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# Proximate Analysis of Holy Quran Recitations on Physiological, Psychological, and Neural Functioning in Muslims

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**Abstract**

In contemporary times, the increasing susceptibility to psychological disorders has prompted researchers to explore diverse approaches, encompassing both pharmacological and non-pharmacological interventions. A notable trend among scholars involves investigating the efficacy of religious therapy, particularly the recitation of the Holy Quran, as a means to address these health issues. This review systematically assesses studies examining the impact of Holy Quran recitation on cardiac and mental performance, as well as psychological disorders such as anxiety, stress, depression, and labor pain. The cultural significance of the Holy Quran in Muslim societies underscores the relevance of this intervention. Through a systematic evaluation of relevant studies, a positive impact of Holy Quran recitation emerges, demonstrating improvements in cardiac and mental performance, as well as the alleviation of anxiety, stress, depression, and labor pain. Across all studies, statistically significant differences were noted between groups employing Holy Quran recitation therapy and those utilizing alternative interventions, supporting its confident use as a non-pharmacological remedy for health problems. While the positive effects are evident, implementation requires a robust methodology, emphasizing the need to delineate specific surahs for different diseases. This review contributes to the growing evidence supporting Holy Quran recitation therapy as a viable non-pharmacological intervention, highlighting the importance of future research to optimize its therapeutic application.

Keywords: Holy Quran, Recitation, Physiological, Psychological, Neural, Muslims

## INTRODUCTION

People go through ups and downs in their daily lives. They can sometimes overcome these issues, but most of the time, they cannot, resulting in stress and despair (Al-Galal et al., 2016). Mental illnesses are becoming a global public health concern. Cognitive problems may affect 1/4 of adults and 10% of youngsters yearly (Edwards, 2016). Millions of people's lives, as well as the community and economy, are affected by mental disorders(Jones et al., 2014). Anxiety is the most frequent mental health issue among the general public (Eric J Lenze, 2011). Stress not only diminishes a person's cognition and decision-making aptness (Hafeez et al., 2018), but it can also be lethal, as some studies have shown that psychological stress is a significant contributor to the majority of physical and psychological illnesses, including heart attacks, strokes, and depression (Ahuja & Banga, 2019; Bairagi & Kulkarni, 2019). Psychological treatments are frequently utilized to treat mental illnesses (Cuijpers et al., 2013). Patients may prefer non-pharmacological therapy due to the threat of side effects that pharmacological medications may produce. Unnecessary analog-sedative drugs may raise the risk of over-sedation, which can have negative consequences (Gartlehner et al., 2017).



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Sound in healing dates back to ancient times (Pulido, 2021). Researchers found that sound can improve mood, energy levels, and work-life balance (O'Callaghan et al., 2014). According to Levin and Chatters (1998), the findings of various studies have all pointed to a positive association between religious activity and health (Levin & Chatters, 1998). Each religion has its own Holy writing, such as the Quran for the Muslims, the Bible for the Christians, and the Vedas for the Hindus. Almost all religions agree that reciting their holy scriptures brings happiness, well-being, and good health. Various studies have shown that engaging the brain in religious practices improves physiological functioning, decreases blood pressure, lessens anxiety, and lowers the heart rate (Bakri et al., 2014).

Furthermore, findings have shown that when they deliberately listen to it, their religious texts cause significant changes in their brain signals (Noor Ashikin Zulkurnaini, Ros Shilawani S. Abdul Kadir, Zunairah Hj Murat, 2019). Al-Qur'an enhances spiritual relaxation and cerebral impulse balance (Zulkurnaini et al., 2012). Furthermore, in a study, the autonomous response was more robust when the Quran was read rather than music (Muhammad Rezal, Jofizal Jannis, 2009). In numerous studies, listening to the Quran has also been linked to improved memory (Sabaa Ahmed Yahya Al-Galal, Shaikhli, 2018). As a result, it was deduced that listening to Al-Quran improved students' working memory and that the Quran might be used as a therapy to produce happy emotions in students with Internet Addiction Disorder (Tamam & Saleh, 2020). Recitation of the Al-Quran stimulates the release of hormones and chemicals that affect anxiety, resulting in a soothing effect (Shekha et al., 2013). Indeed, much research has been conducted on using Al-Quran recitation to treat human illnesses like anxiety, tension, depression, and psychological issues (Kamal et al., 2013; Sadeghi, 2011). It becomes simple for doctors whose patients are unable to communicate. In this situation, physiological data are measured to determine an individual's emotional state. Physiological changes in the human body, such as heart rate variations (ECG/HRV), brain waves (EEG), breathing rate (BR), blood volume pulse (BVP), skin conductance (GSR), temperature, muscle tension, occur while experiencing various emotions (Sharma & Kapoor, 2014). Al-Quran recitation therapy can also be used as a non-pharmacological intervention to help neonates enhance their physiological functions (Abbas et al., 2016).

