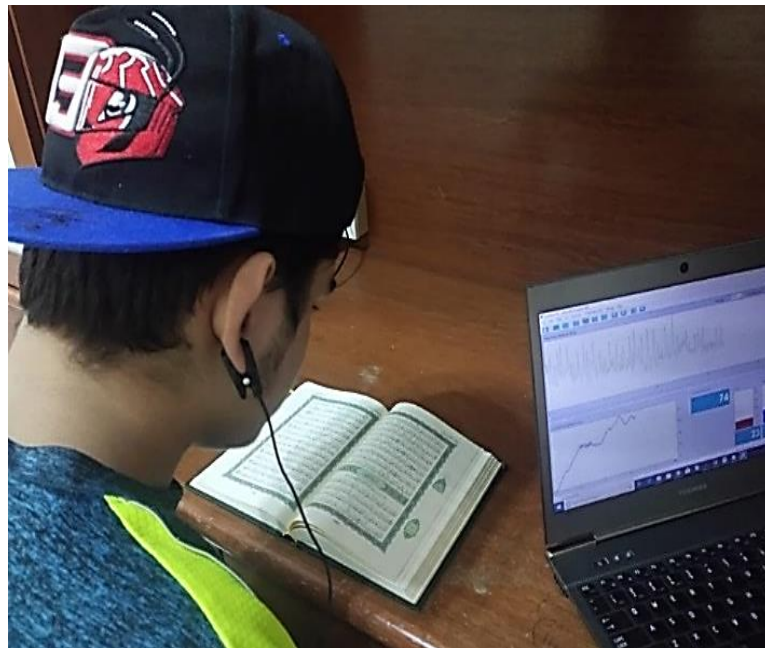


Figure 5. Image of the reciter during HRV.

The CapnoTrainer® provides continuous PCO<sub>2</sub> measurement whilst breathing. Because the air we breathe contains only 0.03% carbon dioxide (CO<sub>2</sub>), it effectively reads 'zero' on inhalation. During exhalation, it rises sharply to the average alveolar PCO<sub>2</sub> level, then rises very slowly during the transition from exhale to inhale (alveolar plateau) and eventually reaches a peak immediately before the next inhale. This peak is known as the end tidal carbon dioxide (ETCO<sub>2</sub>). The waveform displayed on a computer screen as a live graph is known as a capnogram.



Figure 6. The CapnoTrainer.

‘Capno’ means carbon dioxide, and the CapnoTrainer is an educational instrument designed for enhancing well-being, health, and performance through learning good respiration. By measuring CO<sub>2</sub> levels and breath rate in real time and presenting the data in an easy-to-digest visual on a computer screen, the CapnoTrainer enables practitioners and their clients to engage in breathing retraining. The aim is to achieve an individual’s breathing reflex, in which the diaphragm operates intuitively via the brainstem to maintain optimal pH, carbon dioxide, and oxygen levels. People should aim for no more than six breaths per minute (2017). Figure 7 shows the data recorded by the CapnoTrainer PC tool; Figure 8 shows an image of the reciter during the breathing behaviour (BB) data collection.

