

# The effect of listening to the Holy Qur'an on sensory perception of grip strength

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## Abstract

The study aimed to explore how listening to the Holy Qur'an affects the visual and non-visual kinaesthetic perception of grip strength, as well as some psychological characteristics in fitness centres in Qatar. An experimental method was used to achieve the objectives of the study. The sample consists of 260 players, randomly divided equally into two groups, one experimental and the other control. Tribal tests are conducted on both groups, with the variable being visual kinaesthetic perception. The researchers used a dynamometer (handgrip) to evaluate grip strength without blocking sight at various levels (25%, 50%, 75%, and 100%), then re-measured with sight blocked at the same levels. Finally, the experimental group undertook a twelve-week program of listening to the Holy Qur'an, with three sessions per day, at 8:00 a.m., 1:00 p.m., and 9:00 p.m., each lasting twenty (20) minutes.

In contrast, the control group was given no such program. Instead, the physiological and psychological assessments were repeated at the end of the program. The findings demonstrate statistically significant variations in the visual and non-visual kinaesthetic perception of the required strength between the two measurements, before and after, at the level of significance  $\alpha \leq 0.05$  (25%, 50%, and 75%) in favor of post-measurement for both experimental and control group members. Finally, the researchers recommends that players listen continuously to the Holy Qur'an before and after training and competition to improve their physiological condition and reduce recovery time and that similar studies be conducted to determine the impact of listening to the Holy Qur'an on other physiological variables and other categories of players.

**Keywords:** sensory perception, grip strength, Holy Qur'an.

## INTRODUCTION

Muslims believe that the Holy Qur'an is the nation's constitution, as well as a source of pride, dignity, elevation, and revival, by which Allah raised the nation of Islam among the nations. It was the best nation brought out for the people because no one clings to it unless they are glorified and happy, and no one turns away from it unless they are humiliated. Allah Almighty says: {You are the best nation

produced [as an example] for humankind. You enjoy what is right, forbid wrong, and believe in Allah. If only the People of the Scripture had considered it, it would have been better for them. Among them are believers, but most of them are defiantly disobedient} [Al-'Imran: 110].

In Surah Muhammad verse (24) in the Holy Quran, Allah Almighty says: {Then do they not reflect upon the Qur'an or are there locks upon

[their] hearts?}; in Surah An-Nisa Verse (82): {Then do they not reflect upon the Qur'an? If it had been from [any] other than Allah, they would have found within it much contradiction}, in Surah Al-jinn verses (1&2): {Say [O Muhammad], It has been revealed to me that a group of the jinn listened and said, and It guides to the right course, and we have believed in it. Moreover, we will never associate with our Lord anyone}.

According to Sadeghi (2011), citing in Zureikat (2020), the Holy Qur'an is referred to as a "treatment" in several verses, sometimes as a "healer of the heart," and sometimes as a "source of guidance and treatment." As human nature has an internal tendency toward harmony with rhythm, it enjoys order and coordination, and the Holy Qur'an has a pleasant and poetic style of expression that impacts people. Julianto and Etsem (2011) acknowledge that Holy Qur'an verses contain guidance for a life devoid of anxiety, stress, and depression, and this is what Allah Almighty has affirmed, as stated in the decisiveness of his Holy Quran: {And We send down of the Qur'an that which is healing and mercy for the believers, but it does not increase the wrongdoers except in loss}(Verse 82, Surah Al-Esra'). According to Firmanto (2011), 40% of people with psychological issues such as anxiety, stress, and depression are referred to religious experts for treatment and have Qur'an verses read to them.

The Holy Qur'an has numerous health benefits that accrue to individuals in various aspects of their lives, including the reduction and resolution of stress and nervousness in individuals who listen to it. The most interesting of these are the positive results obtained through experiments on non-Muslims familiar with the Arabic language but who did not understand the meaning of the Qur'an verses. They felt calm when they heard them because of the physiological effects of the Qur'an on their nervous system, which demonstrates that the human nervous system responds positively to sound stimuli with regular ups and downs (Ansari et al., 2005).

