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Evaluation Of Stress Releasing Hormone Activity On Farmers With The Help Of Artificial Intelligence Improved By Dynamic Meditation.

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Abstract

Introduction: It is necessary to consider how rural needs are very important for the revival of agriculture and manufacturing. Agriculture is very important because it employs 52% of the population and accounts for 17% of GDP. Approximately 14 million farmers have committed suicide in the last 17 years. Although the amount of land provided per capita decreased, the share of agriculture decreased further. The report shows that the number of suicides in India's agriculture sector in 2022 is 11,290; this number was up 3.75% from the 10,881 suicides reported in 2021. Of the 2022 victims, 5,207 were farmers and 6,083 were farmers. In 2021, the corresponding figures are 5,318 farmers and 5,563 farmers. This means a crisis for farmers. Dynamic meditation is a popular form of meditation introduced by the Indian mystic Osho in the 1970s. Effects of Osho Dynamic Meditation on blood cortisol levels (cortisol is an indicator of stress) to see if it has an effect on stress. And use Mindrove computer to calculate farmer's brain power and monitor brain power. ⁽¹⁾

Aim: Evaluation of Stress Releasing Hormone Activity on Farmers with The Help of Artificial Intelligence Improved by Dynamic Meditation.

Objective: 1. To examine the effects of meditation on the brain. 2. Examine the effects of emotional stress on cortisol levels. 3. Examine farmers' stress before and after positive thinking. Use Mindrove EEG machine and get better results. 4. Promote the idea of farmers and others to have good energy and a stress-free life.

Material and Method: 20 healthy farmers (20 men) aged between 20 and 50 participated in this study. Blood cortisol levels were estimated from a blood sample taken the morning before the study (for example) and after day 21 of the study. The significance of the difference in mean cortisol levels between baseline and post view groups was tested using t tests. In addition, on the first and last day of meditation, the farmer's

EEG activity was checked using the Mindrove Bright Machine and whether there was a difference in the waves.

Results and discussions: On day 21, blood cortisol levels in all 20 healthy farmers were lower than baseline, and the decrease in cortisol levels was significant ($p < 0.001$). Alpha, delta and theta parameters (low frequency) of EEG increased compared to the first day ($p < 0.001$), while beta and gamma did not change. Improve people's physical and mental health.

Conclusion: Dynamic meditation is useful to decreased cortisol level in blood stream and increases in smaller frequency wave like alpha and delta that indicate improve calmness, and decreases anxiety of farmer physical and mentally healthy.

Keywords: dynamic meditation (DM), cortisol, electroencephalogram (EEG), Stress.

Introduction

About meditation

Meditation is a practice that trains the mind to focus and shift thoughts. It is often used to improve mental health, resilience and emotional balance. Although meditation has its roots in ancient religious and spiritual practices, it has gained popularity in recent years due to its beneficial effects on the body and mind. One of the main purposes of meditation is to reach a state of consciousness. Mindfulness is the ability to focus on and be aware of yourself and your environment without judgment. By practicing mindfulness through meditation, people can learn to let go of emotions and negative thoughts while improving their sense of self. ⁽²⁾

Research shows that regular exercise can have a positive impact on mental health. It has been shown to reduce stress, anxiety, and depression by promoting feelings of relaxation and peace. This is done by keeping the body relaxed, which prevents the physiological effects of stress. Also, meditation can improve thinking and intelligence. By training the brain to focus on a single point or object, people can improve their ability to focus and stay focused for long periods of time. This is especially helpful for students and professionals who want to stay active and succeed in their jobs. ⁽³⁾

Also, meditation is beneficial to physical health. It can lower blood pressure, reduce the risk of heart disease and improve immunity. Additionally, practicing mindfulness regularly is associated with reduced pain and inflammation. Meditation is a versatile practice that can take many forms. Some meditation techniques include meditation focusing on a specific object or breath. If you want to meditate, you should find a quiet and comfortable place where you can sit or lie down in a comfortable position. It is recommended to start with short periods of time and gradually increase the duration as you become more comfortable and experienced. Relationships are important, so making time to practice every day can improve the results of meditation.

