



Transient Changes in Visual Functions During An Acute Episode Of Depression

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Objectives: To find evidence on effects of depression, anxiety or stress on the visual functions and to evaluate visual performance in depressed patients with no other ocular anomalies and find out which component of visual system is more compromised due to depression.

Method: Screening of Visual acuity, Contrast sensitivity, Color vision, Glare sensitivity and Visual field were carried on 80 patients having clinically diagnosed depression using Snellen chart, Ishihara test, Lea low contrast test, Snellen chart for Glare sensitivity and Confrontation respectively.

Results: 1% of depressed patients show decrease in Visual acuity and Contrast sensitivity with higher value for glare sensitivity while 99% of depressed patients exhibit no defect in visual processing. Anxiety, Stress and Panic also do not affect visual functions. This study is unbiased to age, gender and occupation.

Conclusion: Depression does not affect vision or any component of visual functions. Visual acuity and Contrast sensitivity is more likely to be affected by depression. Most cases illustrate the bi directional relationship between depression and visual anomalies.



Introduction:

Depression is a diagnosable and detectable illness. Feeling of sadness cannot be characterized as depression; it has certain symptoms which exhibit physically. Clinical depression has many names such as Major Depressive Disorder, Unipolar Depression and Recurrent Depression. Features founding the baseline of depression are mostly mood disorders. Anxiety, phobia and extremities can be a part of an acute attack of depression, but during an episode of depression each patient may present with different scenarios. Depression, in other words can be explained as low moods in the form of low self esteem, sadness, guilt or lack of interest in things once pleasurable. The basic symptoms which fall in clinical terms for depression is sadness, distressful mood, deviance in mental abilities, reduction and aggravation of motor behavior secondarily it involves somatic fixation, sense of de-personalization, suicidal thinking, insomnia, loss of weight and loss of appetite.¹ 50% of anomalies in psychopathology is related to depression but prevalence changes with the type depression.² Depression has many types: Major depression, persistent depressive disorder, postpartum depression, seasonal affective disorder and bipolar disorder.³ Depression has its many forms, it can be seasonal or non seasonal. It can be due to anxiety (neurotic) or psychotic. Person can have bipolar disorder or a mother can suffer from postpartum depression. Depression affects the performance and efficiency of daily tasks, sleep cycle, eating habits, irritability, intestinal problems, body aches even decision making process slows down. Its acme is suicide. Causes of depression: it is a vast topic with adverse debates on it. Causes of such disease can be related to the age, gender, occupation and environment. It takes a wide range in its grip to begin explaining. It can be hereditary or due to a sudden event or accident in once life, for the worst it can be of idiopathic etiology. Being gender biased females tend to have depression more than males, depression may have different causes in adolescent to take place like it can be due to lack of autonomy, competitive environment in academia, inability to perform specific task which seems quite easy for other age fellows, relationship with family and sibling, Feeling different than others so they seem unable to comprehend you⁴. So depression roots out from a versatile pattern like being diseased, many of the researches shows cancer, low vision, diabetes and multiple sclerosis ends up in severe depression or depression can be the starting step of some disease like Parkinson's disease. Relation among vision and depression is complex in a bi directional way as it can be the root or can be the consequence. It is seen that depressive patient if encounters difficulty in vision they seem irrelevant for an eye checkup. According to a study distress specific to

vision is a indicator for the precursor of stress and anxiety⁵. Depression affects the body and general health by altering the typical program of mind. Depression also effects on the contrast we perceive of this colorful world. In one way or another it hinders ocular health. According to one of facts made clear, that depressive patient tend to see world more in gray tones which illustrate well with the phrase "feeling blue" as one of the sense of sadness. Some of science work is also established this statement that a depressive patient focuses on low tones or sad angle of a picture for longer than a normal human being. Depression is a mental disease which has all of its doing in brain and in some critical way it interferes in ability of an individual with clear vision. Eye is the intricate neurosensory organ with the purpose to discriminate patterns and difference in light stimuli. Once ability to perceive the surrounding is known as vision but it is not as simple phenomena, a whole world of science open up behind it. It involves optic nerves, tracts to transport these peculiar signals to the visual cortex and the translating brain centers.