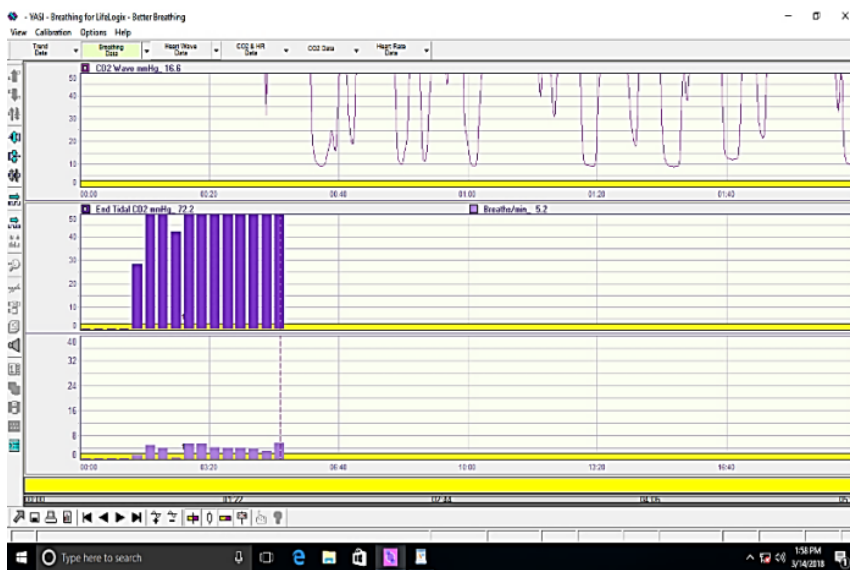


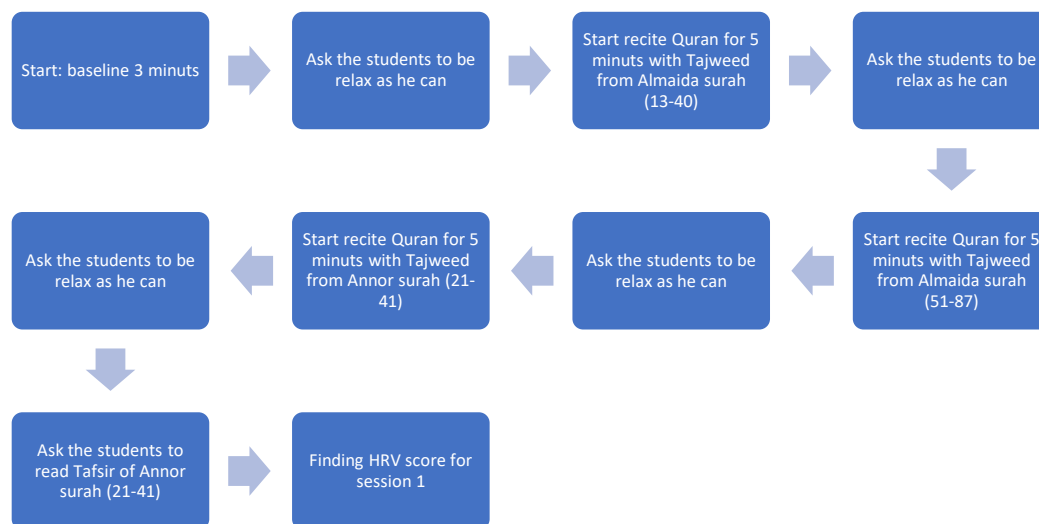
Figure 7. PC screen of CapnoTrainer.



Figure 8. Image of the reciter during BB.

## Procedures

The HRV protocol for the first session (*Tajweed*) is shown in Figure 9; each student met individually based on the agreed-upon appointment. And then, the student asks to sit correctly and be ready for HRV data collection. Then, the emWave device's sensor attaches to the ear loop, and the visible data are collected on the PC using the emWave tool and software. After that, collect the basic HRV data from the student without reciting the Quran for 2-3 minutes.



**Figure 9.** HRV protocol for session 1 (Tjweed).

After the baseline, the student was asked to recite verses from the *Maad surah* (13–40) for 5 minutes while data were collected on the PC using the emWave tool and software. After reciting the *Quran* for 5 minutes, the student was asked to sit correctly and relax as much as possible. After the relaxation, the student was asked to recite verses on *Waqf* from *Surah Almaidah* (51–87) for 5 minutes while data were collected on the PC using the emWave tool and software. After reciting the *Quran* for 5 minutes, the student was asked to sit correctly and relax as much as possible. After the relaxation, the student was asked to start reciting verses on *Maad*, *Waqf*, and other *Tajweed* rules, such as *Nun* and *Tanween*, and to practice fluency verses from the *Annur surah* (21–41) for five minutes. While data were collected on the PC using the emWave tool and software, the recitation of the *Quran*, session 1 (*Tajweed*), was completed at the end of the session.

During the second session (story), the reader began with a 2–3-minute baseline and then read the *Tafsir* of the verses they would recite. Next, he recited verses from *Surah Al-Baqara* (2:47–66) for 5 minutes, then relaxed. Afterwards, he read the *Tafsir* for the following verses he would recite, then started reciting the *surah Al-Kahf* (60–82) for five minutes. Next, he relaxed, then proceeded to the last part of the *Yosuf surah* (1–20), which he recited for 5 minutes.

The HRV protocol for the second session (Story) is shown in Figure 10. Initially, each student met individually at the agreed-upon appointment. And then, the student asks to sit correctly and be ready for HRV data collection. Then, the emWave device's sensor attaches to the ear loop, and the visible data are collected on the PC using the emWave tool and

software. After that, collect the basic HRV data from the student without reciting the *Quran* for 2-3 minutes to establish the baseline for session 2.

After the baseline, the student is asked to start reading the *Tafser* of the verses he/she will recite from *Surah Al Baqara* (47–66), which is about the Prophet Musa and his people, the Jews. After the student read the *Tafser*, he/she was asked to recite verses from *Surah Al Baqara* (47–66) for 5 minutes, while data were collected on the PC using the emWave tool and software. After reciting the *Quran* for 5 minutes, the student was asked to sit correctly and relax as much as possible.