In summary, meditation has many benefits for the body and mind. By incorporating meditation into their daily lives, people can increase self-awareness, reduce stress, focus, and improve overall health. It is a powerful tool that allows people to find inner peace and connect with themselves and the world around them. ⁽⁴⁾

In conclusion, contemplation offers various preferences for both mental and physical well-being. By consolidating contemplation into one's day by day schedule, people can encounter expanded self-awareness, diminished push, made strides concentration, and upgraded in general wellbeing. It may be an effective instrument that permits people to discover internal peace and develop a more profound association with themselves and the world around them.

Numerous people with pity or uneasiness turn to nonpharmacologic and nonconventional trade, tallying work out, yoga, reflection, tai chi, or qi gong. Meta-analyses and efficient overviews have showed up that this contemplation can advance side impacts of hopelessness and uneasiness clutters. As an adjunctive treatment, work out shows up most pleasing for treatment-resistant debilitation, unipolar debilitation, and posttraumatic extend clutter. Yoga as monotherapy or adjunctive treatment shows up positive impacts, particularly for debilitation. As an adjunctive treatment, it empowers treatment of uneasiness disarranges, particularly solidify clutter. Tai chi and qi gong may be obliging as adjunctive medications for debilitation, but impacts are clashing. As monotherapy or an adjunctive treatment, mindfulness-based thought has positive impacts on disheartening, and its impacts can last for six months or more. In show disdain toward of the reality that positive revelations are less common in people with uneasiness disarranges, the demonstrate supports adjunctive utilize. There are no clear negative impacts of mindfulness-based mediations, and their common prosperity benefits legitimize them utilize as adjunctive treatment for patients with pity and uneasiness clutters. ⁽⁵⁾

About Dynamic Meditation

Osho talks about dynamic meditation. The first 10 minutes of dynamic meditation are rapid, deep, chaotic breathing. This is followed by 10 minutes of catharsis, 10 minutes of jumping and singing "hoo", 15 minutes of silence, and finally 15 minutes of celebratory dancing. Music created specifically for this emotion serves as a reminder for each stage. However, since this is a personal experience, you should close your eyes and not look at others, preferring to use a blindfold. When you meditate, Osho wants you to remain a witness and observe what is happening as if you were just a spectator and everything was happening to someone else. Practice actively, it is the best way of thinking, best at dawn. Although it can be done individually or in a group, the energy will be stronger if done. The term "dynamic meditation" is an oxymoron. Unlike energy, which suggests effort and activity, meditation suggests being quiet, lean, and weak. In a way, this is dialectical meditation. This program makes movements based on imagination. During meditation, confusion (movement/stillness) may occur before you feel relaxed (relaxation/stillness). Thinking becomes easier when you eliminate clutter. ⁽⁶⁾

MATERIAL AND METHOD

Stages of Osho dynamic meditation.

This meditation is a quick, intense, and thorough way to break old, ingrained patterns in the body mind that keep you imprisoned in the past, and to experience the freedom, witnessing, silence, and peace that lie beyond those prison walls.

The meditation is intended to be practiced in the early morning, when "the whole of nature becomes alive, the night has gone, the sun is coming up, and everything becomes conscious and alert." this meditation can be done alone, but it can be beneficial to begin with others. It is an individual experience, so ignore those around you. Wear clothing that is loose and comfortable. The meditation is to be done with its specific osho dynamic meditation music, which indicates and energetically supports the different stages.

The meditation lasts one hour and is divided into five stages. Keep your eyes closed throughout, and if necessary, use a blindfold. This is a meditation in which you must remain alert, conscious, and aware at all times. Continue to be a witness. And when you have become completely inactive, frozen, in the fourth stage, this alertness will peak.

10 minutes for the first stage

Breathing chaotically through the nose, allow breathing to be intense, deep, and fast, without rhythm or pattern - and always focusing on the exhalation. The inhalation will be handled by the body. The breath should enter the lungs deeply. Do this as quickly and as hard as you can until you are literally the breathing.

Use your natural body movements to help you conserve energy. Feel it build up, but don't let go during the initial stage.

10 minutes for the second stage

Explode! ... remove everything that needs to be discarded. Pay attention to your body. Allow your body to express itself in whatever way it wants. Go completely insane. Scream, shout, cry, jump, kick, shake, dance, sing, laugh, and generally make a scene. Hold nothing back; move your entire body. A little acting can often help you get started. Never let your mind get in the way of what is going on. Go insane on purpose. Be complete.

