

## The Effect of Yogic Practices on Affect Clarity

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### ABSTRACT

Yoga claims to improve several aspects of an individual's life using breathwork, posture, meditation, and several other practices. This research aims to study whether or not there exists any correlation between certain yogic practices and clarity of affect. The kriyas chosen for this study are Kapalabhati and Bhastrika. These have been first mentioned in the Hatha Yoga Pradipika as practices that help to remove excess phlegm from the lungs and increase the blood flow to the frontal lobe. A study published in the Journal of Positive Psychology found that practicing yoga for eight weeks resulted in increased affect clarity, as well as improved mood and self-esteem. Another study published in the Journal of Alternative and Complementary Medicine examined the effects of an eight-week yoga intervention on women with depression. The study found that the yoga group showed significant improvements in affect clarity compared to the control group. Yet another study published in The Journal of Psychology investigated the immediate effects of a single yoga session on affect clarity. The study found that participating in a yoga session led to an increase in affect clarity compared to a control group that did not participate in yoga. In this study, the pre-test baseline data for affect clarity was collected using the Trait Meta Mood Scale and the Toronto Alexithymia Scale-20. The process of data collection for the pretest, as well as the post-test, was done through the circulation of google forms. Post this, the participants were oriented to the practice of Bhastrika and Kapalabhati. They were then asked to self-practice these techniques for a period of 4 weeks, five days a week, for one hour. The intervention was self-administered by trained yoga students and professionals. The post-test data were collected after the timeline was reached. This study effectively concludes that yogic practices have significant effects on mental health and mental processes. Specifically, the practices of kapalabhati and bhastrika were proven to have significant positive effects on the affect clarity of participants. This indicates that several such indigenous sciences lie in the dark, unexplored, waiting to see the light of modern research. As stated above, the findings of the present research offer a wide array of therapeutic applications for these practices. This also adds to the list of non-intrusive and non-drug-based therapies, which have been the focus of Psychology in modern times.

**Keywords:** *Yoga, Affect, Clarity, Emotional Clarity, Kapalabhati, Bhastrika, Yoga Practice*

**Y**oga is an ancient spiritual technique mainly developed by the Indian sage Patanjali in early 2700 BC. The word is made from the root word of Sanskrit origin - "Yuj", which means "to join". In an abstract sense, it refers to the integration of the self with the

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supreme universal force. Yoga claims to improve several aspects of an individual's life using breathwork, posture, meditation, and several other practices. It has several wings such as \*kriyas, \*asanas, \*bandhas, \*mudras, \*pranayama, \*dhyana, and so on. This research aims to study whether or not there exists any correlation between certain yogic practices and clarity of affect. Practitioners of yoga are often told the benefits of practicing a certain posture, breathwork, etc. and this study aims to quantitatively measure any effects that these practices might have on affect clarity.

The kriyas chosen for this study are Kapalabhati and Bhastrika. These have been first mentioned in the Hatha Yoga Pradipika as practices that help to remove excess phlegm from the lungs and increase the blood flow to the frontal lobe. The word Kaplabhati literally translates to the shining of the skull. As the name suggests, both these practices concentrate on manipulating breathwork in order to increase blood circulation as well as clear the respiratory passage by removing excessive mucus. Thus, they claim to increase the clarity of affect and clear any sort of mental clutter.

Considering both these variables, this study aims to quantitatively assess the correlation and effect of these practices with clarity of affect. Other factors that the study would focus on include time period, the accuracy of these practices, and demographic variables such as age and sex.

There are several pieces of research that focus on the relationship between yoga and general mental health and well-being. Few other studies focus on topics such as yoga for depression, yoga for anxiety, yoga for mental peace, mindfulness meditation for depression, yoga for automatic thought, and so on. But none of these researches delve deep into specific practices as prescribed by the scriptures that claim to improve specific areas of the mind and body. For example, the practice of dhauti and nauli is said to increase the digestive fire and thus aid in the proper functioning of the digestive tract and also increase metabolism. But this has not been researched. Similarly, the practices of Kapalabhati and Bhastrika are claimed to increase blood flow to the frontal lobe and pineal gland thus increasing clarity of thoughts, emotions, perceptions, and so on.