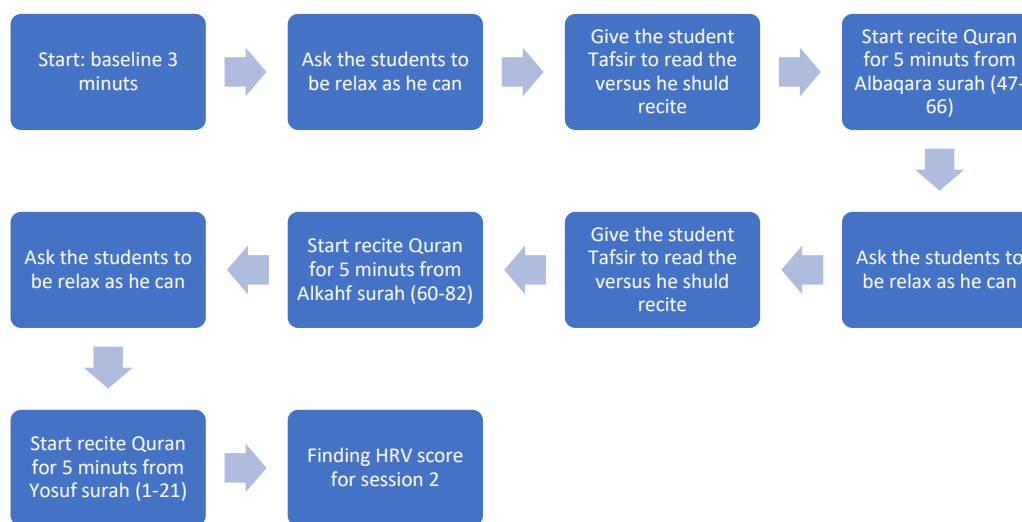


Figure 10. HRV protocol for session 2 (Story).

The story of *Albaqara surah* (47–66) is about prophet Moses, in this story, prophet Moses showed his unwavering faith in God when he led his followers to the Red Sea Pharoah’s army was behind them, and the open sea in front: When the time for retribution came, not only did God cause Pharoah and his army to drown, He also raised the status of the Israelites. Over a period of forty days, God revealed religious knowledge to Moses and chose him to continue leading His people. When Moses returned to his people, however, they had taken to worshipping a calf, Moses asked God to forgive him and his brother. Thus began a series of events in which Moses (PBUH) repeatedly guided the Children of Israel towards the worship of One God, even as he endured their complaints and taunts. God continued to bless the Israelites by bestowing many favours, while also inflicting punishments for their disobedience. When it was time for them to enter Canaan, the Israelites rebelled against Moses and God's command. In telling this story, the *Quran* relates Moses’s powerlessness over his own people: Despite the many trials and tribulations they faced, Moses and Aaron, peace be upon them, continued to submit themselves entirely to God's will. Indeed, the *Quran* exonerates Moses and Aaron of any wrongdoing and depicts them as His grateful servants.

After relaxing, the student was asked to start reading the *Tafser* of the verses he/she will recite (*Alkahf surah* (60–82)) about the Prophet Musa and the pietistic man, *Al-Kuder*. After the student read the *Tafser*, he/she was asked to recite verses from *Surah Al-*

*Kahf* (60–82) for 5 minutes, while data were collected on the PC using the emWave tool and software.

After reciting the Quran for 5 minutes, the student was asked to sit correctly and relax as much as possible. After the relaxation, the student is asked to start reading the *Tafseer* of the verses he/she will recite from the *Yosuf Surah* (1–20) about the Prophet Yusuf and his brothers. After the student read the *Tafseer*, he/she was asked to recite verses from the *Yosuf Surah* (1–20) for 5 minutes, while data were collected on the PC using the emWave tool and software. And at the end of reciting the Quran from the *Yosuf surah* (1-20), session 2 (Story), it will be finished. All the stories in this session are based on interpretations of the Quran from various books, such as *Tafsir Al-Jalalayn (al-Mahali & al-Suyuti, 2007)*.

During the third session (Theme), the reader began with a 2–3-minute baseline and then read the *Tafseer* of the verses they would recite. Next, he/she began reciting the verses about heaven from *Al-Rahman surah* (46–78) and *Al-Waqiah surah* (10–40) for five minutes and then relaxed. Afterwards, he/she read the *tafseer* for the following verses to be recited, and then he/she began reciting verses about hell from *Al-Mursalat surah* (1–50) for five minutes. He relaxed, then proceeded to the last part of the *Hud surah* (50–83), which he recited for five minutes.

The HRV protocol for the third session (Theme) is shown in Figure 11. Firstly, each student met individually based on the agreed-upon appointment. And then, the student asks to sit correctly and be ready for HRV data collection. Then, the emWave device's sensor attaches to the ear loop, and the visible data are collected on the PC using the emWave tool and software. After that, collect the basic HRV data from the student without reciting the Quran for 2-3 minutes to establish the baseline for session 2.

After the baseline, the student was asked to start reading the *Tafseer* of the verses they will recite (*Al-Rahman surah* (46–78) and *Al-Waqiah surah* (10–40)), which are about heaven. After the student read the *Tafseer*, he/she asked to start reciting verses from the - *Rlrahman surah* (46–78) and -*Wlwaqiah surah* (10–40) for 5 minutes, while data were collected on the PC using the emWave tool and software. After reciting the Quran for 5 minutes, the student was asked to sit correctly and relax as much as possible. After the relaxation, the student was asked to start reading the *Tafseer* of the verses they will recite (*Al-Mursalat Surah* (1–50)), which are about hell. After the student read the *Tafseer*, he/she was asked to recite verses from *Surah Al-Mursalat* (1–50) for 5 minutes, while data were collected on the PC using the emWave tool and software.

