

RESEARCH ARTICLE

The Effect of the "One Day One Hour" Method in Reading the Qur'an on Improving Short-Term Memory in Students of the Faculty of Medicine, Muhammadiyah University of North Sumatra

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Abstrak

Introduction: Short-term memory is a temporary storage of information with limited capacity. The ODOH (One Day One Hour) method is a program of reading the Qur'an for one hour every day that can improve brain function, concentration, and memory. This study aims to analyze the effect of reading the Qur'an on short-term memory with a digit span test on students of the Faculty of Medicine, Muhammadiyah University of North Sumatra. **Objective:** to measure short-term memory using a digit span test after reading the Qur'an **Method:** This study used a quantitative research method with a quasi-experimental design with a Non-Equivalent Control Group approach. The research subjects were 20 people who were taken using a purposive sampling method. **Results:** The results of the hypothesis test with Paired Sample T-Test showed that the "One Day One Hour" method had no significant effect on improving short-term memory on the forward test, because there was no significant difference between the pretest (5.9) and posttest (6.4). However, in the backward test, there was a significant increase from the pretest (4.1) to the posttest (5.3). **Conclusion:** There was no significant increase in the short-term memory of the experimental group using the forward digit span test, but there was a significant increase in the backward test.

Keyword: Al-Qur'an, Short term Memory, One Day One Hour, Span Digit Test

INTRODUCTION

The Quran is a holy book revealed by Allah SWT as the final revelation to the Prophet Muhammad SAW, which serves as a guide for Muslims. The term "Quran" comes from the Arabic words "qara'a", "yadra'u", "qira'atan" or "qur'anan" which mean to collect or gather. When someone regularly reads and applies the values of the Quran in their daily activities, this not only deepens their faith and piety to Allah SWT, but also provides practical benefits such as improving memory, strengthening concentration, and sharpening focus.(1)

Memory is a process of processing information that is processed in the brain. In theory, memory is divided into short-term and long-term memory (2). Humans are divided into two types of memory, namely long-term memory which has a large capacity in processing information memories, and short-term memory or primary memory which has a temporary information storage process with a limited capacity. These two types of memory play an important role in processing various new information received from the surrounding environment. (3)

There are several factors that influence the working process of memory, such as age, gender, and stress can affect memory. Stress in particular has a significant impact on memory function and can interfere with cognitive abilities, especially in storing information. (4) Reading is one activity that we can do to maintain and strengthen our

ability to remember. (5) The activity of reading the Qur'an has been proven to be effective for improving memory because it contains a sequential and easily understood information processing pattern, while helping to improve focus and brain performance. (6)

Quran reading activities, which must focus on the rules of recitation and the rules of recitation, function to improve concentration and memory (7). One method tested in this study is the "One Day One Hour" method, which focuses on daily Quran reading activities (8). Based on research findings, reading activities for 15-20 minutes in a single session have been shown to strengthen concentration and memory, as excessively long periods tend to reduce the effectiveness of attention. (9)

Research has been conducted, particularly studies on the effect of listening to Quranic recitations on increasing short-term memory capacity (10). Other research, conducted by Irawati et al., discusses the effect of Quranic recitation on cognitive function. (2019) The activity of reading the Qur'an for 15 minutes proved to have a positive impact in improving short-term memory skills, where this research examined the relationship between increased cognitive function and the duration of reading the Qur'an. (11)

Based on this background, researchers wanted to conduct research on the impact of the "One Day One Hour" Qur'an reading program on short-term

memory skills, with a focus on students of the Faculty of Medicine at the University of Muhammadiyah North Sumatra the class 2021. Students of this class, who are often faced with various academic demands and mental burdens that can potentially cause stress and anxiety, likely need methods to maintain and optimize their memory abilities. (12)

METHOD

This study used a quasi-experimental method with a Non-Equivalent Control Group design, which divided the experimental research process into experimental and control groups based on pretests and posttests. This study was conducted in December 2024, involving students from the 2021 intake of the Faculty of Medicine, Muhammadiyah University of North Sumatra. A total of 20 research subjects were divided into two groups: the experimental group and the control group. The sample was selected using a purposive sampling method, considering inclusion and exclusion criteria to achieve the desired sample size.

The inclusion criteria in this study include; 1) active students at the Faculty of Medicine, Muhammadiyah University of North Sumatra, 2) students who have the ability to read the Qur'an, and 3) students of the Class of 2021. Meanwhile, the exclusion criteria are; 1) students who cannot read the Qur'an, and 2) students whose ability to read the Qur'an is still limited to the iqro' stage.

Dropout criteria include; 1) withdrawing during the study, 2) experiencing stress or heavy mental burden, and 3) illness.

