Positive And Negative Affect As Predictors Of Depression

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Depression is the most common mental health disorder, it is estimated that more than 3.8% people in the world suffer from depression, which is listed by the World Health Organization (WHO) as the single largest factor contributing to global disability. The number of incident cases of depression worldwide increased from 172 million in 1990 to 25,8 million in 2017, representing an increase of 49.86% (Lui, He, Yang, Feng, Zhao, Lyu, 2020). Depression results from a complex interaction of social, psychological, and biological factors. Depression can lead to stress and dysfunction and worsen the affected person's life situation and the depression itself. Depression is understood as a disturbance in affective experience of an individual.

Affect is an umbrella term for describing emotions and emotional expression. It refers to emotions and feelings that an individual experiences and how they act and make decisions. Emotions like happiness, enthusiasm, and joy represent positive affect whereas distress, sadness, fear, and disgust come under negative affect.

Positive and negative affect play a large role in how we experience our day-to-day life and have influence on our brain activity. An Individual's thoughts, ideas, opinions, abilities, and performance all may be influenced to greater degree by their affective status.

Earlier researchers often assumed positive and negative affect are two ends of same continuum that one can only be at one point on this scale, meaning they can be experiencing one type of affect to a certain degree (from extremely mild to extremely strong), but not the other at the same time (Russell & Carroll, 1999). However, there are times when an individual may experience both affect like we are sad for the loss of an ailing family member, yet we are relived that their misery has ended. It is now understood that these are two different phenomena, and an individual can experience both at the same time versus only one at a time.

A depressed individual experiences low mood, easy fatiguability and lack of interest in previously enjoyed activities. These symptoms arise from affective disturbance. Depression is characterised as high and dysregulated negative affect in addition to diminished positive affect. Functional impairment in depression is found to be correlated with positive and negative affect (Fried & Nesse, 2014). Both positive and negative affect disturbances predict a suboptimal treatment response and a poor future depression prognosis (McMakin et al., 2012; Spijker, Bijl, De Graaf, & Nolen, 2001; Uher et al., 2012).

These finding suggest that to effectively treat depression, improve functioning, and sustained long-term recovery, treatments should target both positive and negative affect disturbances simultaneously. However, the existing treatment for depression places a greater emphasis on lowering negative than increasing positive affect (Dunn, 2012, 2019; Treadway & Zald, 2011). The failure to target positive affect deficits may contribute to suboptimal treatment outcomes.

This argument is based on a conceptual analysis of the interventions prescribed for depression. Mainstream pharmacological treatments for depression predominantly would include selective serotonin-reuptake inhibitors (SSRIs), selective noradrenaline-reuptake inhibitors (SNRIs), and tricyclic antidepressants (TCAs) neurotransmitters related to negative affect rather than dopamine and opioids – neurotransmitters linked to positive affect (Argyropoulos & Nutt, 2013; Dunlop & Nemeroff, 2007; Shelton & Tomarken, 2001). Likewise, mainstream psychological therapies for depression cognitive behaviour therapy (CBT) neglects positive affect and focus more on negative affect (King, 2002). In CBT there is an initial emphasis on graded scheduling of positive activities to build a sense of mastery and pleasure. However, a theoretical model of psychological mechanisms of positive affect is not conceptualised (Dunn et. al., 2019) and subsequent sessions predominantly concentration on identifying and challenging negative view of the self, world,

and future (the negative triad) and drive heightened negative affect, with little focus on positive affect related techniques. Cognitive therapy represents one of several evidence-based therapies for depression (including emerging third-wave cognitive treatments), all of which show equivalently suboptimal treatment outcomes (Cuijpers et al., 2013; Hunot et al., 2013) and focus on negative affect to a greater extent than positive affect. However, such conceptual analyses are subjective, and empirical evaluation is required to support these claims. Thus, the present study aimed to explore empirical relationship of positive and negative affect with depression.

METHOD:

A sample of 100 participants was taken from psychiatric clinics in Delhi NCR region who met the criteria for depression for at least one year. These were Individuals attending the out-patient clinic of a psychiatric facility, meeting the ICD-10 DCR criteria for mild to moderate depressive episode without somatic and psychotic symptoms, or recurrent depressive disorder current episode moderate or severe without somatic and psychotic symptoms (F32.10, F32.20, F33.10 and F33.20) and no significant suicidal ideation. Another 100 participants were included as normal healthy controls. These were Individuals with no current or history of any mental disorders and scoring negative on Modified Mini International Neuropsychiatric Interview Screen (MMS) (Sheehan, 1998).

All 200 participants were interviewed to collect demographic details and ensure they met the criteria for their respective group. Thereafter, they were assessed for their current depression status using LEVEL 2—Depression—Adult (PROMIS Emotional Distress—Depression—Short Form) (PROMIS Health Organization, 2012) and positive and negative affect was assessed by Positive and Negative Affect Scale (PANAS) (Watson, Clark, & Tellegen, 1988).

Following null hypotheses were formulated for the current study:

1. There will be no difference in positive and negative affect between depression and normal control group.
2. There will be a no relationship between positive and negative affect and depression.
3. Depression scores will neither be predicted by positive nor negative affect.