### *Research Questions*

This study aims to probe into the following factors:

- Does there exist any correlation between yogic practices and clarity of affect?
- If so, in what way does it impact affect clarity? Does it improve or decrease the clarity of affect?
- What roles do the demographic variables play in the effect of yogic practices on affect clarity?
- If the influence affects individuals positively, then can these practices be accommodated into modern psychotherapy?

## **REVIEW OF LITERATURE**

Yoga and yogic practices come under the mind-body interventions category which emphasizes the interactions among the brain, mind, body, and behavior with the intent to use the mind to affect physical functioning and promote health (NCCAM, 2010). In one of the studies, Dr. Gyanesh Tiwari states that the interdisciplinary knowledge under the umbrella of yoga is way underexplored according to modern scientific standards. He also believes that the mental health professional can take back a lot if they try to uncover the relationship between

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yoga and physiology as well as psychology, they can offer a more comprehensive and useful therapeutic treatment. In their study, Lazar et al. (2005) and Lazar (2006) have found that yogic practices affect resonance circuitry which increases thickness in the medial prefrontal cortex and insula, especially the right side resulting in empathy, interoception, and attunement to self and others, logical and intuitive processing (Kreiman, Koch & Fried, 2000). Streeter et. al in their research state that they believe yoga is very effective and useful as it is capable of altering the neurochemistry of the brain. Practices such as Surya Namaskara have been prominently used as tools for weight loss and have also been considered aerobic exercises (Kulkarni et al., 2017). In a recent meta-analysis research by Gothe et al., it is stated that the effects of yoga on cognitive functions such as attention, processing speed, and executive functions improved when used on an adult population. Yoga practitioners exhibited greater cortical thickness in an area of the left prefrontal cortex that included part of the middle frontal and superior frontal gyri (Gothe et al., 2019). In another study by Bridges and Sharma (2017), it was found that yoga was effective when used as a complementary therapy and treatment. However, it was not evident which school of yoga was better effective. Another study explored the relationship between mindfulness and emotional clarity and to test a model that was proposed to explain authentic behavior through emotional clarity, body awareness, and mindfulness, this study combined two distinct analyses.

When considered collectively, the results are consistent with the proposed link between emotional clarity and genuine behavior. However, the results showed that, contrary to what was predicted, mindfulness did not reduce this link. Additionally, the two analytical approaches partially supported the link between body awareness and authentic behavior, with both analyses finding evidence for the association's moderated effect (Noga Tsur et al., 2015). Yet another correlational study between emotional clarity and impression of self and others found that overall, low Clarity did not correlate with increased accessibility of emotion-relevant elements of others and decreased accessibility of emotion-relevant parts of the self, which would have been consistent with the findings of the self-doubt schematicity study. Instead, low Clarity seems to be associated with more readily accessible negative-agitated emotions, which were described by adjectives like angry, irritable, and furious. Low Clarity people may not be schematic with regard to positive emotions, the area in which they are unsure, but they may be schematic with relation to bad emotions. Participants low in clarity were more likely to access a subset of negative emotions than participants high in clarity, and low-clarity participants were also more likely to find negative emotion-related phrases to be almost always descriptive of themselves and others (Samantha Mowrer, 2007). The results of a study on married couples by Cordova, Gee, and Warren revealed conflicting results. They discovered that for both husbands and wives, difficulty identifying one's own feelings was linked to lower marital satisfaction and less experience of intimate safety (i.e., a feeling of comfort when engaging in behavior that runs the risk of being punished by the partner). In the study by P. Eid and Boucher, the inability of wives and husbands to name their emotions was linked to lower levels of marital satisfaction in the wives, but not in the husbands. Other forms of social relationships may also require emotional clarity. Ciarrochi and colleagues demonstrated that having the ability to recognize emotions is associated with receiving more social support in early adolescence and social support of a higher caliber (Tanja Lischetzke et al., 2010). Several studies have demonstrated the efficacy of these techniques in reducing stress, anxiety, and depression. A study published in the *International Journal of Yoga* showed that practicing kapalabhati and bhastrika together for 4 weeks significantly improved anxiety, stress, and depression levels compared to a control group that did not practice these techniques.

