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Research Article

The Impact of Quran Memorization on Psychological and Health Well-Being

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Abstract

It is a spiritual and religious activity, memorising of the Quran, which has a positive effect on both mental and physical health. There are, however, a dearth of scientific research linking Quran memorising to improved human health. In other words, the study's goal is to find out whether kids in a chosen group of Selangor secondary schools in Malaysia benefit psychologically and physically by learning the Quran. This includes IQ, QoL, and hormone levels. A cross-sectional study of 159 Quran memorization students from five Selangor schools was performed. Measures of QoL and IQ, including the Short Form Health Survey (SF-36) and the Wechsler Abbreviated Scale of Intelligence Second Edition (WAS II), were carried out. A number of IQ tests were administered to determine verbal comprehension, perception, and full-scale intelligence. The levels of serotonin and cortisol in the patient's blood were also measured. FSIQ scores ranged from 104.00 to 14.58, with significant differences (p0.05) seen for the physical QoL component, serotonin level, VCI and PRI, and FSIQ scores based on Quran memorising proficiency. The amount of Quran memorising and VCI had a modest association (r= 0.356, p0.05). Finally, the results of this research indicate that memorising of the Quran improves IQ, QoL, and serotonin levels. People who memorise Quran are more likely to be in good physical health, according to the findings of this research.

Keywords: Quran memorization, Intelligence quotient, Quality of life, Serotonin, Cortisol.

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Introduction

A person's religious convictions, education, and health are all essential in today's society. When faced with stress or sickness, the majority of individuals would rather turn to religion for comfort. When people engage in religious activities, they develop inner strength to face life's challenges. Muslim holy book Quran has become an option for people who suffer from mental disorders and are looking for a simple treatment or anything that may help with the healing process. Memory of the Quran has an effect on Muslim behaviour, communication, and thought.

The Quran has about 6200 verses. Remembering the Quran entails learning every word of every verse and pronouncing it exactly as it is written. As far as memory work goes, it is termed "Tahfiz," and those who finish the process of memorising the Quran are known as "Huffaz," or "the memorizer"3. Memorization of the Quran requires retrieval and creation of memories. Quran memorizer4 exhibited an increase in grey matter volume in a brain imaging research. Quran memorization also promotes tranquilly and improves memory capacity, as shown by the practises of memorizing5. Higher levels of memorization have been linked to better brain function and development of memory6.

Several studies highlighted the benefits of Quran towards reciters, listeners and memorizers. Reciting Quran stabilizes mood disorders such as anxiety and stress[7-8]. Listening to Quran relates to cognitive enhancement, emotion and relaxation[9]. Quran memorizers showed greater scale in anxiety, sleep, depression and social functioning[10]. There are two hormones considered as mood-related hormones; serotonin and cortisol[11-12]. In the state of depression, individual's memory goes weakened which is in parallel with serotonin decrease[13]. Cortisol also found to decrease when stress reduces[14]. Although serotonin and cortisol play a role in mood regulation, their functions go beyond that15. It's important to note that cortisol, for example, aids in dealing with stressful circumstances by decreasing negative emotional responses15, whereas the serotonin system aids in higher cognitive functions like memory16.

Quran memorising is associated with improved health outcomes17. Despite this, little is known about the broad range of health advantages that may be reaped by memorising the Quran. As a result, the present research sought to determine the impact of Quran memorising on students' hormone levels, intellect, and overall well-being in a chosen group of Selangor high schools.

Methods

It was unanimously accepted by the university's research committee for inclusion in this study. The participants ranged in age from 13 to 17 years old. A cross-sectional design was used for this study. Only willing participants were included in this research, which drew participants from a proportional stratified sample. Students were divided into four groups based on how well they could recall information from memory. After a briefing, participants received questionnaires. WASI-II was utilised as a general cognitive intelligence testing kit, which is short for Wechsler Abbreviated Scale of Intelligence- II. With an average reliability coefficient of.95 and.94, the four subtests in WASI-II that make up a Full-Scale IQ score include block design and matrix reasoning (which are used to calculate the composite Perceptual Reasoning Index scores) as well as vocabulary and similarities (which are used to calculate the Verbal Comprehension Index scores). The manual's instructions and the IQ level of each subject, as determined by the scores18, were used to determine the scoring.

The Short Form Health Survey (SF-36) was also utilised in a modified and translated form19. A lower QoL group (scores 0-49) and a higher QoL group (scores 50-100) were created by combining the physical and mental component scores20. Enzyme-linked immunosorbent assay kits were used to measure levels of cortisol and serotonin in the blood (Elabscience, China). SPSS version 23.0 was used to analyse the data (IBM, USA). Post hoc analysis based on Gabriel's method was performed after one-way ANOVA. This was done to see whether there was any connection between the two continuous variables using Pearson's correlation test (Quran memorization, IQ scores, quality of life scores and hormone levels). The p-value was set at 0.05, which is considered to be statistically significant.