Kilani, Too, and Adrian (1987) stated sight is primarily used to observe objects and distinguish between them, whether close or far away from the sighted eye. Allah Almighty says: {It is He who has produced you and made for you hearing and vision and hearts; little are you grateful}

[Al-Mulk:23].

Proske and Gandevia (2004) highlight the importance of visual and non-visual kinaesthetic perception, related to muscle contraction strength, in reducing errors, directing, and correcting movement during a performance in terms of the force exerted, its direction (or motor path), leading to a higher ability to control fine activities and maintain proper motor posture. According to Younes (2017), kinaesthetic perception is one determinant of sports performance and is made up of a complex network of senses that play a role in learning and managing movement. The central nervous system senses the strength and speed needed to achieve a movement and sends orders to the muscles to execute it precisely. Al-Kilani and Nasrallah (2018) investigated visual and non-visual kinaesthetic perception in 80 male and female students from military and police sciences specializations in Palestine, with and without blocking sight. The findings revealed statistically significant changes in the kinaesthetic perception of the test, depending on whether sight was available or not, with the results favoring sight availability at all levels (maximum power of 100%, 75%, 50%, and 25%). The findings showed that the further away from the full force of 100%, the higher the mistake rate in kinaesthetic perception and the higher the percentage difference in visual and non-visual perception. In Mobaydeen (2020), 53 players affiliated with Prince Ali Centres in Jordan reveals that the perception of visual kinaesthetic sense is similar among the players in muscle strength tests, except for the direction test, where the differences are in favor of the younger players, and there is a positive relationship between kinaesthetic perception and physical abilities. Zureikat's (2020) study showed that listening to the Holy Qur'an improves mood, focus, anxiety, perceived intensity, and heart rate at rest among elite

boxing and athletics players in Jordan working for two minutes on the treadmill. Elfawal and Hosni's (2016) study revealed that listening to the Qur'an can be used as a non-pharmacological treatment, a psychological reassurance, and an auxiliary analgesic in anesthesia operations, resulting in a degree of blood circulation calming for patients undergoing surgery. According to Babamohmadi et al. (2015) and Eskandari et al. (2012), listening to the Holy Qur'an has a favorable effect on relaxation and comfort, lowering tension, anxiety, and depression. They stress that individuals' mental health improves when listening to the Qur'an, and it has a significant impact on the psychological and physiological components of the participants' responses during and after physical activity.

Perdana et al. (2018) find that humans require memory to store knowledge about the various aspects of their lives. Having a good memory makes completing a motor job or responsibility easier. As a stress reliever, listening to sound, typically music, enhances control, neuromuscular coordination, and brain memory stimulation. In their study, 26 men and 24 women ranging in age from 19 to 22 years were separated into two groups. One group listened to music while the other listened to the Holy Qur'an. Those who listened to the Qur'an were better at storing short-term memory, had better neurological control, and had more control over the program designed. This result is corroborated by Zureikat (2020), who shows that the Holy Qur'an improves boxing and sports players' awareness of muscular labor intensity and control, as well as nervous control.

The Qur'an's marvels in organ physiology are endless, which is why the Almighty said in Surah Adh-Dhaariyat (21) :{ And in yourselves. Then will you not see?}. The goal of these miracles is not just to prove that the Qur'an predates psychologists. While that is a great goal, there is a greater one, to reflect on these verses to strengthen our faith and increase our confidence in Allah Almighty, that we may be among those to whom Allah Almighty said in Surah Al-Annfaal (2): { The believers are only those who, when Allāh is mentioned, their

hearts become fearful, and when His verses are recited to them, it increases them in faith; and upon their Lord they rely, The ones who establish prayer and from what We have provided them, they spend Those are the believers, indeed. For them are degrees [of high position] with their Lord and forgiveness and noble provision}.

