Investigation of Relative Brain Power Changes Across Brainwave Frequencies in Faradarmangars Under the Influence of the Faradarmani Consciousness Field

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Abstract

The Faradarmani Consciousness Field (FCF) is described as a non-physical entity, with its effect initiated through a brief mental attention by a human. It is hypothesized that information transmitted via this field can lead to alterations in brain activity. In this study, we investigated how exposure to the Faradarmani Consciousness Field influences the relative power distribution of EEG brainwave frequencies during both task performance (with Faradarmani) and resting states (without announcing Faradarmani). The results revealed both increases (in delta, alpha 1, beta 2, beta 3, and high beta waves) and decreases (in theta, alpha 2, and beta 1 waves) in relative power under the influence of the Faradarmani Consciousness Field.

Keywords: Relative Power, Absolute Power, Brain Waves, Faradarmani Consciousness Field, Faradarmangar

Introduction

Brainwaves, or neural oscillations, represent the electrical activity of the brain and can be categorized into different frequency bands, Delta (0.5–4 Hz), Theta (4–7 Hz), Alpha (8–12 Hz), Beta (13–30 Hz), and Gamma (30–80 Hz), each associated with distinct cognitive and physiological states (Attar, 2022). The EEG analysis provides insights into both absolute power, which reflects the overall energy in each band, and relative power, which shows the proportional contribution of each band to the total power (Govindan et al., 2017). These measures are widely used to evaluate cognitive processes, mental states, and the effects of interventions such as meditation, neurofeedback, or consciousness-related practices (Jeong, 2004; Tosti et al., 2024; Treves et al., 2024).

According to Taheri's theory, various Consciousness Fields with different functions exist. These fields, which are subsets of the Cosmic Consciousness Network, can be utilized through the human mind. One of these fields is called Faradarmani. To initiate its influence, a brief and spontaneous moment of attention is sufficient. It is hypothesized that upon this connection, information is transmitted from the field and, after being processed by the mind, its effects become evident at the level of the brain as the receiver (Taheri, 2013). In this study, a population of Faradarmangars, or trained individuals, was selected, and the brain's relative power across different frequency bands was assessed during phases without the Consciousness Field (rest) and with the Consciousness Field (task). Comparing changes over a period of time allows for the evaluation of this non-material and non-energy field's effects at the brain level.

Method

Forty-four healthy adult participants (mean age: 41 ± 7 years), none of whom had used any neurological or psychiatric medications in the six months prior to the test day, were included in the study group. Of these participants, 41% were male (n=18) and 59% were female (n=26). The Faradarmani Consciousness Field treatment was initiated by the participants at a predetermined time (upon hearing a soft beep sound from the computer system located on the desk in front of the seating area). In this study, a task referred to the action in which Faradarmangars personally initiated a connection with the Cosmic Consciousness Network. The study was approved by the Ethics Committee of Iran University of Medical Sciences (Approval ID: IR.IUMS.REC.1402.940).

The time intervals were defined as follows:

1. Rest 1: In this stage, the trained participants, referred to as Faradarmangars, were asked not to engage any type of T-Consciousness Fields and to remain simply relaxed and tension-free. The aim of this stage was to collect baseline data for each individual as a control before applying the FCF, which is useful for creating a collective control dataset.

2. Task: At the beginning of Rest 1, upon hearing the sound of a horn—predefined before the experiment—the participants initiated their connection with the FCF, marking the beginning of Task 1. In fact, the task involved a continuous connection for 10 minutes. During this stage, data was continuously collected from the participants' brains. In the analysis phase, the data was examined both as a whole and in three equal, consecutive intervals, referred to as Task 1, Task 2, and Task 3. The purpose of this segmented analysis was to evaluate how the FCF affects the brain over time.

3. Rest 2: Another three-minute stage followed, during which the participants disengaged from their connection with the FCF upon hearing the second horn sound, as defined prior to the experiment. Similar to Rest 1, they remained relaxed and tension-free without using the FCF.

