

# Impact of Guided Imagery on the Vigilance and Emotionality of the College Students

Lasika Gudhainiya<sup>1</sup>, Dr. Alpana Mohan<sup>2</sup>

Research scholar<sup>1</sup>, Associate Professor<sup>2</sup>, Department of Psychology, V.M.L.G. College Ghaziabad

[Lashikasharma999@gmail.com](mailto:Lashikasharma999@gmail.com)<sup>1</sup> [alpana.mphan@gmail.com](mailto:alpana.mphan@gmail.com)<sup>2</sup>

## Abstract

The aim of the present study was to investigate the impact of Guided Imagery on the vigilance and emotionality of the college students as well as well being of them. The sample comprised of 100 students conveniently selected from Dayalbagh Educational Institute (DEI), Agra. Their age ranged in between 20 – 29 yrs and they belonged to urban areas. The Bourdon-Wiersma vigilance test and Eysenck Personality Profile (EPP) was used to generate data. Mann – Whiteny U test was used to statistically analyze the difference in between the groups i.e. high and low emotionality. Results for Part ‘A’ indicate that there is a significant difference ( $z$ - values =  $-1.961$ ,  $-1.965$ ,  $p < 0.05$ ) between vigilance [Total Responses (TR), Correct Responses (CR)] only but this difference is not significant ( $z = -0.838$ ,  $p > 0.05$ ) for the Error Responses(ER)] of high and low emotionality groups. In Part ‘B’, ten willing subjects with high emotionality were purposely selected from the Part ‘A’ of the study for the sample. They were given 20 days intervention of meditative stimulus with guided imagery. Wilcoxon-T test was used for data analysis. Results indicate that there is no significant difference in the pre and post test scores of emotionality ( $z$  – values =  $0.284$ ,  $p > 0.05$ ) of the subjects. Impact of Guided Imagery on vigilance (TR, CR and ER) of subjects also show that there is no significant difference in pre and post test scores ( $z$ - values =  $0.566$ ,  $0.285$ ,  $0.437$ ,  $p > 0.05$ ) respectively. Although the impact of Guided Imagery intervention is reflected in the mean scores of pre and post measure of vigilance but the difference is not significant enough to generalize the results.

**Keywords:** Guided Imagery, Vigilance, Emotionality, Meditation.

## 1. Introduction

Meditation from ancient was meant to help deeper understanding of the connected with God and spiritual forces of life. Now a days , meditation is commonly used for relaxation and stress management. Meditation enhanced the mind-body relationship and works like medicine in some cases. Meditation helps in a deep state of relaxation and a healthy mind. Meditation focus our attention and eliminate the jumbled thoughts that may be crowding your mind and causing stress. The meditation process helps in enhanced physical and emotional well-being. Meditation is a technique that self-directed practice for relaxation the body and calming the mind.

**Guided meditation:** Sometimes called guided imagery or visualization, with this method of meditation individuals from mental images of places or situations they find relaxing. They try to use as many senses as possible, such as smells, sights, sounds and textures. They may be led through this process by a guide or teacher. Practicing guided imagery enables to:

- temporarily increase number of immune system cells to keep the rest of the body healthy
- help reduce feelings of depression and

- increase feeling of well-being

Today, the technique of guided imagery is used most effectively used in medical setting in the management of acute or chronic pain, depression, anxiety, hypochondria, negative emotions nausea and vomiting (*Giedt, 1997*).

In modern psychology, vigilance, means sustained attention and its defined as the ability to maintain attention and alertness over prolonged periods of time. During this time, the person attempts to detect the appearance of particular target stimulus.

