Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 2, 5272 – 5279

The Efficacy of Cognitive Behavior Therapy on Resilience in Acute Coronary Syndrome Patients

[1]Dr. Baba Vajrala, [2]DR. S. K. Tripathi, [3]Ms. S. JasminDebora, [4]Ms. Subha Sankari.G., [5]Ms. Priya R., [6]Dr.Abey Varughese.

[1]Professor cum principal Birender Singh college of Nursing, Haryana
[2]Professor cum HOD Psychology Dept, Adesh university, Punjab.
[3]Professor cum HOD Medical surgical Nursing, S.G.T University, Haryana.
[4]Professor cum Principal, National college of Nursing, Haryana.
[5]Professor cum Principal, Savithri Jindal school of Nursing, Haryana
[6]Professor cum Principal, sharbati college of Nursing, Haryana.

Abstract

Introduction: CBT therapy might be employed to help patients with ACS to develop possible qualities and attributes like happiness, resilience, courage etc., keeping the same thought in mind the present study proposed program which aimed to test the applicability of strength based cognitive behavior therapy model on improving Resilience among ACS patients. Method: Experimental research was carried out with an element of manipulation, control and randomization. The manipulation in the form of intervention CBT was given to the interventional group and without intervention to the control group; the level of anxiety, stress and resilience were assessed before and after intervention in both groups. Systematic random sampling technique was adopted to select the sample and the size in experimental group or interventional group was 30 and in control group was 30.The data collected was analyzed by using descriptive and inferential statistics Results: Results indicated that CBT was efficacious on improving resilience and reducing Anxiety and stress levels. It was also found to be efficacy in improving quality of life. Effect size estimates and rates of clinically significant change further support the findings. Follow-up assessment at 15th day ,30th day and 45th day after the intervention indicated maintenance of treatment gains. Conclusion: The study concluded that CBT was effective in improving resilience among ACS patients.

Keywords: Efficacy, Resilience, Cognitive Behavior Therapy, Acute Coronary Syndrome.

INTRODUCTION

Acute coronary syndrome (ACS) refers to the progression of coronary artery disease (CAD). ACS defines the signs of CAD, such as unstable angina and non-ST-elevation. If the decline in blood flow caused by CAD is significant and protracted, a myocardial infarction might ensue, inflicting permanent damage. Coronary heart disease is becoming more significant in emerging nations. Cardiovascular illnesses are expected to be the leading cause of disability and death in India by 2020, accounting for one-third of all fatalities. According to the prevalence of coronary artery disease among Asian Indians, India has the world's highest rate of ACS. The registration center has given up-to-date information on 20,468 patients from 89 locations across ten regions and 50 cities in India.

Relationship between psychological factors and coronary heart disease: -

Although the majority of CHD research has focused on biological risk factors and lifestyle choices, some evidence suggests that psychological and mental issues have an

essential role in the origin, development, duration, and prognosis of the disease. Depression, anxiety, and stress are the essential variables. There is growing evidence that psychological variables, as independent risk factors, play an essential role in chronic physical illnesses, notably coronary heart disease. Interrelated human factors such as drive, self-efficacy, and resilience influence patients' capacity to assume responsibility for their own treatment. The discovery of effective methods to foster the development of these qualities in this group may enhance patients' coping techniques and equip them to cope with a chronic condition correctly.

How Resilience effects the Cardio Vascular system: -

Resilience is described as a process of negotiating and adapting to severe causes of stress or trauma; it is an individual's capacity to respond to adversity, maintain equilibrium, and continue on with life in a good manner. Resilient persons are less prone to sickness and have a greater capacity to reduce stress generated by disease's negative effects. According to Swedish research, low levels of resilience throughout adolescence are related to an increased risk of heart disease in adulthood. Less tenacity When faced with adversity, a person may be more prone to stress and exhibit poor coping methods, which may result in anxiety, sadness, anger, impulsiveness, and low self-esteem.