The mother worries as the contractions become more frequent and more prolonged during the initial stage of labor. An increase in adrenaline release during the early phase of labor can reduce oxygen flow to the fetus. The decrease in blood supply causes uterine contractions to weaken, resulting in a prolonged labor phase. The voice of the Holy Quran has a positive effect on intrauterine sperm conception (Bashtian M, 2008), labor pain reduction (Bayrami & Ebrahimipour, 2014), physiological responses of premature infants (Keshavars et al., 2010), betterment of vital signs, and newborn Apgar score. Eskandari (2012) according to the findings of various studies. Hearing recitals of the al-Quran has been proven to alleviate anxiety in mothers giving birth through surgery in clinical trials (AjorPaz & Ranjbar, 2010). Muslims experience a sense of transcendence when listening to the al-Quran read-aloud. The al-Quran therapy creates optimal equilibrium to improve social, spiritual, psychological, and physical health (Abdel-Khalek, 2007). Due to the importance of the Holy Quran in the lives of Muslims, this review is conducted to assess studies that showed the effects of HQR on various disorders in various settings.

This comprehensive review employed a systematic and extensive search for relevant publications across prominent databases, including PubMed, IranDoc, EMBASE, Science Direct, and Google Scholar. The search, intentionally conducted without language or time restrictions, utilized a carefully chosen set of keywords covering essential aspects of the research, such as "Al-

Quran recitation," "therapy," "cardiac health," "mental performance," "human physiology," "anxiety," "stress," "depression," and "labor process." This approach, involving diverse databases and a broad range of keywords, aimed to capture a comprehensive array of studies on the impact of Holy Quran recitation on various facets of health and well-being. Additionally, a meticulous manual hand search complemented the electronic searches, ensuring the identification of potentially overlooked relevant items. This dual strategy, combining electronic and manual searches, enhances the robustness of the review by minimizing the possibility of omitting pertinent studies. The integration of hand-searched items further enriches the diversity of sources included in the review, contributing to its comprehensiveness and relevance to the overarching research question.

## RESULTS AND DISCUSSION

### Result

### Effect on Cardiac Performance

Al-Zaben (2014) analyzed the variability in heart rate of nineteen undergraduate students aged 20–22 years when paying attention to and not to the Holy Quran. The ECG was recorded for each individual for 20 minutes while they were at rest and listened to the Qur'an using headphones. The Wilcoxon test and the paired-sample t-test were employed to determine the significance. The heart rate does not vary much while listening to the Qur'an, but there is a drop in HR variation and a reduction in the strength of the low-frequency power (LF), designating a drop in affable stimulation. According to certain studies, low-frequency strength and low sympathetic activity may protect against arrhythmias and the enlargement of CHD (coronary heart disease) (Al-Zaben et al., 2014).

A study by Ghanem and Wahab (2018) revealed that Quran recitation positively affects heart rate variability. This study aims to justify that biofeedback of fluctuations in heart rate can decrease negative emotional symptoms in persons, especially in the case of psychological disorders. The whole experiment consists of 4 sessions. The baseline coherence rate was low in all four study sessions; as the Quran recitation started, the coherence rate started to increase continuously. During the 1st session, the focus was on Tajweed, Coherence rate elevated to 70, 54, and 66, and average HR was 83, 85, and 83 and HRV power spectrum was 0.11, 0.08, 0.09 Hz when surah Al-Maida (13-40) with Mad Tajweed, surah Al-Maida (51-58) with WaqfTajweed and surah Al- Noor (21-41) with another type of Tajweed was recited respectively. During 2nd session, the focus was on the story. The coherence rate elevated to 85, 65, and 64. Average HR was 84, 93, and 89, and the HRV power spectrum was 0.09, 0.10, and 0.12 Hz when surah Al-Baqarah (47-66), surah Al-Kahf (60-82) and surah Yousef (1-21) was recited respectively. The 3rd session focused on specific verses about paradise, hell, and punishment. The coherence rate was 89, 66, 65, and 70, and the average HR was 80, 76, 80, and 81. The HRV power spectrum was 0.09, 0.13, 0.13, 0.09 Hz when surah Al- Rehman (46-78) about heaven, surah Al-Waqiah (10-40) about heaven, surah Al- Mursalat (1-50) about hell and surah Al- Hood about punishment was recited respectively. During 4th session, the focus was on understanding the meaning of given verses. The coherence rate elevated to 55, 77, and 36, and the average HR was 90, 82, and 77 and the HRV power spectrum was 0.09,

0.12, and 0.07 Hz when before translation, after translation, and during reading the newspaper was measured. Reading the newspaper shows lower relaxation than Quran recitation. Results of this study declared that it creates favorable fluctuations in heart rate, which ultimately indicates positive emotions, thus producing relaxation and improving the body's physiology (Ghanem & Wahab, 2018).