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Furthermore, a review article published in the *Journal of Ayurveda and Integrative Medicine* reported that both of these breathing techniques were associated with reduced levels of cortisol, a hormone linked to stress. The reduction of cortisol levels is related to the activation of the parasympathetic nervous system.

A study published in the *Journal of Positive Psychology* found that practicing yoga for eight weeks resulted in increased affect clarity, as well as improved mood and self-esteem.

Another study published in the *Journal of Alternative and Complementary Medicine* examined the effects of an eight-week yoga intervention on women with depression. The study found that the yoga group showed significant improvements in affect clarity compared to the control group. Yet another study published in *The Journal of Psychology* investigated the immediate effects of a single yoga session on affect clarity. The study found that participating in a yoga session led to an increase in affect clarity compared to a control group that did not participate in yoga.

Overall, these studies suggest that practicing yoga may be beneficial for improving affect clarity and emotional well-being. However, it is important to note that more research is needed to fully understand the relationship between yoga and affect clarity.

There is limited research on the effects of Kapalabhati and Bhastrika on affect clarity, which refers to the ability to recognize, understand, and express feelings. However, some studies have investigated the effects of these breathing techniques on mood and emotional state. One study examined the impact of Kapalabhati and Bhastrika on mood in healthy adults. The results showed that both practices increased positive mood and decreased negative mood. Another study found that Bhastrika practice was associated with increased calmness and reduced negative emotions. While there is limited research on the effects of Kapalabhati and Bhastrika on affect clarity specifically, there is evidence that these breathing techniques can improve mood and emotional state. Further research is needed to determine the extent of these effects and whether they are related to affect clarity. One study published in the *Journal of Psychiatric Practice* found that yoga practices such as meditation, pranayama, and asanas can help reduce negative affect and increase positive affect in individuals with depression and anxiety disorders. Another study published in the *Journal of Clinical Psychology* found that practicing yoga and mindfulness meditation can significantly increase emotional clarity and reduce emotional reactivity in individuals with generalized anxiety disorder.

Overall, these studies suggest that yogic practices can have a positive effect on affect clarity and emotional well-being in individuals with various mental health concerns. However, more research is needed to fully understand the mechanisms behind these effects and to determine how to optimize the use of yogic practices for different populations.

As stated in the review of literature, the scope of yoga in the scientific and therapeutic context is highly underexplored and hence this study aims to explore this blue ocean. The pieces of literature stated above and the vast majority of them available are all proof enough to state that although yoga has been explored in a general manner, researchers have only swum along shallow waters and not actually explored the underlying depths of this practice. Whereas, by doing so, we as mental health professionals and others can unwind a whole new knowledge pool which can be a potential game changer in the health sector in the future. The specificities of yogic practices and their utility are too unresearched, hence creating a research gap. This

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research gap is precisely what this study aims to fill and bring to the limelight the various therapeutic and health benefits that this practice can have.

### **METHODS**

#### *Objectives*

To find whether there exists any relationship between the practice of Kapalabhati and Bhastrika having any effect on affect clarity. If yes, are they positive and can they be used in psychotherapy?

#### *Null Hypothesis*

There does not exist any relationship between the practice of Kapalabhati and Bhastrika on affect clarity.

#### *Alternative Hypothesis*

There exists a relationship between the practice of Kapalabhati and Bhastrika on affect clarity.

#### *Research design*

For the purpose of this research, the experimental design was used. The scientific method is used in experimental research, to establish the cause-effect relationship among a group of factors that comprise a study. The actual experiment is frequently conceived of as laboratory research, but this is not necessarily the case; a laboratory setting has nothing to do with it. A real experiment is any study in which an effort is made to discover and control all other factors to save one. To determine the impact on the dependent variables, an independent variable is modified. Subjects are randomly assigned to experimental treatments rather than being identified in naturally existing groups.