The researchers believe that, based on their review of previous studies, the majority are interested in the effect of listening to the Holy Qur'an on patients in intensive care with kidney, heart, and birth cases, while ignoring the impact of the Qur'an on athletes, except one (Zureikat, 2020). Regardless of the importance of the category of sports practitioners, sport offers beneficial effects in refining individuals' personalities and their integration into society. It generates a generation that rejects extremism and violence and believes in love and peace. As a result, this research is essential because there is a pressing need to understand the influence of listening to the Holy Qur'an on psychological and physiological characteristics before and after physical activity. For example, it could increase self-motivation, decrease anxiety and tension, improve concentration, and enhance the work of the central and peripheral nervous systems by increasing visual and non-visual perception.

#### Research problem

Allah orients Muslims to contemplate and understand the meanings of the Holy Qur'an. Allah Almighty in Surah Sad because it is the finest and best book on the face of the globe, and because it is the word of Allah Almighty (29):{ This is a blessed Book which We have revealed to you, [O Muhammad], so that they might reflect upon its verses and that those of understanding would be reminded}. For Muslims, the Holy Qur'an is a healer and mercy.

The researchers sees a scarcity of studies focusing on the Holy Qur'an and its impact on physiological features in their review of previous studies and the theoretical literature. Apart from the study of Zureikat (2020), conducted on elite boxing and athletics players,

most searchers are interested in disease cases, so the researcher shows this study to find out the impact of listening to the Holy Qur'an on physiological variables such as heart rate and blood pressure (visual and non-visual kinaesthetic perception of grip strength).

#### Research objectives

The study objective is to find the impact of listening to the Holy Qur'an on physiological variables (visual and non-visual kinaesthetic sense of grip strength) in fitness center participants.

The following hypotheses are tested:

- There are statistically significant differences between the two measurements before and after listening to the Holy Qur'an on the visual and non-visual kinaesthetic perceptions of the experimental and control groups at the significance level  $\alpha \geq 0.05$  in favor of the post measurement.
- There are statistically significant differences at the significance level  $\alpha \geq 0.05$  between the experimental and control groups in the two-dimensional measures of the effect of listening to the Holy Qur'an on visual and non-visual kinaesthetic perception.

The following definitions of terminology are used:

- The Holy Qur'an is Allah Almighty's Book and His Words, which He revealed to the Prophet Muhammad—may Allah's prayers and peace be upon him—and which He ensures will be preserved until the Day of Judgment. Allah's morals should be recited, memorized, and imitated (Zureikat, 2020).

- Kinetic perception is the ability of a human to accept external and internal stimuli through the senses and transmit them to specific brain areas, which then interpret and send signals to the motor system to respond to them (Rhodes, 2009).

### Research methodology and procedures

#### Research methodology

The researchers take the experimental approach because of the nature and objectives of the study.

#### Research community and sample

The research sample consists of 260 players chosen at random from a population of 325 players from the Pro GYM in Doha, Qatar. The sample is divided into two groups: the experimental group of 130 individuals and the control group of 130. The characteristics of the sample are shown in Table 1, based on the research variables.

Table 1. Description of the sample according to the research variables ( $n = 260$ ).

Variable	Unit	Group	Lowest value	Highest value	Arithmetic mean	Standard deviation	Skewness
Age	Years	Experimental group	21	30	25.17	3.49	0.04
		Control group	20	31	25.14	3.67	0.04
Grip strength	Kilograms	Experimental group	23.9	45.1	33.57	6.54	0.20
		Control group	24.3	43.7	31.80	5.89	0.03

Table 1 showed the arithmetic mean of the experimental and control age variables, respectively, are 25.17 and 25.14 years, with standard deviations of 3.49 and 3.67, and a skew coefficient of 0.04. The arithmetic mean values of the grip strength variable are 33.57 and 31.8, as shown in Table 1. The torsion coefficients are 0.20 and 0.03. This indicates

that the people in the research sample are homogeneous and subject to a moderate normal distribution, with skewness coefficient values ranging between  $\pm 3$ . To ensure that the members of the experimental and control groups are equal in terms of pre-measurement grip strength factors, a t-test is used for two independent groups, as shown in Table 2.

Table 2. Arithmetic means and deviations for grip strength and significance of differences between the experimental and control groups ( $n = 260$ )

Variable	Units	Experimental group (n=40)		Control group (n=40)		T-value	Significance level
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation		
Grip strength	Kilograms	33.57	6.54	33.48	5.65	0.06	0.94

\* Statistically significant at the significance level  $\alpha \leq 0.05$ .

