EFFECT OF METACOGNITIVE AND EMOTION REGULATION STRATEGIES ON DEPRESSION SYMPTOMS AMONG SECONDARY SCHOOL STUDENTS IN ZARIA METROPOLIS, KADUNA STATE, NIGERIA

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A THESIS SUBMITTED TO THESCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY, ZARIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY DEGREE (Ph.D) IN EDUCATIONAL PSYCHOLOGY

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DECLARATION

I, Haruna Muhammad hereby declare that this thesis entitled "EFFECT OF METACOGNITIVE AND EMOTION REGULATION STRATEGIES ON DEPRESSION SYMPTOMS AMONG SECONDARY SCHOOL STUDENTS IN ZARIA METROPOLIS, KADUNA STATE, NIGERIA" has been conducted by me in the Department of Educational Psychology and Counselling. The information derived from the literature has been duly acknowledged accordingly in the text and a list of references provided. No part of this work was previously presented for another degree or Diploma at this or any other Institution.

_____ _____

Haruna MUHAMMAD Date
P17EDPC9012

CERTIFICATION

This thesis entitled "EFFECT OF METACOGNITIVE AND EMOTION REGULATION STRATEGIES ON DEPRESSION SYMPTOMS AMONG SECONDARY SCHOOL STUDENTS IN ZARIA METROPOLIS, KADUNA STATE, NIGERIA" by Haruna MUHAMMAD meets the regulations governing the award of Doctor of Philosophy Degree of Ahmadu Bello University, Zaria and is approved for its' contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to my late parents Alhaji Muhammad Shawai Gidado and Malama Bara'atu Sufyan Dikko for their sacrifices, devotion and total commitment to our moral and spiritual upbringing. It is my earnest hope and whole-hearted prayers that the exalted, omnipotent, omniscient and merciful Allah makes Jannatul Firdausi their final abode. May their souls rest in Jannatul firdausi, ameen.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIXES

LIST OF ABBREVIATIONS

CAS	Cognitive Attentional Syndrome
CBT	Cognitive Behavioural Therapy
COG Symptoms:	Cognitive Symptoms of Depression
EMO Symptoms:	Emotional Symptoms of Depression
ER:	Emotion Regulation
ER:	Emotion Regulation Strategy
MCS:	Metacognitive Strategy
MCT:	Metacognitive Therapy
MDD:	Major Depressive Disorder
PHY Symptoms:	Physical Symptoms
Postt:	Post-test
PPD	Postpartum Depression
Pt:	Pre-test
PTSD:	Posttraumatic Stress Disorder
SUI IDEATION:	Suicidal Ideation

OPERATIONAL DEFINITION OF TERMS

The key variables in this study are operationally defined as follows:

Depression refers to a mood disorder that is accompanied by state of sadness, gloom and pessimistic ideation, with loss of interest or pleasure in enjoyable activities, diminished ability to think or concentrate as a result of cognitive attentional syndrome which is categorized into cognitive, emotional and physical dimensions and suicidal ideation among senior secondary school students in Zaria Metropolis as measured by the adapted Burns Depression Questionnaire.

Cognitive Dimensionof Depression is characterized by distorted thinking, mental loneliness, difficulty making decisions and being fixed tounpleasant thoughts and events.

Emotional Dimensionof Depression refers to the feelings of sadness and down in the dumps, feeling unhappy, crying spells, and dissatisfaction with life.

Physical Dimensionof Depression refers to excessive fatiguing, feeling depleted or exhausted, increased or decreased appetite, sleeping disorder and frequent headache.

Suicidal Ideation refers to recurring thoughts or attempts to harm oneself or ending one's life due to inability to manage negative beliefs and ideas about life events.

Emotion Regulation (ER) Strategy refers to the processes by which students influence which emotions they have and think positively thereby managing their negative emotions so as to reduce their depression symptoms.

Metacognitive Strategy refers to information processing model which emphasizes on modifying distorted beliefs as a result of perseverative thinking style referred to as Cognitive Attentional Syndrome (CAS) such as cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis.

ABSTRACT

This study investigated effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis. The study was guided by twelve objectives which were transformed into research questions and hypotheses. The study employed pre-test post-test quasi-experimental research design with the general population of 779 students while the target population stood at 79 SS 2 students of Barewa College, Zaria and Government Girls Secondary School Students (WTC), Zaria who exhibited moderate depression as identified using Depression Symptoms Checklist by Robert, Williams and Williams, (2020). A sample of 20 students from each school was drawn randomly for the purpose of this study. The instrument used for data collection at the pre and posttest in this study was Burns Depression Questionnaire (as adapted). It has a total of 28 items measured on five point-Likert scale which was validated by professionals at Ahmadu Bello University, Zaria with a reliability coefficient of 0.808 as established using Cronbach Alpha. Data were collected at the pre-test, treatment sessions and post-test respectively. The data collected were analyzed with paired sample t-test and analysis of covariance (ANCOVA) using SPSS version 26. Findings of the study revealed that there is significant difference between pre-test and posttest mean scores of cognitive, physical and emotional symptoms of depression and suicidal ideation among SS 2 students exposed to Metacognitive Strategy vindicating that there is significanteffect of metacognitive strategy on cognitive, physical and emotional symptoms of depression $p = .000$, significant effect of metacognitive strategy on suicidal ideation exists among secondary school students in Zaria metropolis $p = .031$. Also, there is significant effect of emotion regulation strategy on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis, $p = .000$ among other findings. It was concluded that metacognitive and emotion regulation strategies were effective in reducing cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis, Kaduna State. It was also concluded that there was no differential effect between metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis. Part of the recommendationswas that Educational Psychologists, counsellors and social workers shouldemploy metacognitive and emotion regulation strategies in managing cognitive attentional syndrome leading to cognitive, physical and emotional symptoms of depression and suicidal ideation so as to regulate their emotions and enhance higher order thinking that will boost students' performance in school.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Depression is the most common of the affective disorders; it may range from a very mild condition bordering on normality to severe (psychotic) depression accompanied by hallucinations and delusions. When the negative reactions to life`s situations become repetitively intense and frequent we develop symptoms of depression. Life throws up innumerable situations, which we greet with both negative and positive emotions such as excitement, frustration, fear, happiness, anger, sadness. Depression is prevalent among all age groups in almost all walks of life. Mental health disorders such as depression according to the World Health Organization, (2008) are among the leading causes of disability worldwide. Depression is a common mental health problem, ranking third after cardiac and respiratory diseases as a major cause of disability.

Depression is a debilitating and pernicious cluster of symptoms that may persist for a period of weeks, months, or even years. It is an affective disorder that presents with negative mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. It is also characterized by changes in mood status presenting as feelings of sadness which may fluctuate from slight hopelessness to severe feelings of disappointment. It is a disorder that can be reliably diagnosed and treated by psychological techniques. If left untreated in the early age of occurrence, it may lead to different problems such as school failure, conduct disorder, delinquency, eating disorders such as anorexia and bulimia, school phobia, panic attacks, substance abuse, problem of thinking and making decisions, and, in in an extreme cases if not checked it leads to recurring thoughts of death or suicide (Yalemwork, 2015). Depressive episodes can be categorized as mild, moderate, or severe depending on the

number and severity of symptoms. An individual with a mild depressive episode will have some difficulties in continuing with ordinary work and social activities but will probably not cease to function completely. On the other hand, it is very unlikely that the individual with severe depressive episode will be able to continue with social, work, or domestic activities, except to a very limited extent. As for moderate depression, the individual would normally have many symptoms that are needed to make the diagnosis of depression. Moderate episodes have a severity that is intermediate between mild and severe depressions (World Health Organization, 2008).

Depression has many possible causes, including mood disturbance, genetic vulnerability, chronic stressful life, use of psychoactive substances, and medical problems. It is believed that several of these forces interact to bring depression (Marcus, Yasamy, Ommeren, Chisholm & Saxena, 2012). Areas in the brain that are affected in cases of depression are the prefrontal cortex, cingulated gyrus, amygdala, hippocampus, thalamus, and hypothalamus. Neurotransmitters that are depleted in clients with depression are serotonin that helps regulate sleep, appetite, and mood and inhibits pain. Reduced serotonin secretion is recorded in patients with depression. Norepinephrine triggers anxiety and is involved in some types of depression. It determines motivation and reward. Norepinephrine and serotonin (5-HT) modulate subcortical and cortical functions that their shortage in states of depression and anxiety contributes to abnormalities in sleep, concentration, attention and memory, arousal states, appetite, and libido (Marcus, etal, 2012).

Depression has been found to have effect on students' academic performance, school adjustment, attention and concentration may lead to feelings of hopelessness, low self-esteem, withdrawal behaviour and to some extent suicidal intentions. Hysenbegasi,Hass and Rowland (2005) found

that depression has a strong impact on academic productivity among students. According to the study of the 121 depressed students who were diagnosed in school, 14.64% had missed a great number of classes, 5.45% missed assignments, and 1.36% and 0.74% of them missed examinations and dropped a number of courses.This is a cause for concern as it has implication on learning among secondary school students.