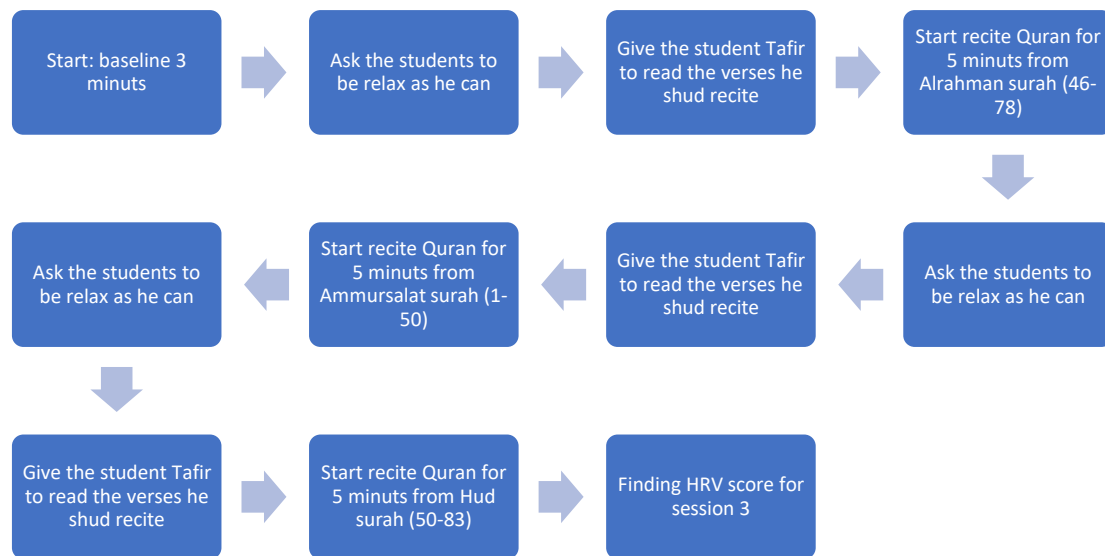


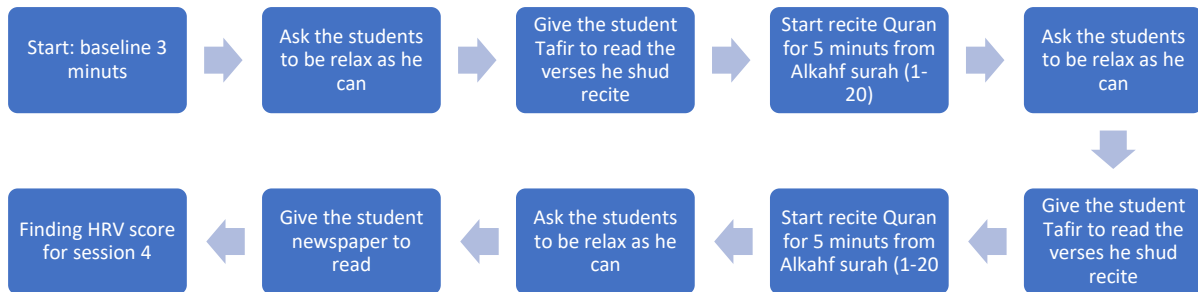
Figure 11. HRV protocol for session 3 (Theme).

After reciting the Quran for 5 minutes, the student was asked to sit correctly and relax as much as possible. After the relaxation, the student is asked to start reading the *Tafser* of the verses he/she will recite (*Hud surah (50–83)*), these verses are about punishment. After the student read the *Tafser*, he/she was asked to recite verses from the *Hud surah (50–83)* for 5 minutes, while data were collected on the PC using the emWave tool and software. And at the end of reciting the Quran from the *Hud surah (50–83)*, session 3 (Theme) is finished. All the Themes in this session have been based on interpretations of the Quran from various books, such as *Tafsir Al-Jalalayn* (al-Mahali & ai-Suyuti, 2007).

During the fourth session (Understanding), the reader started with 2–3 minutes baseline, Next, they started recited the verses from *Alkahf surah (1–20)* for five minutes, and then they relaxed, next they read the *Tafser* of the same verses *Alkahf surah (1–20)*, and then they started reciting from *Alkahf surah (1–20)* for five minutes. Then they relaxed, and in the last part of this session, the student was asked to read a section from the newspaper for five minutes. The HRV protocol for the fourth session (Understanding) is shown in Figure 12. First, each student met individually at the agreed-upon appointment. And then, the student asks to sit correctly and be ready for HRV data collection. Then, the emWave device's sensor attaches to the ear loop, and the visible data are collected on the PC using the emWave tool and software. After that, collect basic HRV data from the student for 2-3 minutes without reciting the Quran to establish the baseline for session 2.