The results given in Table 2 show no statistically significant differences at the significance level  $\alpha \leq 0.05$  between the tribal and remote measurements of the grip strength variable before listening to the Holy Qur'an between the experimental and control groups. These results confirm the parity between the groups before applying for the program.

### Research tools and measurement procedures

#### Research tool

Grip strength is measured with a dynamometer. The correct grip on the dynamometer in terms of the distribution of the fingers and the distance between the thumb and fingers concerning the body of the measuring device is set according to Rand et al. (2007) and Tang et al. (2014), who indicate that the angle must be perpendicular to the surface of the device to provide a lower margin of error and reduce the possibility that the fingers bump into the device or push it. They confirm that the availability of predictive information in non-visual kinaesthetic perception depends on the motor memory for visual perception and sensory memory for movement perception calculations, which they incorporate into the grasp of the upcoming (non-visual) movement.

After clarifying the procedures for implementation, the player puts dry powder on their palm and presses the device with the maximum force possible, recording the result of the performance. The attempt is repeated after a twenty-minute interval, and they are asked to show their work (25%, 50%, or 75% of strength).

#### Measurement method

The players' strength is measured four times with visual perception (first at maximum power 100%, then at 25%, 50%, and finally 75%). Then a cover is placed over their eyes, and the previous procedure is repeated to measure their non-visual perception. The players are notified of their maximum strength, and the same test is repeated after the program is completed. The percentage of error is calculated for 25%, 50%, and 75% of maximum strength.

The readability of the study was calculated, a sample of 70 players outside the research sample, the stability coefficient is determined for each of the research variables, and the scale as a whole to decide on the internal consistency using Cronbach's alpha.

Table 3. Scientific parameters of the research tool

Number	Field	Cronbach's alpha coefficient of stability
1	Grip strength	0.91

The research tool's dependability coefficient is 0.91, satisfying the study objectives.

The researchers employed the following tools to acquire data, all of which are incredibly dependable and trustworthy:

Grip strength (kg) was measured using Dynamometer Main Takei (TK200), made in Japan.

### Analysis of results

Firstly, the findings support the hypothesis that there are statistically significant effects of listening to the Holy Qur'an on visual and non-visual kinaesthetic perception between the experimental and control groups at the level of

significance  $\alpha \leq 0.05$ , in favor of the experimental group.

The paired samples t-tests of the hypothesis validity are shown in Tables 4 and 5.

Table 4. Arithmetic mean, standard deviation, and t-test findings for variations in visual and non-visual kinaesthetic perception pre- and post-measures in the experimental group ( $n = 130$ )

Measurement	Visual kinaesthetic perception					
	25%		50%		75%	
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation
Before hearing the Holy Qur'an	19.73	3.67	13.44	3.18	11.62	4.18
After hearing the Holy Qur'an	8.87	1.23	12.17	1.63	5.51	2.57
Calculated t-value of the error ratio	17.74		2.24		7.94	
Significance level	*0.000		*0.006		*0.000	
measurement	Non-visual kinaesthetic perception					
	25%		50%		75%	
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation
Before hearing the Holy Qur'an	11.91	3.69	14.19	3.77	12.12	2.75
After hearing the Holy Qur'an	3.92	1.86	12.65	2.69	5.74	5.03
Calculated t-value of the error ratio	12.19		2.09		7.03	
Significance level	*0.000		*0.039		*0.000	

\*Statistically significant at significance level  $\alpha \leq 0.05$ .