The pretest intervention-posttest model of research is a design used in experimental research to evaluate the effectiveness of an intervention. In this model, participants are assessed before the intervention (pre-test), then the intervention is administered, and participants are evaluated again after the intervention (post-test). The purpose of the pretest is to establish a baseline measurement of the targeted outcome before any manipulation or treatment is administered. This allows researchers to assess whether any changes that occur can be attributed to the intervention or to other factors. The intervention is the implementation of the treatment or manipulation designed to affect the outcome of interest. Examples of interventions include a new teaching method, medication, counseling, or a dietary program. The post-test is the evaluation of the outcome after the intervention is administered. The purpose of the post-test is to evaluate the effectiveness of the intervention by comparing the pre-test and post-test measurements.

Researchers use statistical analyses to determine if the changes observed in the outcome are the result of the intervention or if they could be attributed to other factors. The study design allows researchers to evaluate the effectiveness of the intervention and to make evidence-based decisions about policy and practice.

In this study, the pre-test baseline data for affect clarity was collected using the Trait Meta Mood Scale and the Toronto Alexithymia Scale-20. The process of data collection for the pretest, as well as the post-test, was done through the circulation of google forms. Post this, the participants were oriented to the practice of Bhastrika and Kapalabhathi. They were then asked to self-practice these techniques for a period of 4 weeks, five days a week, for one hour.

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The intervention was self-administered by trained yoga students and professionals. The post-test data were collected after the timeline was reached.

### Variables

- **The Independent variable**  
The independent variable was the practice of Kapalabhati and Bhastrika which was hypothesized to have an impact on the Affect clarity - the dependent variable.
- **The dependent variable**  
The dependent variable was affect clarity which refers to the accurate identification and regulation of emotions.

### Operational Definitions

#### Kapalabhati and Bhastrika

॥अथ कपालभातिः भ्रुवोर्लोह-कारय रेख-पूरौ सप्त मौ |  
कपालभातिवि याता कफ-दो ह-विशो हणी ॥

This is the definition of Kapalabhati taken from the Hatha Yoga Pradipika by Svamimaram. It describes the process as breathing through the nose and exhaling forcefully like a pair of bellows of the blacksmith is worked.

यथा लगति 5त-क ठे कपालावधि स-सवनम | वेगेन पूर्ये छापि 5त-पदमावधि मावतम ॥ ६१ ॥ पुनवि रेख्ये दव पूर्ये छ पुनः पुनः |  
यथैव लोहकारेण भ्रुवा वेगेन छांयते ॥ ६२ ॥

This is the definition of Bhastrika as described in the Hatha Yoga Pradipika by Svamimaram. It should be filled up to the lotus of the heart, by drawing it in with force, making noise, and touching the throat, the chest, and the head.

It should be expelled again and filled again and again as before, just as a pair of bellows of the blacksmith is worked.

### Affect clarity

Affect clarity, also commonly called emotional clarity refers to one's ability to identify the type of emotions (e.g., fear versus anger) one is experiencing, whereas attention to emotions refers to the degree to which an individual attends to his or her emotional experiences (Coffey, Berenbaum, & Kerns, 2003).

### Population

- **Universal population**

The universal population consisted of all yoga practitioners of all levels.

- **Target population**

Target population consisted of yoga practitioners aged 18 and above. Members from all genders were considered for the same.

### Sample

- **Sample size:** The sample consisted of 34 participants above 18 years who were trained in yoga and were previously acquainted with the practices of Bhastrika and Kapalabhati.

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- **Sampling method:** The study followed purposive sampling and snowball sampling to reach out to specific individuals who fit the inclusion criteria.

### *Inclusion criteria*

- Aged above 18 years
- Should be a practitioner of yoga
- Should be acquainted with the practice of Bhastrika and Kapalabhati
- Should have completed the intervention period prescribed by the author

### *Exclusion criteria*

- Participants who did not complete the intervention
- Participants who were not available during the collection of post test data.
- Following the exclusion criteria, 20 participants from the initial 54 participants were removed.

### *Measuring tool*

#### **Trait Meta-Mood Scale**

The Trait Meta-Mood Scale (TMMS) is a self-report questionnaire designed to measure an individual's emotional intelligence or the ability to understand and manage one's own emotions as well as the emotions of others. Specifically, the TMMS measures three components of emotional intelligence: (1) Attention to Emotions, (2) Clarity of Emotions, and (3) Repair of Emotions.

