Effect of Developing Psychological Immune System using Cognitive Behavioral Therapy for Reducing Psychological Illnesses Among Youth

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ABSTRACT

Immune system can be defined as a biological term which consists of all those bodily functions of a human body that protects us from any disease or disorder. It is basically as shield that guards against any foreign content which is not acceptable or which can create an imbalance in our body. Whereas, ‘psychological immune system’ refers to a state of one’s mind where an individual develops a resilient mental armor which is quite flexible, tough & durable enough to absorb any kind of mental health issues and its adverse effects on one’s mind and which eventually aids to preserve one’s mental wellbeing. In today’s fast growing world, people are so occupied with their work that they have totally forgotten about their health. This is gradually distorting one’s mental health and also weakening their psychological resilience. The current scenario shows that if appropriate mental health techniques or therapeutic intervention such as cognitive behavioral therapy is being used at an early stage, it can help reducing psychological illnesses quite effectively. The present research was conducted to study the effect of developing psychological immune system using CBT in order to reduce psychological illnesses among youth. A standardized inventory namely Psychological Immunity System Inventory (PISI), consists of 80 items, developed by Olah (1996, 2005, and 2012) was used which is possessing high reliability and validity. The research was conducted on 05 young adults of Delhi city suffering from depression. Techniques of CBT were applied as an intervention during five therapeutic sessions to the participants. Pre & Post testing was done. It was found that participants who were provided with CBT recorded increased levels of psychological immunity. This research study is found to be unique and useful for reducing the effects of psychological illnesses among youth.

Keywords: Psychological Immunity, resilient, wellbeing, cognitive behavioral therapy
I. INTRODUCTION

Immune System

Immune system refers to the body’s resistance against disease causing organisms or contagious agents, faulty cells or abnormal body cells like cancer, foreign cells etc. It is a composite arrangement of cells, tissues, organs and the substances they make that aids the body to fight against infections and other diseases. The immune system comprises white blood cells, organs & tissues of the lymph system, such as thymus, spleen, tonsils, lymph nodes, lymph vessels, & bone marrow. The major tasks of the body's immune system are to battle diseases causing germs or pathogens such as bacteria, viruses, parasites or fungi and to eliminate them from the body, to identify and deactivate harmful substances from the environment and also to battle disease causing changes in the body, such as cancer cells.

The immune system is engaged in a continuous inspection of the body for pathogens or tumors. Whether disease or disorders develop, depends on the lethality of the pathogen and the capabilities of the immune system. To prevent disease, the immune system must identify attack & remember substances that intimidate health, either foreign pathogens or mutations of the body's own cells. To do so, it must be able to differentiate self from non-self substances called antigens or antibody generators. To competently eradicate antigens, the immune system must act in response as quickly and as strongly as possible to kill abnormal cells or infectious agents.

Psychological Immune System

Psychological immune system is defined as “a system of adaptive resources and positive personality characteristics that acts as psychological antibodies at the time of stress.” It consists of a variety of positive characteristics such as positive thinking, sense of coherence, sense of control, emotional regulation and goal orientation, positive self-efficacy and problem-solving skills. As physical immune system protects individuals from different viral infections of the environment, in the same way, psychological immune system acts as a shield against environmental stressors, day-to-day hassles, and negative emotions (Dubey and Shahi, 2011).

According to Bhardwaj and Agrawal (2015), constructing psychological immunity is a method that can be targeted with the help of various purposeful and persistent interventions. On the other hand, taking into consideration the crisis situation, few simple but effective tips can help an individual to remain resilient are:

- The mindful reception of a crisis situation
- Enhancing the connectedness within the relations for future mental health issues.
- Adaptive coping appraisal and problem-solving skills
- Developing hope/optimism about overcoming the crisis
- Engaging in altruism in the form of holding a positive approach
- Reading good literature