Results

159 subjects involved in this study (82 males:77 females). 64.2% were in age range 13-15 and 35.8% in 16-17 age range. The mean score of Full-Scale IQ (FSIQ) was 104.00 ± 14.58. Verbal Comprehension Index (VCI) mean scores were 101.03 19.07 and Perceptual Reasoning Index (PRI) mean scores were 105.56 13.75 for the subtests. (74.02 15.58) and (69.21 15.36) were the results for the physical and psychological components, respectively, as indicated in Table 1.

Table 1: Survey respondents' socioeconomic status (n=159)

Variables	N	%	Mean	SD
Gender				
Male	82	51.6		
Female	77	48.4		
Age				
13-15 years	102	64.2		
16-17 years	57	35.8		
Level of Quran memorization (chapter)				
Level 0 (<1)	43	27.0		
Level 1 (1-10)	41	25.8		
Level 2 (11-20)	49	30.8		
Level 3 (21-30)	26	16.4		
IQ level				
Full-Scale Intelligence Quotient (FSIQ)			104.03	14.58
Verbal Comprehension Index (VCI)			101.03	19.07
Perceptual Reasoning Index (PRI)			105.56	13.75
Quality of life				
Total score SF-36			71.62	13.50
Physical Component Summary (PCS)			74.02	15.58
Mental Component Summary (MCS)			69.21	15.36
Hormone level				
Cortisol (ng/ml) n = 77			537.68	215.42
Serotonin (ng/ml) n=88			662.65	222.83

Table 2 shows the results of an independent t-test, which revealed that male participants had substantially higher FSIQ scores than females. Based on the results of a one-way ANOVA, it seems that memorising of the Quran has an impact on FSIQ (F=4.949, p0.05), VCI (F = 9.294, P0.001), and PRI scores (F = 3.828, p 0.05). According to Gabriel's post-hoc analysis, participants in level 3 Quran memorization outperformed those in levels 0 and 1 by a considerable margin (p0.05).

Table 2: Gender and Quran memorising level comparisons on Full-Scale IQ, Verbal Comprehension Index (VCI), and Perceptual Reasoning Index (PRI) on FSIQ, VCI, and PRI

Variables	Gender		t	p
	Male n=82	Female n=77		
Full Scale Intelligence Quotient (FSIQ)	106.26±15.60	101.65±13.10	2.010	0.046*

Verbal Comprehension Index (VCI)	104.39±97.44	97.44±17.51	2.328	0.021*
Perceptual Reasoning Index (PRI)	105.96±14.77	105.13±12.67	0.381	0.704

Variables	Level of Quran memorization				F	p
	Level 0 n=43	Level 1 n=41	Level 2 n=49	Level 3 n=26		
Full Scale Intelligence Quotient (FSIQ)	100.86±9.54	100.17±15.02	105.65±15.30	112.27±16.24[a]	4.949	0.003*
Verbal Comprehension Index (VCI)	91.65±12.76	97.68±19.35	106.10±18.26	112.23±20.86[a]	9.294	0.000*
Perceptual Reasoning Index (PRI)	109.53±11.79	101.93±12.24	102.84±15.24	109.85±12.80	3.828	0.011*

*p<0.05 significant difference
[a] The Post Hoc test showed a significant difference (p<0.05) with Level 0 and Level 1

As indicated in Table 3, independent t-test findings on quality of life revealed no gender differences. When it came to physical component summary (PCS), the degree of Quran memorization had an impact. According to the results of Gabriel's post-hoc study, those who have memorised the Quran up to level 3 have substantially higher PCS scores than those who have not.

Table 3: A comparison of life quality based on gender and memory of the Quranic verses [presented as mean±standard deviation (SD)]

Variables	Gender		t	p
	Male n=82	Female n=77		
Physical Component Summary (PCS)	74.41±17.40	73.61±13.47	0.323	0.747
Mental Component Summary (MCS)	69.07±16.20	69.35±14.53	-0.113	0.910

Variables	Level of Al-Quran memorization				F	p
	Level 0 n=43	Level 1 n=41	Level 2 n=49	Level 3 n=26		
Physical Component Summary (PCS)	78.79±12.88	68.93±18.26	71.40±15.98	79.11±10.42[a]	4.466	0.005*
Mental Component Summary (MCS)	69.99±13.98	66.77±18.18	68.43±14.67	73.23±13.86	1.019	0.386

*p<0.05 significant difference

[a] The Post Hoc test showed a significant difference (p<0.05) with Level 1

Based on Table 4, hormonal analysis showed no significant different between gender of both cortisol and serotonin. However, serotonin level was influenced by the levels of Quran memorized. According to the results of Gabriel's post-hoc study, those who have memorised the Quran up to level 3 have substantially greater levels of serotonin.