Depression is one of the most prevalent problems in the mental health of students at different educational levels, such as secondary school, college and university (Arslan, Ayranci, Unsal & Arslantas, 2009). Literature established that mental health disorders, particularly depression, is a common problem among students as psychological morbidity encountered by counselling centres in schools. This suggeststhat depression is one of the common problems among secondary school students. It has been highlighted that depression accounted for 39% of problems, a higher rate than anxiety and the self-esteem of students across different settings (Ibrahim, Kelly, Adams & Glazebrook, 2013).

A study in the United Kingdom reported that approximately one-third of medical students (first-year) have mental health problems of depression and anxiety (Dyrbye, Thomas & Shanafelt, 2005). Other studies have mentioned that 12% of medical students in the United Students have serious symptoms of depression measured by DSM III standard. Compared to law students, Canadian medical students recorded higher rates of depression (Dahlin, Johnborg,& Runeson, 2005).A Nigerian study by Adewuya,Ola, Aloba, Mapayi & Oginni(2006), about the prevalence of depression among students found the rate of depression among Nigerian students was 2.7%. This situation is alarming as cases of psychopathological illnesses and suicide ideation among students continue to increase in recent years.

Depression manifests it's self through a number of symptoms which includes cognitive, physical and emotional, to some extent suicidal urges. Cognitive symptoms includes guilt and shame, difficulty making decision, criticizing oneself and blaming others, loss of interest in family, friends/peer group, loneliness, loss of motivation, lack of interest in work and other activities. Physical symptoms includes feeling tired, difficulty sleeping or over sleeping, decreased appetite, frequent headache and worrying about one's health. Emotional symptoms includes feeling sad or down in the dumps, crying spells or tearfulness, loss of pleasure or satisfaction in life, feeling hopeless, worthless and inadequate, low self-esteem, spending less time with family and friends. At extreme level, depressed people develop suicidal urges which encompasses the thinking of ending one's life. This situation calls for concerted efforts to be put in place so as to manage depressive symptoms among secondary school students in Zaria metropolis.

Several forms of treatment have been applied to depression. In this study, metacognitive strategy which adopted Wells (2009) metacognitive therapy procedures and emotion regulation strategy were employed on students with depression symptoms. Many treatments appear to be promising. However, a clear indication of the best alternative methods has not yet been provided by the literature. Primary psychological treatments for depression includemetacognitive therapy, emotion regulation, prolonged imaginary exposure to traumatic memories and cognitive restructuring of appraisals and beliefs emerging from trauma experiences. Meta-analyses demonstrate that clients' depression improves with the mentioned treatments. However, a significant percentage of clients fail to respond to the treatment, indicate a partial improvement, or even discontinue the treatment (Sherman, 2016). Ineffectiveness of some behaviour modification techniques in the treatment of depression is possible due to poor skills in the administration of the technique or incompatibility of the technique in managing the depression

symptoms. Wells and Sembi (2014) believes that for a treatment to be more widely effective, it should be accessible, brief, less demanding, and less potentially distressing interventions; the metacognitive therapy on depression is such an intervention. The goal of this treatment is to allow clients to develop flexible metacognitive awareness and control, and also to free them from worry/rumination, and threat monitoring.

Metacognitive strategy is a recent development in understanding the causes of mental health problems and in treating them. The approach is based on a specific theory proposed by Wells and Matthews (1994), initially used to treat Generalised Anxiety and subsequently expanded as a general treatment approach. The approach is backed by scientific evidence from a wide range of studies. Metacognition is the aspect of cognition that controls mental processes and thinking. Most people have some direct conscious experience of metacognition. For instance, when unable to remember a name a person may feel sure that the name is stored in memory. This gives rise to a metacognitive state that occurs as a strong feeling called the 'tip-of the tongue-effect. This is an example of metacognition working to inform the person that an item of information is somewhere in memory even though the person is unable to remember it. Metacognition can even go further by retrieving this name and pushing into consciousness often when least expected. Although we are aware of some metacognitions operating like in this example most of the metacognitions that control our thinking and conscious experience operate in the background.

One of the features of psychological disorders such as depression is that thinking becomes difficult to control and biased in particular ways that lead to a worsening and maintenance of emotional suffering. Many clients report that they feel that they have difficulty controlling their thoughts and behaviours. Another important feature is that the persons' thinking and attention becomes fixed in patterns of brooding and dwelling on the self and threatening information.

Metacognitive strategy recognises this change in thinking patterns and believes it is very important. It gives it a name: the Cognitive-Attentional Syndrome (CAS).This pattern consists of worry, rumination, fixation of attention on threat, and coping behaviours that the person believes are helpful but many of which backfire and keep emotional problems going. The CAS is controlled by metacognitions and it is necessary to remove the CAS by helping clients develop new ways of controlling their attention, new ways of relating to negative thoughts and beliefs, and by modifying metacognitive beliefs that give rise to unhelpful thinking patterns. This approach has been developed into specific ways of understanding and treating psychological problems such as depression.

Depression may be resistant to pharmacological treatment but may respond well to a metacognitive treatment; and this therapeutic effect could remain for a long time.Metacognitive movement insists on beliefs and negative thoughts as outcome of metacognitive control on cognition. It tries to change metacognitive thoughts which are effective on maladaptive style of thoughts or change the cause of increasing general negative thoughts (Wells, 2009).

The other treatment to be employed in this study is Emotion Regulation (ER) developed by Gross(1998) which refers to the automatic or controlled, conscious or unconscious process of individuals influencing emotions in self, others, or both which proposes that emotions themselves have an innately adaptive potential that if activated can help clients change problematic emotional states or unwanted self-experiences. This view of emotion is based on the belief, now gaining ample empirical support, that emotion, at its core, is an innate and adaptive system that has evolved to help us survive and thrive.

Emotion regulation (ER) is the processes by which individuals influence which emotions they have, when they have them and how they experience and express these emotions. These processes may be automatic (unconscious) or controlled (conscious) that serve to up-regulate or down regulate positive or negative emotions. These processes are categorised into 5 time points in the process of emotion generation at which individuals can regulate their emotions: 1) situation selection (avoidance, social withdrawal), 2) situation modification (keeping distance, using safety signals), 3) attentional deployment (distraction, rumination), 4) cognitive change (rationalization, reappraisal), and 5) response modulation (expressive suppression, experiential avoidance). These strategies may be applied before or after experiencing emotion. Accordingly, the first four groups of strategies are called antecedent-focused, while the latter is considered response- focused strategies (Gross, 2002).

Emotion regulation has both intrinsic and extrinsic processes, intrinsic process of ER refers to an attempt by one to regulate his or her emotions, while extrinsic processes refers to one's attempt to regulate others` emotions. Extrinsic processes are so salient in infancy and early childhood while intrinsic processes are associated with adult population (Gross&Thompson, 2007). Both intrinsic and extrinsic ER have been vigorously studied in regard to somatic and mental health well-being, as well as child and adult psychopathology.

Depression has severe consequences on the productive human force and social areas which calls the attention of care providers for early diagnosis, proper treatment, and intervention. It is against this background the researcher intends to explore the efficacy of metacognitive and emotion regulation strategy on depression among secondary school students in Zaria metropolis.

1.2 Statement of the Problem

Depression is one of the most widespread psychological problems across the world and a major factor in problems of mental health. Students are expected to be in their good state of mind and well-balance psychological and mental health to be able to pursue academic excellence in their various endeavour. However, many students suffer mental health issues specifically depressive symptoms as a result of enormous challenges beyond their adaptive capabilities. The issue of students' mental health is a global problem that covers all developed and non-developed societies, both modern and traditional. Secondary school education, specifically boarding school system marks a transitional period for students during which students move away from family and home for the first time and miss the conventionalsupervision of elders and the family social support. In addition, some students might have to deal with financial decisions and difficulties for the first time in their lives. These changes have been recognized as risk factors for developing depression, which is associated with several problems in school notably academic achievement, school adjustment, meeting new people, changing environment, loneliness and security concerns and illnesses, accomplishing school responsibilities and obligations. Students make efforts to embrace new experiences and changes in academic pursuit, social aspects, behavioural, emotional, and economic situations. Inability of some secondary school students to deal with these concerns constitutes serious problems leading to depression. A number of studies have indicated a high prevalence ofdepression among students compared to the rest of the population. More importantly, incidence of suicidal ideation and practices among students at different levels indicates that the psychological and mental problems of students continue to increase.

The researcher observes through interaction with students as a teacher that students with symptoms of depression achieve lower grades and are less active in the classroom relative to

students who do not have these symptoms. This suggests that depression is a serious problem that requires psychological support for students who manifest the symptoms so as to adjust and acquire knowledge, skills and values that would make them socially acceptable, personally adjusted and emotionally responsible individuals in the society. By so doing, the goals of secondary education would be accomplished thereby having healthy, adjusted and resounding brains ready to pursue university education. Many traditional and psychological methods and strategies have been used in the past to manage the problem of depression, yet depression symptoms have continued to manifest among secondary school students. Against this backdrop the researcher deems it fit to investigate the effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria Metropolis.

1.3 Objectives of the Study

The objectives of this study were to determine the:

1. effect of metacognitive strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis.
2. effect of metacognitive strategy on physical symptoms of depression among secondary school students in Zaria metropolis.
3. effect of metacognitive strategy on emotional symptoms of depression among secondary school students in Zaria metropolis.
4. effect of metacognitive strategy on suicidal ideation among secondary school students in Zaria metropolis
5. effect of emotion regulation strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis.