EEG data acquisition

The participants' brain electrical activity was recorded at the National Brain Mapping Laboratory (NBML) of Iran using the g.tec g.HIamp system (g.tec, Graz, Austria) with a 128-channel cap equipped with passive Ag/AgCl electrodes. The electrodes were evenly distributed across the scalp based on the international 10/20 system for electrode placement. The ground electrode was placed on the forehead, and the online reference was positioned on the right earlobe. Data was recorded with a sampling frequency of 512 Hz, and impedance was maintained below 10 kΩ.

Data Processing

The EEG data were preprocessed using the EEGLAB (Delorme and Makeig, 2004) and FieldTrip (Oostenveld et al., 2011) toolboxes for MATLAB (MATLAB R2016a, The MathWorks, Inc., Natick, MA, USA). High-pass filters (with a cutoff frequency of 2 Hz) and band-stop filters (to remove 50 Hz line noise and its harmonic frequencies) were applied to the raw data. The data were re-referenced to the common average reference, and artifacts were manually rejected through visual inspection using EEGLAB. Independent Component Analysis (ICA) was performed to remove artifact-related components (e.g., head and eye movements, heartbeat, and muscle tone). The preprocessed data, containing minimal artifacts, were segmented into different rest and task phases according to the study design. FieldTrip was then used for further EEG data processing.

Frequency domain analysis is performed using the Fast Fourier Transform (FFT) algorithm (with a resolution of 0.125 Hz) to calculate the absolute power density (μV²/Hz). The absolute power of a band is the integral of all power values within its frequency range. The mean (overall) frequency (Hz) is also obtained from the entire analyzed spectrum (1 to 30 Hz) (Yuvaraj et al., 2024).

Data analysis

Descriptive statistical analysis, frequency distribution analysis, and chart plotting were performed using GraphPad software version 9. Entropy calculations were carried out using SPSS software version 28. Differences between time-based populations were analyzed using two-way ANOVA. A p-value threshold of 0.05 was considered for significance; any change with a p-value less than this threshold was regarded as statistically significant, while changes above this value were considered non-significant (ns).

Table 1. Relative power across different brainwave frequency bands and brain regions in the study population. R1: Rest 1, T1: Task 1, T2: Task 2, T3: Task 3, R2: Rest 2.

Power	Abs. Power					Relative Power				
Time Frame	1: R1	2: T1	3: T2	4: T3	5: R2	1: R1	2: T1	3: T2	4: T3	5: R2
All	49.42	38.28	47.51	48.37	44.21	-	-	-	-	-
Delta	8.168	7.319	9.147	9.846	7.249	0.177956	0.208513	0.207967	0.220326	0.179299
Tetha	13.23	9.069	11.7	12.26	9.338	0.288242	0.258369	0.266012	0.274345	0.230969
Alpha1	7.743	6.027	8.092	8.003	7.249	0.168697	0.171705	0.18398	0.179085	0.179299
Alpha2	6.82	4.434	5.761	5.354	6.63	0.148587	0.126321	0.130982	0.119808	0.163988
Beta1	3.485	2.433	3.118	3.072	3.481	0.075928	0.069314	0.070891	0.068743	0.0861
Beta2	1.645	1.404	1.623	1.591	1.65	0.03584	0.039999	0.036901	0.035602	0.040812
Beta 3	2.555	2.271	2.444	2.476	2.584	0.055666	0.064699	0.055567	0.055406	0.063913
High B	1.019	0.9563	0.9477	0.9474	1.017	0.022201	0.027244	0.021547	0.0212	0.025155
Gamma1	0.6856	0.6552	0.641	0.6326	0.6744	0.014937	0.018666	0.014574	0.014156	0.016681
Gamma2	0.5483	0.5325	0.5093	0.5063	0.5573	0.011946	0.015171	0.011579	0.01133	0.013784
Sum	45.8989	35.101	43.983	44.6883	40.4297					