Materials and Methods:

Eighty Patients aged 18 to 40 years of Depression admitted in psychiatry ward of Mayo Hospital Lahore were evaluated from August to December 2014 in this cross sectional study. Their Visual Acuity, Visual Fields, Contrast Sensitivity, Color Vision & Glare were measured and gauged against the Severity & Type of depression, Gender, Occupation & Socio-economic status.

Visual acuity was measured by Snellen visual acuity chart. Color vision by Ishihara test, Contrast Sensitivity by Lea contrast sensitivity chart, Visual Field by confrontation method while Glare sensitivity was recorded by brightness acuity test.

Results:

Visual Acuity of Right Eye * Depression Cross-tabulation

		Depression	Total
		yes	
Visual Acuity of Right Eye	6/6 -6/12	75	75
	6/12 -6/60	5	5
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on Visual Acuity.

**Table:3**

Contrast Sensitivity of Right Eye * Depression Crosstabulation

		Depression	Total
		yes	
Contrast Sensitivity of Right Eye	1.25%-5%	77	77
	5%-25%	3	3
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on contrast sensitivity

Table:4

Contrast Sensitivity of Left Eye * Depression Crosstabulation

		Depression	Total
		yes	
Contrast Sensitivity of Left Eye	1.25%-5%	77	77
	5%-25%	3	3
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on contrast sensitivity

Table:5

Color Vision of Right Eye * Depression Crosstabulation

		Depression	Total
		yes	
Color Vision of Right Eye	12/12-18/12	80	80
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on color vision.

Table:6

Color Vision of Left Eye * Depression Crosstabulation

		Depression	Total
		yes	
Color Vision of Left Eye	12/12-18/12	80	80
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on color vision.

Table:7

Glare Sensitivity of Right Eye * Depression Crosstabulation

		Depression	Total
		yes	
Glare Sensitivity of Right Eye	6/6 - 6/12	75	75
	6/12 - 6/60	5	5
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on glare sensitivity.

Table:8

Glare Sensitivity of Left Eye * Depression Crosstabulation

		Depression	Total
		yes	
Glare Sensitivity of Left Eye	6/6 - 6/12	76	76
	6/12 - 6/60	4	4
Total		80	80

Explanation:

This chart shows there is no relevant effect of depression on glare sensitivity.

Table:9

Visual Field of Right Eye * Depression Crosstabulation

		Depression	Total
		yes	
Visual Field of Right Eye	Good	80	80
Total		80	80

Explanation:

This chart shows that there is no relevant effect of depression on Visual Field.

Table:10

Visual Field of Left Eye * Depression Crosstabulation

		Depression	Total
		yes	
Visual Field of Left Eye	Good	80	80
Total		80	80

Explanation:

This chart shows that there is no relevant effect of depression on Visual Field.



Discussion:

According to a study of year 2008 depressed persons have values for detection acuity and contrast sensitivity on luminance at 6.0 cpd and 12.0 cpd. This was concluded that clinical depression was related to contrast sensitivity using ERG (electroretinogram) but my study does not support the variable values of visual acuity and contrast sensitivity along with depression as the data was taken based on screening tests. Thresholds for contrast sensitivity of various types of depression was quantified in normal persons and depressed patients and it provided the evidence of depression being the cause of higher values for contrasts sensitivity while no such data was found in my study due to the limitations of baseline investigations . One of the previous study suggested that depression could be a reason in older person to perceive higher burden of vision related diseases. Data of my research do not support and evidence for the age and anxiety having any effect on vision. Visual Contrast sensitivity has recently been reported to lower in depressed patients compared to healthy controls which lead to reduced visual contrast sensitivity but further investigations were still needed. My search work does not support any data for the interference of depression in right hemisphere. The analysis of my study indicates that none of the visual functions and their performance is affected by depression, anxiety, stress or panic attack. It may refer to the perception of test object in mind but gross findings suggest that it may not be the case with visual task performance or for any of its components.

Conclusion.

So the data collection and their analyses with the help of screening test concluded as that not much of the evidence is given that depression may be the cause of any ocular anomaly while it's been made a valid fact that so much of the ocular anomalies lead to depression. This study does not provide so much ground to demonstrate this bi directional relationship of depression and ocular anomalies.

References:

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