After the baseline, the student was asked to recite the verses from *Surah Alkahf (1–20)* for five minutes while data were collected on the PC using the emWave tool and software. After reciting the Quran for 5 minutes, the student was asked to sit correctly and relax as much as they could. After the relaxation, the student is asked to start reading the *Tafser* of the verses they will recite (*Alkahf surah (1–20)*). After the student read the *Tafser*, they were asked to start reciting verses from *Surah Alkahf (1–20)* for 20 minutes, while data were collected on the PC using the emWave tool and software. After reciting the Quran for 5 minutes, the student is asked to sit correctly and relax as much as possible.

After relaxation, the student was asked to read a section of the newspaper for 5 minutes, while data were collected on the PC using the emWave tool and software. After reading the section from the newspaper, session 4 (Understanding) was completed.



**Figure 12.** HRV protocol for session 4 (understanding).

Processes in the respiratory and cardiovascular systems, as well as psychological or emotional states, significantly impact breathing patterns. Conversely, balanced breathing patterns may reflect physiological resilience and efficiency, contributing to self-regulation and health maintenance. Breathing contributes to health maintenance by influencing RSA and, in turn, HRV (Courtney et al., 2011).

The data collection procedure of breathing behaviour, which starts with selected six good readers only, is comparable with the sample size of the same type of study using BFB, where (Ariff et al., 2013) used 5 ventilated Muslim patients as a sample size in the coronary care unit of a hospital (Ariff et al., 2013). Every reader must recite the Quran for one session (*Tajweed*). This session lasts approximately 30 minutes and begins with a five-minute baseline to measure the breathing cycle per minute (B/min) before the student starts reciting the *Quran*.

During this session (*Tajweed*), the reader recited verses about *Maad* from the *Al-Maida* surah (13–40) for 5 minutes, then took a break. Next, the reader recited verses on *Waqf* from the *Al-Maida* Surah (51–87) for 5 minutes, then relaxed. Next, the reader recited verses on *Maad*, *Waqf*, and other *Tajweed* rules, such as *Nun* and *Tanween*, as well as fluency verses from the *Annur* surah (21–41) for five minutes.

The BB protocol for the (*Tajweed*) is shown in Figure 13; each student attended individually based on the agreed appointment. And then, the student asks to sit correctly and be ready for the BB data collection. Then, the CapnoTrainer device's sensor is connected to a nose tube placed on the nose, and the device begins breathing. Visible data is collected on the PC using the CapnoTrainer tool and software. After that, collect basic BB data from the student for 5 minutes, without reciting the *Quran*, as a baseline.

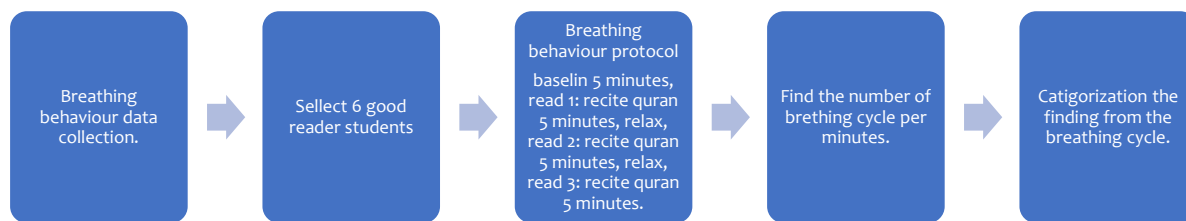


Figure 13. Breathing Behaviour Data Collection.

## Result and Discussion

As shown in Figures 14, 15, and 16, across the four sessions, all results show a clear difference in HRV data between good and weak reciters. Good reciters can control their heart rate and heart rate variability (HRV), achieving desirable HRV scores. Thus, good reciters have higher HRV and better heart rate control, indicating that they reach a relaxation state more easily than weak reciters.

Comparing the results from the first and last sessions with those from the second and third sessions shows that the latter two have the highest scores. Meanwhile, the HRV scores of the good reciters in the second and third sessions (story and theme) are a little lower than those in the first and fourth sessions (*Tajweed* and *Understanding*).

The tension and action of the stories stressed the students in the Story session. Thus, their HRV (CR) scores were low (61.3). The same effect was observed in the third session (Theme) when the students read about hell, heaven, and punishment. The students' emotions were affected during the recitation of different verses, so their HRV (CR) score was low (60.3).

For the weak reciters, no differences were observed between sessions. The weak reciters' students had low HRV (CR) scores (40, 54, 28, and 37.9) even though they had high HRV scores in other sessions. During the other sessions, the students lost control of their heart rate, resulting in lower high scores and higher low scores.