Apart from the vigilance of the subject, their emotionality is also affected to a greater extent with constant efforts using meditation practice with different stimulus. The physiology of emotion is closely linked to arousal of the nervous system to particular emotions various state of arousal.. Although those acting primarily on emotion may seem as if they are not thinking, where as cognition is an important aspect of emotion, particularly in the interpretation of events. For example, the experience of response to a threat usually occurs in fear. The subsequent arousal of the nervous system and cognition of danger (e.g. rapid heartbeat and breathing, sweating, muscle tension) is an subsequent interpretation and labeling of that arousal as an emotional state. Emotion is also linked to behavioral tendency. Emotionality, , can be a characteristic of non-human processes or entities like rationality. Individuals have no great problems speaking of an emotional encounter, an emotional decision, an emotional space, an emotional film, and the like—even if he/she still feel compelled to project a human subject as the source of these emotional experiences.

Research on emotion has increased significantly over the past two decades with many fields contributing including psychology, neuroscience, medicine, history, sociology, and even computer science. The current research is conducted about emotionality which involves the dimensions like; Unhappiness, Anxiety, Dependence, Hypochondria etc. It is a known fact now that PET scans and fMRI scans help study the affective processes in the brain and have shown meditation as effective technique for positive emotional responses. Instead of using these techniques a pre and post measure will also serve the purpose of knowing about the changes due to meditation.

In Eysenck's Theory (1947), the EPP differs from most if not all other systems of personality description and measurement in a variety of ways which will become clear in due course. It is closely integrated with the theory of personality development; it is firmly grounded in a causal theory of personality determination; and it claims to have universal applicability, i.e. not to be dependent on cultural factors.

In a study, meditation training may disrupt the risk chain of stress-precipitated alcohol relapse was investigated by **Garland, Gaylord, Boettiger and Howard (2010)**. In 2008, 53 alcohol-dependent adults (mean age = 40.3) recruited from a therapeutic community located in the urban south-eastern U.S. were randomized a support group or mindfulness training . Most participants were male (79.2%), African American (60.4%), and earned less than \$20,000 annually (52.8%). Self-report measures, psycho-physiological cue-reactivity, and alcohol attentional bias were analyzed via repeated measures ANOVA. Thirty-seven participants completed the interventions. Meditation training significantly reduced stress and thought suppression, increased physiological recovery from alcohol cues, and modulated alcohol attentional bias.

In another study, a number of benefits from meditation have been claimed by those who practice various traditions, but few have been well tested in scientifically controlled studies. Among these claims are improved performances and decreased sleep need. Therefore, in these studies it was assessed whether meditation leads to

an immediate performance improvement on a well validated psychomotor vigilance task (PVT), and second, whether longer bouts of meditation may alter sleep need (**Kaul, 2009**).

### **Justification of the Topic**

Meditation is an intensely personal and spiritual experience. The desired purpose of each meditation technique is to channel normal waking consciousness into a more positive direction by totally transforming one's state of mind that will further influence the vigilance and emotionality of the individuals. To meditate is to turn inwards, to concentrate on the inner self. Meditation opens up to a whole universe of change and possibility that will simplify and satisfy the individual. Meditation technique allows mind to settle inward beyond thought to experience the source of thought – pure awareness. Guided Imagery is a meditation technique used by many natural or alternative medicine practitioners as well as some physicians and psychologists for aiding clients to use mental imagery to help with anything, from healing their bodies with Cancer guided imagery to solving problems or reducing stress. In this state of restful alertness, brain functions significantly with greater coherence and body gains deep rest.

This increases the vigilance of the individual for better concentration on their performance. Further, when the person concentrates on inner self, his/her degree of emotionality i.e. Inferiority, Unhappiness, Anxiety, Dependence, Hypochondria, Guilt and Obsessiveness will undergo changes. Emotionality is about how much one feels valued, loved, accepted, and thought well off by others and how much he/she value, love, and accept themselves. Emotionality is one of the most controversial topics in psychology, a source of intense discussion and disagreement from the earliest philosophers and other thinkers to the present day. Individual emotions and emotional text are different interpretations and evaluations of a given . The interpretations change easily because with emotionality individual moves in the realm of difference. To focus on emotionality, instead of emotions help us to analyze these texts as such without getting too distracted by their assessments. So the present research is relevant enough to focus on these issues and find out the chances of improving the situation i.e. bringing positive change in the vigilance and emotionality of the subjects through intervention.