Table 4: Gender and Quran memorising level comparison of pupils' mood-related hormone levels [presented as mean±standard deviation (SD)]

Hormone (ng/ml)	Gender		t	p
	Male	Female		
Cortisol n= 77	n=37 537.12±219.09	n=40 538.19±214.76	-0.022	0.983
Serotonin n=88	n=43 681.89±203.67	n=45 644.27±240.57	0.294	0.432

Hormone (ng/ml)	Level of Al-Quran memorization				F	p
	Level 0	Level 1	Level 2	Level 3		
Cortisol n= 77	n=27 470.33±215.77	n=20 569.76±205.28	n=24 562.63±221.98	n=6 634.04±183.55	1.570	0.204
Serotonin n=88	n=21 560.35±243.16	n=19 736.52±196.54	n=31 632.90±228.75	n=17 760.73±149.55 [a]	3.785	0.013*

*p<0.05 significant difference
[a] The Post Hoc test showed a significant difference (p<0.05) with Level 0

In general, positive correlation was also found between FSIQ, quality of life, level of cortisol and serotonin with the level of Quran memorized as shown in Table 5.

Table 5: Quran memorization and hormone levels are closely linked, with IQ and quality of life being positively correlated.

Variables		Level of Quran Memorization	
	n	r	p
IQ Level			
Full Scale IQ (FSIQ)	159	0.242	0.002*
Verbal Comprehension Index (VCI)	159	0.356	<0.001*
Perceptual Reasoning Index (PRI)	159	-0.028	0.728
Quality of Life			
Physical Component Summary (PCS)	159	0.078	0.327
Mental Component Summary (MCS)	159	0.108	0.177
Hormone Level			
Cortisol (ng/ml)	77	0.230	0.044*
Serotonin (ng/ml)	88	0.230	0.031*

*p<0.05 value shows significant correlation

Discussion

An individual's overall cognitive intellectual ability is estimated using the Full-Scale Intelligence Quotient (FSIQ) score. Although it has been shown to affect academic performance among individuals who engaged Quran memorising, the effects of Quran memorization on intellect have not been extensively studied. Many methods have been developed recently to aid and expedite the process of memorising the Quran21-22. It doesn't matter what methods you use, the key to remembering the Quran is repetition. You must go through many cycles of reciting, memorising, and repeating until you reach fluency. It evaluates how well people can comprehend, process, and interpret textual material, whereas the PRI examines how fast people can make sense of sensory data and utilise it to develop judgements about the outside world and take action accordingly18. According to the findings of this research, Quran memorising had a substantial impact on both verbal IQ as well as perceptual IQ. The FSIQ and VRI of Quran memorising experts was considerably greater than that of beginners (0 and 1). These findings are in line with earlier research showing a link between IQ and memory skills in the Huffaz23 population. Intriguingly, Sapuan et al. 4 discovered that Quran memorization enhanced the grey matter volume in the brain's left side. Verbal and linguistic abilities are controlled by the left hemisphere of the brain24. This part of the brain is critical for remembering the linguistically coded information in the Quran since the memorizers must constantly pronounce the verses4.

There were substantial variations between the physical quality of life components and Quran memorising levels in the present research. According to the results, individuals who memorised the Quran at level 3 had better physical health than those at level 1, as shown by higher PCS scores. When it comes to physical health, those who are religious tend to have better quality of life, and there is a favourable relationship between physical health and coping mechanisms in the religious realm25. Serotonin26-27 seems to be linked to positive emotions including happiness and well-being.

Cortisol and serotonin levels examined in this research may be seen from a variety of angles owing to their many roles. In terms of mood28-29, as well as memory30-31, cortisol and serotonin both have a role. Depressive and anxiety disorders have been related to low levels of serotonin in people 30. According to the latest findings, the amount of Quran memorised had an impact on serotonin levels. The serotonin levels of those who were close to memorising the whole Quran were greater than those of the novices. Higher levels of serotonin indicated that these students were neither depressed or anxious, despite the fact that they were tasked with memorising the Quran while still doing well in school. That's what Taghiabad et al.32 discovered when they studied the mental health benefits of learning the Quran. Quran memorization is a difficult job that requires dedication and persistence. Because it requires more than simply remembering verses, learning Quran may be difficult for beginners. The Quran is written in Arabic, which is a language that is not widely spoken in Malaysia. Serotonin is the organiser of coping behaviour, which is a key driver of stress resistance, and coping is a crucial result in surviving stressful situations. Aside from mood, serotonin is critical for brain synapse creation and maintenance, along with acetylcholine's role in memory and learning. Quran memorising or textual memory practise impacts memorizers' (huffaz) activity and volumes in the occipitotemporal brain, perirhinal cortex, and inferior temporal gyrus, especially. It's possible that these regions have memory storage functions or are part of the memory consolidation process4. Despite this, whether brain serotonin levels correspond with peripheral serotonin levels remains a matter of debate. In depressed individuals, however, measurements of serum serotonin have been utilised to assess antidepressant efficacy36,37.

There was a significant connection between memory and IQ, quality of life, and hormone levels, according to the study's findings. Religious and spiritual practises in a population have a connection to both physical and mental health components38. There is evidence that religious activity, such as memorising the Quran, is a mediator in improving health and well-being39. People who are more advanced in remembering juz' had greater physical health than those who were just starting out.

Conclusion

This study suggests that Quran memorization positively affects IQ, quality of life and the serotonin level. Furthermore, people who memorize Quran present a better physical health status.

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