10 minutes for the third stage

Jump up and down, arms raised high above your head, shouting as loudly as you can, "hoo! Hoo! Hoo!" allow the sound to hammer deep into the sex centre each time you land on the flats of your feet. Give everything you've got; completely exhaust yourself.

15 minutes for the fourth stage

Stop! Freeze wherever you are and in whatever position you are in. Make no attempt to arrange the body. A cough, a movement, or anything else will dilute the energy flow and cause the effort to be wasted. Be a witness to everything that occurs to you.

15 minutes for the fifth stage

Celebrate! Whatever is there can be expressed through music and dance. Keep your vitality with you throughout the day.

Selection of number of participants

An extremely large number of articles, book chapters, and books recommend guidance and suggest anywhere from 5 to 50 participants as adequate. Therefore, we select twenty healthy male farmers between the age 20 to 50 years for the study.

Preparation of activity

- a) An experimental study was planned doing the dynamic meditation empty stomach in morning at 6 to 7 am.
- b) The regular practice of dynamic meditation for 21 days should be carried out. Twenty healthy farmers between 20 to 50 years, 20 males participate in the study.
- c) Serum cortisol level was estimated from the blood samples collected in the morning one day prior (baseline) and post-meditation on the 21st day of the study. The difference between mean cortisol levels of the baseline and post-meditation groups were tested for significance by applying the paired t-test.
- d) Check the mental state at the first date of meditation and 21th day of meditation with the help of EEG mindrove bright machine.
- e) We can compare the blood cortisol sample and EEG result data, before meditation at 1st day and after meditation of 21th day and conclude stress level in farmers and hormonal level in blood sample, and calculate stress reduction performance.

- f) According to that we are conclude the effect of dynamic meditation are useful for stress reduction in farmers or not. ⁽⁷⁾

Tools and equipment

Recording personal information, namely, age, gender was recorded. The electroencephalography (EEG) was applied in this study. The neuroheadset was used to display the output, analyse and record brainwaves. The principles of analytical check were based on the 10-20 system or International 10-20 system by displaying the EEG output. In this study, the effectiveness of commercially available lightweight EEG devices, Mindrove EEG bright headband, was considered. Via the application of a four electrode or channel are occur and signal-processing unit in a headband arrangement, the Mindrove EEG bright headband provides operating at 1-250 Hz. Although the Mindrove EEG bright provided a coarser picture of brain activity than multi- electrode EEG or other technologies, the principle advantage of the Mindrove EEG bright was its unobtrusive nature, which minimizes the aforementioned difficulties in conducting accurate user studies. ^(8,9,10)



Figure no.1: Mindrove EEG Bright Headband

RESULT

Serum cortisol levels were decreased in the blood samples of all the 20 volunteers on 21st day as compared to the baseline levels, i.e., a day before starting the dynamic meditation [Table no.2].

In the baseline group (a day before the start of dynamic meditation), the mean serum cortisol level was 14.09 and the standard deviation was 2.476 with a standard error of 0.554 while in the post-meditation group (after 21 days of the dynamic meditation) the mean serum cortisol level was 9.29 and the standard deviation was 1.753 with a standard error of 0.392 [Table-2]. Difference between the mean cortisol level of the baseline group and the post meditation group was analysed by the paired t-test and it was found to be highly significant ($p < 0.001$).