Daud and Sharif's 2018 research evaluated that listening to Surat Al-Hasyr can bring tranquility. The authors use Thinklabs PCG software built by Audacity to investigate the outcome of heart sounds while attending to chosen verses from the Qur'an (MATLAB7.11.0). The Fast Fourier transform (FFT) was used to determine the frequency of soothing heart sounds; it provides information on the frequency of ingredients that occurred in the signal studied.

When the author compares the frequency acquired before receiving Al-Quran, the frequency achieved between S2 and S1 is shown to be lesser while listening to Al-Quran. Lower frequency suggests a relaxed state. Furthermore, the technique for collecting data can be improved by appropriately grasping the stethoscope and the volunteer's position so that no external variables affect the data collection (Daud & Sharif, 2018).

## Effect on Neurological Performance

Hojjati et al. (2014) conducted another critical study on the influence of the Quran on mental health. They looked at how the voice of the Qur'an affected children's minds in grade 5. The sample consisted of 32 females aged 12 who were split into two groups: experimental and control. The digit span test and alphabet succession test (version 4) by Wechsler were used to assess memory performance. The tests were conducted before and after 15 minutes of hearing a Qur'an tune. The control group must then sit for 15 minutes without doing anything that could impact their recall.

According to the findings, the control group's letters order subscale lessened, while the experiment group's climbed from 17,66 to 19,37. Similarly, an increase in the mean of the digit spam subscale was also noticed from 18, 75 to 20, 62 in the experimental group, whereas it remained unchanged in the control group. The Quran group's digit span differed considerably from the control group ($p<0.001$)(Hojjati et al., 2014).

People who had taken residence in the Golabchi skilled nursing faculty (SNF) in Kashan. An intentional sampling strategy was used to choose participants. Their IQ level was normal, and they could comprehend quizzes and were in good mental health. The researchers employed a survey that included demographic and personal questions, as well as articles from the standard. In terms of mental health, the author investigated whether the Qur'an element of mental health in older persons who stay in skilled nursing facilities, based on a study conducted on 56 seniors, is a predictive general mental health questionnaire(GHQ-28). The chi-square test and multivariate linear regression test were used. According to the findings, 41.1 percent of the participants lacked a mental health index, and the feature "reciting-Quran while in a nursing home" was identified as a potent predictor of mental health. According to their findings, the mental health of senior residents had a strong link to their willingness to live in the SNF and their recitation of the Quran while there (Sooki et al., 2011).

Fauzan & Abidin (2017) experimented to examine the potency of Surah Al-Baqrah: verse 255 (AyatulKursi) with NFT (Neurofeedback training) on the performance of memory. WBIS and EEG tests were used. The experimenter placed 10 students in 2$^{nd}$ year into two groups based on credit hours finished and their memory difficulty and stress. Five students in the experimental group and

five in the control group were purposefully chosen to practice neurofeedback training. The primary goal of this study was to see how Ayatul Kursi's reading and listening differed while undergoing neurofeedback training to increase memory and to track alpha wave variations using an EEG monitor. The writers discovered that reciting Ayatul Kursi improved scores far more than paying attention to verse. The recital of a Qur'an Ayats increases the production of Alpha rhythm (Berger's waves), which aids in relaxation and retrieval of knowledge for critical thinking. However, the previously mentioned findings were based on statistics from only ten partakers, which we believe is insufficient. If a broader range of scenarios, such as before, during, and after listening to the Qur'an, had been investigated, the research would have been more relevant (Fauzan & Abidin, 2017).

Putra et al. (2018) evaluated the result of hearing the Quran Qirat (intoner) audio on primary memory and found corresponding results. However, data was collected from 24 women and 26 men aged 19-22 using an empirical design including pre-test and post-test. The researchers employed a diary Toshiba 11 tool, handset, software design tools, and a room for experiment to assess primary memory performance affected by Qirat to recognize better how Qirat's audio affects primary memory. This method has the advantage of proving or disproving the null hypothesis and accepting the research hypothesis. Using tarteel caused a differentiation between the two treatments in the experiments, as demonstrated by a paired sample t-test. Findings showed a positive effect. The average primary memory ability without Qirat was 11.8, while the average primary memory ability with Qirat was 12.62 (Putra et al., 2018).