Table 5. Arithmetic mean, standard deviation, and t-test findings for variations in visual and non-visual kinaesthetic perceptions pre- and post-measures in the control group ( $n = 130$ )

Measurement	Visual kinaesthetic perception					
	25%		50%		75%	
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation
Without listening to the Holy Qur'an (before)	17.99	2.11	18.04	3.26	21.55	4.41
Without listening to the Holy Qur'an (after)	14.10	2.03	14.60	2.82	9.85	3.38
Calculated t-value	7.73		5.03		0.10	
Significance level	*0.000		*0.000		*0.000	
Measurement	Non-visual kinaesthetic perception					
	25%		50%		75%	
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation

Without listening to the Holy Qur'an (before)	18.62	2.11	27.92	4.70	4.41	18.90
Without listening to the Holy Qur'an (after)	13.26	2.03	6.98	1.47597	3.38	8.91
Calculated t-value	11.55		26.86		11.37	
Significance level	*0.000		*0.000		*0.000	

\*Statistically significant at the significance level  $\alpha \leq 0.05$ .

The results are given in Tables 4 and 5 show statistically significant differences in the visual and non-visual kinaesthetic perceptions of the strength needed (25%, 50%, 75%) between the two measurements before and after, at the level of significance  $\alpha \leq 0.05$ . The dimensional values of the experimental and control group members, with the averages of the dimensional error rate of the two groups being smaller than the averages of the tribal error rate, indicate that the hypothesis is accepted. This finding suggests that the physical fitness program had a significant and favorable impact on the two samples, whether listening to the Holy Qur'an or not.

The researchers attributes the positive result of listening to the Holy Qur'an to the variables visual and non-visual kinaesthetic perception in the experimental group, which may be the reason for the improved psychological state and decrease in the intensity of stress and anxiety, which helped increase the level of concentration and the efficiency of the central nervous system. The integration of listening to the Holy Qur'an and participating in athletic activities improved nerve signal transmission, which had a beneficial impact on neural regulation and enhanced the level of awareness of visual and non-visual kinaesthetic sense.

According to Wilmore and Costill (2015), the practice of athletic exercise increases the effectiveness of the central and peripheral nervous systems' action, which improves motor control by increasing the speed and strength of nerve signals, leading to better control of the motor unit. The findings of this study corroborate those of Zureikat (2020) and Chang et al. (2008), both of which find that listening to the Holy Qur'an delays fatigue, removes negative feelings, and induces relaxation. The findings also corroborate Shekha and Othman (2013). They find that listening to the Holy Qur'an has a specific effect on the human heart, affecting some of the hormones responsible for relaxation.

The second hypothesis states that there are statistically significant differences in the dimensional measurement of the effect of listening to the Holy Qur'an on visual and non-visual kinaesthetic perception between the experimental and control groups at the significance level  $\alpha \leq 0.05$  in favor of the experimental group. Therefore, an independent samples t-test is performed for the two groups to test the validity of this hypothesis, as shown in Table 6.

Table 6. *The t-test for two independent groups indicates the differences in the post-measurement of visual and non-visual kinaesthetic perception between the experimental and control groups (n = 130).*

Measurement	Visual kinaesthetic perception					
	25%		50%		75%	
	Rate of arithmetic mean error	Standard deviation	Rate of arithmetic mean error	Standard deviation	Rate of arithmetic mean error	Standard deviation
Experimental, after listening to the Holy Qur'an	8.87	1.23	12.17	1.63	5.51	4.13
Control, without	17.99	2.11	18.04	3.26	9.85	3.38

listening to the Holy Qur'an						
Calculated t-value	-23.61		-10.17		-5.14	
Significance level	*0.000		*0.000		*0.000	
<b>Measurement</b>	<b>Non-visual kinaesthetic perception</b>					
	<b>25%</b>		<b>50%</b>		<b>75%</b>	
	<b>Arithmetic mean</b>	<b>Standard deviation</b>	<b>Arithmetic mean</b>	<b>Standard deviation</b>	<b>Arithmetic mean</b>	<b>Standard deviation</b>
Experimental, after listening to the Holy Qur'an	1.86	3.92	12.65	2.69	5.74	5.03
Control, without listening to the Holy Qur'an	2.11	18.62	27.92	4.70	8.91	3.38
Calculated t-value	-32.98		-17.81		-3.30	
Significance level	*0.000		*0.000		*0.000	

\*Statistically significant at the significance level  $\alpha \leq 0.05$ .