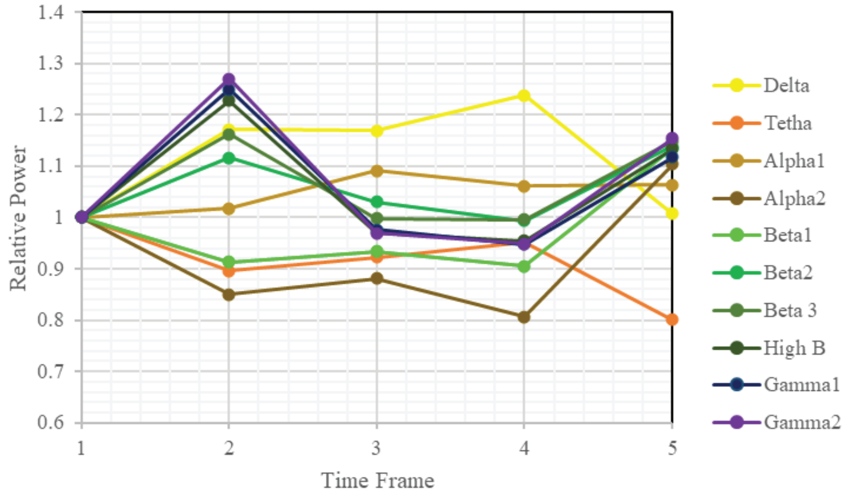

Figure 1. Examination of relative brain power trends in Faradarmangars across different frequency bands and phases of the study compared to the control (Rest 1). 1: Rest 1; 2: Task 1; 3: Task 2; 4: Task 3; 5: Rest 2.

Results and Conclusion

In Table 1, in addition to presenting absolute power, the calculated values of relative power across different brainwave frequency bands are also shown. Additionally, changes in the relative power trends across different frequency bands compared to Rest 1 are presented in Figure 1.

As shown in Table 1 and Figure 1, with the initiation of the connection (Task 1), 7 out of 10 frequency bands exhibit an increase in relative power. The three waves that display a different pattern during this phase are theta (from the low-frequency range), alpha 2, and beta 1 (from the mid-frequency range). The greatest increase in relative power is observed in the high-frequency waves (high beta, gamma 1, and gamma 2). This observation suggests that the application of Faradarmani Consciousness Field did not affect uniformly brain electrical activity.

As mentioned above, under the influence of the Faradarmani Consciousness Field, a reduction in relative theta power was observed during the task condition. According to previous findings, theta power shows context-dependent relationships with cognitive function. While increased theta activity during cognitive tasks is typically associated with enhanced performance, elevated theta at rest has been linked to lower cognitive abilities, particularly in children and adolescents (Tan et al., 2024). In the current study, despite the task condition being associated with minimal cognitive effort (i.e., a short attention to the field without active engagement), a reduction in theta power was observed under the influence of the Faradarmani Consciousness Field. This reduction might reflect a distinct modulation of brain dynamics, possibly indicating increased clarity or reduced mind-wandering, rather than conventional task-related theta increases.

It is worth noting that, based on this approach, information transmitted from the T-Consciousness Field is first received by the mind, and consequently, observable changes in brain activity may emerge. The observed reduction in relative power in the alpha 2 and beta 1 bands under the influence of the Faradarmani Consciousness Field may reflect this internal reception and subtle processing of information. This interpretation aligns with findings linking decreases in alpha/beta power to enhanced information processing (Griffiths et al., 2019), suggesting that the brain may receive and process information via Faradarmani even in the absence of active cognitive engagement.