Neurobiology of Resilience: -

Recently, neuroscience has turned its attention to the issue of resilience to determine how neural mechanisms may contribute to human resilience. So that more effective therapies may be created. Recent research has started to offer fresh light on the resilient brain. The brain's key function includes both perception and reaction to stressful events. The methods through which the brain reacts to stress are crucial to an organism's proper function. In this respect, cellular resilience in the brain and neural responses to stress has become an attractive topic of study. In pre-clinical animals, the effects of stress on the brain include a reduction in neurotrophic support and behavioral abnormalities. The hypothalamus-pituitary adrenal axis seems to be important in mediating these effects. Recent evidence suggests that glucocorticoids and corticotropic hormone-releasing factors play an important role in the long-term consequences of early life stress on hippocampus integrity and function. When examining the association between resilience and post-traumatic stress disorder, as well as coping techniques, the levels of dehydro-epiandrosterone and neuropeptide-Y are important. Contemplative practices, such as meditation, yoga, and cognitive behavior therapy, are effective methods of training and developing skills that contribute to resilience. These practices, which employ consciousness to optimize physiological functioning and behavioral outcomes, can increase attention emotional regulation.

How Cognitive Behavior Therapy improve Resilience among Acute Coronary Syndrome patients: -

Cognitive behavior therapy combines intervention with behaviorism. A therapist aims to improve maladaptive behavior through changing dysfunctional thinking and beliefs, as well as providing clients with information processing skills training. Modification of patients' fundamental dysfunctional beliefs creates more permanent and faithful adjustments in behaviour for gradual improvement in their core ideas about themselves, their environment, and other people. The current research will use a strength-based CBT paradigm created by Padesky and Mooney in 2012. It is a four-step strength-based cognitive behaviour therapy programme that is intended to develop positive attributes such as happiness, optimism, and resilience. This approach is primarily intended to create and improve human resilience. This methodology combines collaborative empiricism with guided discovery methodologies. In this case, collaborative empiricism implies that the therapist actively engages the client in order to discover his or her own abilities. As a result, each stage of treatment is a mutual building and discovery. Through therapy sessions, guided exploration is stressed to sustain client involvement and facilitate learning. CBT is a four-step technique that argues that hidden strengths may be found in everyday expressions. Second, pre-existing strengths are employed to maintain a consistent personal model of resilience.

The third phase is for the therapist to invite the client to utilize the PMR to create a strategy for

improving resilience in a living area where the client is presently suffering.

The fourth and last phase is for the client to practice resilience via specific behavior experiments with an emphasis on resilience. CBT has been shown to be useful in the treatment of a broad spectrum of diseases.

It has proven its worth by treating a wide range of psychiatric problems such as depression, anxiety, chronic pain, and sleep disorders. The success of CBT areas such as a wide range of disorders has led to speculation that CBT therapy models may also be employed to help patients with ACS develop possible qualities and attributes such as happiness, resilience, courage, and so on. With this in mind, the current study proposed programme which aimed to test the applicability of CBT therapy models to patients with ACS.

Objectives: -

1. Determine the amount of stress in Acute Coronary Syndrome patients in both experimental and control groups.

2. Determine the amount of Resilience in Acute Coronary Syndrome patients in both experimental and control groups.

3. Using a post-test, determine the efficacy of CBT in building resilience among Acute Coronary Syndrome patients in both the experimental and control groups.

4. Determine the relationship between the post-test resilience scores and the specified factors of ACS patients in the experimental group.

Hypothesis: -

H1: - There will be a significant difference between the pre-test and post-test scores of ACS patients in Experimental Group after CBT and without Intervention in the Control Group.

H2: - A significant association will be there between the post-test scores and the selected variables of ACS patients in Experimental Group.

Resources and Methodology

Research approach: -Quantitative experimental research approach was adopted because it is effective to determine the relationship, direction of relationships and nature of the relationships among the variables.