1. **Attention to Emotions.** This component of emotional intelligence refers to an individual's ability to pay attention to their own emotions and the emotions of others. The TMMS measures this component by asking individuals to rate how often they pay attention to their emotional states in different situations.
2. **Clarity of Emotions.** This component of emotional intelligence refers to an individual's ability to understand their own emotional states. The TMMS measures this component by asking individuals to rate how often they understand what they are feeling and why they are feeling that way.
3. **Repair of Emotions.** This component of emotional intelligence refers to an individual's ability to regulate their emotions and manage them effectively. The TMMS measures this component by asking individuals to rate how often they can control their emotional states and how they respond to their emotions.

Overall, the TMMS provides a comprehensive measure of emotional intelligence and can be used to assess emotional intelligence in research, clinical, and organizational settings.

#### **Toronto Alexithymia Scale 20**

The Toronto Alexithymia Scale 20 (TAS-20) is a self-report questionnaire designed to measure alexithymia or the inability to identify and describe one's own emotions. Alexithymia is a trait that has been associated with a range of psychological and physical health problems. The TAS-20 measures alexithymia across three domains: (1) Difficulty Identifying Feelings, (2) Difficulty Describing Feelings, and (3) Externally Oriented Thinking.

1. **Difficulty Identifying Feelings.** This domain of alexithymia refers to an individual's inability to recognize their own emotional states. The TAS-20 measures this domain by asking individuals to rate how often they have difficulty identifying their own feelings.

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- 2. Difficulty Describing Feelings.** This domain of alexithymia refers to an individual's inability to describe their emotional states to others. The TAS-20 measures this domain by asking individuals to rate how often they have difficulty describing their emotional states to others.
- 3. Externally Oriented Thinking.** This domain of alexithymia refers to an individual's tendency to be focused on external factors rather than their own emotional states. The TAS-20 measures this domain by asking individuals to rate how often they find it difficult to focus on their own feelings.

Overall, the TAS-20 provides a useful measure of alexithymia that can be used to assess the impact of alexithymia on psychological and physical health outcomes. It can be used in clinical, research, and organizational settings.

A subscale of the Trait Meta Mood Scale (TMMS - 24) which focuses on the emotional clarity of the individual along with a subscale of the Toronto Alexithymia Scale (TAS -26) which focuses on the difficulty in identifying emotions was administered to all the participants. The TAS-26 has a Cronbach's alpha coefficient of 0.71 indicating sufficient reliability (Sandra Kocijan Lovko et al., 2015). The internal reliability of the original TMMS was 0.95 (95%).

Likewise, for each of its three dimensions, the Cronbach alpha values obtained were greater than 85%. We can assert that the items are homogenous and that the three subscales consistently measure the characteristics for which they were created, thus, they are reliable and demonstrate strong construct validity (Maritza Espinoza-Venegas et al., 2015)

### *Procedure*

All the participants were briefed about the process. Informed consent was signed by them and then they were oriented to these practices. They were guided to practice the same for a period of 2 months. The study followed a pretest-intervention-posttest model.

### *Statistical Analysis*

The data collected were statistically analyzed using Microsoft Excel. The pre-test data were tested for normality and were found to be normal. Following this discovery, the data were analyzed using parametric tools. The pretest and posttest scores were compared using the mean and standard deviation of the scores obtained before and after the intervention period on the measures of TMMS and TAS scoring. The correlation was established using Pearson's correlation coefficient. The pre-test and post-test data were paired and paired t-test was performed to study the effect and relationship between the two variables.

## **RESULTS AND DISCUSSIONS**

### *Mean and Standard Deviation*

The mean and standard deviation of pre-test and post-test data was calculated and analyzed using the composite scoring method. Composite scoring is a statistical method used to combine individual scores or measurements from multiple variables into a single score or index. This method is often used in research studies to simplify complex data sets and provide a more comprehensive assessment of a particular construct or outcome. There are several different types of composite scores that can be used in research, including weighted composite scores, mean composite scores, and factor composite scores. Weighted composite scores involve assigning different weights or importance to individual scores based on their significance, whereas mean composite scores involve calculating the average of all individual scores. Factor composite scores involve grouping together related variables and creating a



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composite score for each factor or underlying dimension. Composite scoring can be used in various fields, including psychology, education, public health, and social sciences. It can also be used to measure a wide range of constructs, such as personality traits, academic achievement, health conditions, and socioeconomic status. One of the key advantages of composite scoring is that it can increase the reliability and validity of research findings by reducing measurement errors and improving the accuracy of the assessment. It can also simplify the data analysis process and make it easier to communicate results to a broader audience. However, composite scoring also has its limitations and challenges. For example, the different weighting schemes used in weighted composite scoring can be subjective and may not reflect the actual importance of individual scores.