## Effect on physiological performance

Table 1 provides an overview of various studies investigating the impact of Quranic recitation on physiological responses in different clinical settings. The studies, conducted using diverse research designs, aimed to understand the influence of Quranic therapy on vital signs and physiological parameters in specific populations.

**Table 1. Characteristics of studies on physiological disorders**

| (Author's Name year ) | Objective | Study type | Sample | Intervention &comparison | Outcomes |
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| Qolizadeh et al (2019) | To see how Quran recitation affects physiological responses in neonates in the NICU. | Randomized clinical study | 64 neonates in NICU | Once a day, in the afternoon.<br>The duration of the trial is one day.<br>Intervention time: not specified | During the process ($p<0.001$) and 10 minutes after the procedure ($p=0.028$), the pulse rate was considerably reduced.<br>The respiratory rate was considerably reduced ($p<0.001$).<br>Oxygen saturation was considerably more significant throughout the process ($p<0.001$) and 10 minutes afterward.<br>The reduction in atrial pressure was considerable.<br>Between the two groups, body temperature did not differ notably. |
| Majidipour et al (2018) | To see how Quran therapy affected physiological responses in preterm babies during and after phlebotomy. | Randomized Clinical Trial | In the NICU, 56 preterm babies were admitted. | Frequency: Once<br>Study time: 1 day<br>Session time: 25 minutes, with 20 minutes before and 5 minutes during the intervention | In six assessment sessions, the intervention group's heart rate was considerably lower ($p<0.005$).<br>After 20 minutes of intervention, there was a considerable difference in RR ($p=0.039$).<br>The experimental group had substantially increased oxygen saturation ($p<0.05$). |

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| Keshavars et al (2010) | To see the effect of Quran therapy on Physiology | RCT and double-masked study | 120 Premature babies | 40 mint session<br>20 Mints recitation of Surah Yousef via headphones in the voice of Shahhat Muhammad Anver | Compared to baseline data, the Quran group's mean RR and HR reduced considerably while oxygen saturation levels rose ($p<0.001$). These changes persisted for 10 min. after the intervention ($p<0.001$). Between the two groups, the mean change in three variables after the session and after 10 min. was substantially changed ($p<0.001$) |
| Eskandari (2012) | The motive of the study was to see how Qur'an therapy affected the physiological responses of preterm newborns. | double-blind RCT | 120 preterm neonatesin NICU | Once a day in the morning.<br>Study time: 1 day<br>Intervention time: 20 minutes | In three phases of data collection, there was a substantial change in RR and oxygen saturation among individuals in the experimental group ($p<0.0001$).<br>Ten minutes after the intervention, there was a substantial change in heart rate. |
| Marofi et al (2018) | This study examined how Qur'an recitation affected physiological reactions and discomfort during blood drawing. | RCT | 72 infants admitted to the NICU | During the blood collection process, only once.<br>1 day's worth of research<br>Intervention time: from the time blood is drawn to three minutes after it has been drawn | The intervention group's pulse and respiratory rate increased significantly during the blood collection process.<br>During the blood collection technique, oxygen saturation was considerably lower than before and 3 minutes after the operation. |
| Alipour et al (2014) | The goal of this study was to see how Qur'an therapy, lullabies, and quietness affected physiological and behavioral responses in preterm babies. | Double-blind RCT | 120 neonates | Once a day<br>Study time: 1 day<br>Intervention time: 20 minutes<br>ANOVA and Friedman test did the assessment | Following the intervention, the four groups had no substantial change in respiratory rate, oxygen saturation, and pulse. |
| Nasiri et al (2017) | To see how HQR affects vital signs in unconscious patients when used as a tranquilizer | Quasi-experimental study | 30 ICU patients | HQR Surah Yusaf 15 minutes daily for 10 days | Significant improvement was observed in the state of consciousness ($p<0.0001$), and significant differences in BP, RR, and HR declined ($p<0.0001$) after the intervention. |
| Bakar (2015) | This study examined how listening to HQR affected the physiological stress response. | Quasi-experimental study<br>30 mints session | 44 ICU patients<br>Case: N=22 , Control N=22<br>Tool: Al-Fatihah and YassinSurah | Physiological assessment: HR, BP, RR, and Respiratory assessment: SpO2, VT, RR | There were no considerable differences in HR, sBP, DBP, MAP, or RR when comparing pre-and post-test score mean differences. Except for HR, there was no decline in physiological response in the intervention group.<br>Results: HQR did not significantly affect except in HR |
| Mirzaeian (2017) | To see how HQR affects oxygen pressure vital signs in unconscious individuals when used as a tranquilizer | Quasi-experimental study | 20 patients In the ICU, who were almost identical in terms of the degree of awareness and coma etiology | HQR (Surah Yaseen) was played by MP3 via headphones for 15 minutes daily for 4 weeks. | In contrast to before the intervention, the mean sBP ($P=0.04$) and dBP ($P=0.05$), HR ($P=0.001$), and arterial oxygen pressure ($P=0.04$) exhibited significant changes. For RR and temperature, there was not a statistically significant difference. |
| Ariff et al (2013) | To assess the effects of surah Yaseen recitation on the | Quasi-experimental , one-arm, Pilot study, | Not calculated | Surah Yaseen recited twice. | Yassin's recitation did not have a substantial impact on the hemodynamic parameters.<br>Conclusion: Further studies and refinements of methodology. |