Cognitive Behavioral Therapy

Cognitive-behavioral therapy (CBT) refers to a category of interventions that share the fundamental principle that mental disorders and psychological stress occurs due to maladaptive cognitive factors. The central premise of this treatment approach, as pioneered by Beck (1970) & Ellis (1962) shows that maladaptive thought processes contribute to the maintenance of emotional stress & behavioral problems. As per Beck’s model, these maladaptive cognitions comprises of universal beliefs or schemas about the world, the self, & the future, which leads to particular and repeated thoughts in certain specific situations. The basic model depicts that therapeutic interventions to change these maladaptive thought processes lead to changes in emotional stress and challenging behaviors. It is the most universally implemented and examined psychological intervention for depression or major depressive disorder. It is an effective treatment
technique for mild-to-moderate depression. CBT is based on the principle that negative thoughts and obstructive beliefs are a major cause of depression. As a result, with the help of several cognitive and behavioral techniques, clients can be trained to counter or modify maladaptive thoughts and coping patterns (Cuijpers et al., 2013; Malhi et al., 2015).

**Depression**

Depression is a common or widespread mental disorder that consists of symptoms like depressed mood, loss of interest or pleasure, diminished energy, feelings of guiltiness or low self-worth, disturbed sleep or appetite poor attention etc. Furthermore, depression often comes with symptoms of anxiousness and worries. As far as the worst case scenario is concerned, depression can lead to suicide. Around 1 million lives are lost every year due to suicide, which translates to almost 3000 suicide deaths each day. Depression is also termed as 'clinical depression' or 'depressive disorder' which is a mood disorder that leads to distressing symptoms that have an effect on how one feel, think and handle routine activities such as sleeping, eating, or working.

**II. Review of Literature**

Shields et al. (2020) conducted a systematic review and meta-analysis of randomized clinical trials (RCTs) in which they estimated associations between 8 different psychosocial interventions and 7 markers of immune system function and examined 9 potential moderating factors. The findings suggested that psychosocial interventions are reliably associated with enhanced immune system function and may therefore represent a viable strategy for improving immune-related health.

Lopresti (2017) found growing evidence confirming increased inflammation in a subset of adults with depression. The impact of this relationship has mostly been considered in biologically based interventions together with potential implications for psychological therapies. The purpose of this study was to examine the relationship between cognitive behavior therapy and inflammation. Findings from this systematic review suggest there may be a bi-directional influence between CBT and inflammation, whereby CBT has anti-inflammatory effects, and inflammation, particularly in a subset of patients with elevated inflammation, influences the treatment response to CBT. This study also highlights the potential benefits of examining the inter-relationship between CBT on physiological processes implicated in depression.

Rachman and Stanley (2016) administered a research in which the construct of the psychological immune system is explained and evaluated. The psychological immune system has two major properties: defensive & healing. Data pertaining to psychological immune system consists of meta-analyses of the associations between psychological variables such as positive wellbeing and diseases & mortality, and associations between wellbeing and good health. The outcomes of long-term prospective studies are reliable with the conclusions drawn from the meta-analyses. Laboratory examination of the effects of psychological variables on the biological immune system demonstrate that negative affect or distress can slow down the process of wound-healing and positive affect can develop rapid resistance to infections.

According to Hofmann et al. (2012), this study was to provide a comprehensive survey of meta-analyses examining the efficacy of CBT. We identified 269 meta-analytic studies and reviewed of those a representative sample of 106 meta-analyses examining CBT for the following problems: substance use disorder, schizophrenia and other psychotic disorders, depression and dysthymia, bipolar disorder, anxiety disorders, somatoform disorders, eating disorders, insomnia, personality disorders, anger and aggression, criminal behaviors, general stress, distress due to general medical conditions, chronic pain and fatigue, distress related to pregnancy complications and female hormonal conditions. Eleven studies compared response rates between CBT and other treatments or
control conditions. CBT showed higher response rates than the comparison conditions in 7 of these reviews and only one review reported that CBT had lower response rates than comparison treatments. In general, the evidence-base of CBT is very strong.