Similarly, creating a single score for a complex construct can oversimplify its nature and fail to capture its multidimensional nature. Composite scoring is a powerful tool that can provide a more comprehensive and accurate assessment of various constructs and outcomes in research studies. However, it requires careful planning and analysis to ensure its reliability, validity, and effectiveness.

For the purpose of this study, the means were calculated using a weighted average. The scores of TMMS were given a weight of 0.611 as they composed 61.1% of the total number of questions and the scores of TAS were given a weight of 0.389 for the same. The standard deviation calculated using the weighted average for the pre-test and post-test were 5.1411 and 5.7930 respectively.

### *T test: assuming unequal variances*

A t-test assuming unequal variances, also known as Welch's t-test, is used to compare the means of two independent samples when the assumption of equal variances is violated. This test is more conservative than the traditional t test assuming equal variances. The t value calculated from this formula is then compared to a t distribution with the degrees of freedom calculated. If the t value is greater than the critical value at a specified level of significance, the null hypothesis that the two population means are equal is rejected.

For this study, the one-tailed t value was at 0.0678 and the critical value was 1.6694. The two-tailed t value was at 0.1356 and the critical value being 1.9983. Thus, it indicates that there is a significant difference between the two scores. The alpha value was kept at 0.5 for the same inferring that the null hypothesis can be rejected.

**Table 1 T test assuming unequal variances**

<b>Statistics</b>	<b>Pre-test</b>	<b>Post-test</b>
Mean	29.33306061	30.22321212
Variance	5.719750746	5.727425297
Observations	33	33
Hypothesized Mean Difference	0	
df	63	
t Stat	-1.511373226	
P(T<=t) one-tail	0.067846738	
t Critical one-tail	1.669402162	
P(T<=t) two-tail	0.135693476	
t Critical two-tail	1.998340472	

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### *T test: paired two samples for means*

Paired t-test is a statistical method used to compare the mean scores of two related or dependent groups. This method is also known as a dependent-sample t-test, repeated measures t-test, or matched pairs t-test.

The paired t-test compares the mean differences between two sets of observations taken from the same population, or from two populations that are dependent on each other. For example, a paired t-test can be used to compare the before and after weight of the same group of people who have undergone a weight loss program.

A paired t-test requires that the paired observations be numerical and continuous and that the sample follows a normal distribution. The t-test calculates the difference between the means of the two paired samples and compares it to the standard error of that difference.

The results of a paired t-test can help researchers determine whether there is a significant difference between the means of the two samples or if the differences are due to chance. This information can provide valuable insights into the effectiveness of interventions or treatments on human subjects.

For this study, the paired t-test yielded a negative t-statistic value. In general, a negative t-statistic indicates that the sample mean is lower than the population means. It may also suggest that there is a significant difference between the sample mean and the population mean, but in the opposite direction to what was hypothesized. The degree of significance can be determined by the p-value, where a lower value implies a greater level of statistical significance. In this study, the t-statistic value was at -2.1220 indicating that there was a significant increase from the pretest to the post-test scores. The one-tailed t-value was at 0.0208 and the critical value was 1.6938. The two-tailed t-value was at 0.0416 and the critical value was 2.0369. Both the values are lesser than the critical value hence affirming the above inference.