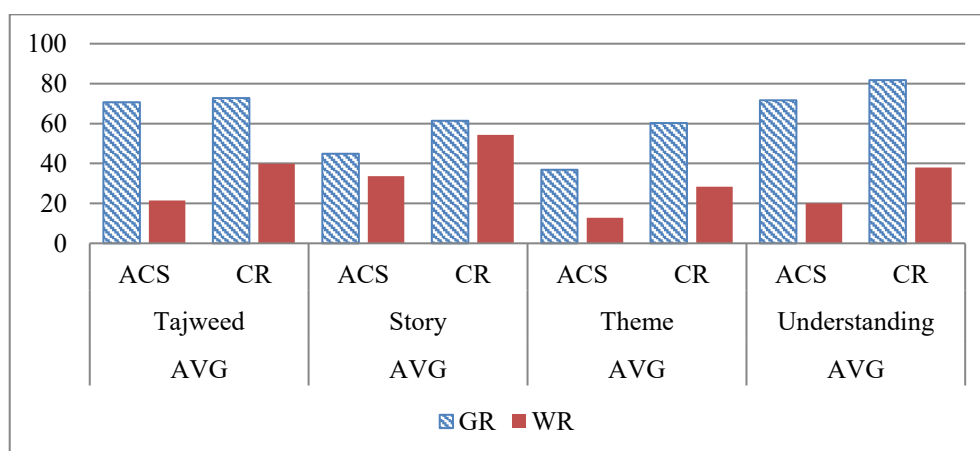
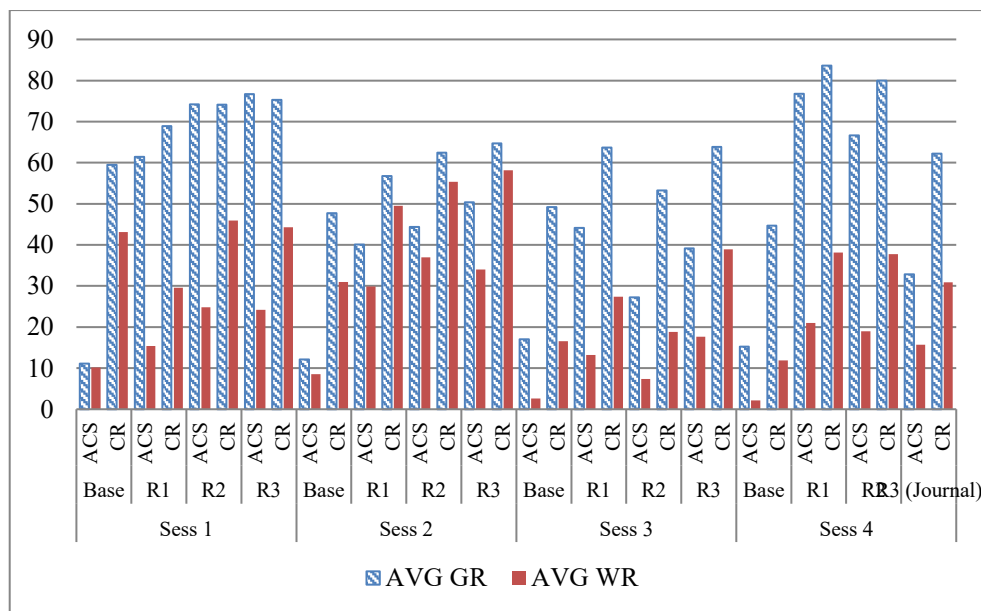


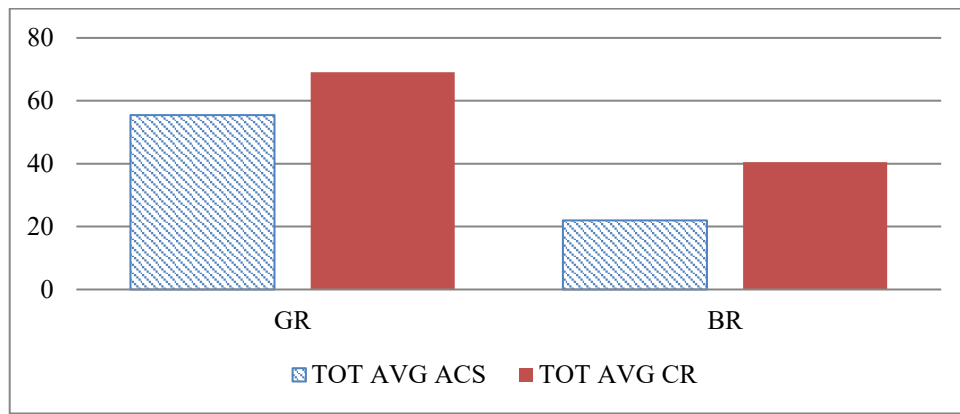
Figure 14. Effect of Different Verses and Reading Style On The Emotions of The Good and Weak Reciters.

As illustrated in Figure 15, baseline values were taken before the student started reading. Obviously, the baseline values for the first and last sessions were lower than those at the start of reciting the *Quran*. Then their scores start increasing, indicating that these two sessions have a positive effect on students' relaxation (towards relaxation). By contrast, the baseline values in the second and third sessions did not differ significantly from the reciting scores. Thus, the different verses and themes clearly affect the reader's emotions (toward relaxation). After the students of the good reciters finished reading the *Quran*, they read a newspaper article. Their HRV scores were lower because they did not focus on the style of reciting, and they all just read the text rapidly. When comparing the results of the good reciters' students with those of the weak reciters' students, the weak reciters show irregular HRV scores across sessions. Figure 16 illustrates the difference between good and weak reciter students, as reflected in the overall mean across all sessions.