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| | hemodynamics of serious patients | | | Assessments: Mean blood pressure, HR, SpO2, ECG changes. | |
| Naseri-Salahshour et al. (2018) | This study's goal was to determine how comatose patients' levels of consciousness were impacted by their religious practices. | RCT, single center. | 66 comatose patients | Surah Raad was played<br>Level of consciousness, i.e., GCS components verbal response, eye-opening, motor response<br>GCS measured before and after the operation | The intervention group's level of awareness increased considerably (P=0.01) after 10 days, while the control group's level of consciousness did not increase significantly (P=0.09) after 10 days.<br>Conclusion: The level of comatose patients can be improved with Quran |

## Effect on psychological performance

Table 2 summarizes diverse studies investigating the impact of Quranic recitation on psychological disorders, particularly focusing on anxiety and depression across various populations. The studies employ different methodologies and interventions to explore the potential therapeutic effects of Quranic recitation.

**Table 2. Characteristics of studies on psychological disorders**

| Author's name-year | Study type | Participants | Interventions and comparisons | Assessment | Outcomes |
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| Qasem Tabar et al (2013) | Clinical trial study | fifty high school pupils with pre-exam anxiety,<br>Mean age= 17 years,<br>Male=50% | For 5 minutes, Group 1HQR.<br>No intervention for Group 2 | TAS was used to assess anxiety in both groups | In contrast to the control group, the intervention group had considerably reduced levels of anxiety (p=0.001) |
| Ghorbani et al (2014) | Quasi-experimental study | 62 secondary school students | Before the exam, Group 1 listened to the HQR for 20 minutes.<br>Group 2 sat for 20 min in their place | TAS was used to assess anxiety in both groups | In contrast to the control group, the intervention group had substantially reduced levels of anxiety (p<0.05). |
| Ganjou & Akbari (2013) | Quasi-experimental study | 60 pre-medical students | Before the test, Group 1 spent 15 minutes listening to the Holy Quran.<br>Group 2 listened to music | STAI was used to assess anxiety in both groups | Both experimental groups substantially decreased anxiety (p<0.05). |
| Poor Dehkordi et al (2008) | Clinical trial study | 60 nursing students,<br>Female= 85% | For two weeks, Group 1 did progressive muscle relaxation thrice daily. Group 2 listened to HQR and recited God's name daily for 2 weeks, each time for 10 min.<br>No intervention for Group 3 | STAI was used to assess anxiety in both groups 2 weeks before and on the day of training | The intervention groups had considerably lower levels of anxiety than the control group (p<0.05) |
| Heidari & Shahbazi (2015) | Quasi-experimental study | 86 nursing students | The Holy Quran is recited for 5 minutes. | STAI was used to assess anxiety in both groups | During tests with Quran recitation, anxiety levels in nursing and emergency medical students were considerably lesser than during exams without it (p<0.05) |
| Ramazani et al (2014) | Quasi-experimental study | 150 medical sciences students,<br>Mean age= 21.2 (2.2) years,<br>Female=63.3% | Before the exam, the Holy Quran is recited for ten minutes | Before and after the session, the STAI was used to measure anxiety | Pre and post-intervention, the mean anxiety score differed significantly (p<0.05). |