Research design: - An Experimental research design was selected to assess the efficacy of CBT on resilience among ACS patients; As, it is having an element of manipulation, control and randomization. The manipulation in the form of intervention CBT was given to the interventional group and without intervention to the control group; the level of anxiety, stress and resilience were assessed before and after intervention in both groups.

Setting of the study: - NRI general and multi-specialty hospital which is 1080 bedded located on NH5, chinakakani, Guntur district, Andhra Pradesh. was chosen.

Population: -Acute coronary syndrome patients,

Target population: - patients with ACS between the age group of 30-65 years and Accessible population were ACS patients with age between 30-65 years admitted in critical care units at NRIGH.

Sample and sampling methods: -

Probability Because randomly picked components would most effectively reflect the population, a random sample strategy was adopted. A stratified approach for selecting items from an ordered sample frame is the systematic random sampling technique. An equiprobability approach is the most prevalent kind of systemic sampling.

$$K=N/n$$

Where n= is the sample size and N is the population size.

The researcher adopted systematic sampling equiprobability method based on the population homogeneity does not hide sampling interval pattern.

Sample size was estimated by using the mean of the study group. The formula used was $N=4\sigma/d2$

Where σ (sigma) is the standard deviation as in similar studies done previously

D=allowable error (5-20% of).

$$N = \frac{4 \text{ x } 5.30 \text{ x } 5.30}{2 \text{ x } 2} = 28.09$$

The sample size in experimental group or interventional group was 30 and in control group was 30, which minimizes the sample error and increases the generalization of the findings.

Criteria for the selection of participants: -

Inclusion Criteria: -

The study included patients with ACS who are

- in between the age group of 30-65 years.
- Admitted in CCU at NRIGH, Chinakakani, Guntur. A.P.
- having elevated cardia markers (Troponin-1, Myoglobin) and Ischemia.
- willing to participate in the study.
- available at the time of data collection

Elimination Criteria: -

The study excluded patients with ACS who are

- having the age below 30 years and above 65 years.
- admitted in other than CCU at NRIGH, Chinakakani, Guntur.
- having inflammatory disease and neurological problems.
- not willing to participate in the study.
- not available at the time of data collection.

Method of data collection: structured interview schedule (Part-A) and standardized scales to assess the level of anxiety, stress and resilience. (part-B) were adopted

Description of the tool: -based on the study objectives the tool was divided in to two sections

Part-A :-(a) Demographic data was gathered by structured interview schedule.

(b) Bio chemical data was gathered from the clinical reports.

Part-B :- (a) The level of Anxiety was assessed by Anxiety Scale.

(b) The level of Stress was assessed by Perceived Stress Scale.

(c) The level of Resilience was assessed by wagnild and Young Resilience scale.

Interventional protocol: -the interventional therapeutic procedures used were grouped in to psycho education, cognitive interventions and behavioral interventions.

Psycho education: understanding the risk factors &etiology and pathophysiology of acute coronary syndrome, anxiety and stress.

Life style modifications, diet, life style modifications, stress management, adherence to treatment regimen and follow up.

Cognitive interventional technique: strength based cognitive behavior therapy a four-step model to build resilience.

Behavior interventional technique: relaxation training, deep breathing exercises, thought mood tracking, sleep hygiene guide lines, worry time, problem solving assertiveness skills and pleasant activities.

Ethical considerations: -

- Written informed consent was obtained from all participants prior to assessment explaining the nature of current study to the antecedents and patients.
- Ethical clearance was obtained from the institutional ethical committee.

Collection of data: -

Patient diagnosed with ACS and fulfilling the specified inclusion and exclusion criteria were recruited from the coronary care units at NRIGH Chinakakani, Guntur District, Andhra Pradesh.