The HRV data for all four *Quran* recitation sessions are shown in Table 1. For good reciter results, the HRV score for the first session (*Tajweed*) shows that the average accumulated coherence score was 70.7, and the average coherence ratio was 72.7. For the second session (Story), the average of the accumulated coherence score was 44.9, and the average of the coherence ratio was 61.3. For the third session (theme), the average of the accumulated coherence score was 36.8, and the average of the coherence ratio was 60.2. For the fourth session (understanding), the average of the accumulated coherence score was 71.7, and the average of the coherence ratio was 81.8.



**Figure 15.** Effect of different verses and reading style on the emotions of the good and weak reciters.



**Figure 16.** The Difference Between Good and Weak Reciters.

For the weak reciter results, the HRV score for the first session (Tajweed) shows that the average accumulated coherence score was 21.4, and the average coherence ratio was 39.9. For the second session (Story), the average of the accumulated coherence score was 33.6, and the average of the coherence ratio was 54.3. For the third session (theme), the average of the accumulated coherence score was 12.7, and the average of the coherence ratio was 28.3. For the fourth session (understanding), the average of the accumulated coherence score was 20, and the average of the coherence ratio was 37.9.

**Table 1.** The HRV data for all four sessions of reciting the Quran.

	Tajweed		Story		Theme		Understanding	
	ACS	CR	ACS	CR	ACS	CR	ACS	CR
GR	70.7	72.7	44.9	61.3	36.8	60.2	71.7	81.8
WR	21.4	39.9	33.6	54.3	12.7	28.3	20	37.9

Table 2 presents the average HRV results for all sessions of reciting the Quran and reading a newspaper. The good reciter results of the HRV score for the reciting of the Quran, the average of the accumulated coherence score was 57.11, and the average of the coherence ratio was 69.95. At the same time, the result of reading a newspaper shows that the average of the accumulated coherence score was 32.86, and the average of the coherence ratio was 62.2.

**Table 2.** Data for Reciting The Quran and Reading The Newspaper.

	Reciting Quran		Reading newspaper	
	ACS	CR	ACS	CR
GR	57.11	69.95	32.86	62.2
WR	21.98	40.22	15.71	30.85

The weak reciter results of the HRV score for the reciting of the Quran show that the average of the accumulated coherence score was 21.98, and the average of the coherence ratio was 40.22. The results of reading a newspaper indicate that the average accumulated coherence score was 15.71 and the average coherence ratio was 30.85.

The T-test includes the following parameters used in this research, the t-value measures the size of the difference relative in the sample data and the t-value it can be either positive or negative, df is degree of freedom and its equal to (N-2), The p value is defined as the probability of observing the given value of the test statistic, or greater, under the null hypothesis. Traditionally, the cut-off value to reject the null hypothesis is 0.05, which means that when no difference exists, such an extreme value for the test statistic is expected less than 5% of the time.

The HRV outcome based on Pre-Post t-test illustrates in Table 3 for a good reciter (GR), the results were pre-ACS, the mean score =13.88, post-ACS, the mean score =57.11, p value < 0.05, and pre-CR, the mean score 50.27, post-CR CR the mean score=69.95, p value < 0.05. And the outcomes for the weak reciter (WR): pre-ACS, mean score = 5.83; post-ACS, mean score = 21.98; pre-CR, mean score = 25.43; post-CR, mean score = 40.22; p-value < 0.05.

**Table 3.** The Mean Score of HRV for Good and Weak Reciters in The Pre-Post Test.

Group	HRV Outcome	Mean	t	df	p	t Critical
GR	Pre-ACS	13.88	-10.35	28	0.00	2.05
	Post-ACS	57.11				
	Pre-CR	50.27	-3.25	28	0.00	2.05
	Post-CR	69.95				
WR	Pre-ACS	5.83	-7.17	28	0.00	2.05
	Post-ACS	21.98				
	Pre-CR	25.43	-3.30	28	0.00	2.05
	Post-CR	40.22				

The t-test results for HRV scores for good and weak reciters are shown in Table 4. According to this comparison between the GR and WR, the GR mean score = 57.11, while the WR mean score = 21.98, and the p-value < 0.05, indicating a significant difference between the GR and WR.

**Table 4.** The Mean Score of HRV Based on Good and Weak Reciters.

HRV Outcome	Group	Mean	t	df	p	t Critical
ACS	GR	57.11	8.47	28.00	0.00	1.70
	WR	21.98				
CR	GR	69.96	7.48	28.00	0.00	1.70
	WR	40.22				

The BB outcome based on the Pre-Post t-test is illustrated in Table 5, the breath per minute for Baseline (Pre), the mean value = 10.73, the Tajweed (Post), the mean value =4.34, and the p-value = <0.05, which shows a significant difference between the baseline and reciting the Quran.