6. effect of emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis.
7. effect of emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis.
8. effect of emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis.
9. differential effect of metacognitive strategy and emotion regulation strategy on cognitive symptomsof depression among secondary school students in Zaria metropolis.
10. differential effect of metacognitive strategy and emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis.
11. differential effect of metacognitive strategy and emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis.
12. differential effect of metacognitive strategy and emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis.

1.4 Research Questions

The following research questions were raised for the purpose of this study:

1. What is the effect of metacognitive strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis?
2. What is the effect of metacognitive strategy on physical symptoms of depression among secondary school students in Zaria metropolis?

3. What is the effect of metacognitive strategy on emotional symptoms of depression among secondary school students in Zaria metropolis?
4. The effect of metacognitive strategy on suicidal ideation among secondary school students in Zaria metropolis.
5. What is the effect of emotion regulation strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis?
6. What is the effect of emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis?
7. What is the effect of emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis?
8. What is the effect of emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis?
9. What is the differential effect of metacognitive strategyand emotion regulation strategy on cognitive symptomsof depression among secondary school students in Zaria metropolis?
10. What is the differential effect of metacognitive strategy and emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis?
11. What is the differential effect of metacognitive strategy and emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis?
12. What is the differential effect of metacognitive strategy and emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis?

1.5 Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant difference between pre and posttest mean scores of cognitive symptoms of depression among secondary school students in Zaria metropolis exposed to metacognitive strategy.
2. There is no significant difference between pre and posttest mean scores of physical symptoms of depression among secondary school students in Zaria metropolis exposed to metacognitive strategy.
3. There is no significant difference between pre and posttest mean scores of emotional symptoms of depression among secondary school students in Zaria metropolis exposed to metacognitive strategy.
4. There is no significant difference between pre and posttest mean scores of suicidal ideationamong secondary school students in Zaria metropolis exposed to metacognitive strategy.
5. There is no significant difference between pre and posttest mean scores of cognitive symptoms of depression among secondary school students in Zaria metropolis exposed to emotion regulation strategy.
6. There is no significant difference between pre and posttest mean scores of physical symptoms of depression among secondary school students in Zaria metropolis exposed to emotion regulation strategy.
7. There is no significant difference between pre and posttest mean scores of emotional symptoms of depression among secondary school students in Zaria metropolis exposed to emotion regulation strategy.

8. There is no significant difference between pre and posttest mean scores of suicidal ideation among secondary school students in Zaria metropolis exposed to emotion regulation strategy.
9. There is no significant differential effect of metacognitive and emotion regulation strategies on cognitive symptoms of depressionamong secondary school students in Zaria metropolis.
10. There is no significant differential effect of metacognitive therapy and emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis.
11. There is no significant differential effect of metacognitive and emotion regulation strategies on emotional symptoms of depression among secondary school students in Zaria metropolis.
12. There is no significant differential effect of metacognitive and emotion regulation strategies on suicidal ideation among secondary school students in Zaria metropolis.

1.6 Basic Assumptions

This study was based on the following assumptions; that:

1. Metacognitive strategy may have effect on cognitive, physical and emotional symptoms of depression and suicidal ideationamong secondary school students in Zaria metropolis.
2. Emotion regulation strategy may have effect on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis.
3. There may be differential effect of metacognitive and emotion regulation strategies on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis.

1.7 Significance of the Study

This study will play a vital role in improving theory and practice in psychological studies particularly in the area of depression among secondary school students in Zaria. The findings of this study will be beneficial to psychologists and counsellors, teachers, students, parents, government, researchers, health workers and caregivers. The study will also be very pertinent in adding value to psychologists and counsellors who may be interested in conducting studies on depression with a view to reducing the symptoms so as to have well-adjusted students who will perform better at secondary school level thereby serving as a gateway to university education.

Educational Psychologists and Counselors will find this research worthy and beneficial as the treatment techniques - metacognitive and emotion regulation strategies will serve as an open up to them by exposing them to the laid down logical procedures and principles in the application of the treatment packages on depression symptoms among secondary school students. This exposure will then put them in a position to employ them in other psychological problems associated with students in schools and or counselling centres. Suffice it to say that the study would be of great importance to psychologists and counsellors in advancing and extending their expertise and services in intervening in areas of managing behaviours in schools and society at large.

Teachers at secondary schools in Zaria metropolis will benefit from this study by treating their students who exhibit depression symptoms thereby making them well-adjusted members of school who will focus attention to learn the subjects taught to them and make meaningful contributions to the teaching and learning process.

Students will benefit from this study directly by participating in the study or indirectly by having access to information about their problems and steps to managing their symptoms of depression. Parents will also benefit from the study in the sense that their children who exhibit depression symptoms would be managed at secondary school thereby enabling them to realize their ambition of having a well-adjusted children who learn and progress in various endeavours.

The findings of this research will be of great relevance to government as it will provide them with an insight and empirically based data that would make it possible to make decisions and policies of how to manage problems of depression so as to maintain healthy living among students in secondary schools in Zaria metropolis.

Finally, it could serve as useful data for researchers, students, health workers and caregivers and also add value to the literature of psychology in terms of behaviour modification strategies and to generate further research. The aforementioned could be achieved if findings of this research are published in journals, newspapers and presented in conferences, workshops and seminars and general academia.

1.8 Scope and Delimitation of the Study

This study investigated effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis. The study targetedSS 2 students who exhibitedmoderate cognitive, physical and emotional symptoms of depression and suicidal ideation. The researcher selected SS 2 students as they were the stable set of students who had ample time to participate in the study and could be followed upif need be. The study involved both male and female students who met the criterion for participation. It also focused on students in boarding schools whom the researcher believes that the treatment could be more

properly monitored because there would be less or no distractions of confounding variablesin the treatments since the students were housed in the schools. This study was delimited to SS1students as they were beginners who strive to adjust with the boarding school system and SS 3 students who were on the verge of graduation and focusing attention to passing out examinations. It was also delimited to those SS2 students who exhibited mild and extreme depression symptoms. This is because mild depression did not constitute too much problem while extreme depression may require clinical attention.Other models of Metacognition and emotion regulationsapart from the strategies used in this study were delimited.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter presents conceptual framework, theories that are pertinent to the variables under study, review of empirical studies and summary of literature review.Areas of the review in this chapter include conceptual framework, concept of depression, prevalence of depression among students, common causes of depression among students, general causes of depression, consequences of depression on students, types of depression, incidence and risk factors of depression, managing and treatment of depression, concept of metacognition, foundations of metacognitive therapy skills, emotion regulation, methods of emotion regulation in depression among other concepts. Theoretical framework was provided includingBeck's cognitive theory, George Brown's model of self-esteem and Depression, self-worth contingency models of depression, Freud's psychoanalytic theory of depression, Learned helplessness theory of depression, Flavell's theory of metacognition and James-Lange theory of emotion and Emotion Regulation were all reviewed in the chapter. The chapter finally reviewed empirical studies that are relevant to the study and summary of literature review so provided.

2.2 Conceptual Framework

Diathesis-Stress Models of Depression

Thediathesis-stress model identifies two general factors that influence the onset of depression. One of these factors is a negative life event (or source of stress). These events typically involve the loss of an important source of love, security, identity, or self-worth. The death of loved ones,

the breakup of an important romantic relationship, or a significant personal failure are prototypic examples (Beck 1967).

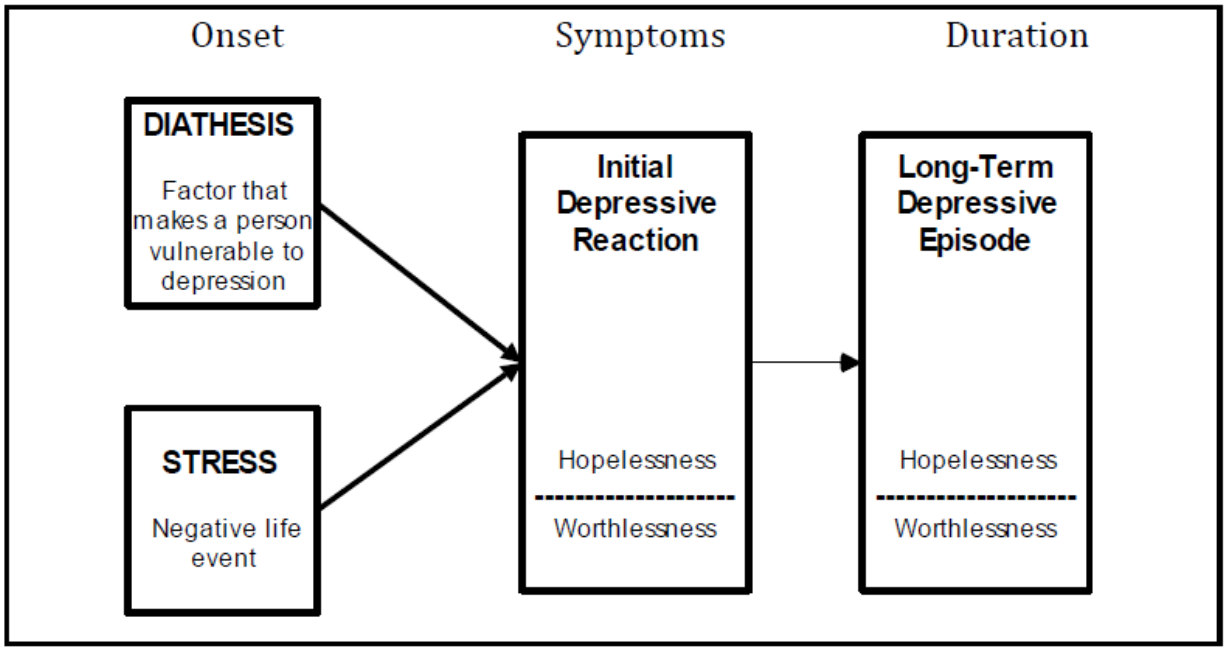


Figure 1: Diathesis Stress Model of Depression

This figure is a schematic representation of a model of reactive depression. A depressive reaction occurs when a person vulnerable to depression experiences a negative life event, this depressive reaction is characterized by feelings of hopelessness and/or worthlessness. Finally, the dashed line indicates that a short-term depressive reaction may resolve quickly or turn into a long-term depressive episode.