The study began by providing an explanation of the research objectives and obtaining written consent (informed consent) from the respondents. The researcher then discussed with the experimental group to find out which surahs they had memorized and their muraja'ah routines. The groups were divided evenly based on gender. The sample size was determined to be 20 subjects who met the inclusion and exclusion criteria. This number was established using a purposive sampling method to ensure homogeneity in Quranic reading proficiency and equivalent academic workload among medical students. The experimental group underwent an intervention in the form of Qur'an reading activities, while the control group did not receive this intervention. Before the intervention began, both groups took a pretest that included forward and backward digit repetition tests. The test was conducted offline, in which the researcher read out a series of random numbers consisting of 9 digits with a 1-second pause. In the forward test, respondents were asked to repeat the numbers in order, while in the backward test, they repeated the numbers from back to front. (13)

The experimental group received an intervention in the form of reciting the Qur'an starting from the first juz, following a schedule of three times per day: morning,

afternoon, and evening. Each session lasted for 20 minutes, totaling one hour of reading per day. To ensure compliance and verify that the experimental group performed the recitations, participants were required to submit short video clips of themselves reciting the Qur'an to the researchers via a dedicated WhatsApp group during each session. These videos were recorded for a few minutes daily throughout the study period. The choice of this duration was based on previous research demonstrating that reciting the Qur'an for a minimum of 15 minutes can strengthen short-term memory. Specifically, for the evening sessions conducted between 9:00 PM and 10:00 PM, there is an added benefit of increased melatonin production, which contributes to improved sleep quality and reduced stress levels. A final evaluation in the form of a post-test was conducted after one week of intervention using the digit span test, with the results subjected to further analysis.

The collected data will be analyzed using SPSS and presented in tabular form. Normality test was performed using Shapiro-Wilk (for $n \leq 50$). If the data is normally distributed ($p > 0.05$), the analysis was performed using the Paired T-test. If not normally distributed ($p < 0.05$), the Wilcoxon test was used. If $p < 0.05$, then H_0 is rejected, indicating a significant relationship between the variables. Conversely, if $p > 0.05$, H_0 is accepted, meaning there is no significant relationship. Comparison of post-intervention means

between the two groups will be performed using the Independent T-test.

RESULTS

Table 1. Characteristics of Research Subjects

	Category	Experiment Group	Control Group
Age	19-20 years	1	4
	21-22 years	9	6
	Total	10	10
Gender	Male	5	5
	Female	5	5
	Total	10	10

Table 1 shows the distribution of the characteristics of the research subjects, consisting of 10 samples from the experimental group and 10 samples from the control group. In the experimental group, there were 10 research subjects. A small proportion was 1 person aged 19-20 years. The majority were 9 people aged 21-22 years. In the control group of 10 research subjects, a small proportion were 4 people aged 19-20 years. While the majority were 6 people aged 21-22 years. In terms of gender characteristics, each group was divided equally between the number of men and women in both groups. A total of 5 men and 5 women in the experimental group and 5 men and 5 women in the control group.

Table 2. Normality Test and Distribution of Research Subjects Based on Pretest and Posttest Scores of the Forward Digit Span Test in the Experimental Group and Control Group

Group	Category	N	Mean	P-value
Experiment	Pretest	10	5,9	0,132
	Posttest	10	6,4	
Control	Pretest	10	4,9	0,083
	Posttest	10	5,2	

Table 2 shows the distribution and normality of the forward digit span test data administered to two research groups: the experimental and control groups. Each group consisted of 10 students from the Faculty of Medicine, Muhammadiyah University of North Sumatra, Class of 2021. Measurements were taken before and after the Quran reading intervention. The results for both groups showed a similar range of scores, with the lowest score being 4 and the highest being 9, for both the pretest and posttest. The experimental group recorded an average increase in scores from 5.9 (pretest) to 6.4 (posttest), while the control group experienced an average increase from 4.9 (pretest) to 5.2 (posttest).

The normality test for the experimental group yielded a P-value of $0.0132 < \alpha (0.05)$, with an average pretest score of 5.9 and a posttest score of 6.4. Meanwhile, the results of the control group in the pretest and posttest had a P-value of $0.083 > \alpha (0.05)$ with an average pretest value of 4.9 and posttest of 5.2. It can be concluded that there is no significant difference between the pretest and posttest in the forward method in the control group.