**Table 5.** The Mean Score of BB for Good Reciters, Pre-Post Test.

	Outcome	Mean	t	df	p	t Critical
B/min	Baseline	10.73667	3.57	10	0.01	2.57
	Tajweed	4.347222				

Research question 1: What is the effect of Quran recitation on the HRV and Breathing Behaviour among university students (good and weak reciters)?

All students who joined this session are undergraduate students. Every student has been attending four sessions. In the first session on *Tajweed*, the second on some stories in a certain Surah, the third on verses of heaven, hell, and punishment, and the last on understanding the meaning of the Quran. This study uses HRV to assess students' relaxation and stress levels. The HRV survey is a powerful, objective, and non-invasive tool for measuring neurocardiac function that reflects heart–brain interactions and ANS dynamics (Tiller et al., 1996). The analysis of HRV can explore the dynamic interactions among physiological, mental, emotional, and behavioural processes.

The results show a clear difference in HRV data between good and weak readers; good readers have greater control over their heart rate and heart rate variability. Thus, good reciter students have higher HRV scores and better heart rate control. This findings similar to the Prophet (PBUH) saying: *'No people get together in a house of the houses of Allah (i.e. a mosque), reciting the Book of Allah, and learning it together among themselves, but calmness (sakinah) comes down to them, (Divine) mercy covers them (from above), and the angels surround them, and Allah makes a mention of them among those who are with Him'*, which means that the reciting of the Quran can help calmness and relaxation.

Based on the results of this study, students who are good in reciting Quran, they have higher scores in heart rate variability depending on their higher scores in coherence ratio and accumulate coherence score of HRV, and this completely compatible with the Quran, verse 28 of *Surah Al-Raad*, Allah said, *'Those who believe in their heart to Allah slept mentioned, certainly the remembrance of Allah do hearts be calm.'* This statement confirms that only Allah is the hope that calms the heart and increases people's optimism. The recitation of the Quran also influences it; Allah confirms that it reduces stress.

Research question 2: What is the relationship between different Quran recitation styles (Tajweed, Story, Theme, and Understanding) and relaxation among students?

The finding shows a clear difference in HRV data between good and weak reciters. Good reciters maintain control over their heart rate and heart rate variability (HRV), with high HRV scores. Thus, good reciting students have higher HRV and better heart rate control. The HRV scores of the good reciters in the second and third sessions (story and theme) are lower than those in the first and fourth sessions (*Tajweed* and understanding).

The result for the good reciters' students in the story session showed lower relaxation, as the students were affected by the stories' actions. Thus, their HRV scores were low. The same effect has been observed in the third session (theme) when the students recite about hell, heaven, and punishment. The students have lower relaxation because they are emotionally involved with the verses, so their HRV scores were low. For

the weak reciters, there were no significant differences between sessions because they already have less control over their heart rate and heart rate variability (HRV) scores.

This research concluded that reciting the *Quran* with *Tajweed* has higher scores in HRV (increasing relaxation), and this is compatible with the findings of (Heidari & Shahbazi, 2015), who showed that the sound of the *Quran* before exams can reduce the anxiety levels of students. The *Quran* not only promotes relaxation and reduces stress but also helps foster familiarity with it. The *Quran* provides comfort and distances humans from anxieties and depression. Prevention and pre-emption of the onset or aggravation of a disease are undoubtedly among the basics of mental health and psychotherapy. At present, such an approach is found to be assertive and integrated and is accurately detailed in a *Quran* approach to protect individuals from falling into mental illness and shielding them from illness and delinquency. Allah said, In the remembrance of Allah do hearts find rest, and *Theker* keep their prayers on time (keep up prayer to remember me) (Alsaboney, 2007).

## Conclusion

The results of HRV and BB sessions, along with demographic information, are reported in this research. Regarding HRV findings, students who are proficient in reciting the *Quran* have higher coherence ratios and accumulated coherence scores. Findings from the BB session indicate that the students recite the *Quran* correctly and can control their breathing, which leads to relaxation. Overall, the findings suggest that proficient reciters consistently demonstrate high heart rate variability (HRV) coherence across various types of *Quranic* recitation tasks. The *Tajweed* and *Understanding* sessions yielded the highest coherence scores, suggesting that structured and familiar recitation styles may facilitate stronger physiological regulation. Although the *Story* and *Theme* sessions showed lower coherence, the results still reflect stable autonomic engagement, particularly in coherence-ratio measures. Collectively, these outcomes demonstrate that proficient reciters maintain elevated HRV coherence across recitation contexts, supporting the notion that skilful *Quranic* recitation is associated with enhanced physiological coherence and emotional regulation. Based on the Pre-Post t-test shows significant differences between pre- and post-conditions and between GR and BR ( $p$ -value < 0.05). The significance of this research lies in confirming the study's primary conclusion: students who are proficient in reciting the *Quran* can more easily control their psychological signals than those who are not skilled, thereby promoting relaxation.

## Declarations

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