

Does the Heart have a Control on the Mind and Emotions?

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Abstract

During centuries, human beings have been raising a key question on the exact role of the heart: is it concerned with the mind or is it only a blood pump? And in the latter option, is the brain the main part of the mind?

According to the holy Quran, the Heart has an important role in mind, thoughts and wisdom (*See Alaaraf and Alhadj chapters*). Moreover, during the ancient civilizations it was also admitted that the heart was strongly linked with feelings and thoughts.

However, in the last centuries, the unique definition of the heart has become only medical and limited to the function of blood pumping.

Fortunately, recent research works in the field of neuro-cardiology have led to very interesting discoveries by showing the great role of the heart in mind and feelings. These discoveries, which have completely changed the definition and role of the heart, represent a real scientific revolution.

1. What is the main source of the mind and emotions: the Heart, the Brain or both?

The famous question, concerning the actual location of the mind center or the feeling center, has not been solved yet. In the holy Quran, the heart plays a key role in human being behavior, while in ancient medical science it was supposed to be only the brain. So, is it the heart, the brain or something else?

In this context, *Rollin McCRaty*, Director of the HeartMath research center, said: <<Most of us have been taught in school that the heart is constantly responding to “orders” sent by the brain in the form of neural signals. However, it is not as commonly known that the heart actually sends more signals to the brain than the brain sends to the heart! Moreover, these heart signals have a significant effect on brain function – influencing emotional processing as well as higher cognitive faculties such as attention, perception, memory, and problem-solving. In other words, not only does the heart respond to the

brain, but the brain continuously responds to the heart>> said the HeartMath Institute Research Director (Heartmath, 2022).

Consequently, it appears that the ancient medical definition of the heart, supposed to be a simple blood pump, is misleading. In fact, several research experiments showed that the heart is also responsible for many emotional functions.

In fact, for many years scientists studied heart from the physiological side and they considered it only a blood pumping machine, but starting from the twenty one century and because of the high development in heart transplantation and artificial heart surgeries, researchers started to notice a strange phenomenon which is a change in the patient's psychological status after heart transplantation, these psychological changes are very deep to the extent that after changing the old heart these changes may affect his personal believes (Al-Kaheel, 2022)

Moreover, according to recent research works, in the new field of neurocardiology, scientists have discovered that the heart possesses its own nervous system (Armour, 2007): a nervous network so sophisticated as to earn the description of an intelligent heart-brain. With mover than 40,000 neurons, this heart-brain gives the heart the ability to sense, process information, make decisions, and even to show a type of learning or memory.

Again, literature in this research field has shown that the heart communicates with the brain in several ways: through nerve impulses, via hormones, through pulse waves, and through electromagnetic fields (McCraty, 2015).

According to Fredrickson, the pattern of the heart's rhythmic activity and the corresponding pattern of cardiac afferent neural signals transmitted to the brain can facilitate or inhibit higher cognitive functions. In other words, during emotional stress, when the heart's rhythm is irregular or incoherent, this discordance communicates some signals to the brain that result in the inhibition of higher brain processes related to perception, reasoning, and creativity (Fredrickson, 2005).

Also, according to Fredrickson, this fact explains why we often cannot think clearly, make careless mistakes, and have little access to our creativity under stress situation. Hence, these negative emotional states tend to produce a rigid and limited patterns of thought and action by reducing the possibility to make wise judgments (Fredrickson, 2005).

Biochemically speaking, the heart manufactures and secretes oxytocin hormone, which is involved in cognition, tolerance, trust, etc. For instance, some previous research works reported that the rat heart is a site of oxytocin synthesis and release, since this hormone was detected in the four chambers of the rat heart (Jankowski, 1998).

Moreover, the heart produces and secretes several other hormones, such as atrial peptide or atrial natriuretic peptide, which inhibits the release of stress hormones and influences our motivation and behaviour (McCraty, 2009).

One of the important conclusions reported by researchers in this field (HeartMath LLC. www.heartmath.com) is as follows: "Although there is much yet to be understood, it appears that the age-old associations of the heart with thought, feeling, and insight may indeed have a basis in science".

2. Heart and Brain citation in the Quran

The term “قلب”, meaning heart in English, in its singular or plural form, was cited 132 times in the holy Quran, while the brain was not cited in the holy Quran (to the knowledge of the author) except the term head in its singular or plural form.

Now, when one reads the holy Quran, we strangely discover that the heart has an important role in feeling and wisdom, as one can see in the following verses:

a. First verse (chapter 7, verse 179):

وَلَقَدْ ذَرَأْنَا لِجَهَنَّمَ كَثِيرًا مِّنَ الْجِنِّ وَالْإِنسِ لَهُمْ قُلُوبٌ لَا يَفْقَهُونَ بِهَا... {الأعراف: من الآية 179}

Translation (chapter 7, verse 179): [Certainly We have winnowed out for hell many of the jinn and humans: **they have hearts with which they do not understand...**].

b. Second verse (chapter 22, verse 46):

أَفَلَمْ يَسِيرُوا فِي الْأَرْضِ فَتَكُونَ لَهُمْ قُلُوبٌ يَعْقِلُونَ بِهَا أَوْ آذَانٌ يَسْمَعُونَ بِهَا فَإِنَّهَا لَا تَعْمَى الْأَبْصَارُ وَلَكِن تَعْمَى الْقُلُوبُ الَّتِي فِي الصُّدُورِ. {الحج: 46}

Translation (chapter 22, verse 46): [Have they not travelled through the land so that **they may have hearts by which they may exercise their reason**, or ears by which they may hear? Indeed, it is not the eyes that turn blind, but **it is the hearts in the breasts that turn blind!**].

If we observe the first verse, we notice an important phrase: “**they have hearts with which they do not understand**”, which involves that the heart plays an important role in faith.

Now, what is meant by Heart in the holy Quran? Is it only an abstract concept without any physical existence (i.e., representing the mind)? Or is it the real heart organ that is concerned with the cardiovascular system?

To respond to that question, let us observe the second verse (22:46). By reading the first sentence of this verse, we notice an important sentence: “**they may have hearts by which they may exercise their reason**”, which shows that the heart is a key point of wisdom. However, by reading the second part of the verse, we find the following sentence: “**it is the hearts in the breasts that turn blind**”, which shows that the meaning of the term “heart” is probably the well-known “heart organ” that is inside the breast. This Quranic clarification gives an interesting response to the previous question, showing that the mind and belief are linked to the heart.

Now, by comparing the Quran knowledge on the heart and the new neuro-cardiological discoveries, we observe a great compatibility. Hence, once again, recent scientific discoveries come together strengthening the knowledge embedded in the Quran and which was sent down 14 centuries before. Probably, we will continue to discover more and more amazing concordances between the Quran and future research discoveries.

3. Conclusion

Even though the relationship between the heart, brain and the mind is still an enigma, which is not completely solved or even understood, it appears that the Quran sheds light on a lot of questions that were mistakenly answered by some ancient medical scientists.

The recent research works in neurocardiology have led to very interesting results reinforcing the Quran theory by showing the important role of the heart in mind and feelings. This discovery, which has changed the interpretation of the heart role, represents a real scientific revolution.

That is, it appears that the new scientific discovery about the important role of the heart in feelings, wisdom and reasoning are confirming several Quran verses, which give to the heart a key importance in wisdom and belief.

So, once again, these scientific results show that this ancient book, dating from the 7th century, could not be a human invention at all.

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