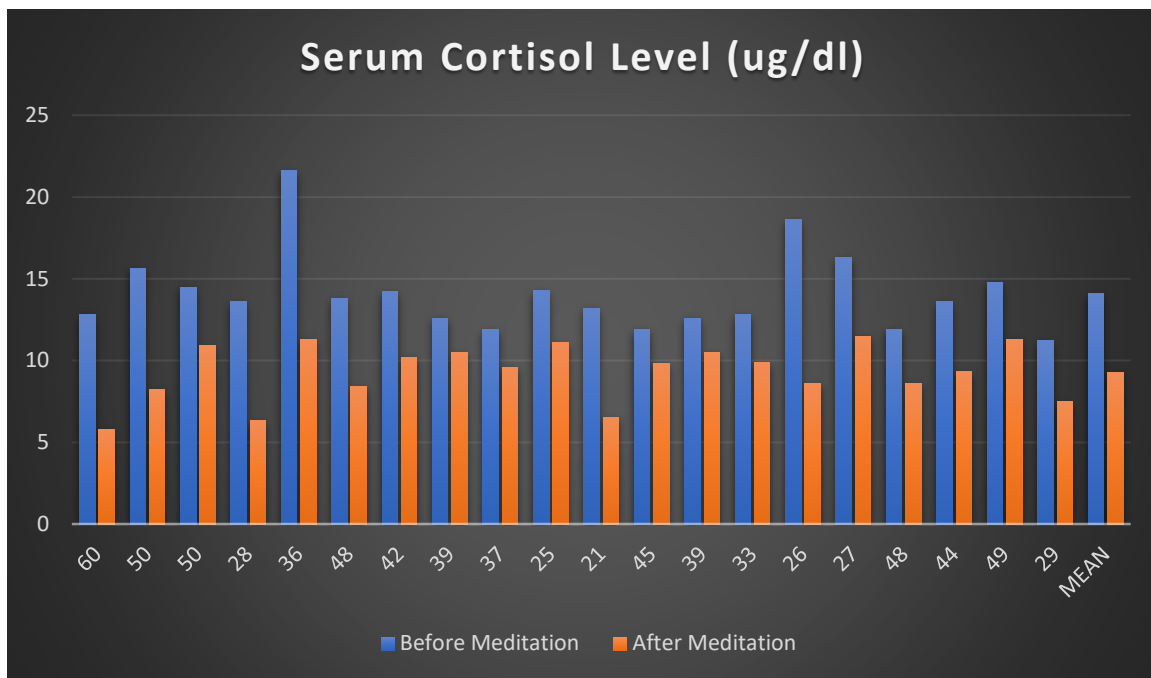


Fig no.2 Describe the serum cortisol level (ug/dl) before and after the practice of dynamic meditation.

Sr. no	Age	Serum Cortisol Level (ug/dl) Before starting the dynamic meditation.	Serum Cortisol Level (ug/dl) After 21 days of the dynamic meditation.
1	60	12.8	5.8
2	50	15.6	8.2
3	50	14.5	10.9
4	28	13.6	6.3
5	36	21.6	11.3
6	48	13.8	8.4
7	42	14.2	10.2
8	39	12.6	10.5
9	37	11.9	9.6
10	25	14.3	11.1
11	21	13.2	6.5
12	45	11.9	9.8
13	39	12.6	10.5
14	33	12.8	9.9
15	26	18.6	8.6
16	27	16.3	11.5
17	48	11.9	8.6
18	44	13.6	9.3
19	49	14.8	11.3

20	29	11.2	7.5
MEAN	38.8	14.090	9.290
SD	10.556	2.476	1.753
SEM	2.360	0.554	0.392
N	20	20	20

Table no. 1 Describe the serum cortisol level before and after 21 days of dynamic meditation.

EEG activities	Before dynamic meditation		After dynamic meditation		P-value
	Mean	SD	Mean	SD	
Delta wave	4.51	± 1.18	13.28	± 2.52	$p < 0.001$
Theta wave	2.00	± 0.86	3.49	± 0.81	$p < 0.001$
Alpha wave	1.03	± 0.52	1.59	± 0.51	$p < 0.001$
Beta wave	0.95	± 0.38	0.99	± 0.36	0.0800
Gamma wave	0.50	± 0.21	0.53	± 0.17	0.1470

Table no. 2 Describe Electroencephalogram activity before and after dynamic meditation.

From Table no.4, it was found that delta, theta, and alpha brainwaves gradually increased after dynamic meditation with statistically significant at the 0.05 level compared to before dynamic meditation. On the other hand, beta and gamma bands were no change after dynamic meditation.

According to Table no.4, it was found that delta brainwave increased after Dynamic Meditation with statistically significant at the 0.05 level compared to before Dynamic Meditation (before: $4.51 \pm 1.18 \mu V$ after: $13.28 \pm 2.52 \mu V$ $p < 0.001$).

According to Table no.4, it was found that theta brainwave increased after Dynamic Meditation with statistically significant at the 0.05 level compared to before Dynamic Meditation (before: $2.00 \pm 0.86 \mu V$ after: $3.49 \pm 0.81 \mu V$ ($p < 0.001$)).