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| Mottaghi et al (2011) | Quasi-experimental study | A total of 80 female athletes from the university, Average age= 21.3 (2.2) years | One hour before the tournament, Group 1 listened to a 15-minute recitation of the Holy Quran. No intervention for Group 2 | CSAI was used to assess anxiety in both groups | The mean anxiety score of the two groups differed significantly (p=0.02). |
| Aghamohamadi & Hanachi (2014) | Clinical trial study | 24 female university athletes, Mean age= 21.8 years | The Holy Quran was recited to group 1. Group 2 attained no intervention | BAI was used to assess anxiety in both groups before and after the Bruce treadmill test | Anxiety was less in the experimental group, but the difference was not statistically considerable (p>0.05) |
| Akbari et al (2011) | Quasi-experimental study | Thirty male prisoners, Age= Between 18 and 56 years | In 15×45 minute sessions, Group 1 listened to the Holy Quran being recited. Group 2 attained no intervention | BAI was used to assess anxiety in both groups, | of the two groups differed significantly in the mean anxiety score (p=0.001) |
| Darabinia et al (2017) | Quasi-experimental study | 80 staff members in the medical field (Mazandaran, Iran)having no mental or physical disorders Mean age = 44.87 ± 3.56 Male = 45% | Experimental group: n = 40. For three months, I listened to a random selection of verses from the Holy Quran. Control group: n = 40, the Quran recital was not received. | Levene's test assesses mental health. | After hearing the Quran verses, the experimental group's mean of mental health and all of its dimensions was greater than the control group's (p<0.05). |
| Najafi (2014) | Experimental study | Seventy patients with myocardial infarction, Mean age 61 years, Male = 65.1% | For two days, Group 1 was exposed to the scent of lavender and Quran recitation four times daily. No treatment was given to Group 2. | At the beginning and conclusion of each intervention cycle, STAI was used to assess anxiety in both groups. | The experimental group had substantially lower anxiety levels after each intervention cycle than the control group (p<0.05) |
| Babaii et al (2015) | Clinical trial study | 60 patients with high-level anxiety before cardiac catheterization, age>18 years | For 18 minutes, Group 1 listened to the HQR. Group 2 only rested for 18 minutes in bed | STAI was used to assess anxiety in both groups | The intervention group experienced considerably less anxiety than the control group (p<0.001) |
| Ildarabadi et al (2004) | Quasi-experimental study | 61 patients waiting for open heart surgery | Group 1 listened to the Holy Quran for 15×2 minutes the day before surgery. Group 2 received no intervention | STAI was used | The experimental group had considerably lesser anxiety levels than the control group (p<0.001) |
| Khatooni (1997) | Quasi-experimental study | A total of 60 individuals were admitted to CCU. | For 20 minutes, Group 1 listened to the Holy Quran being recited. No intervention for Group 2 | STAI was used | In contrast to the baseline score, there was a substantial decrease in anxiety in the intervention group (p<0.001) |
| Majidi (2004) | Clinical trial study | 108 patients waiting for coronary artery angiography | For 20 minutes, Group 1 listened to the Holy Quran being recited. Group 2 attained no intervention | STAI was used | The experimental group's anxiety level was considerably lesser than the control group (p<0.001) |
| Tajvidi et al. (2001) | Quasi-experimental study | 80 patients waiting for open heart surgery | Group 1 listened to the HQR for 15×2 min. The day before surgery. Group 2 attained no intervention | STAI was used to assess anxiety in both groups | The mean anxiety score of the two groups differed significantly (p<0.05) |
| Babamohamadi et al. (2017) | RCT | 54 patients undergoing hemodialysis Mean age = 53.3 | Experimental group: n=27, Surah Yaseen, 20 minutes for one session | BDI-II was used to measure depression in | In hemodialysis patients, reciting the HQR has a considerable effect in reducing symptoms of depression. |