Patients were explained about the nature and purpose of the study, information regarding the number of assessments, approximate number of sessions and duration of the therapy and randomization to intervention and control group. Informed consent was obtained from all the patients and the intervention group received 8 sessions of CBT based on the program proposed by Clark (1997) and wells (1997) on a weekly basis. Patients in interventional group were assessed with part-I& part-II tools at 15 th day (post treatment) and were assessed with part-I& part-II tools on 30 th and 45th days of follow up periods. The independent rates assessed patients

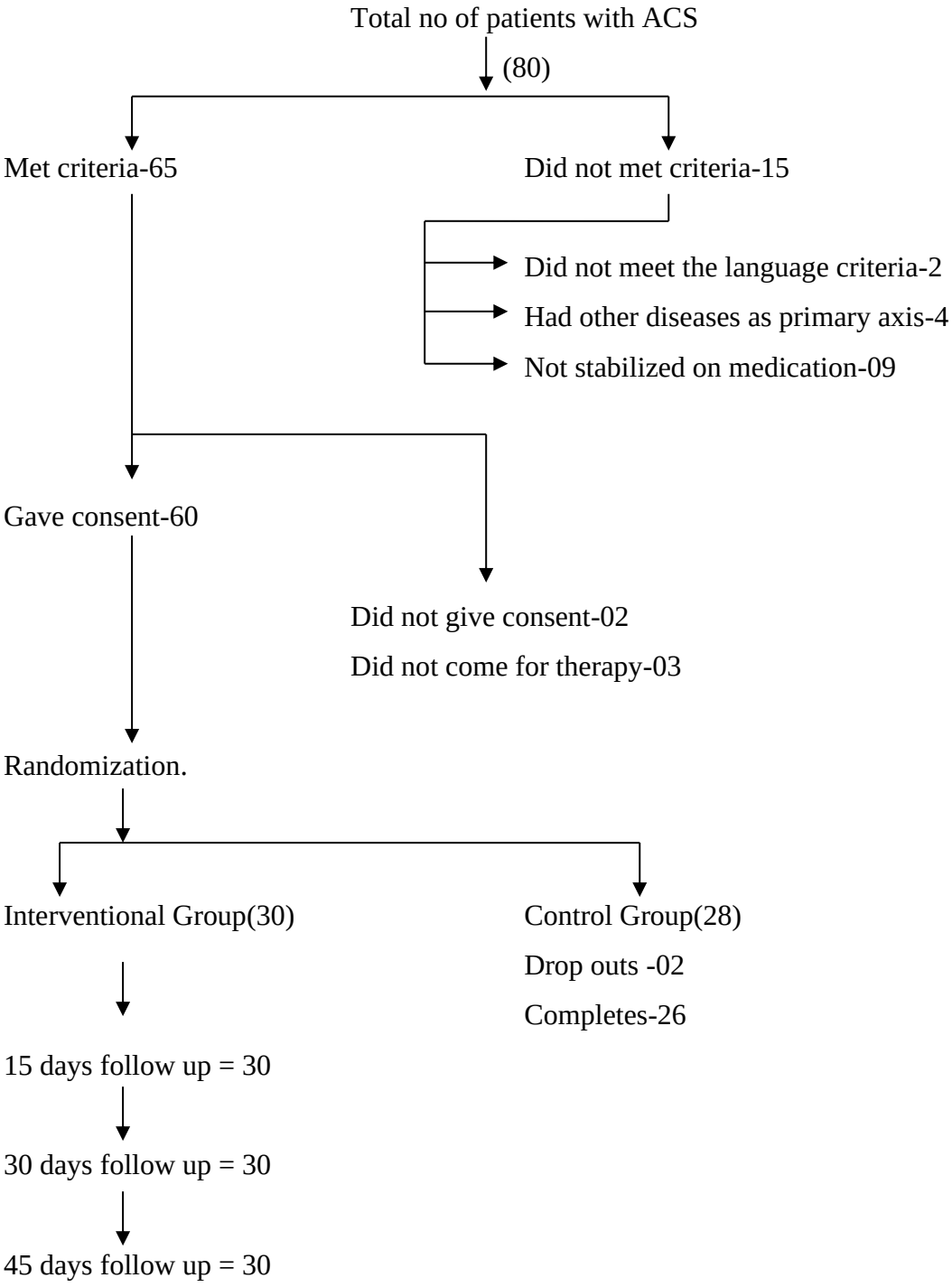
at base line and all subsequent assessment points.