### **METHODOLOGY**

The study is conducted in two parts i.e. Part 'A' devoted to finding the difference in vigilance scores of the subjects, high and low on emotionality and Part 'B' devoted to the intervention given and observing its impact on vigilance and emotionality of the subjects.

#### **PART 'A'**

##### **Objective**

To comparatively analyze the difference in the vigilance [Total numbers of responses (TR), correct responses (CR) and Error responses (ER)] of high and low emotionality groups.

##### **Variables**

**Independent Variables:** Emotionality [**Neuroticism:** (called Emotionality in the EPP) Inferiority, Unhappiness, Anxiety, Dependence, Hypochondria, Guilt and Obsessiveness] (High and low)

**Dependent Variables:** Vigilance [Total numbers of responses (TR), correct responses (CR) and Error responses (ER)]

**Relevant Variable:** Age (20 -29), Gender (Females only) Education (Under Graduation –Ph.D)

##### **Hypothesis**

- There will be a significant difference in the vigilance (Total Responses, Correct Responses and Error Responses) of high and low emotionality groups.

### **Operational Definition**

**Vigilance:** Vigilance refers to situations in which nothing much is happening, but a person pays attention in the hope of detecting something whenever it does happen.

**Emotionality:** Emotionality is the physiological component of anxiety, and can manifest itself as muscle tension, elevated heart rate, sweating, feeling sick and shaking.

Emotionality is about how much one feels valued, loved, accepted, and thought well off by others and how much he/she value, love and accept themselves.

### **Sample**

The study is conducted on 100 female students selected conveniently from DEI, Agra. Their age range is in between 20-29 yrs and they are from urban areas. They did not have any severe psychiatric illness.

### **Tools**

The following tools were used to measure the variables under consideration for the study.

**Bourdon-Wiersma vigilance test:** This dot cancellation test is used to measure perceptual speed and perceptual accuracy indicating vigilance of subjects. The test consists of 50 rows of groups of 3, 4 or 5 dots with 8 groups of 4 dots in each row. The task is to strike out the groups of 4 dots in each row as accurately and quickly as possible within 8 minutes time. The test is sufficiently reliable and valid and used for various researches earlier.

**Eysenck Personality Profile (EPP):** (Manual version 6.4) – (2000) this is widely used in research and consultancy. In Organizations, its widely used as a selection and appraisal tool. It also has clinical applications. The Eysenck Personality Profile (EPP) measures 21 traits of personality that is consistent with the three major dimensions of personality as defined by Professor Hans Eysenck. The questionnaire was developed by Eysenck and Wilson (2008). **Neuroticism:** (called *Emotionality in the EPP*) Inferiority, Unhappiness, Anxiety, Dependence, Hypochondria, Guilt and Obsessiveness.

### **Research Design**

In order to test the hypothesis for this study, double group design was used.

### **Procedure**

First the researcher established rapport with the subjects. Then Eysenck Personality Profiler (EPP) and then Bourdon-Wiersma vigilance test were administered by the researcher on the subjects to obtain the scores. The two groups were divided on the basis of the mean as high emotionality and low emotionality groups. Their vigilance was compared on the basis of total response (TR), correct response (CR) and error response (ER).

**Statistical Tool** Mann – Whitney U test to analyze the difference in between groups is used.

## **PART 'B'**

### **Objective**

To study the impact of Guided imagery on the vigilance and emotionality of the college students.