2.2.1 Concept of Depression

Depression is a state of sadness, gloom, and pessimistic ideation, with loss of interest or pleasure in normally enjoyable activities, accompanied in severe cases by anorexia and consequent weight loss, insomnia (especially middle or terminal insomnia) or hypersomnia, asthenia, feelings of

worthlessness or guilt, diminished ability to think or concentrate, or recurrent thoughts of deathor suicide(Coleman, 2015).Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide. Almost 1 million lives are lost yearly due to suicide, which translates to 3000 suicide deaths every day. For every person who commited suicide, 20 or more may attempt to end his or her life (WHO, 2012).There are multiple variations of depression that a person can suffer from, with the most general distinction being depression in people who have or do not have a history of manic episodes.

Depressive episode involves symptoms such as depressed mood, loss of interest and enjoyment, and increased fatigability. Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate, or severe. An individual with a mild depressive episode will have some difficulty in continuing with ordinary work and social activities, but will probably not cease to function completely. During a severe depressive episode, on the other hand, it is very unlikely that the sufferer will be able to continue with social, work, or domestic activities, except to a very limited extent (WHO, 2012).

Bipolar affective disorder typically consists of both manic and depressive episodes separated by periods of normal mood. Manic episodes involve elevated mood and increased energy, resulting in over-activity, pressure of speech and decreased need for sleep. While depression is the leading cause of disability for both males and females, the burden of depression is 50% higher for

females than males (WHO, 2008). In fact, depression is the leading cause of disease burden for women in both high-income and low- and middle-income countries (WHO, 2008).

2.2.2 Prevalence of Depression among Students

Depression is one of the most prevalent problems in the mental health of students at different educational levels, such as high school, college and university (Arslan, Ayranci, Unsal, &Arslantas, 2009). Many studies have proposed that psychological morbidity, particularly depression, isa common disorder among students. Studies of psychological problems encountered by counselling centres revealed that depression was one of the five most common problems among college students. They highlighted that depression accounted for 39% of problems, a higher rate than anxiety and the self-esteem of students across different settings (Erdur-Baker, Aberson, Borrow &Draper, 2006; cited by Faeq 2016). Recently, many studies have been carried out on the rate of depression among students (Chen,Wang, Qiu, Yang, Qiao, Yang, & Liang, 2013). They report that depression is a widespread problem and continues to increase in the student population (Sarokhani,Delpisheh, Veisani, Sarokhani, Esmaelimanesh& Sayehmiri, 2013). For instance, one study stated that the rate of depression varied from 10% to 40% among students at different levels and that adult students reported higher levels of symptoms of depression compared to the adult non-student population (Faeq, 2016).

Other studies in this area have also found that the symptoms of depression range from 27% and above among students and these symptoms represent the most common problems encountered by university counselling centres (Mobley, 2008as cited by Faeq, 2016). Although the prevalence of depression in the student population compared to the general population has not been well researched. A number of studies have looked at the rate of depression among particular groups of

students. A systematic review of published studies, from January 1980 to May 2005 about the rate of depression in Canadian and US medical students, reported higher levels of depression in the student population compared to the general population (Dyrbye, Thomas &Shanafelt, 2006 as cited by Faeq 2016).

Another recent systematic review reported that depression in university students is much higher compared to the general population (Ibrahim,Kelly, Adams, & Glazebrook, 2013). Similarly, according to this study, it cannot be concluded that the prevalence of depression is higher than the general population because this study only focused on university students. Likewise, a more recent study by Haldorsen, Bak, Dissing and Petersson (2014) found that the prevalence of depression among Danish medical students was remarkably higher than the Danish population as a whole.

A Nigerian study by Adewuya, (2006 as cited by Faeq, 2016), on the prevalence of depression among university students, found the rate of depression among Nigerian students was only 2.7%. This is much lower compared to the (25%) rate of depression among Nigerian outpatients visiting general clinics or compared to an older population sample (over 60 years) (18.3%) in western Nigeria. Additionally, a recent study on depression in Chinese university students by Chen and his colleagues (2013) concluded that the prevalence of depression was similar to that of the non-student population in the Chinese city of Harbin.

2.2.3 Causes of Depression among Students

The distinct causes of depression among students have not been investigated, particularly in the previous studies. It is important to remember that the above studies have shown high rates in the prevalence of depression (from 5% to 30%) in students across the (Ibrahim,Kelly., Adams.,

&Glazebrook., 2013). There are some common causes of depression among students. The first serious cause associated with the depression among students is socio-economic status. Though, a limited number of studies have investigated the effect of socio-economic factors on depression in the student population, students' socio-economic level has been shown to play a significant role in the symptoms of depression in students (Faeq, 2016).

A large cross-national (from 23 countries) study (Steptoe, Tsuda, Tanaka &Wardle, 2007 as cited by Faeq, 2016) on the relationship between symptoms of depression and socio-economic background of university students showed that family and personal income level, parental education and family wealth, contributed to depression in students. Similarly, data from an analysis of Egyptian studies on the relationship between socio-economic status and depression among undergraduate students found that socio-economic background associated negatively with symptoms of depression in students. This study concluded that students from families with a low level of income and parental occupation have a tendency towards depression (Ibrahim et al., 2013). More notably, the financial problems of students and their families have a negative impact on depression in students. The study showed that students originally from the countryside recorded higher levels of depression than students who live in cities. Shamsuddin and his colleagues (2013) reported that this might be due to an economic situation where families in rural areas often have a lower economic status. Moreover, it might be explained that some students from rural areas move away and leave their families while at university, and this might cause some difficulties for some students.

Studies also show that students who are from a higher socio-economic position such as a high level of social class, an educated background and economic situation, are more likely to have a sense of control. This sense of control can provide students better protection against mental

health problems, namely depression, associated with moving to a university environment (Lanchman &Weaver, as cited by Faeq, 2016). Additionally, the educational level of students' parents could play role in depression associated with the university environment of students. For example, Ibrahim et al. (2013) found that students with less educated family are 50% to 60% more likely to suffer from problems of depression compared to highly educated families (father and mother). It is also reported that the father's occupation has an effect on depression in students.

The second most common cause, reported as a serious factor for the rate of depression in students, is living away from home or transition to new environment, such as university and college. For some students, separation from home or family might cause psychological distress, especially depression. This is due to problems and difficulties associated with living in a new and different environment at university or college without social support. It was also found that students who live at home with their families are less likely to be affectedby depression because their families provide more support and enhanced protection against academic stress (Christie,Munro &Retting, as cited 2002 by Faeq, 2016).

It is pointed out that although it is less costly for students to share accommodation, and gives more social advantages, those share house students may be dissatisfied with their environment and housemates, and there are more opportunities to be diverted away from their studies. It is believed that this dissatisfaction leads to increased psychological distress such as depression and stress. Another problem with accommodation is that students who live alone may face problems without social support, especially international students. A study by Haldorsen et al. (2014) found that students dealing with social problems and psychological distress have a higher rate of the symptoms of depression compared to students living with their family. The above evidence

shows that students, who live with their family and partners and have the social support to deal with their problems, have a better chance of living without depression while at university and college. Although the transition to college and university is a successful step, and it is a good opportunity for students to have a better future, in poor countries it might cause some students who move to secondary school or university some social and psychological problems, including depression. For example, Adewuya and his colleagues (2006 as cited by Faeq, 2016) explained that symptoms of depression in Nigerian students could be caused by poor academic conditions, overcrowded classrooms, a poor quality of accommodation, and a lack of learning materials and equipment.

An important finding mentioned in the recent study of Haldorsen et al. (2014) found that the stress factors of students have a significant association with symptoms of depression. In the previous study Haldorsen et al. (2014) concluded that increased stress in students led to raised symptoms of depression. Similarly, many studies emphasized the same relationship between depression, stress and anxiety. The third main cause of depression among students is study satisfaction. That means that students who are not satisfied with their course of study have greater rate of depression than students who are satisfied A possible interpretation for this finding may be the student's lack of interest and motivation in their major, because on some occasions the student's parents choose the subject for study (Chen et al., 2013). It could be deduced that students who are content with their education are less likely to suffer from depression and anxiety.

Interestingly, another cause of depression in school and college age students is body size or body weight. Depression related to body size has been investigated by a number of studies and found that many students are depressed because they are not satisfied with their body size.