The study was concluded in two phases.

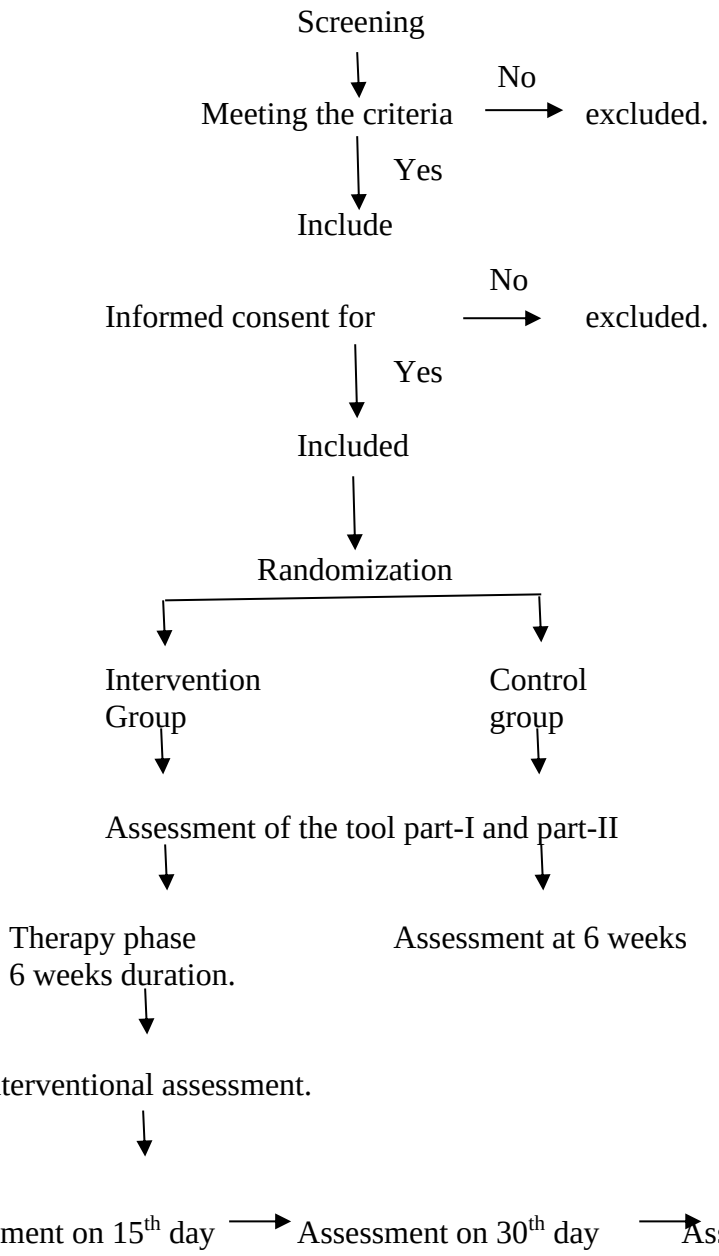
Pilot phase: -

Pilot phase was carried out on 15 patients diagnosed with acute coronary syndrome who fulfilled inclusion and exclusion criteria.The following changes were incorporated following pilot phase

Flow Chart of the Sample Recommended in the Main Study.



Flow chart of the procedure for the main study.