Table 3. Normality Test and Distribution of Research Subjects Based on Pretest and Posttest Scores of Backward Digit Span Test in Experimental Group and Control Group

Group	category	N	Mean	P-Value
Experiment	Pretest	10	4,1	0,006

Control	Posttest	10	5,3	0,083
	Pretest	10	3,8	
	Posttest	10	4,1	

Table 3. Based on the analysis results, the distribution and normality of backward digit span test scores in 10 students in the experimental group and 10 students in the control group were measured before and after the Qur'an reading intervention. In the experimental group, the minimum score was 4 and the maximum score was 9 for both the pretest and posttest. The average score for the experimental group in the pretest was 4.1 and the posttest was 5.3. In the control group, the minimum score was 4 and the maximum score was 9 for both the pretest and posttest. The average score for the control group in the pretest was 3.8 and the posttest was 4.1.

In the normality test, the experimental group obtained a P-value of $0.006 > \alpha (0.05)$ with an average pretest value of 4.1 and an average posttest value of 5.3 which had a significant difference in increase so it was concluded that the backward method had an effect on increasing short-term memory in the experimental group. While the results of the control group in the pretest and posttest P-value of $0.083 > \alpha (0.05)$ with an average pretest value of 3.8 which was not significantly different from the average posttest of 4.1. It can be concluded that there was no significant difference between

the pretest and posttest results in the control group using the backward method.

Table 4. Difference Test of the Difference in the Results of the Pretest and Posttest of the Forward Digit Span Test in the Experimental Group and the Experimental Group

Group	average	standard deviation	P- value
Experiment Group	0,5	0,97	0,218
Control Group	0,3	0,48	

Based on table 4, the measurement results using the forward method were obtained with a P-value of 0.218 with $< \alpha$ (0.05) with an average value of increased memory in the experimental group of 0.5 and the control group of 0.3. So it can be concluded that there is no significant difference between the pretest and posttest differences of the experimental group and the control group using the Forward method.

Table 5. Test of Differences in the Results of the Pretest and Posttest Backward Digit Span Test in the Experimental Group and the Learning Group

Group	Average	standard deviation	P- value
Experiment Group	1,2	0,63	0,007
Control Group	0,3	0,48	

Based on table 5, the measurement results using the backward method showed a P-Value of $0.007 < \alpha$ (0.05) with an average value of increased memory in the

experimental group of 1.2, significantly different from the increase in memory in the control group of 0.3, so it was concluded that the backward method had a significant influence on increasing short-term memory.

DISCUSSION

The results of this study align with previous research showing improved short-term memory, as measured by a forward digit span test, in individuals who regularly read the Quran. Participants who underwent the intervention showed a more significant increase in scores than the comparison group. This improvement occurs because reading the Quran requires a person to concentrate on several elements such as tajweed, punctuation, and reading rules, which helps improve concentration and memory. When concentrating continuously, the brain produces alpha waves that relax the body and help improve memory.(14)

Another study examining the impact of listening to Quranic recitations (murottal) on concentration levels using a digit span test also produced similar findings. The study group showed significant progress because routinely listening to Quranic recitations can trigger the body to produce endorphins, which function. This process helps relax muscles and reduce anxiety, as well as producing brain substances that improve concentration and memory. Research shows that reading and listening to the Ayatul Kursi (verse of the chair) helps memory through its calming sound effects and increased focus.(16)

When someone reads the Qur'an, the brain produces waves that support mental

health, especially alpha waves that create a state of awake relaxation and theta waves that support learning and memory abilities. (17) When reading the Qur'an, both parts of the brain work in harmony, thereby improving thinking abilities. Physically, this activity activates the nervous system, which causes blood pressure and heart rate to decrease, and stress hormones to decrease. Simultaneously, the body will produce more hormones that improve mood and play an important role in influencing memory. (18)

Regular breathing patterns while reading the Qur'an increase oxygen saturation and lower blood pressure, which supports cognitive function. Increased blood flow to the brain optimizes neurological function. (19) Neuroendocrine responses include increased endorphins, melatonin regulation for sleep quality, and decreased adrenaline which reduces stress. Careful attention to punctuation and the rules of reading the Qur'an contributes to increased focus, attention, and memory. (20)

This study had several limitations, including the difficulty of monitoring participants' adherence to the routine of reciting the Quran three times a day for a full week. Furthermore, suboptimal interaction between the research team and the respondents was also a challenge. Another challenge was the limited literature available for reference.

CONCLUSION

The study found a significant improvement in memory performance in the

group that engaged in Quranic reading, particularly when tested using the backward digit span test. Although the forward digit span test results showed no significant difference between groups, the group that underwent the Quranic reading intervention performed better than the control group. This study demonstrates that a daily one-hour Quranic reading routine can effectively improve short-term memory in the 2021 intake of students from the Faculty of Medicine, UMSU.

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