III. Objectives

Following are the objectives designed for current research study:

1. To study the psychological immunity of youth suffering from depression.
2. To study the correlation between psychological immune system and depression.
3. To see the effect of Cognitive behavioral therapy (CBT) for reducing psychological illness among youth.

Hypotheses

- “There is a significant effect of cognitive behavioral therapy (CBT) on enhancing psychological immune system.”
- “There is a significant effect of cognitive behavioral therapy (CBT) on reducing psychological illness among youth.”

Test Description

The Beck Depression Inventory (BDI) is a 21-item test accessible in MCQ format which claims to assess existence and extent of depression among adolescents and adults. It attempts to evaluate an explicit symptom which appears to be meticulous to depressed patients and which are invariable with descriptions of the depression in the psychiatric literature. This test is a highly reliable one which shows consistent and reliable results. The test-retest reliability has been found out to be more than 0.90. Internal consistency studies established a correlation coefficient of 0.86 for the test items and the Spearman-Brown correlation for the reliability yielded a coefficient of 0.93.

Psychological Immunity System Inventory (PISI), developed by Olah (1996, 2005, and 2012) is a 80 items having 16 different factors which are further divided into 3 subsystems: (1) Approach Belief System (2) Monitoring- Creating Executing (3) Self Regulating System. The responses of the test were made on a 4 point scale ranged from completely does not describe me to completely describe me. The Cronbach Alpha was found from 0.62 to 0.80 for all the 16 scales. The retest reliability was found from .77 to .89 for all the sixteen scales. The convergent and discriminate validity was also found high.

IV. Methodology

Locale

The locale of the present research is the city of New Delhi.

Sample

The selected sample is college students of Delhi city. The sample size of the present study consisted of 05 students purposively selected from a college of New Delhi.

Method of Data Collection

Prior consent was taken from the selected participants regarding the tests to be conducted. After rapport establishment, they were told about the purpose of the research. They were assured that their responses will be kept confidential and will be used for research purpose only.

Initially, the purposively selected students (05) were given Beck Depression Inventory (BDI). On finding that they are having high scores on depression were then given Psychological Immunity System Inventory (PISI) in order to know the state of their psychological immune levels during pre testing. After giving necessary instructions about the conduction of the tests, participants have completed the test in given time and scoring was done as per the manual. Afterwards, all the selected participants were prepared for therapy and subsequently were given Cognitive behavioral therapy (CBT) as psychological
intervention and their post effects were noted based on post testing.

**Statistical Techniques**
The major statistical technique applied in the current research is T-test (which was applied with the help of mean, standard deviation, normality testing) and the analysis was conducted in SPSS (Statistical Packages for Social Sciences), version 21.0.

**V. Analysis of Result and Discussion**

**Table 1. Comparing Pre and Post scores for Depression**

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Mean Diff</th>
<th>t</th>
<th>p value</th>
</tr>
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<tr>
<td><strong>Depression</strong></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>32.20</td>
<td>3.03</td>
<td>5</td>
<td>24.40</td>
<td>2.70</td>
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</table>

Table no. 1 shows the comparison between pre and post scores for depression. The pre scores for mean and standard deviation (SD) were found to be 32.30 and 3.03 and post scores for mean and standard deviation (SD) were found to be 24.40 and 2.70. The mean difference was found to be 7.80 and the ‘t’ score was 11.76 which was significant at 0.01 level (p<0.01). It infers that there is significant difference between depression scores (Pre-Post testing). It infers that psychotherapeutic sessions of cognitive behavioral therapy have worked well in reducing depression among young adults.