Results:

H1: - The study finding reveal that, In Experimental group before CBT 70.33 % were exhibiting category-III level of anxiety which drastically reduced after CBT to minimal anxiety of 93.33 %.:Level of stress before CBT 53.33 % was Severe which drastically reduced after CBT to Mild Stress of 100%.;The level of Resilience before CBT 100 % ,was very low which drastically increased after CBT with very high Resilience of 56.667 %. In control group the level of Anxiety in pre test 64.285 % exhibited panic or category-III level of anxiety which drastically increased in post-test with same category anxiety of 67.857 %; 50 % were experiencing Severe Stress which was little increase in post -test with same level of stress of 57.142 %.With regard to Resilience 100 % were exhibiting very low level of resilience which was same in post-test. Calculated paired t -value was t=48.491 which is greater than the table value 2.045 at 0.05 level of significance with df=29, indicated that there is significant improvement in the Resilience after CBT in

Experimental group. So the researcher accepted research Hypothesis (H1).

H2: - There was significant association between the level of Resilience in post-test with their Age; the calculated chi-square value - 11.469 was greater than the table value 0.0749 at 0.05 level; with their Gender x2=2.167,and t value-03383;with Smoking Status x2 =0.545, and t-value-0.076;with Alcohol Status x2 =8.235, and t-value-0.083 ;with exercise x2 =5.0,and t-value-0.082;with BMI, x2 =16.063, and t-value-0.0029;with Work Pattern x2 =13.4, and t-value-0.012;with PTT, x2 =2.025, and t-value-0.363;with INR, x2 =4.499, and t-value-0.105;with Troponin -I, x2 =55.185, and t-value-0.0; with WBC count x2 =2.894,and t-value-0.235; with Serum Potassium levels, x2 =19.625, and t-value-0.001;with Blood Urea Nitrogen,x2 =8.710, and t-value-0.012; with Serum Sodium x2 =5.509, and t-value-0.063;with Serum Calcium, x2 =14.96, and t-value-0.006;with Blood Glucose levels, x2 =13.925,and t-value-0.0009;with Creatinine Clearance , x2 =12.821, and t-value-0.0016;with C-reactive Protein status x2 =0.743,and t-value-0.689;with ECG levels, x2 =14.989, and t-value-0.00047. So the researcher accepted research Hypothesis. (H2)

Discussion:

Our Research has shown the evidence of reduction in the level of Anxiety, Stress and level of Resilience after cognitive behavioral therapy and association was found between the resilience levels w clinical data of the clients after CBT among Acute coronary syndrome patients and we could not assess the inter relationship between Anxiety, stress and resilience; limitations of our study should be studied in future research.

According to Swedish research, low levels of resilience throughout adolescence are related to an increased risk of heart disease in adulthood.

Padesky and Mooney created a four-step Strengths-Based cognitive-behavioral therapy (CBT) approach to assist clients in developing positive traits and increasing personal resilience. A methodical search for client strengths is key to the approach, and therapist-client conversations reveal strategies for bringing hidden qualities into client consciousness. Positive quality development necessitates a change in treatment viewpoint as well as different therapeutic procedures than those used when therapy is intended to alleviate suffering. Required alterations to traditional CBT are noted, along with particular therapeutic adaptations aimed to assist client resilience development, such as an emphasis on existing strengths, the constructive use of imagery, and client-generated metaphors. The conclusions of this investigation are consistent with our findings.

Rebecca E Meister, Tania Weber, Mary Prince, and colleagues conducted a descriptive study to determine resilience as a correlate of acute stress disorder symptoms in patients with acute myocardial infarction. Seventy-one consecutive patients with acute MI within 48 hours of having stable hemodynamic conditions were established, and for three months after, all patients completed the acute stress disorder scale and the resilience scale to self-rate the severity of ASD symptoms and trait aversion. The findings revealed that greater resilience was associated with lower ASD symptoms independent of covariates (b=-0.22, P0.05). According to the study's results, individuals with acute MI who had greater trait resilience have lower symptoms of ASD during MI. Resilience was shown to be significantly related to re-experiencing and arousal symptoms. These findings highlight the necessity of recognizing individuals with poor resilience in medical settings and providing necessary assistance to them. The results corroborate those of our investigation.