## **Variables**

**Independent Variables:** Guided Imagery (Verbal meditative stimulus.)

**Dependent Variables:** (1) Vigilance [Total numbers of responses (TR), correct responses (CR) and Error responses (ER)]

(2) Emotionality [**Neuroticism:** (*called Emotionality in the EPP*) Inferiority, Unhappiness, Anxiety, Dependence, Hypochondria, Guilt and Obsessiveness]

**Relevant Variable:** Time of the day (Morning), Language (for verbal meditative stimulus, understanding of English language required).

## **Hypotheses**

- There will be no significant impact of Guided imagery on Vigilance (TR, CR and ER) of college students.
- There will be no significant impact of Guided imagery on emotionality dimensions of college students.

## **Operational Definitions**

**Guided Imagery:** Guided imagery or visualization, with this method of meditation one forms mental images of places or situations that he/she finds relaxing. One tries to use as many senses as possible, such as smells, sights, sounds and textures. One may be led through this process by a guide or teacher.

## **Sample Description**

Ten female students were selected from Part 'A' of the study identified high on emotionality were included in the sample for Part 'B' of the study. Their age ranged in between 20-25 yrs and they were from urban areas. They all were good in understanding English language. They were given an orientation for the meditative technique. They were not exposed to meditation technique earlier. They were willing to be a part of the intervention. Purposive sampling was used.

**Research Design** In order to test the hypothesis for this study, a single group pre and post measure design was used.

## **Technique**

The following tool was used to measure the variables under consideration for the study.

**Guided Imagery:** For Guided imagery 10 minutes 04 seconds verbal instructions in English for deep relaxation and concentration were used. Deep relaxation by George is used as a stimulus.

## **Procedure**

First researcher built a rapport with the subjects. Then as a part of the pre measure of the study, Eysenck personality profile questionnaire and then Bourdon-Wiersma Vigilance test was administered by the researcher on the subjects to obtain the pre measure scores. Then the researcher gave instructions to the subjects about the procedure for meditation.

The instructions were as follows: "Along the path to a sincere meditation, you will encounter many distractions that provide opportunities for you to strengthen your focus, and may discourage you as well. These distractions come in the form of thoughts, emotions and physical interruptions, creatively disturbing you in the way of itchiness, aches and pains. At other times, your mind may come up with lists you need to make, conversations you need to have to learn that your meditation time is valuable. In fact, when taken seriously and practiced diligently, it become the most sacred time of your day.

When you learn to listen, you become accustomed to the sound and you rest within it. Then you truly can come into union with peace. You become a living and loving being who relates to all of life through a prism that is fueled by joy, connection and love. In fact, you being to radiate that joy and love to all whom you meet and everything you touch. Your days turn into opportunities to share that experience and you look for ways to contribute to the continuation of this really for yourself and others. You simply become happy”.

Initiates then removed their shoes and sat comfortably on the matt in the counseling room. While sitting comfortably with eyes closed without assuming any special yoga position. The technique was practiced for 10 -12 minutes daily in the morning. The practice was easy and natural. They were further instructed:

- 1) While you sit down and get settled and comfortable, make sure that there are no distractions
- 2) Close your eyes, and then allow your mind and body to relax.
- 3) Breaths slowly and deeply, let you feel the mind relaxing.
- 4) Listen to the music/voice that will be played here and continue to concentrate.
- 5) Feel the bliss that the music/voice gives, while following the instructions for the verbal stimulus but do not force you to concentrate. Let the comfort come naturally in your mind.
- 6) Allow yourself to focus on the universe as well as the feeling of closeness and togetherness with the universe, while you continue to mentally concentrate for about ten to fifteen minutes till the music/voice is heard.

Twenty days intervention was given to the subjects with high emotionality included in the sample. 20 minutes session was given to the subjects along with the instructions. Then after 20 days a post measure of EPP (emotionality) and vigilance was taken, the options for cancellation in vigilance test was changed to reduce the practice effect. Measures of emotionality and vigilance done in Part ‘A’ of the study served as pre measure in Part ‘B’.