Some types of depression run in families, indicating that a biological vulnerability to depression can be inherited. This seems to be the case, especially with bipolar disorder. Families in which members of each generation develop bipolar disorder have been studied. The investigators found that those with the illness have a somewhat different genetic makeup than those who do not become ill. However, the reverse is not true. That is, not everybody with the genetic makeup that causes vulnerability to bipolar disorder will develop the illness. Apparently, additional factors, possibly a stressful environment, are involved in its onset and protective factors are involved in its prevention.

Major depression also seems to occur in generation after generation in some families, although not as strongly as in bipolar I or II. Indeed, major depression can also occur in people who have no family history of depression. An external event often seems to initiate an episode of depression. Thus, a serious loss, chronic illness, difficult relationship, financial problem, or any unwelcome change in life patterns can trigger a depressive episode (Beck & Perkins, 2001). Very often, a combination of genetic, psychological, and environmental factors is involved in the onset of a depressive disorder. Stressors that contribute to the development of depression sometimes affect some groups more than others. For example, minority groups who more often feel impacted by discrimination are disproportionately represented. Socioeconomically disadvantaged groups have higher rates of depression compared to their advantaged counterparts. Immigrants to the United States may be more vulnerable to developing depression, particularly when isolated by language.

Regardless of ethnicity, men appear to be particularly sensitive to the depressive effects of unemployment, divorce, low socioeconomic status, and having few good ways to cope with stress. Women who have been the victim of physical, emotional, or sexual abuse, either as a

child or perpetrated by a romantic partner are vulnerable to developing a depressive disorder as well. Men who engage in sex with other men seem to be particularly vulnerable to depression when they have no domestic partner, do not identify themselves as homosexual, or have been the victim of multiple episodes of antigay violence. However, it seems that men and women have similar risk factors for depression for the most part.

Nothing in the universe is as complex and fascinating as the human brain. The 100-plus chemicals that circulate in the brain are known as neurochemicals or neurotransmitters. Much of our research and knowledge, however, has focused on four of these neurochemical systems: norepinephrine, serotonin, dopamine, and acetylcholine. In the new millennium, after new discoveries are made, it is possible that these four neurochemicals will be viewed as the "black bile, yellow bile, phlegm, and blood" of the 20th century. Different neuropsychiatric illnesses seem to be associated with an overabundance or a lack of some of these neurochemicals in certain parts of the brain. For example, a lack of dopamine at the base of the brain causes Parkinson's disease. Alzheimer's dementia seems to be related to lower acetylcholine levels in the brain. The addictive disorders are under the influence of the neurochemical dopamine. That is to say, drugs and alcohol work by releasing dopamine in the brain. The dopamine causes euphoria, which is a pleasant sensation. Repeated use of drugs or alcohol, however, desensitizes the dopamine system, which means that the system gets used to the drugs and alcohol. Therefore, a person needs more drugs or alcohol to achieve the same high feeling. Thus, the addicted person takes more substance but feels less and less high and increasingly depressed (Beck & Perkins, 2001).

Certain medications used for a variety of medical conditions are more likely than others to cause depression as a side effect. Specifically, some medications that are used to treat high blood

pressure, cancer, seizures, extreme pain, and to achieve contraception can result in depression. Even some psychiatric medications like some sleep aids and medications to treat alcoholism and anxiety can contribute to the development of depression.

Beck and Perkin (2001) Asserted that many mental-health conditions or developmental disabilities are associated with depression as well. Individuals with anxiety, attention deficit hyperactivity disorder (ADHD), substance abuse, and developmental disabilities may be more vulnerable to developing depression. The different types of schizophrenia are associated with an imbalance of dopamine (too much) and serotonin (poorly regulated) in certain areas of the brain. Finally, the depressive disorders appear to be associated with altered brain serotonin and norepinephrine systems. Both of these neurochemicals may be lower in depressed people. Please note that depression is "associated with" instead of "caused by" abnormalities of these neurochemicals because we really don't know whether low levels of neurochemicals in the brain cause depression or whether depression causes low levels of neurochemicals in the brain.

What we do know is certain medications that alter the levels of norepinephrine or serotonin can alleviate the symptoms of depression. Some medicines that affect both of these neurochemical systems appear to perform even better or faster. Other medications that treat depression primarily affect the other neurochemical systems. The most powerful treatment for depression, electroconvulsive therapy (ECT), is certainly not specific to any particular neurotransmitter system. Rather, ECT, by causing a seizure, produces a generalized brain activity that probably releases massive amounts of all of the neurochemicals(Beck & Perkins, 2001).

Women are twice as likely to become depressed as men. However, scientists do not know the reason for this difference. Psychological factors also contribute to a person's vulnerability to

depression. Thus, persistent deprivation in infancy, physical or sexual abuse, clusters of certain personality traits, and inadequate ways of coping (maladaptive coping mechanisms) all can increase the frequency and severity of depressive disorders, with or without inherited vulnerability.

The effect of maternal-fetal stress on depression is currently an exciting area of research. It seems that maternal stress during pregnancy can increase the chance that the child will be prone to depression as an adult, particularly if there is a genetic vulnerability. It is thought that the mother's circulating stress hormones can influence the development of the fetus' brain during pregnancy. This altered fetal brain development occurs in ways that predispose the child to the risk of depression as an adult. Further research is still necessary to clarify how this happens. Again, this situation shows the complex interaction between genetic vulnerability and environmental stress, in this case, the stress of the mother on the fetus (Fava& Cassano, 2016).

Postpartum Depression

Postpartum depression (PPD) is a condition that describes a range of physical and emotional changes that many mothers can have after having a baby. PPD can be treated with medication and behaviour modification techniques. There are three types of PPD women can have after giving birth:

1. The so-called "baby blues" happen in many women in the days right after childbirth. A new mother can have sudden mood swings, such as feeling very happy and then feeling very sad or angry. She may cry for no reason and can feel impatient, irritable, restless, anxious, lonely, and sad. The baby blues may last only a few hours or as long as one to two weeks after

delivery. The baby blues do not always require treatment from a health-care provider. Often, joining a support group of new moms or talking with other moms helps.

2. Postpartum depression (PPD) can happen a few days or even months after childbirth. PPD can happen after the birth of any child, not just the first child. A woman can have feelings similar to the baby blues -- sadness, despair, anxiety, irritability - but she feels them much more strongly than she would with the baby blues. PPD often keeps a woman from doing the things she needs to do every day. When a woman's ability to function is affected, this is a sure sign that she needs to see her health- care provider right away. If a woman does not get treatment for PPD, symptoms can get worse and last for as long as one year. While PPD is a serious condition, it can be treated with medication and counseling.
3. Postpartum psychosis is a very serious mental illness that can affect new mothers. This illness can happen quickly, often within the first three months after childbirth. Women can experience psychotic depression, in that the depression causes them to lose touch with reality, have auditory hallucinations (hearing things that aren't actually happening, like a person talking), and delusions (seeing things differently from what they are in reality). Visual hallucinations (seeing things that aren't there) are less common. Other symptoms include insomnia (not being able to sleep), feeling agitated (unsettled) and angry, strange feelings and behaviors, as well as having suicidal or homicidal thoughts. Women who have postpartum psychosis need treatment right away and almost always need medication. Sometimes women are put into the hospital because they are at risk for hurting themselves or someone else, including their baby(Fava & Cassano, 2016).

2.2.4Consequences of Depression in Students

It is clear that depression has a substantial negative consequence for students as individuals in society. Few studies have been performed about the impact of depression on students' personal ability and academic career. It is suggested that depression can lead to many mental and physical disorders, which are big threats for students who make up an important part of the population in the community. Depression might cause problems for the future occupations of students by delaying access or difficulties in choosing a career. It could be deduced that depression may bring about various mental problems which may lead to psychological, social and physical problems for students during and after their academic life. It is believed the major problems in students' depression include poor self-assessment, lack of pleasure and interest in everyday life, problems in eating and sleeping, and suicidal thoughts. Additionally, this disorder has many negative effects associated with personal, cognitive, and emotional problems, notably, decision making and problems of time managementpoor academic achievement and low level of exam performance, decreased attention and drug abuse; over consumption of alcohol and increased, levels of smoking in adults and university students and negative effects, on everyday work and achievements (Chen etal, 2013).

Most importantly, the most serious consequence of depression is the threat of suicide in students. An earlier study on suicide in students explained that depression is the most prevalent cause of suicide attempts among students (Eisenberg et al., 2007 as cited by Faeq, 2016). Unfortunately, however, there is no exact data showing the rate of suicide among students worldwide. The study mentioned that 2.7% of depressed students tried to commit suicide, while 9.5% to 10% had suicidal thoughts (Dahlin, 2005; as cited by Faeq, 2016).

2.2.5Types of Depression

Depressive disorders are mood disorders that come in different forms, just as do other illnesses, such as heart disease and diabetes. Three of the most common types of depressive disorders are discussed below. However, remember that within each of these types, there are variations in the number, timing, severity, and persistence of symptoms. There are also differences in how individuals experience depression based on age as stated by Debjit bhowmik1, Kumar, Srivastava, Paswan,& Dutta, (2012).

Major depression

Major depression is characterized by a combination of symptoms that last for at least two weeks in a row, including sad and/or irritable mood that interfere with the ability to work, sleep, eat, and enjoy once- pleasurable activities. Difficulties in sleeping or eating can take the form of excessive or insufficient of either behavior. Disabling episodes of depression can occur once, twice, or several times in a lifetime.