Ghassan & Palardy, Véronique&Rizkallah, Élias&Guay, Stéphane, Fredette, Catherine & El-Baalbaki A comprehensive examination the onset, severity, and progression of posttraumatic stress disorder are influenced by social support (PTSD). This systematic review had two goals: (1) to investigate the role of social and marital support in the effectiveness of cognitive-behavioral therapy (CBT) for PTSD, and (2) to determine if CBT for PTSD enhances the quality of patients' social and marital support. A systematic search of databases yielded 17 suitable papers, 6 of which answered the first research question and 11 of which answered the second research question. The majority of studies discovered that social and marital support has a role in the effectiveness of CBT

for PTSD. Except for one study, CBT for PTSD enhanced the level of social and marital support. However, several of the research included in this study had methodological limitations. More randomized clinical studies would subsequently be required to ascertain the precise and definitive function of social and marital support in the treatment of PTSD. This is consistent with the outcomes of our investigation.

Conclusion

Our findings suggest that CBT is effective in improving resilience and decreasing Stress and Anxiety among ACS patients; Thus enhance the quality of life.

Reference

[1] Adriana Feder, Dennis Charney, KateCollins. Neuro biology of Resilience. Cambridge university press. 2011.available at www.cambridge.org

[2] Adriana Feder, Eric J. Nestler, Dennis S. Charney; 2009; Psychobiology and molecular genetics of resilience; Nat Rev Neuroscience. 2009 Jun; 10(6): 446–457.

[3] Ali, M. M., Dwyer, D. S., Vanner, E. A., & Lopez, A. (2010). Adolescent propensity to engage in health risky behaviors: The role of individual resilience. International Journal of Environmental Research and Public Health, 7, 2161-2176.

[4] Antonio L. Arrebola-Morenoa, Rocio Garcia-Retamerob,c, Andrés Catenab, Rafael Marfil-Álvareza, Rafael Melgares-Morenoa, José A. Ramírez-Hernándeza(2014), On the protective effect of resilience in patients with acute coronary syndrome; International Journal of Clinical and Health Psychology 14, 111−119.

[5] Arretrola Moreno Antonio, Rocio Garcia-Retmerost et. al (2013); the protective Efficacy of Resilience in patients with acute coronary syndrome.

[6] Bergh Cecilia ,ruzanudumyan, katjafall et al(2016). assess the relationship of stress resilience in adolescence with subsequent coronary heart disease risk and possible mediating role of physical fitness

[7] Bran Wald's E.A text book of cardio vascular medicine . 4th edition. Philadelphia :WB Saunders company ;2005;1382-1390

[8] Carlos Eduardo Norte I., Gabriela Guerra Leal Souza II et.al: impact of Cognitive Behavior Therapy on Resilience related neurobiological factors. Archives of clinical psychology.2011 Issno 101-6083.

[9] Cecila Bergh,Ruzanudumyan, Katja fall et al. stress resilience and physical fitness in adolescence and risk of coronary heart disease in middle age.BMJ.2016; April. Available at http://heart.bmj.com

[10] Cohen, S., Janicki-Deverts, D., Doyle, W. J., Miller, G. E., Frank, E., Rabine, B. S., & Turner, R. B. (2012). Chronic stress, glucocorticoid receptor resistance, inflammation, and disease risk. Proceedings of the National Academy of Sciences, 109, 5995-5999.

[11] Conceicao Maria Martins delemons, David William Moraes et al

[12] CyndaHylton Rushton, Joyce Batchelle Kaia Schroeder et al. Burn out and resilience among nurses practicing in high intensity settings.

[13] Denollet, J., Freedland, K. E., Carney, R. M., de Jonge, P., &Roest, A. M. (2013). Cognitive-affective symptoms of depression after myocardial infarction: Different prognostic importance across age groups. Psychosomatic Medicine, 75, 701-708.