**Table 2. Comparing Pre and Post for Psychological Immune System**

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Mean Diff</th>
<th>t</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>N</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td><strong>Positive Thinking</strong></td>
<td>10.60</td>
<td>1.14</td>
<td>5</td>
<td>11.80</td>
<td>1.30</td>
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<tr>
<td><strong>Sense of Control</strong></td>
<td>11.20</td>
<td>1.92</td>
<td>5</td>
<td>11.80</td>
<td>1.30</td>
</tr>
<tr>
<td><strong>Sense of Coherence</strong></td>
<td>10.20</td>
<td>1.48</td>
<td>5</td>
<td>12.80</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>Sense of Self Growth</strong></td>
<td>10.40</td>
<td>1.14</td>
<td>5</td>
<td>12.20</td>
<td>1.30</td>
</tr>
<tr>
<td><strong>Change and Challenge Orientation</strong></td>
<td>10.80</td>
<td>0.84</td>
<td>5</td>
<td>13.20</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>Social Monitoring Capacity</strong></td>
<td>10.40</td>
<td>1.14</td>
<td>5</td>
<td>11.80</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>Goal Orientation</strong></td>
<td>9.40</td>
<td>1.67</td>
<td>5</td>
<td>11.40</td>
<td>1.14</td>
</tr>
<tr>
<td><strong>Creative Self Concept</strong></td>
<td>8.00</td>
<td>0.71</td>
<td>5</td>
<td>10.00</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Problem Solving Capacity</strong></td>
<td>10.00</td>
<td>1.58</td>
<td>5</td>
<td>11.80</td>
<td>0.84</td>
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<tr>
<td><strong>Self Efficacy</strong></td>
<td>9.80</td>
<td>1.48</td>
<td>5</td>
<td>12.40</td>
<td>0.55</td>
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<tr>
<td><strong>Social Mobilizing Capacity</strong></td>
<td>10.40</td>
<td>1.14</td>
<td>5</td>
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<tr>
<td><strong>Social Creating Capacity</strong></td>
<td>9.80</td>
<td>1.64</td>
<td>5</td>
<td>12.60</td>
<td>0.89</td>
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<tr>
<td><strong>Synchronicity</strong></td>
<td>8.20</td>
<td>0.84</td>
<td>5</td>
<td>12.00</td>
<td>0.71</td>
</tr>
<tr>
<td><strong>Impulse Control</strong></td>
<td>8.60</td>
<td>1.14</td>
<td>5</td>
<td>12.80</td>
<td>0.84</td>
</tr>
<tr>
<td><strong>Emotional Control</strong></td>
<td>8.80</td>
<td>0.84</td>
<td>5</td>
<td>12.40</td>
<td>0.55</td>
</tr>
<tr>
<td><strong>Irritability Control</strong></td>
<td>10.00</td>
<td>1.58</td>
<td>5</td>
<td>11.60</td>
<td>1.14</td>
</tr>
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<td><strong>Total</strong></td>
<td>156.60</td>
<td>7.67</td>
<td>5</td>
<td>193.80</td>
<td>4.38</td>
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</table>

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Table no. 2 depicts the comparison between pre and post testing scores for all the factors of psychological immune system. For positive thinking, pre scores of mean and standard deviation (SD) were found to be 10.60 and 1.14 and post scores of mean and standard deviation (SD) were found to be 11.80 and 1.30. The mean difference was found to be 1.20 and the ‘t’ score was 6.00 which was significant at 0.05 level (p<0.05). It infers that positive thinking has been increased after application of therapeutic intervention. The person was able to think more optimistically and adaptively towards alleviating his/her issues and enhancing psychological immunity.

For sense of control, pre scores of mean and standard deviation (SD) were found to be 11.20 and 1.92 and post scores of mean and standard deviation (SD) were found to be 11.80 and 1.30. The mean difference was found to be 0.60 and the ‘t’ score was 1.50 which was insignificant at 0.05 level (p<0.05). It infers that sense of control has been increased a bit after applying therapy. It also shows that person can have a stronger sense of control when he/she feels mentally sound in terms of immunity.