It is clear from the results given in Table 6 that there are statistically significant differences, at the significance level  $\alpha \leq 0.05$ , in the dimensional measurements of visual and non-visual kinaesthetic perception between members of the experimental and control groups, in favor of the experimental group. The average error rates for practical group members on the visual kinaesthetic perception of grip strength at 25%, 50%, and 75% are, respectively, 5.51, 12.17, and 8.87, and for the non-visual kinaesthetic perception 5.74, 12.65, and 3.92. The average error rates for the control group for visual kinaesthetic perception or grip strength at 25%, 50%, and 75% are, respectively, 9.85, 18.04, and 17.99, and for non-visual kinaesthetic perception 8.91, 27.92, and 16.62. Therefore the hypothesis is accepted.

These findings show that the experimental sample who listened to the Holy Qur'an had a lower average mistake rate on visual and non-visual kinaesthetic perception than the control group. The researchers attributes this positive result of listening to the Holy Qur'an to the variables visual and non-visual kinaesthetic perception among the experimental group members, as well as the fact that listening to the Holy Qur'an directly affects the essential organs in the human body, hearing, and sight. Surah Al-Mulk, verse (23) says: {It is He Who has created you (and made you grow), and made for you the faculties of hearing, seeing,

feeling and understanding: little thanks it is ye give}. The researchers believes that integrating the senses of hearing, sight, and hearts leads to positive effects in the human body, as hearing and sight are aware of external stimuli transmitted to the central nervous system, where they are analyzed and translated into movement or emotion. Listening to the Holy Qur'an has a magical effect on the senses that leads to an improvement in their function, which is reflected in the work of the central and peripheral nervous system and an increase in the level of perception of the visual and non-visual senses.

Sight is the most significant part of the balance. Maciaszek et al. (2006) say that sustaining equilibrium in the human body is exceedingly complex, as it involves the integration of the senses, the central nervous system, and muscle strength. The balancing method is located in the inner ear and transmits information to the brain (Young et al., 2018). The balance system, also known as the vestibular system, guides a person through their surroundings. It operates at high speed, and if the brain receives input from only one side, the system becomes confused, resulting in a loss of balance.

The results of this research agree with Zureikat (2020), who shows that listening to the Holy Qur'an positively affects the psychological and physiological aspects of the listener; Nasisi et al. (2017), who offer an improvement in the



physiological variables (blood pressure, heart rate), and an increase in awareness and cognition among their research sample; Balong and Jember (2017), whose results indicate a decrease in heart rate and an improvement in mood; and Ghang et al. (2011), whose results suggest that the recitation of the Qur'an leads to great relaxation for the listener.

### Conclusions and Recommendations

In light of the research objectives and results, the researchers concludes that listening to the Holy Qur'an has a positive effect on the degree of visual and non-visual kinaesthetic perception of grip strength.

Listening to the Noble Qur'an positively affects the psychological and physiological aspects of the listeners, as it delays the appearance of fatigue, removes negative feelings and increases the feeling of relaxation, accordingly listening to the Qur'an has a positive effect on improving the degree of sensorimotor, visual and non-visual perception, which are the most important organs of the human body, hearing and sight due to their impact on human perception of external stimuli and their translation through transmission and analysis through the nervous and peripheral system into movements, emotions and improving their functional work, which helps maintain On the balance in the human body, which is reflected in the muscular strength in the body.

The researchers recommend listening to the Holy Qur'an daily, without interruption, for players before and after training and competition to improve the physiological and psychological condition and reduce the time for recovery. Similar studies should be conducted to ascertain the effects of listening to the Holy Qur'an on other physiological variables and categories of players.