Dysthymia

Dysthymia is a less severe but usually more long- lasting type of depression compared to major depression. It involves long-term (chronic) symptoms that do not disable but yet prevent the affected person from functioning at "full steam" or from feeling good. Sometimes, people with dysthymia also experience episodes of major depression. This combination of the two types of depression is referred to as double-depression.

Bipolar Disorder (Manic Depression)

Another type of depression is bipolar disorder, which encompasses a group of mood disorders that were formerly called manic-depressive illness or manic depression. These conditions show a particular pattern of inheritance. Not nearly as common as the other types of depressive disorders, bipolar disorders involve cycles of mood that include at least one episode of mania or hypomania and may include episodes of depression as well. Bipolar disorders are often chronic and recurring. Sometimes, the mood switches are dramatic and rapid, but most often they are gradual. When in the depressed cycle, the person can experience any or all of the symptoms of a depressive disorder. When in the manic cycle, many of the symptoms under mania may be experienced. Mania often affects thinking, judgment, and social behavior in ways that cause serious problems and embarrassment. For example, indiscriminate or otherwise unsafe sexual practices or unwise business or financial decisions may be made when an individual is in a manic phase. A significant variant of the bipolar disorders is designated as bipolar II disorder. (The usual form of bipolar disorder is referred to as bipolar I disorder.) Bipolar II disorder is a syndrome in which the affected person has repeated depressive episodes punctuated by what is called hypomania (mini-highs). These euphoric states in bipolar II do not fully meet the criteria for the complete manic episodes that occur in bipolar (Debjit bhowmik etal, 2012).

2.2.6 Depression Symptoms

Depression symptoms include according to Beck and Perkins, 2000: feelings of sadness or unhappiness, irritability or frustration even over small matters, loss of interest or pleasure in normal activities, reduced sex drive, insomnia or excessive sleeping, changes in appetite — it often causes decreased appetite and weight loss, but in some people it causes increased cravings for food and weight gain, agitation or restlessness — for example, pacing, hand-wringing or an

inability to sit still, irritability or anger outbursts, impaired thinking, speaking or body movements, indecisiveness, distractibility and decreased concentration, fatigue, tiredness and loss of energy — even small tasks may seem to require a lot of effort, feelings of worthlessness or guilt, fixating on past failures or blaming yourself when things aren't going right, trouble thinking, concentrating, making decisions and remembering things, frequent thoughts of death/dying or suicide, crying spells for no apparent reason , unexplained physical problems, such as back pain or headaches. Depression affects each person in different ways, so symptoms caused by depression vary from person to person. Inherited traits, age, gender and cultural background all play a role in how depression may affect one.

Common symptoms of depression can be a little different in children and teens than they are in adults. In younger children, symptoms of depression may include sadness, irritability, hopelessness and worry. Symptoms in adolescents and teens may include anxiety, anger and avoidance of social interaction. Changes in thinking and sleep are common signs of depression in adolescents and adults but are not as common in younger children. In children and teens, depression often occurs along with behavior problems and other mental health conditions, such as anxiety or attention-deficit/hyperactivity, poor schoolwork among others (Beck & Perkins, 2001).

Depression is not a normal part of growing older, and many elders feel satisfied with their lives. However, depression can and does occur in older adults. Unfortunately, it often goes undiagnosed and untreated. Many adults with depression feel reluctant to seek help when they're feeling down. In older adults, depression may go undiagnosed because symptoms — for example, fatigue, loss of appetite, sleep problems or loss of interest in sex — may seem to be caused by other illnesses.

Older adults with depression may have less obvious symptoms. They may feel dissatisfied with life in general, bored, helpless or worthless. They may always want to stay at home, rather than going out to socialize or doing new things. Suicidal thinking or feelings in older adults is a sign of serious depression that should never be taken lightly, especially in men. Of all people with depression, older adult men are at the highest risk of suicide (Debjit etal, 2012).

Mehler-Wex and Kölch (2008) as cited by Ranttila and Trishna (2011) also added that depressive symptoms in minors are strongly dependent on their age. The following shows different age groups with their corresponding psychopathology and somatic symptoms.

Toddlers

Restlessness, screaming; Unprompted crying attacks, irritability, agitation; Disinterestedness, passivity, apathy, lack of expression; Reduced creativity, imagination and stamina Clinginess, silliness; Auto stimulating behaviour

Preschool Children

Crying, irritability, aggressive and explosive outbreaks, Hypomimia, reduced gestural activity/passive general motor response, introversion, lack of interest; Joylessness, attention seeking behavior; Low frustration tolerance, aggressiveness Delayed social and cognitive developments .

SchoolChildren

Crying, defiant behavior, defense, aggressive behaviors; Self-reported sadness, listlessness and lack of drive, Disinterestedness, withdrawal; Problems concentrating, failure at school Worries, initial thoughts expressing tiredness of life; Attention seeking

Adolescents

Apathy, despair, refusal, lack of drive, disinterestedness, withdrawal; Thoughts and actions slowed down, problems in performance/achievements, cognitive impairments; Anxiety, disgust, lack of self-confidence, self-reproachfulness, brooding, fear of the future, suicidality (Ranttila& Trishna, 2011).

There were only few studies conducted to examine the gender-related depressive symptoms in younger school-aged children. In one study, a sample of 122 children from 5th and 6th graders from four suburban middle-class public schools were examined for gender differences in depressive symptoms with the use of Children's Depression Inventory (CDI).The findings suggested that girls were more into internalizing and negative self-image whereas boys were into externalizing and more school problems. Although on average, the depressive symptoms scores were slightly higher in girls than in boys on the 27-item CDI, but the difference was considered as insignificant (Beck & Perkins, 2001).

A depressive disorder is a syndrome (group of symptoms) that reflects a sad and/or irritable mood exceeding normal sadness or grief. More specifically, the sadness of depression is characterized by a greater intensity and duration and by more severe symptoms and functional disabilities than is normal. Depressive signs and symptoms are characterized not only by negative thoughts, moods, and behaviors but also by specific changes in bodily functions (for example, crying spells, body aches, low energy or libido, as well as problems with eating, weight, or sleeping). The functional changes of clinical depression are often called neurovegetative signs. This means that the nervous system changes in the brain cause many physical symptoms that result in diminished participation and a decreased or increased activity

level. Certain people with depressive disorder, especially bipolar depression (manic depression), seem to have an inherited vulnerability to this condition(Beck & Perkins, 2001).

Depression amounts to huge direct costs, which are for treatment, and indirect costs, such as lost productivity and absenteeism from school or work.In a major medical study, depression caused significant problems in the functioning of those affected more often than did arthritis, hypertension, chronic lung disease, and diabetes, and in some ways as often as coronary artery disease. Depression can increase the risks for developing coronary artery disease, HIV, asthma, and many other medical illnesses. Other complications of depression include its tendency to increase the morbidity (illness/negative health effects) and mortality (death) from these and many other medical conditions. Depression can coexist with virtually every other mental health illness, aggravating the status of those who suffer the combination of both depression and the other mental illness. Depression in the elderly tends to be chronic, has a low rate of recovery, and is often undertreated. This is of particular concern given that elderly men, particularly elderly white men have the highest suicide rate (American Psychiatric Association, 2010).

Depression is usually first identified in a primary-care setting, not in a mental-health practitioner's office. Moreover, it often assumes various disguises, which causes depression to be frequently underdiagnosed. In spite of clear research evidence and clinical guidelines regarding therapy, depression is often undertreated. Hopefully, this situation can change for the better. For full recovery from a mood disorder, regardless of whether there is a precipitating factor or it seems to come out of the blue, treatment with medication and/or electroconvulsive therapy (ECT) and psychotherapy are necessary.

2.2.7Incidence and Risk Factors of Depression

Many researchers believe it is caused by chemical changes in the brain. This may be due to a problem with your genes, or triggered by certain stressful events. More likely, it's a combination of both. Some types of depression run in families. But depression can also occur if you have no family history of the illness. Anyone can develop depression, even kids (Fava & Cassano, 2016).

The following may play a role in depression: Alcohol or drug abuse,certain medical conditions, including underactive thyroid, cancer, or long- term pain, certain medications such as steroids sleeping problems, stressful life events, such as: breaking up with a boyfriend or girlfriend, failing a class, death or illness of someone close to you, divorce, childhood abuse or neglect, job loss, social isolation (common in the elderly) among others.

2.2.8Managing Depression

Depression is a disorder that can be reliably diagnosed and treated in primary care. As outlined in the WHO mhGAP Intervention Guide, preferable treatment options consist of basic psychosocial support combined with antidepressant medication or psychotherapy, such as cognitive behaviour therapy, interpersonal psychotherapy or problem-solving treatment. In this study, Metacognitive therapy and emotion regulation strategy are the treatment procedures. Antidepressant medications and brief, structured forms of psychotherapy are effective. Antidepressants can be a very effective form of treatment for moderate-severe depression but are not the first line of treatment for cases of mild or sub-threshold depression. As an adjunct to care by specialists or in primary health care, self-help is an important approach to help people with depression. (Debjitetal, 2012).