**Statistical Tools** Wilcoxon –T test was used to analyze difference in pre and post measures.

### **Data Analysis**

#### **Part ‘A’**

The statistics employed in this research study include Mean, SD and Mann- Whitney U test, to know the significance of difference in the vigilance (TR, CR and ER) of high and low emotionality groups

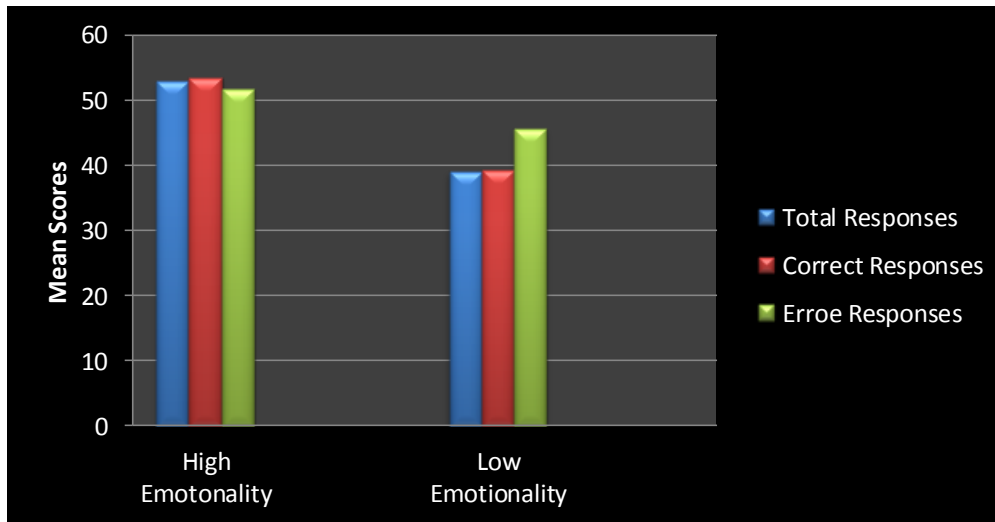
***TABLE 4.1 Mean and Standard Deviation of vigilance (TR, CR and ER) of high and low emotionality groups (N = 100)***

Measures of vigilance test	High Emotionality group		Low Emotionality group	
	Mean	SD	Mean	SD
<b>Total Responses</b>	53.03	28.56	39.3	28.50
<b>Correct Responses</b>	53.30	28.58	39.27	28.40
<b>Error Responses</b>	51.67	29.07	45.65	28.33

It can be observed from result Table 4.1 that means scores of Total Responses in high emotionality group is 53.30 and in low emotionality group is 39.30. Further for Correct Responses mean score in high emotionality group is 53.30 and in low emotionality group is 39.27. Here also there is an increase in the mean score in high emotionality group. Error Responses in high emotionality group is 51.67 and in low emotionality group is 45.65. According to the mean scores high emotionality group indicates higher vigilance (TR and CR) in comparison to low emotionality group.

There is a slight difference in the TR, CR and ER of high and low emotionality groups which is also reflected in the bar diagram Figure 4.1 showing the bars for high emotionality group higher than the low emotionality group for TR, CR and ER.

**Figure 4.1: Bar diagram showing mean scores on vigilance high and low emotionality groups.**



Further, to test the significance of this difference in mean scores, Mann-Whitney U test was calculated for the scores of Total, correct and error responses for vigilance, which are presented in Table 4.2.

**TABLE 4.2 Summary of Z-Values for the vigilance (TR, CR and ER) of the high and low emotionality groups.**

Measures of Vigilance	N	Mean Rank	U	Z-Values	Level of Significance
Total Responses	100	52.05	576.00	<b>-1.961</b>	p < 0.05
Correct Responses	100	50.05	575.50	<b>-1.965</b>	p < 0.05
Errors Responses	100	60.60	703.00	<b>0.838</b>	p > 0.05

It can be observed from Table 4.2 that z observation of Total Responses is **-1.961**, Correct Responses is **-1.965** and Error Responses is **0.838**. Since the absolute values of z-observed for two measures of vigilance (Total and Correct) responses are more than the table value of z critical = 1.96, p < 0.05, we accept the hypothesis and conclude there is significant difference in the vigilance (TR, CR and ER) of high and low emotionality groups.