After the Task 1 phase, the brainwaves that had shown an increase in relative power exhibited three different patterns:

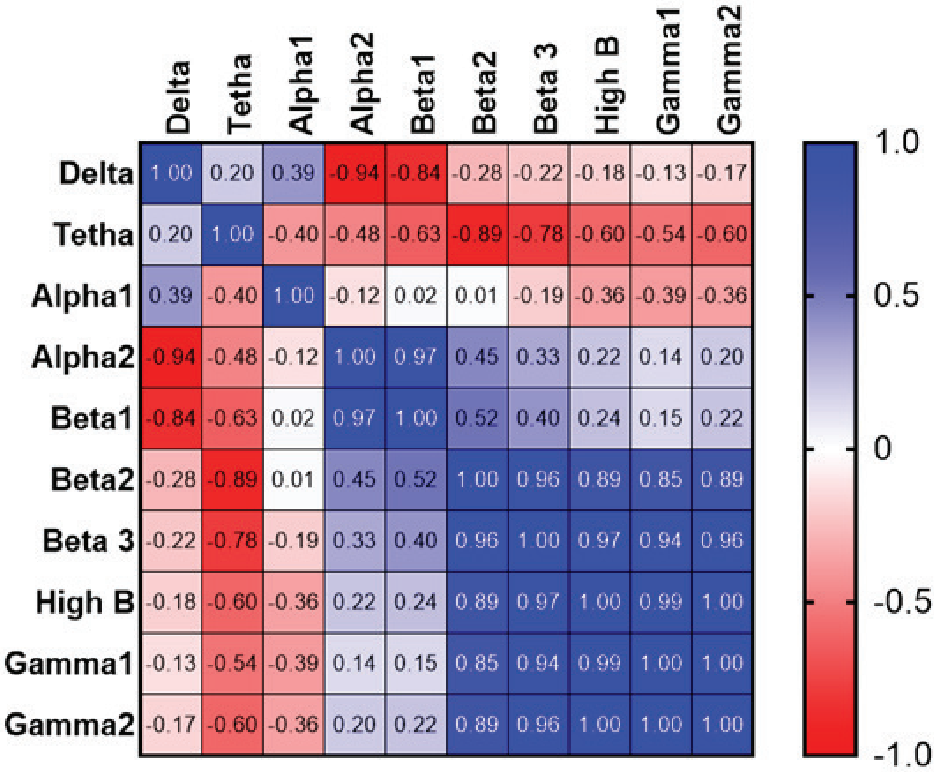

Figure 2. Pearson correlation analysis of different frequency bands, along with the correlation coefficient values across all time points of this study.

First pattern: Low-frequency waves (delta and alpha 1) showed higher relative power compared to their baseline (rest 1) levels. For the lowest-frequency wave (theta), this increasing trend continued until the end of Task 3. After that, in the Rest 2 phase, the relative power approached the baseline state, and in the case of delta, this return to the Rest 1 level was almost complete; in other words, the relative power of delta in the initial and final resting states was exactly the same.

Second pattern: The mid-frequency waves (beta 2 and 3) return to their baseline relative power levels (Rest 1) during Tasks 2 and 3, and then in Rest 2, they once again exhibit a pattern similar to Task 1, showing an increase in relative power. Alpha 2 and Beta 1, which are considered borderline waves between the slow and mid-range regions, exhibit behavior similar to the other two mid-range waves, with a difference observed in Task 3.

Third pattern: The high-frequency waves (high beta and gamma 1 and 2), after Task 1, show a return and reduction in relative power during Task 2, followed by a continued decrease in Task 3. In Rest 2, similar to the response in the second pattern, they exhibit an increase in relative power.

Among the waves that exhibited a decrease in relative power during Task 1, alpha 2 and beta 1 followed a similar trend and, by Rest 2, reached the range of other waves. The only wave that consistently showed a reduced relative power throughout all stages of this study, from the beginning of the tasks to the end, was the theta wave.

Figure 2 presents the Pearson correlation coefficients between the trends of relative power changes across different frequency bands. As shown in this figure, from the beta 2 range onward, the trends in relative power changes exhibit high correlations, indicating a consistent pattern of variation among these faster waves. The alpha 2 and beta 1 bands show stronger alignment with the higher-frequency bands that follow them. In contrast, the low-frequency waves, delta, theta, and alpha 1, follow distinctly different patterns compared to the others, with theta displaying the most divergent behavior.