According to Table no.4, it was found that alpha brainwave increased after Dynamic Meditation with statistically significant at the 0.05 level compared to before Dynamic Meditation (before: $1.03 \pm 0.52 \mu V$ after: $1.59 \pm 0.51 \mu V$ $p < 0.001$).

According to Table no.4, it was found that beta brainwave not change after Dynamic Meditation compared to before Dynamic Meditation (before: $0.95 \pm 0.38 \mu V$ after: $0.99 \pm 0.36 \mu V$ $p = 0.0800$).

Finally, According to Table no.4 it was found that gamma brainwave was not changed after Dynamic Meditation compared to before Dynamic Meditation (before: $0.50 \pm 0.21 \mu V$ after $0.53 \pm 0.17 \mu V$ $p = 0.1470$).

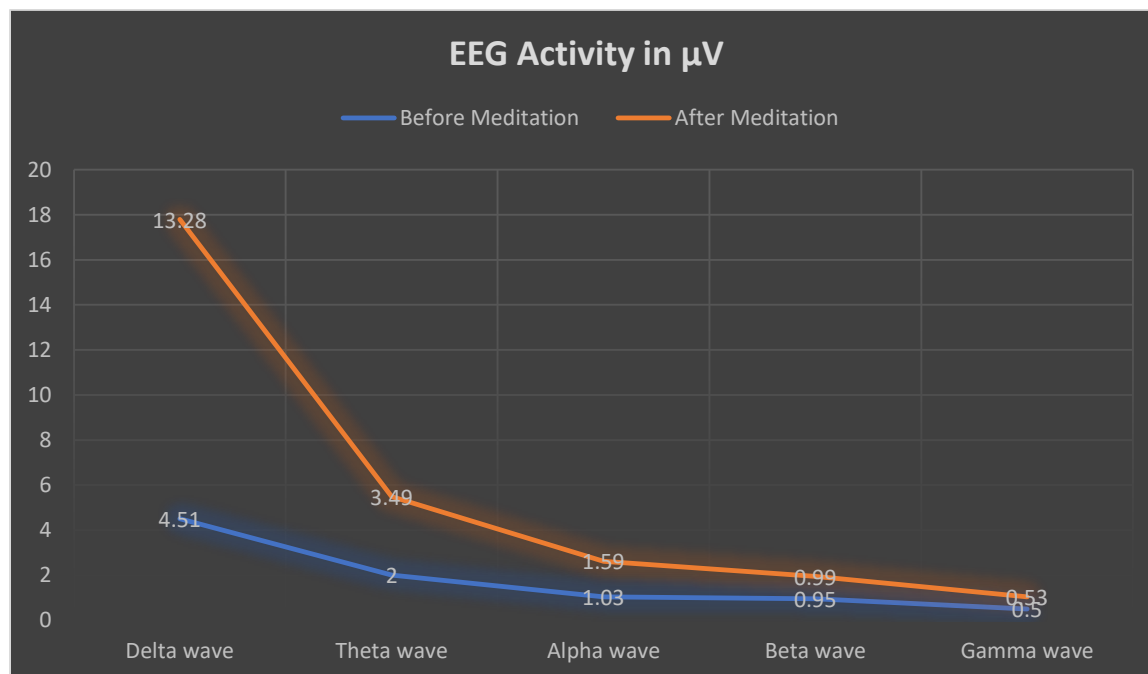


Figure no. 3 Describe Electroencephalogram activity before and after dynamic meditation.

The findings found that Dynamic Meditation could reduce stress and stimulate restoration in cellular level by increasing positive feelings and increase EEG that indicated relaxing in preliminary and deep level or stimulation working of growth hormone such as alpha theta and delta frequency bands with statistically significant at the 0.05 level while both beta and gamma frequency bands were no changed after Dynamic Meditation.

Many studies consistence with this study even in no experience practitioners in mindfulness meditation, Vipassana meditation, Yoga for mental, Neiyang Qi Gong, Zen Meditation Walking Meditation Inner wisdom meditation and related with decrease in stress in body and mind. Increase happiness in work, increasing Emotional Quotient and can in health behavior in Diabetes people. But other pattern was focuses on analyses one brain wave or changes in two brain waves (theta and alpha or delta and alpha) except inner wisdom meditation that changed in delta theta and alpha brain wave. In addition, some pattern also increase in gamma brain wave such as walking meditation Vipassana meditation, Himalayan Yoga, Isha Yoga may be these pattern can increase concentration and focusing but Dynamic meditation emphasize relaxing and emotion detoxification and restoration of cellular.