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| | | Male= 57.4% | Thrice a week, intervention continuous for 1 month, played in the voice of Al-Shateri via MP3 player with headset<br>Control group: n=27 , No intervention | both groups at baseline and one month later, the intervention | |
| Frith et al (2017) | RCT | 53 male hemodialysis patients in a hospital in Tunisia<br>Mean age = 44.87 ± 3.56<br>Male = 100% | Experimental group: n = 28, thrice a week for six months (listening to the HQR in conjunction with endurance-resistance exercise), each session of 20 min., in the voice of Al-Dosari via MP3 with headphones<br>Control group: n =25, (endurance-resistance training only) 4 times a week for 6 months | TUG test and 6MWT test were used to measure functional ability.<br>Health Survey (SF-36) and HADS were used to measure psychosocial outcomes. Kt/V was computed as dialysis adequacy. | All assessed parameters in the experimental group were substantially greater than in the control group, except 6MWT performance and the physical component summary of the SF-36 ($p > 0.05$). |
| Nikbakht Nasrabadi et al (1998) | Quasi-experimental study | 80 patients waiting for an invasive procedure | For 20 minutes, Group 1 listened to the Holy Quran being recited.<br>No intervention for Group 2 | STAI was used to assess anxiety in both groups | In comparison to the baseline score, the anxiety score in the experimental group was significantly lower ($p<0.01$) |
| Mirbagher Ajorpaz et al (2011) | Clinical trial study | 90 patients with abdominal surgery,<br>Age= more than 15 years,<br>Female= 55.5% | Group 1 listened to the Holy Quran.<br>Group 2 listened to music<br>No intervention for Group 3 | STAI was used | Experimental groups had considerably lesser anxiety than the control group ($p=0.001$) |
| Sharafi (2000) | Experimental study | 60 patients waiting for lithotripsy | Group 1 listened to the Holy Quran recital for 20 minutes using headphones.<br>Group 2 listened to Arabic music in the same way | STAI was used | Quran recitation group had considerably lesser anxiety than the music group ($p<0.001$) |
| Mirsane et al. (2016) | Clinical trial study | 60 patients waiting for general surgery,<br>Age= between 18 and 50 years,<br>Female= 61.6% | Group 1 listened to HQR for 30 min. the day before surgery.<br>Group 2 only rested in bed for 30 min | STAI was used to assess anxiety in both groups | Following the session, the experimental group's anxiety level fell considerably ($p=0.03$). However, the control group's mean anxiety score did not alter substantially ($p=0.05$) |
| Atari et al. (2000) | Experimental study | 60 patients before induction of general anesthesia | Group 1 received the HQR for 20 min using headphones before surgery<br>No intervention for Group 2 | STAI was used to assess anxiety in both groups | The intervention group's anxiety score was substantially lesser than the control group's ($p=0.002$) |
| Shafiei et al. (2011) | Experimental study | 180 patients before induction of general anesthesia | Group 1 listened to the HQR without translation.<br>Group 2 listened to the HQR with translation.<br>No intervention for Group 3 | STAI was used | Compared to the control group, group 2 anxiety score was considerably lower ($p=0.019$). However, no statistically considerable difference was noted between group 1 and control group anxiety scores ($p>0.05$) |
| Rafique et al. (2019) | RCT | 12 depressed ladies at a government hospital's psychiatry unit in Pakistan | Experimental group: (n=6) Surah Al-Rehman, two times a day for one | BDI-II was used to assess the participants | Mann-Whitney U test revealed that the experimental group had a |

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| | | Mean age = 23.3<br>Male = 0% | month, for 22 minutes in each session<br>Control group: (n=6) Music is utilized with the same frequency | before and after the treatment | considerably lower (P=0.005) level of depression than the control group |
| Kadkhodaei et al. (2019) | RCT | 54 Pregnant women of normal delivery inAmiralmounin maternity Hospital in Zabol city<br>Mean age = 24.2<br>Male = 0% | Experimental group: Surah Yousef, one time, for 45 minutes via MP3 player with headphones<br>Control group: Arend Stein (Music), one time, for 45 minutes | STAI assessed anxiety | The findings of this study declared that Quranic verse could be utilized as a therapy for anxiety in women who are about to give birth. So, the staff is encouraged to adopt this strategy in conjunction with standard treatment for better maternal and newborn health outcomes. |
| abbasi et al. (2020) | Clinical trial study | 168 pregnant women,<br>Age= Between 15 and 45 years | Group 1 listened to HQR with a translation<br>Group 2 listened to the HQR without translation<br>No intervention for Group 3 | STAI was used to assess anxiety | There was a substantial drop in STAI scores in both intervention groups when compared to baseline values (p=0.001); however, no considerable decline was noted in the control group (p>0.05) |
| Yuni Fitri Hamidiyanti & Gumilang Pratiwi (2019) | Quasi-experimental study | 32 primipara pregnant women at a Muslim healthcare center in Indonesia<br>Male = 0% | Experimental group: (n=16), recitation for 15 min of Surah Ar-Rahman, Quran through MP3 with headphones, for four successive weeks, three times a week, in the voice of Al-Ghomidi<br>Control group: (n=16), No intervention | Anxiety by HARS | The total Hamilton Rating Scale and mean anxiety scores were considerably lesser in the intervention group than in the control group (p<0.01). |
| Allameh et al. (2013) | Clinical trial study | 64 women waiting for cesarean section,<br>Mean age = 28.2 (4.8) years | Group 1 listened to the Quran via headphones during the cesarean section. No intervention for Group 2 | SAS was used to assess anxiety | The anxiety level in the control group was considerably greater during (p=0.001) and 1 hour (p=0.001) after the operation. |
| AjorPaz & Ranjbar (2010) | Quasi-experimental study | 80 women undergoing cesarean section,<br>Age= Between 25 and 35 years | For 20 minutes, Group 1 listened to the HQR.<br>No intervention for Group 2 | STAI was used to evaluate anxiety in both groups | Anxiety was much lower in the experimental group (p=0.002) than in the control group |
| Sharifi et al (2013) | Experimental study | 45 women undergoing cesarean section,<br>Mean age= 28.9 years | Two hours before the cesarean section, Group 1 received a Quran recitation.<br>Group 2 listened to the music<br>No intervention for Group 3 | STAI was used to assess anxiety in all groups | The anxiety levels of both experimental groups were considerably lesser (p=0.003) |