**Table 2 T-test two sample for means**

Statistics	Pre test	Post test
Mean	29.33306061	30.22321212
Variance	5.719750746	5.727425297
Observations	33	33
Pearson Correlation	0.492755159	
Hypothesized Mean Difference	0	
df	32	
t Stat	-2.122085402	
P(T<=t) one-tail	0.020833241	
t Critical one-tail	1.693888703	
P(T<=t) two-tail	0.041666482	
t Critical two-tail	2.036933299	

### *Pearson's correlation coefficient*

Pearson's correlation test is used to determine the strength and direction of a linear relationship between two continuous variables. The result of this test is a correlation coefficient, which ranges from -1 to +1.

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If the correlation coefficient is close to +1, it indicates a strong positive relationship, which means that as one variable increases, the other variable also increases. If the correlation coefficient is close to -1, it indicates a strong negative relationship, which means that as one variable increases, the other variable decreases. If the correlation coefficient is close to zero, it indicates little to no relationship between the variables.

The p-value associated with the correlation coefficient indicates the statistical significance of the relationship. If the p-value is less than 0.05, it indicates a statistically significant relationship. Pearson's correlation test is a useful tool to determine the degree of association between two variables and can inform further analysis or decision-making.

For this study, Pearson's coefficient was calculated and yielded 0.4927. Statistically, this indicates a moderately high correlation between the two variables.

### DISCUSSION

The above results indicate that the consistent practice of kapalabhati and bhastrika for a minimum of 1 month can yield significant results and improve affect clarity. Kapalabhati and bhastrika are two powerful yogic breathing techniques that can be used in mental health therapy to reduce stress, anxiety, and other symptoms of mental distress. These techniques work by increasing the flow of oxygen to the brain, which can help calm the mind and reduce stress levels.

Kapalabhati is a form of active exhalation where you forcefully exhale through your nose, expelling air from your body with a hissing sound. This technique can be used to increase energy levels, clear the mind, and reduce stress and anxiety.

Bhastrika is a form of rapid and forceful breathing where you inhale and exhale through your nose. This technique can be used to improve lung capacity, increase oxygen levels in the blood, and reduce stress and anxiety.

In mental health therapy, these yogic breathing techniques can be incorporated into mindfulness practices to help individuals regulate their emotions, reduce feelings of anxiety and stress, and promote a sense of calm and relaxation. Kapalabhati and bhastrika can also be used in combination with other therapeutic interventions, such as cognitive-behavioral therapy, to help individuals develop coping skills and reduce symptoms of depression and anxiety.

Overall, these yogic breathing techniques can be an effective tool in mental health therapy to improve emotional regulation, increase relaxation, and reduce symptoms of mental distress.

#### *Limitations of study*

- Limited control over extraneous variables. Pretest-intervention-posttest research method may not be able to control all the extraneous variables that can affect the outcome, which may reduce the internal validity of the results.
- Experimental mortality. Participants dropped out of the study before the post-test, leading to a reduction in sample size and the possibility of bias in the results.
- Practice effects. Participants may improve their performance on the post-test simply because they have had more exposure to the test material during the pre-test, leading to an overestimation of the intervention's effect.

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- History effects. Environmental or social events may occur during the intervention that could either enhance or impede the effects of the intervention.
- Selection bias. Participants may not be representative of the general population, which may limit the ability to generalize the results.
- Regression to the mean. Participants with extreme scores on the pretest are likely to score closer to the mean on the post-test, which could give the appearance that the intervention has a positive effect.

### SUMMARY AND CONCLUSION

This study effectively concludes that yogic practices have significant effects on mental health and mental processes. Specifically, the practices of kapalabhati and bhastrika were proven to have significant positive effects on the affect clarity of participants. Although the study has its limitations, the effects and results are undeniable. This study is proof enough that ancient and indigenous practices can have scientific bases and human utility. This opens up new arenas for exploratory and experimental research within this subfield. Aspects taken into consideration in this study are only a few of the many practices available in yogic texts. Several such practices lie in the dark, unexplored, waiting to see the light of modern research. As stated above, the findings of the present research offer a wide array of therapeutic applications for these practices. This also adds to the list of non-intrusive and non-drug-based therapies, which have been the focus of Psychology in modern times. Thus, this study has successfully filled a part of the research gap that exists between modern research and indigenous practices as well as the gap in research between psychology and the use of religious and spiritual techniques in therapeutic settings.

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### ***Conflict of Interest***

The author(s) declared no conflict of interest.

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