**Part ‘B’**

The statistics employed in this research study include Mean, SD and Wilcoxon – T test , to know there is any impact of Guided imagery on emotionality dimensions of college students and is there any significant impact of Guided imagery on Vigilance (TR, CR and ER) of the college students. The scores are presented in the Table 4.3.

**TABLE 4.3 Mean and Standard Deviation of pre and post test of emotionality for college students. (N = 10).**

Measures of Emotionality	Pre test		Post test	
	Mean	SD	Mean	SD
	161.7	8.47	232.5	7.35

It can be observed from result Table 4.3 that mean scores of emotionality in pre test is 161.7 and in post test is 232.5, where the mean of the post test is higher in comparison to the pre test. Further to test the significance of this difference Wilcoxon T-test in applied and the scores presented in the Table 4.4.

**TABLE 4.4 Summary of Z-Values for Emotionality for the pre and post test of the students (N =10).**

Measures of Emotionality	T	Z- Value	Level of Significance
	55	0.284	p > 0.05

It can be observed from Table 4.4 that z observation of emotionality measures is **0.284**, that is since the absolute values of z- observed is less than the table value of z critical =1.96, p> 0.05, we accept the hypothesis and conclude no significant impact of guided imagery on the emotionality dimensions of college students.

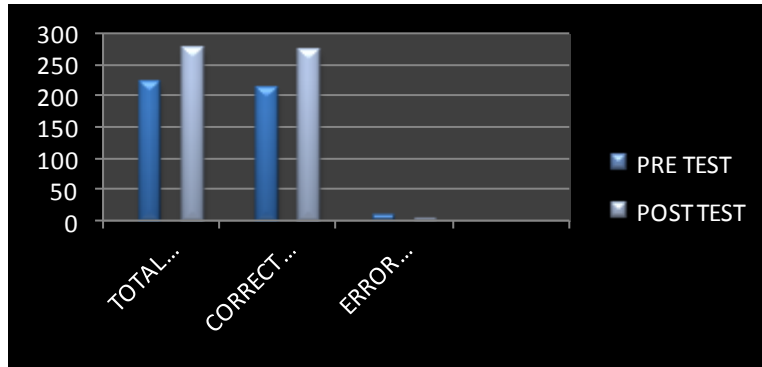
Further, it can be observed from result Table 4.5 that mean score of Total Responses in pre test is 222.08 and in post test are 276.2 where the mean is higher for the post test indicating increase in the total responses for the post test measure. In addition to this, for Correct Responses mean score in pre test is 214 and in post test is 272.7. Here also there is an increase in the mean score for correct responses from pre to post test. The scores are presented in the Table 4.5.

**TABLE 4.5 Mean and Standard Deviation of pre and post test of vigilance for college students (N = 10).**

Measures of vigilance test	Pre Test		Post Test	
	Mean	SD	Mean	SD
<b>Total Responses</b>	222.08	58.57	276.2	31.56
<b>Correct Responses</b>	214	58.19	272.7	32.84
<b>Error Responses</b>	8.8	6.12	3.5	2.63

This difference is also shown in the bar diagram Figure 4.2 where the bar for post test is higher as compared to the pre test.

*Figure 4.2 Bar diagram showing mean scores on vigilance for pre and post test of the college students.*



In connection to this, the mean score for error responses in pre test is 8.8 and in post test are 3.5 where there is a decrease in the errors, also indicated by the bars of errors in Figure 4.2 as the bar for post test is lower than the pre test. According to the mean scores it is observed that the guided imagery technique has shown some impact on the vigilance of the students but these results cannot be generalized.