**Effect on Labor Process**

Regarding the labor process, the results of 6 studies discussed in the psychological portion showed that Quran therapy has a positive role in facing this process. The results of one study, Hadju et al. (2020), have been mentioned separately to highlight this dimension. The quasi-experimental method was used in the study. A sample of 40 pregnant mothers was collected randomly. Twenty were included in the experimental group and 20 in the control group. The chi-square test was used for data collection. Surah Al- Rehman was recited. Levels of cortisol, anxiety score, and labor time were assessed. Anxiety score showed that anxiety level decreased p<0.001 cortisol level difference significantly was 15.50 v/s 25.50 (p=0.001), and time of labor was reduced in the intervention group p< 0.001. These results showed that Quran therapy near the delivery process miraculously

positively affects a mother's physiology and psychology. As the psychology of the mother is disturbed, the hormonal level, the labor time, and the body are disturbed also. In conclusion, the author suggested implementing this therapy in maternity hospitals for better care of mothers and infants.

## Discussion

In the cardiac portion, all 3 studies revealed that Quran therapy has a helpful effect on the performance of the heart and in body relaxation. In the next portion, all 4 studies showed favorable results of Quran recitation on memory and brain performance. Next, 8 studies showed extraordinary results in improving human physiology in the physiological portion. The other 3 studies also showed some improvement, but this improvement was not statistically significant. In the psychological aspect, all studies showed a positive response to this therapy, but the results of one study were not statistically significant.

Within this psychological portion 6, studies and one that was mentioned separately done on pregnant women showed that when Quran therapy is used to improve the psychology of mothers, it predominantly affects labor time and hormonal levels during delivery, making this process less panic than usual, so it also has miracle effects on panic delivery process.

Every change in the body always affects the body at a cellular level, so this therapy greatly affects individual cells and their metabolic processes. For example, a study done by Ranee (2020)described that the human biofield is divided into 5 levels: spiritual, intuitive, mental, energy, and physical bodies. According to this author, healing upper levels helps heal lower levels, but vice versa; it is not possible because of level obstacles. Biofield levels are affected by body health, so they depend on each other. So, according to this study, no disease can be treated at only the physical level by ignoring other metaphysical levels.

A draft paper by AlinaReneed described the effect of Quran recitation on energy production in human cells. According to this study, Quran recitation therapy enhances the efficient capability of individual cells to produce energy (Ranee, 2020). This study shows that the effect of the Quran on non-believers is less or negligible in contrast to believers. This is also mentioned in the Holy Quran:

> "And when you recite the Qur'an, we erect a secret barrier between you and those who do not believe in the Hereafter." (Quran 17:45)

Similarly, in an interview with Dr. Dietrich Klinghardt, he suggested that the human biofield can be affected by sound, vibration, and light (Klinghardt, 2019). So, in the same way, the vibration energy provided by Quranic recitation can align cells with the environment and alter the water structure within the human body to enable improved cellular communication and cellular health. The environment is full of toxins, and under stressful conditions, the body responds in the form of low energy production and fatigue, but this therapy, as discussed earlier, helps to respond well under these conditions and makes it able to survive even in a deadly environment (Ranee, 2020). Moreover, another study (Mehrafsar & Mokhtari, 2018) Proved that cell proliferation and cell migration in PC-3 cells are much better when treated with Cisplatin and Quran recitation than when treated with Cisplatin.

So, in the future, it is recommended that researchers should work to describe the effect of Quran therapy and other non-pharmacological therapies in biological and biochemical ways so

that their effects can be proved authentically. Moreover, new complicated diseases of the present era, such as epilepsy, schizophrenia, nostalgia, and other factitious disorders that have not been medically treated till now, can be treated with this therapy. The specificity of the Quran ayah with the disease should be explained in a specific manner to ease the treatment. In short, there are no diseases that the Quran cannot treat (Belief is essential) because God Himself says in the Quran:

"This is guidance and healing for the believers" (Quran 41: 44)

## CONCLUSION

According to a growing body of studies, spirituality is becoming a more important part of health treatment. Holy Quran chanting treatment favors cardiac function, mental health, and other physiological reactions, such as lowering pulse rate, boosting oxygen saturation, and reducing respiratory rate. This therapy also aids in synthesizing cortisol hormones. It shortens labor times, reducing discomfort for the mother and increasing the probability of improved health for both the mother and the newborn. It is suggested that this therapy be applied in hospitals and healthcare centers for better care and other treatments. However, the need for more studies in this field requires further study to gather more exact and reliable findings. More experiments are required to assess the validity of results in all of the health issues mentioned above.

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