In summary, two dominant patterns of change in relative power can be identified: an overall increase across a variety of brainwaves (delta, alpha 1, beta 2 and 3, high beta, gamma 1 and 2), and a general decrease (theta, alpha 2, beta 1). The most prominent relative power changes were observed in the slow waves. Specifically, delta showed a marked increase in relative power throughout the task phases, followed by a return to baseline comparable to the control in Rest 2. In contrast, the next slow wave, theta, demonstrated an opposite trend, with a continuous decrease in relative power from the beginning of Task 1 to the end of Rest 2.

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References

Attar, E. T. (2022). Review of electroencephalography signals approaches for mental stress assessment. *Neurosciences (Riyadh, Saudi Arabia)*, *27*(4), 209–215. https://doi.org/10.17712/nsj.2022.4.20220025

Delorme, A., & Makeig, S. (2004). EEGLAB: an open source toolbox for analysis of single-trial EEG dynamics including independent component analysis. *Journal of neuroscience methods*, *134*(1), 9–21. https://doi.org/10.1016/j.jneumeth.2003.10.009

Govindan, R. B., Massaro, A., Vezina, G., Tsuchida, T., Cristante, C., & du Plessis, A. (2017). Does relative or absolute EEG power have prognostic value in HIE setting?. *Clinical neurophysiology : official journal of the International Federation of Clinical Neurophysiology*, *128*(1), 14–15. https://doi.org/10.1016/j.clinph.2016.10.094

Griffiths, B. J., Mayhew, S. D., Mullinger, K. J., Jorge, J., Charest, I., Wimber, M., & Hanslmayr, S. (2019). Alpha/beta power decreases track the fidelity of stimulus-specific information. *eLife*, *8*, e49562. https://doi.org/10.7554/eLife.49562

Jeong, J. (2004). EEG dynamics in patients with Alzheimer's disease. *Clinical neurophysiology : official journal of the International Federation of Clinical Neurophysiology*, *115*(7), 1490–1505. https://doi.org/10.1016/j.clinph.2004.01.001

Oostenveld, R., Fries, P., Maris, E., & Schoffelen, J. M. (2011). FieldTrip: Open source software for advanced analysis of MEG, EEG, and invasive electrophysiological data. *Computational intelligence and neuroscience*, *2011*, 156869. https://doi.org/10.1155/2011/156869

Taheri, M.A (2013) Human from another outlook Interuniversal Press; 2nd Edition ISBN-13: 978-1939507006, ISBN- 10: 1939507006

Tan, E., Troller-Renfree, S. V., Morales, S., Buzzell, G. A., McSweeney, M., Antúnez, M., & Fox, N. A. (2024). Theta activity and cognitive functioning: Integrating evidence from resting-state and task-related developmental electroencephalography (EEG) research. Developmental cognitive neuroscience, 67, 101404. https://doi.org/10.1016/j.dcn.2024.101404

Tosti, B., Corrado, S., Mancone, S., Di Libero, T., Rodio, A., Andrade, A., & Diotaiuti, P. (2024). Integrated use of biofeedback and neurofeedback techniques in treating pathological conditions and improving performance: a narrative review. *Frontiers in neuroscience*, *18*, 1358481. https://doi.org/10.3389/fnins.2024.1358481

Treves, I. N., Greene, K. D., Bajwa, Z., Wool, E., Kim, N., Bauer, C. C. C., Bloom, P. A., Pagliaccio, D., Zhang, J., Whitfield-Gabrieli, S., & Auerbach, R. P. (2024). Mindfulness-based Neurofeedback: A Systematic Review of EEG and fMRI studies. *bioRxiv : the preprint server for biology*, 2024.09.12.612669. https://doi.org/10.1101/2024.09.12.612669

Yuvaraj, R., Murugappan, M., Mohamed Ibrahim, N. et al. (2024). On the analysis of EEG power, frequency and asymmetry in Parkinson's disease during emotion processing. B*ehavioral and brain functions*, *10*(1), 12. https://doi.org/10.1186/1744-9081-10-12