For sense of coherence, pre scores of mean and standard deviation (SD) were found to be 10.20 and 1.48 and post scores of mean and standard deviation (SD) were found to be 12.80 and 0.84. The mean difference was found to be 2.60 and the ‘t’ score was 6.50 which was significant at 0.05 level (p<0.05). It infers that sense of coherence has been enhanced and person was able to connect even more cohesively with life when experiencing a stronger psychological immune system.

For sense of self growth, pre scores of mean and standard deviation (SD) were found to be 10.40 and 1.14 and post scores of mean and standard deviation (SD) were found to be 12.20 and 1.30. The mean difference was found to be 1.80 and the ‘t’ score was 4.81 which was significant at 0.05 level (p<0.05). It infers that self-growth in all sense has been increased since an individual could think about growing when aware about his/her physical and mental resilience.

For change and challenge orientation, pre scores of mean and standard deviation (SD) were found to be 10.80 and 0.84 and post scores of mean and standard deviation (SD) were found to be 13.20 and 0.84. The mean difference was found to be 2.40 and the ‘t’ score was 6.00 which was significant at 0.05 level (p<0.05). It infers that the zeal or orientation for change and challenge towards life certainly increased because good mental immune system provides with a high level of excitement towards accepting change and pushing one’s own limits.

For social monitoring capacity, pre scores of mean and standard deviation (SD) were found to be 10.40 and 1.14 and post scores of mean and standard deviation (SD) were found to be 11.80 and 0.84. The mean difference was found to be 1.40 and the ‘t’ score was 3.50 which was significant at 0.05 level (p<0.05). It infers that the capacity to monitor or look after social events or circumstances enhanced since it provides us with tremendous mental flexibility to take stand against social evils as well as unite and guide society in positive direction.

For goal orientation, pre scores of mean and standard deviation (SD) were found to be 9.40 and 1.67 and post scores of mean and standard deviation (SD) were found to be 11.40 and 1.14. The mean difference was found to be 2.00 and the ‘t’ score was 4.47 which was significant at 0.05 level (p<0.05). It infers that goal orientation has been increased after intervention and it is quite obvious as healthy psychological immune system leads to motivation for accomplishing one’s life goals.
**Creative self concept**, pre scores of mean and standard deviation (SD) were found to be 8.00 and 0.71 and post scores of mean and standard deviation (SD) were found to be 10.00 and 1.00. The mean difference was found to be 2.00 and the ‘t’ score was 6.32 which was significant at 0.05 level (p<0.05). It infers that creative self concept has been clearly increased because strong mental health and immunity to resist issues gives us independence to be creative enough both for building self and for the world.

**Problem solving capacity**, pre scores of mean and standard deviation (SD) were found to be 10.00 and 1.58 and post scores of mean and standard deviation (SD) were found to be 11.80 and 0.84. The mean difference was found to be 1.80 and the ‘t’ score was 4.81 which was insignificant at 0.05 level (p>0.05). It infers that capability of problem solving increased a bit after therapeutic treatment since when an individual is psychological strong, it increases presence of mind, creativity etc. to solve life problems.

**Self efficacy**, pre scores of mean and standard deviation (SD) were found to be 9.80 and 1.48 and post scores of mean and standard deviation (SD) were found to be 12.40 and 0.55. The mean difference was found to be 2.60 and the ‘t’ score was 4.33 which was significant at 0.05 level (p<0.05). It infers that having a better psychological immune system leads to an enhanced self efficiency or effectiveness for achieving short term and long term goals.

**Social mobilizing capacity**, pre scores of mean and standard deviation (SD) were found to be 10.40 and 1.14 and post scores of mean and standard deviation (SD) were found to be 13.20 and 0.45. The mean difference was found to be 2.80 and the ‘t’ score was 5.72 which was significant at 0.05 level (p<0.05). It infers that social mobilization power enhanced because a mentally strong and resilient individual holds the capability to gather and bind people together for a common cause.