According to a World Health Organization-sponsored study, while around 9% of people in India reported having an extended period of depression within their lifetime, nearly 36% suffered from what is called Major Depressive Episode (MDE). MDE is characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy and poor concentration, besides feeling depressed. Lowest prevalence of MDE was in China (12%). The average age of depression in India is 31.9 years compared to 18.8 years in China, and 22.7 years in the US. The female: male ratio was about 2:1."WHO ranks depression as the fourth leading cause of disability worldwide and projects that by 2020, it will be the second leading cause.

Depression occurs in persons of all gender, ages, and backgrounds. There are variety of causes, including genetic, environmental, psychological, and biochemical factors. It usually starts between the ages of 15 and 30. Women can also get postpartum depression after the birth of a baby. Some people get seasonal affective disorder. There are effective treatments for depression, including psychological therapeutic techniques and antidepressants. Most people do best by using both. Depression is common, affecting about 121 million people; it is among the leading causes of disability worldwide. Depression can be reliably diagnosed and treated by psychological techniques especially if it is mild to moderate. Fewer than 25% of those affected have access to effective treatments. For severe cases of depression, antidepressant medications and brief, structured forms of psychotherapy are effective which could be administered in the clinical settings. However, fewer than 25 % of those affected (in some countries fewer than 10 %) receive such treatments (Debjitetal, 2012). Barriers to effective care include the lack of resources, lack of trained providers, and the social stigma associated with mental disorders

including depression. It is the second contributor to shorter lifespan for individuals in the 15-44 age groups.

Over the past decade, a number of clinical trials have shown the effectiveness of treatment for depression across a range of resource settings. A trial carried out in rural Uganda, for example, showed that group interpersonal psychotherapy substantially reduced the symptoms and prevalence of depression among 341 men and women meeting criteria for major or sub-syndromal depression (Debjit etal, 2012).

Another trial was conducted with 240 low-in- come women suffering from major depression to examine the effectiveness of a multi-component intervention that included psycho-educational group intervention, structured and systematic follow-up, and drug treatment for those with severe depression. The trial found that there was a substantial difference in favour of the collaborative care program as compared to standard care in primary care. A depression test administered at the 6-month follow up point showed that 70% of the stepped-care group had recovered, as compared with 30% of the usual-care group (Araya, Flynn, Rojas, Fritsch & Simon, 2006 as cited by Debjit etal, 2012). Despite the known effectiveness of treatment for depression, the majority of people in need do not receive it. Where data is available, this is globally fewer than 50%, but fewer than 30% for most regions and even less than 10% in some countries. Barriers to effective care include the lack of resources, lack of trained providers, and the social stigma associated with mental disorders.

While the global burden of depression poses a substantial public health challenge, both at the educational/social and economic levels as well as the clinical level, there are a number of well-defined and evidence-based strategies that can effectively address or combat this burden. For

common mental disorders such as depression being managed in primary care settings, the key interventions are treatment with generic antidepressant drugs and brief psychotherapy.

The prevention of depression is an area that deserves attention. Many prevention programs implemented across the lifespan have provided evidence on the reduction of elevated levels of depressive symptoms. Effective community approaches to prevent depression focus on several actions surrounding the strengthening of protective factors and the reduction of risk factors. Examples of strengthening protective factors include school-based programs targeting cognitive, problem-solving and social skills of children and adolescents as well as exercise programs for the elderly. Interventions for parents of children with conduct problems aimed at improving parental psychosocial well-being by information provision and by training in behavioral childrearing strategies may reduce parental depressive symptoms, with improvements in children's outcomes.

In general, the severe depressive illnesses, particularly those that are recurrent, will require antidepressant medications (or ECT in severe cases) along with psychotherapy for the best outcome. If a person suffers one major depressive episode, he or she has a 50% chance of a second episode. If the individual suffers two major depressive episodes, the chance of a third episode is 75%-80%. If the person suffers three episodes, the likelihood of a fourth episode is 90%-95%. Therefore, after a first depressive episode, it might make sense for the patient to gradually come off medication. However, after a second and certainly after a third episode, most clinicians will have a patient remain on a maintenance dosage of the medication for an extended period of years, if not permanently. Patience is required because the treatment of depression takes time. Sometimes, the doctor will need to try a variety of antidepressants before finding the medication or combination of medications that is most effective for the patient. Sometimes, the dosage must be increased to be effective(Debjit etal,2012).

2.3 Concept of Metacognition

Metacognition is the ability to think about one's own thinking and the thinking of others. This can be at a discrete level of specific mental experiences, or at a more synthetic level where intentions, thoughts, and feelings are brought together into integrated representations of self and others (Flavell, 1979). Several studies indicate deficits in metacognition for people with depression; this deficit seems to be unique to the disorder, as findings indicate people with mental health disorder have reduced metacognitive capacity not just as compared to healthy controls, but also as compared to people with other psychiatric conditions, including bipolar disorder, anxiety or depression, and addictions (Well 2009). The term metacognition was originally used in the education literature (Flavell, 1979), but has evolved in its use to now encompass a spectrum of psychological functions. As used in psychology research, the term metacognition typically refers to the ability to think about the thoughts and feelings of one self and others and integrate this knowledge to make meaning of the world and one's connections within it. Metacognition is commonly understood to have four domains: self-reflectivity - the ability to understand one's own thoughts and feelings; understanding of others' minds - the ability to understand others' thoughts and feelings; decentration - the ability to interpret the world and others' actions as independent from oneself; and mastery - the ability to use skills in the first three domains to respond to psychological and social problems (Lysaker, Leonhardt & Pijnenborg, 2014). The metacognition construct contains several elements associated with empathy – the ability to understand the thoughts and feelings of others, the ability to understand one's own thoughts and feelings (and that they are separate from others), and the ability to respond in an appropriate manner to others in a social setting are all integral to empathic interaction. Perhaps most importantly, metacognition may play a role in the interpretation of

affect felt upon seeing another in distress, perhaps determining if the affect leads to personal distress or to empathic interaction with the other.

2.3.1Nature of Metacognition

The study of metacognition emerged in the area of developmental psychology and subsequently in the psychology of memory, ageing, and neuropsychology. Only recently has metacognition been examined as a fundamental basis for most or all psychological disturbances (Flavell, 1979 as cited by Well 2009). Metacognition describes a range of interrelated factors comprised of any knowledge or cognitive process that is involved in the interpretation, monitoring, or control of cognition. It can be usefully divided into knowledge, experiences, and strategies.

Knowledge and Beliefs: "Metacognitive knowledge" refers to the beliefs and theories that people have about their own thinking. For example, this knowledge consists of the beliefs that are held about particular types of thoughts as well as beliefs about the efficiency of one's memory or powers of concentration. An individual may believe that some thoughts are harmful. A religious person may believe that experiencing certain thoughts is sinful and will lead to punishment. These are examples of metacognitive beliefs about the importance of thoughts. Holding such beliefs has implications for how a person responds to his or her thoughts and how he or she orchestrates his or her thinking.

According to the metacognitive theory of psychological disorder, there are two types of metacognitive knowledge (Wells & Matthews, 1994; Wells, 2000 as cited by Wells 2009): (1) explicit (declarative) beliefs and (2) implicit (procedural) beliefs. Explicit knowledge is that which can be verbally expressed. Examples include "Worrying can cause a heart attack"; "Having bad thoughts means I'm mentally defective"; and "If I focus on danger I'll avoid harm."

Implicit knowledge is not directly verbally penetrable. It can be thought of as the rules or programs that guide thinking, such as the factors con- trolling the allocation of attention, memory search, and use of heuristics in forming judgments. The plan or program for processing can be indirectly inferred from assessment strategies such as metacognitive profiling (Wells & Matthews, 1994as cited by Wells 2009). Implicit or procedural knowledge represent the "thinking skills" that individuals have. In addition to these two types of metacognitive knowledge, there are two broad- content domains in MCT. Individual disorders show some content- specificity within these domains. The broad domains are positive and negative metacognitive beliefs. Positive metacognitive beliefs are concerned with the benefits or advantages of engaging in cognitive activities that constitute the CAS. Examples of positive metacognitive beliefs include "It is useful to focus attention on threat," and "Worrying about the future means I can avoid danger." Negative metacognitive beliefs are beliefs concerning the uncontrollability, meaning, importance, and dangerousness of thoughts and cognitive experiences. Examples of such beliefs include "I have no control over my thoughts"; "I could damage my mind by worrying"; "If I have violent thoughts I will act on them against my will"; and "Being unable to remember names is a sign of a brain tumor." In MCT metacognitive beliefs are key influence on the way individuals respond to negative thoughts, beliefs, symptoms, and emotions. They are a driving force behind the toxic thinking style that leads to prolonged emotional suffering.

Experiences: Metacognitive experiences are the situational appraisals and feelings that individuals have of their mental status. For example, the negative interpretations that obsessional patients make of their intrusive thoughts are metacognitive experiences. The worry about worry that is a feature of generalized anxiety is an example of a metacognitive experience. The

misinterpretations of cognitive events made by patients with panic disorder when they believe they are about to lose control of their behavior or lose their mind is a further example. Experiences also include subjective feelings. A familiar and normal metacognitive feeling state is the tip-of-the- tongue effect, where individuals have a strong sense that an item of information is stored in memory even though it is currently not retrievable. There are similar experiences such as "feeling of knowing" and judgments of learning that have been examined in experimental work on metamemory and judgments (Wells. 2009). These subjective experiences influence behavior such as retrieval efforts and learning strategies. In MCT, negative appraisals of feelings and thoughts contribute to perceived threat and motivate attempts to control thinking. Subjective feeling states and appraisals of cognition can be used as information for influencing judgments about threat and coping. Often these experiences are not fit for purpose. For example, a man suffering from obsessional thoughts that he might have committed a murder focused on the complete- ness of his memory for a period of time to decide whether or not he had committed murder. Any blanks in his memory were interpreted as possible times during which he could have committed the act. In this example his strategies and his appraisals of his memory status (meta- experiences) were unhelpful and maintained his anxiety.