DISCUSSION

This study showed a reduction in anxiety in farmers who completed Osho's 21-day meditation practice; because the results showed a reduction in lower mean cortisol levels. The stress-relieving effects of dynamic meditation can be attributed to its five stages. Deep, rapid breathing in the initial phase leads to a state of hyperventilation and hyperoxygenation, followed by energy stimulation. An anxious man or woman cannot take a deep breath. He couldn't breathe because his stomach was so shallow. Also, the way we breathe is similar to the way we think. Deep, especially breathless, breathing causes old patterns to enter the thought and allows stress to flow from where it can be easily released next. The second stage of catharsis seems to be the most important reason behind the anti-anxiety of meditation, which aims to achieve inner peace by releasing repressed emotions, mental blocks and trauma. Emotions such as crying (as in meditation) have been reported to help reduce stress and be a positive behavior for oneself. Crying affects health by removing stress hormones (such as cortisol) and toxins from the blood. To test this hypothesis, a study measured women's salivary cortisol levels before and after watching a high-intensity video. Levels of these hormones decreased more in women who cried more. Now the majority of psychologists still encourage their clients to cry. Osho made crying an important part of his meditation group, Mystical Rose

Therapy. Catharsis in negative emotions is not just crying, but also the freedom to express everything in your heart by hitting your anger on the mat, shouting, jumping, laughing. Laughter has also been shown to have many health benefits, including reducing stress and stress hormones such as cortisol.

Various forms of meditation and yoga have been reported to manage stress, improve coping skills, reduce stress and anxiety, and increase self-efficacy in caregivers of children with dementia. Some workers have found that meditation can reduce stress, heart rate, blood pressure and even prevent heart disease, reduce stress on the body such as upset stomach, reduce youth crime, help women overcome malnutrition and gain strength

Studies have found that positive thinking can reduce stress and promote cellular changes by enhancing mood and increasing EEG activity, such as alpha theta and delta bands, signalling earlier and deeper relaxation or activation. Significance at 0.05 level Beta and gamma frequency bands less change after dynamic meditation. Mindfulness meditation, Vipassana meditation, spiritual yoga, Inner Yang Qigong, Zen meditation, walking meditation, especially in intellectual meditation, are associated with reducing physical and mental stress, reducing the pressure of difficulty, increasing happiness at work, improving emotional intelligence and possessing talents

CONCLUSION

In this study, plasma cortisol levels (an indicator of stress) decreased when farmers were tested after 21 days of positive thinking. This suggests that Osho's dynamic meditation is designed to combat stress. Therefore, dynamic meditation is a suitable candidate for stress management and related research. This emotional decision-making process consists, at least in part, of stress release, such as crying, which has been shown to reduce stress and the stress hormone cortisol. Therefore, it can be concluded that regular dynamic meditation practice can be recommended as a treatment to improve anxiety and stress related to body and mind. More clinical research is needed to prove its effectiveness and become a clinical treatment. The results showed an increase in the delta theta and alpha bands, while the beta and gamma bands changed less. As a result, it turns out that positive thinking can change the functioning of the brain and can be an alternative for people who want to relax, promote recovery and prepare for life in today's man. Experimental results showing an increase in delta and theta activity in different parts of the brain show that the brain becomes more active after meditation, thus mental health is at a higher level. A decrease in beta activity means a decrease in stress. Most importantly, the variable characteristics observed in this experiment suggest that each subject exhibited a unique state of emotional regulation. State anxiety and self-esteem in adults with social anxiety disorder.

Dynamic meditation, as defined by Osho, is an awareness that leads to the expansion of consciousness beyond the everyday experience of duality. It is an integrated system that reduces stress and increases creativity and inner functioning. This is an exercise to do without thinking about guiding the process. In physical education, the mind does not teach the muscles to be strong; teaches muscles to be strong. Instead, the muscles will become stronger through exercise. Similarly, in performing this practice, that is, dynamic thinking, results are achieved entirely, not by controlling thoughts or other mental processes. The dynamic process of meditation reaches beyond the mind, to the deepest level of the inner self.

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