**Social creating capacity**, pre scores of mean and standard deviation (SD) were found to be 9.80 and 1.64 and post scores of mean and standard deviation (SD) were found to be 12.60 and 0.89. The mean difference was found to be 2.80 and the ‘t’ score was 7.48 which was significant at 0.05 level (p<0.05). Increment in social creating capacity after therapy treatment clearly infers that a healthy immune system leads a person to construct an ideal social environment for oneself and others closely connected individuals.

**Synchronicity**, pre scores of mean and standard deviation (SD) were found to be 8.20 and 0.84 and post scores of mean and standard deviation (SD) were found to be 12.00 and 0.71. The mean difference was found to be 3.80 and the ‘t’ score was 5.73 which was significant at 0.05 level (p<0.05). It infers that having a high mental immunity leads to higher level of synchronization between physical, mental and social aspects of life.

**Impulse control**, pre scores of mean and standard deviation (SD) were found to be 8.60 and 1.14 and post scores of mean and standard deviation (SD) were found to be 12.80 and 0.84. The mean difference was found to be 4.20 and the ‘t’ score was 8.57 which was significant at 0.05 level (p<0.05). It infers that holding or controlling one’s impulses or anger or rage becomes quite effortless when a person is positively charged with the help of healthy mental immunity.

**Emotional control**, pre scores of mean and standard deviation (SD) were found to be 8.80 and 0.84 and post scores of mean and standard deviation (SD) were found to be 12.40 and 0.55. The mean difference was found to be 3.60 and the ‘t’ score was 7.06 which was significant at 0.05 level (p<0.05). It infers that a good immune system makes an individual emotionally strong and gives a grip to control them in all practical life situations.
For irritability control, pre scores of mean and standard deviation (SD) were found to be 10.00 and 1.58 and post scores of mean and standard deviation (SD) were found to be 11.60 and 1.14. The mean difference was found to be 1.60 and the ‘t’ score was 4.00 which was significant at 0.05 level (p<0.05). It infers that having a healthy psychological immune system gives a power to manage one’s emotions with efficacy and hence the irritability can be controlled.

For overall psychological immune system, pre scores of mean and standard deviation (SD) were found to be 156.60 and 7.67 and post scores of mean and standard deviation (SD) were found to be 193.80 and 4.38. The mean difference was found to be 37.20 and the ‘t’ score was 15.95 which was significant at 0.01 level (p<0.01). It infers that after giving an appropriate therapy as an intervention, it not only reduces pessimistic factors but also develop an eminent psychological immune system to fight against mental health issues and disorders productively.

Table no. 3
Correlation between Depression and Psychological Immune System

<table>
<thead>
<tr>
<th></th>
<th>r</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>Pre</td>
<td>-0.920</td>
<td>0.000</td>
</tr>
<tr>
<td>Post</td>
<td>-0.900</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Table no. 3 shows the correlation between depression and psychological immune system. The above mentioned table indicates that the coefficient of correlation for pre test scores between the scores of depression and psychological immune system was found to be -0.920 which is significant at 0.01 level (p<0.01) whereas the coefficient of correlation for post test scores between the scores of depression and psychological immune system was found to be -0.900 which is significant at 0.01 level (p>0.01). It depicts a negative correlation between depression and psychological immune system since as the levels of psychological immune system enhances, it reduces the levels of depression and vice versa. It can also be inferred that having a strong mental immunity gives an ability to fight mental health disorders efficiently.

VI. Conclusion

From the above stated statistical analysis, results and their discussion, it can be concluded that psychotherapeutic intervention such as cognitive behavioral therapy (CBT) was found to be an effective treatment technique not only for reducing the levels of depression but also aids in enhancing the levels of psychological immune system and makes an individual resilient enough to fight against mental health issues and disorders and ultimately develop one’s mental wellbeing.

Accordingly, on the basis of the analysis of results, the hypotheses, “There is a significant effect of cognitive behavioral therapy (CBT) on enhancing psychological immune system.” And “There is a significant effect of cognitive behavioral therapy (CBT) on reducing psychological illness among youth.” are accepted.

VII. References