Further, to test the significance of this difference in mean scores, Wilcoxon –T was calculated for the scores of Total, correct and error responses, which are presented in Table 4.6

*Table 4.6 Summary of Z-Values for the vigilance (Total, correct and error responses) of the college students (N=10).*

Measures of Vigilance	T	Z-Values	Level of Significance
<b>Total Responses</b>	-82	<b>0.566</b>	p > 0.05
<b>Correct Responses</b>	-55	<b>0.285</b>	p > 0.05
<b>Errors Responses</b>	-69	<b>0.437</b>	p > 0.05

It can be observed from Table 4.6 that **z** observation of Total Responses is **0.566**, Correct Responses is **0.285** and Error Responses is **0.437** for the vigilance. Since the absolute values of **z**- observed for all three measures of vigilance are less than the table value of **z** critical =1.96,  $p > 0.05$ , we accept the hypothesis and conclude no significant difference is brought about by the guided imagery meditative stimulus on the vigilance of the candidates.

Thus, with the above stated results, the comparison and analysis of all the combinations was done and the interpretation of the scores was also extracted.

The central focus of the present study was concentrated on finding out whether there is a difference in vigilance of subjects in context to their emotionality. Analysis of the data and interpretation of the results of the present study leads to the following findings and conclusions that may be summarized:

#### **PART 'A'**

##### **Finding**

- There is a significant difference in the vigilance (TR, CR and ER) of high and low emotionality groups. Thus the hypothesis is found true, and is accepted.

##### **Discussion**

This study shows that high emotionality group is higher in vigilance task than the low emotionality group. These results indicate that sometimes people are more attentive in stressful situations and get more concentration on the task when they feel high emotionality. To support this as stated earlier in the text vigilance tasks may be assumed to be stressful, hard mental work (**Davies and Tune,1969**) therefore individuals are sometimes comfortable performing under stress and definitely get leading to higher performance than the expected.

#### **PART 'B'**

In part 'B' the central focus was finding out whether there is an impact of Guided imagery on emotionality dimensions and Vigilance (TR, CR and ER) of college students. Analysis of the data and interpretation of the results of the present study leads to the following findings that may be summarized:

##### **Findings**

- There is no significant impact of Guided imagery on emotionality dimensions of college students. Thus the hypothesis is found true, and is accepted.
- There is no significant impact of guided imagery on vigilance (TR, CR and ER) of college students. Thus the hypothesis is found true, and is accepted.

##### **Discussion**

In a study **Olson and Janes (2006)** hypothesized that people are 'vigilant' for difference between stimuli. Results show that unexpected differences were rated as more surprising than unexpected similarities for positive and negative events. The researcher can support the findings with this as the test might have turned out to be an unexpected similarity so it was not all that surprising to make the candidates more vigilant.

##### **Conclusion**

Thus, on the basis of above findings and discussion it can be concluded that the high and low emotionality groups shows difference in their vigilance (TR, CR, and ER) but the guided imagery does not show a significant impact on vigilance and emotionality dimensions of the high emotionality group.

### **Limitations**

The present study also has a few limitations that have come into light which are as follows:

- The sample of the research, especially part 'B', was small this is not enough for the generalization of research results.
- Different dimensions of emotionality were not analyzed this gives possibility for future research as it may give insight into new realms of emotionality and vigilance.
- Students above 29 yrs and below 20 yrs can be included in the study.
- The time duration of pre and post measure can be increased. Time duration of the technique can also be increased to have a better impact.
- Other meditation techniques can be used and tested against the same environment.
- Data can also be generated from other college students in and around Agra city.

### **Suggestions**

From the above findings it can be suggested that vigilance is closely associated to concentration of the individuals. The distractor need to be controlled well in order to specifically measure the vigilance. This was a field experiment where certain controls were not possible in the environment but care can be taken to make the concentration of the subjects more stable before the measurement of the vigilance by taking a measure at an appropriate time.

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