### Reference

- [1] The Holy Qur'an: Surah Muhammad, verse (24); Surah An-Nisa, verse (82); Surah Al-Jinn, verse (1) (2); Surah Al Imran, verse (110); Surah Al-Isra, verse (82); Surah Al-Mulk, verse (82) (23); Surah Al-Dharyyat, verse (21); Surah Al-Anfal, verse (2-4); Surah Saad, verse (29).
- [2] Ansari, A., Negahban, T., Saiadi, A. R. and Aghamohamad, P. (2005). The effect of Koran reciting on depressed patients in the psychiatry department of Moradi hospital in Rafsanjan, *Scientific Journal of Kurdistan University of Medical Sciences*, 10(2), 42-8.
- [3] Elfawal, S. and Mona, R. (2016). The effect of Qur'an therapy on sedative requirements and hemodynamic parameters in patients subjected to spinal anesthesia, *Global Journal of Anesthesia & Pain Medicine*, 1(2), 1-4.
- [4] Eskandari, N., Keshavars, M., Ashayeri, H., Jahdi, F. and Hosseini, A. F. (2012). Qur'an recitation: Short-term effects and related factors in preterm newborns, *Research Journal of Medical Sciences*, 6(3), 148-153.
- [5] Firmanto, A. (2011). Implementasi Principal Component Analysis Dan Backpropagation Neural Network Dalam Pengklasifikasian Terjemahan Ayat-Ayat Ilmu Pengetahuan Dalam Alquran. Tugas Akhir. Telkom University.
- [6] Julianto, V. and Etsem, M. B. (2011). The Effect of Reciting Holy Qur'an toward Short-term Memory Ability Analysed through the Changing Brain Wave. *Jurnal Psikologi Fakultas Psikologi Universitas Gajah Mada*.
- [7] Kilani, H., Too, D. and Adrian, M. J. (1987). Visual perception of biomechanical characteristics of walking, jumping, and landing. *ISBS-Conference Proceedings Archive*.
- [8] Maciaszek, J., Osinski, W., Szeklicki, R., Salomon, A. and Stemplewski, R. (2006). Body balance parameters are established with closed and open eyes in young and older men, *Biology of Sport*, 23(2), 185.
- [9] McNay, I. M. (2010). The relationship of some variables of kinaesthetic perception to achievement among table tennis players in Jordan, an unpublished Ph.D. thesis, College of Physical Education, University of Jordan, Amman, Jordan.
- [10] Nasrallah, M. and Al-Kilani, H. (2018). Kinetic perception (visual - non-visual) of grip strength among police, military, and security sciences students. *Journal of*

- Jordan University Studies, 45, Amman, Jordan.
- [11] Ovaries, S. Y. (2020). Kinetic perception and its relationship to physical and motor abilities among female leaders of His Highness Prince Ali Football Centres in the southern governorates, an unpublished master's thesis, College of Physical Education, Mutah University, Jordan.
- [12] Putra, P. S., Gumilar, R., Kusuma, S. R., Purnomo, H. and Basumerda, C. (2018). The effect of Quran murottal's audio on short term memory. Islamic University of Indonesia , Jalan Kaliurang Km. 14,5 Sleman, Yogyakarta, Indonesia MATEC Web of Conferences 154, 01060
- [13] Rand, M. K., Lemay, M., Squire, L. M., Shimansky, Y. P. and Stelmach, G. E. (2007). Role of vision in aperture closure control during reach-to-grasp movements, *Experimental Brain Research*, 181(3), 447-460.
- [14] Rhodes, B. (2009). Learning and Production of Movement, Behavioural Physiological and Modelling Perspectives, *Human Movement Science*, 23.
- [15] Tang, R., Whitwell, R. L. and Goodale, M. A. (2014). Explicit knowledge about the availability of visual feedback affects grasping with the left but not the right hand. *Experimental Brain Research*, 232(1), 293-302.
- [16] Wilmore, J. H., and Costill, D. L. (2015). *Physiology of sport and exercise*, Champaign: Human Kinetics.
- [17] Younes, A. I. (2017). Sports physical activity based on kinetic games and its impact on improving kinaesthetic perception in children - an experimental study on first-grade students. *Journal of Excellence for Sports Sciences*, 2, Mohamed Khider University of Biskra.
- [18] Young, A. S., Rosengren, S. M. and Welgampola, M. S. (2018). Disorders of the inner-ear balance organs and their pathways, *Handbook of Clinical Neurology*, 159, 385-401.
- [19] Zureikat, A. (2020). The effect of listening to the Holy Qur'an on some physiological and psychological variables among the players of the national boxing and athletics team in Jordan. *International Journal of Psychological and Sports Sciences*, 1, 154-169.