RESULTS:

To test the null hypotheses, following analyses was done, Table 1 shows the descriptive results in form of demographic details. Both the groups (depression and normal control group) had similar mean age of 35 ± 12.05 years and they did not differ on age or gender basis, they all belong to middle and upper middle class, all participants were graduate (15 years of education) and did not have any other comorbid illnesses.

Table 1: Demographic details of the sample (N=200)

Variable	Depression	Normal Control Group	Statistics
	M (SD)	**M (SD)**	
Age in years	35 (12.14)	35 (11.96)	t= .23 (p value = 0.82)
	% (n)	% (n)	
Gender			
Males	44% (n=44)	51% (n=51)	χ^2= 2.44 (p value= 0.15)
Females	56% (n=56)	49% (n=49)	

Further, the results did not support the hypothesis regarding difference in positive and negative affect between depression and normal control group. Both the groups differed significantly with a large effect size. As seen in Table 2 positive affect was significantly higher in normal control group whereas negative affect was significantly higher in individuals with depression.

Table 2: Difference on Positive and Negative Affect scores of PANAS between Depression and Normal control group (N=200)

Variable	Depression (N=100)	Normal Control Group (N=100)	t	Cohen's D
	M (SD)	**M (SD)**		
Positive affect	12.78 (1.82)	30.67 (5.9)	33.78***	4.78
Negative affect	33.91 (6.27)	15.52 (2.18)	29.78***	4.27

*** P value significant at 0.001

Hypothesis about relationship between positive and negative affect and depression was tested using Pearson's correlation method. It was found that depression scores correlated positively with negative affect whereas there was negative correlation found for depression scores and positive affect. Table 3 can be seen for correlation values.

Table 3: Correlation between APA Depression T Sores, Positive Affect, and Negative Affect

	APA Depression T-Score	Positive Affect	Negative Affect
APA Depression T-Score	1	-0.88**	0.86**
Positive Affect		1	-0.82**
Negative Affect			1

**Significant at p value 0.01

Hypothesis regarding prediction of depression scores by positive nor negative affect, linear regression was done to predict depression from positive affect (b= -.89, t (198) = 93.39, $p < .001$). A significant regression equation was found (F (1, 198) = 540.91, $p < .001$), with an R^2 of 0.80. Participants APA depression T-scores increased by 80% when there was reduction of .86 in positive affect scale of PANAS scores.

Further, linear regression was done to predict depression from negative affect (b= .86, t (198) = 30.69, $p < .001$). A significant regression equation was found (F (1, 198) = 543.58, $p < .001$), with R^2 of 0.73. Participant's depression APA t-scores increased by 73% when there was increase of .86 in negative affect scale of PANAS scores.

Overall, regression results suggested that absence of positive affect was slightly strong predictor than presence of negative affect for depression.

DISCUSSION:

Cardinal features of depression are low mood, easy fatigability and lack of interest, however low mood is considered as synonym for depression. Low mood is an emotional state characterised by sadness, low self-esteem, tiredness, and frustration. However, depression is more than low mood, it is also lack of hope-hopelessness, lack of sense of worth-worthlessness or low self-esteem and lack of problem-solving skills-helplessness, anhedonia-lack of interest, these characteristics suggest that there is positive affect that is missing which creates picture of depression and not just increased in sadness, tiredness, and frustration. Treatment of depression is predominated by the focus on mitigating effect of negative affect, though it is understood that positive and negative affect play a concurrently important role. This emphasis on negative affect may also be because of the distress associated with experience of negative affect versus reduction of positive affect. It may be understood that there is valance associated with avoiding negative feelings than embracing positive ones, this tilt towards negative affect is due to a more repetitive routine approach to treatments formed for negative affect rather than empirical evidence.

The current study established that positive affect scores predict depression scores slightly more strongly than negative affect scores. PA deficits were more marked than NA presence. This finding is consistent with the view that disturbances to the PA system are particularly prominent in depression and therefore should be an explicit intervention target (Argyropoulos & Nutt, 2013; Dunn, 2012; Treadway & Zald, 2011).

Dunn et. al. (2020) conducted a randomised control trial to assess how well treatments for major depression disorder repair either positive or negative affect. They concluded that individuals with depression show more marked abnormalities in positive affect than in negative affect, and existing depression treatment such as antidepressants and cognitive therapy repair negative affect more effectively than positive. As a result, depressed individuals are left with residual deficits in positive affect even after treatment. Thus, there is potential to improve depression outcomes by targeting positive affect more systematically in pharmacological and psychological treatment approaches.

These finding need to be confirmed further and translated into approaches for evidence supported treatment of depression.

LIMITATIONS:

The study excluded severe cases of depression due to presence of somatic or psychotic symptoms, these cases of depression that were not included but do possess more richer depressive phenomenological data which probably can contribute more to understanding of affective status in these cases.

The study did not include etiological factors of depression as well as longitudinal status of depression and focused more on cross-sectional status of participants, thus a longitudinal study to tap the changes in affect over the course of illness is recommended, however it was beyond the scope of present work.

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