Strategies: Metacognitive strategies are the responses made to control and alter thinking in the service of emotional and cognitive self-regulation. The strategies selected may intensify, suppress, or change the nature of cognitive activities. Some of them are aimed at reducing thoughts or negative emotions by altering aspects of cognition. For example, an individual may turn his or her attention toward threat in an attempt to be prepared, or he or she may try to suppress distressing thoughts, use positive thinking, or distract from emotion. In psychological disorders, the patient's subjective experience is one of being out of control. Strategies often

consist of attempts to control the nature of thinking. These attempts tend to be counterproductive in the long term. They include attempts to suppress certain thoughts, to analyze experiences to find answers, or to try and predict what might happen in the future so as to avoid problems. In anxiety disorders, individuals often negatively interpret the occurrence of thoughts and their strategies often involve attempts to suppress them. In disorders such as hypochondriasis and generalized anxiety a strategy consists of focusing on particular negative stimuli and worrying about them. For example, a hypochondriacal patient explained how he analyzed possible harmful causes for his muscle weakness to be sure that he did not miss anything that could be important. The problem with this strategy, as with most strategies used by our patients, is that it maintained his sense of threat. In another case, a depressed woman receiving MCT described dealing with her feelings of sadness by dwelling (ruminating) on her inadequacies and mistakes. Her goal was to make herself feel worse so that she was "forced to snap out of it." Clearly, strategies are dependent on the metacognitive knowledge and internal models that individuals have concerning how their cognition and emotion operates. Metacognitive knowledge (beliefs), experiences, and strategies are interdependent and function together in psychological disorder. In the metacognitive theory of psychological disorder, maladaption in knowledge, experiences, and strategies combine to give rise to an unhelpful pattern of thinking that leads to psychological disturbance. However, before describing that pattern in detail, it is pertinent to turn attention to an aspect of metacognitive experiences that plays an important role in MCS. The fact that humans have the capacity to engage in ordinary cognition and also to think about thinking means that there are two ways of experiencing thoughts. These were previously called "modes" (Wells, 2009).

2.3.2The Cognitive Attentional Syndrome (CAS)and Depression Symptoms

The thinking patterns of psychologically disordered individuals have a repetitive and brooding quality focused on self- related topics that is difficult to bring under control. This quality is indicative of the CAS and is marked by heightened self- focused attention. The CAS consists of excessive conceptual processing in the form of worry and rumination. These are long chains of predominantly verbal thought in which the person attempts to answer "What if . . . ?" questions (worry) or attempts to answer questions about the meaning of events (e.g., "Why do I feel this way?"). In addition to this conceptual component, the CAS is comprised of attentional bias in the form of fixating attention on threat- related stimuli. This is termed "threat monitoring" (Wells, 2009). For example, an individual traumatized in a robbery described how he subsequently scanned the environment for potential danger. A client with low self-esteem reported being sensitive to being ignored by other people; it was discovered that this sensitivity was associated with monitoring for signs that people might not like her. These conceptual and attentional processes are part of the person's strategy for dealing with threat, self- discrepancies, and the emotion aroused by them. There are additional strategies that constitute the CAS including thought control strategies such as thought suppression and behaviours such as behavioural, cognitive, physical and emotional avoidance. Some examples of the CAS are evident in the following cases, Wells (2009):

A 43-year-old woman described how she had experienced repeated episodes of depression since she was a teenager. The current depression occurred following the birth of her second daughter approximately 14 months earlier. When asked how much of the time she had spent thinking about her feelings and depression in the past week, she explained that she had spent many hours doing so. When asked for an example of this thinking, she described sitting and gazing at a

television screen thinking about how abnormal it was to feel this way, why she felt sad, how she did not have the correct feelings for her daughter, why this had happened to her, and what this meant about her suitability as a mother. It was discovered that she was spending a large amount of time ruminating in this way in response to negative thoughts about her daughter. When asked what the goal might be in thinking this way, she explained how she was trying to make her mood worse in an attempt to become angry so that she would be forced to "snap out of depression."

The client described above responded to her low mood by ruminating and extended focusing on her feelings in an attempt to deal with her sadness. In effect she was trying to "think herself better" by rumination because she held the metacognitive belief that by becoming angry she could escape from her sadness.

In this example Wells (2009), the client's thinking style in response to intrusions was dominated by trying to think (rumination) and feel emotion to speed up recovery. In addition she was worrying about threats in the future as a means of being prepared. These features of the CAS backfired and increased her depression, anxiety and sense of threat.

A 39-year-old female client described herself as a chronic worrier. Exploration of a recent distressing worry episode established that in response to the negative thought "What if my child is injured?" she had engaged in prolonged worry to try and generate a series of potential ways of coping with such an event. On this occasion she had a panic attack during her worry because she thought she was losing control of her mind. Since then she had been trying to suppress thoughts about her children being involved in accidents, and she was avoiding local newspapers in case they gave her something new she needed to worry about (Wells, 2009).

In this case, prolonged worry in response to negative thoughts, thought suppression, and avoidance were readily observable components of the CAS. On further questioning the patient described how she believed that worrying was an effective means of avoiding problems in the future, clearly indicating the involvement of positive metacognitive beliefs in the problem as well as negative metacognitive beliefs about losing control.

A 23-year-old man presented with a problem of anxiety in social situations, in which he feared that he would look anxious and "weird." When asked about his most recent experience of social anxiety, he identified feeling anxious before attending the treatment session. He was asked what he had been thinking and for how long beforehand. The patient described how he had been trying to anticipate what the situation would be like and rehearsing ways of answering any difficult questions. He was also asked if he had been paying attention to himself or to the external environment during the session. The patient answered that he was paying more attention to himself at the beginning of the session and in particular that he had been focusing on how he sounded and might look to the therapist. He was trying to sound and look normal by controlling his behaviour (Wells, 2009).

The feature of the CAS most evident in this case is perseveration in the form of anticipatory worry. It also involves threat monitoring in the form of focusing on an impression of himself, and coping behaviors in the form of trying to sound and appear "normal." In each of the cases described above it is possible to identify and isolate the CAS. The problem is that components of the CAS lock the person into prolonged emotional experience and produce conflicts in self-regulation that lead to a sense of helplessness and loss of adaptive control over cognition and emotion.

2.3.3 Consequences of the CAS in Depression Symptoms

There are several consequences that lead to psychological disturbances. Wells (2009) explains that focusing attention on threat reinforces beliefs about the presence of danger, and avoiding experiences such as cognitive, physical and emotional symptoms and suicidal ideation prevents the person from discovering the truth about the benign nature of emotion signifies the effect of thinking style and coping on low-level automatic and emotion-level processing. For example, worrying may maintain activation of the anxiety network and divert attention away from processing intrusive images, thereby blocking emotional processing.

Worrying and rumination are invariably biased and focus the individual on negative information. This leads to a distorted impression of the self and the world. For instance, worrying focuses on potential danger in the future, but has little relationship with the true probability of dangerous events. Rumination seeks answers to questions that often do not have a single or identifiable answer, such as “Why me?” Thus, it perpetuates uncertainty and self- discrepancies between what the person knows and what the person desires to know. Furthermore, worry and rumination activate and maintain a sense of threat so that anxiety and depression persist rather than being transient. These processes use up valuable attentional resources and can impair clear and controlled decision making and thinking under pressure. The repeated practice of worry and rumination increases the habit strength of these responses such that the individual has diminished awareness of these activities and allows them to proceed unchecked. Habit strength and lack of awareness contribute to a sense of loss of control of these mental processes.

Wells (2009) emphasized that worry and rumination can interfere with other self- regulatory cognitive processes. For example, worry is predominantly verbal and can interfere with the

processing of images that is necessary for emotional processing after trauma. Similarly, ruminating on the past, such as thinking about failures and mistakes, increases the accessibility of this material when making judgments in the future. The "threat- monitoring" component of the CAS fixates attention on sources of potential threat. This is a problem because (1) it inflates the sense of subjective danger, thereby increasing or maintaining emotional activation; (2) it strengthens a plan or program for guiding cognition that leads the individual to become a skilled and more sensitive threat detector; (3) in cases such as depression, in which cognition needs to retune to the normal threat-free environment, the strategy prevents this process; and (4) threat monitoring may bias fear- processing networks responsible for generating intrusions of stimuli into consciousness. Thus, threat monitoring may increase intrusive mental experiences. Thought control strategies such as suppression or thinking in special ways are problematic because they interfere with normal emotional processing, such as emotional habituation through repeated exposure to thoughts. Suppression is a problem because it is not consistently effective in stopping unwanted thoughts, and failure can be interpreted as loss of control. In each case persistence in processing of threat occurs. Some regulation strategies have ironic effects because they rely on dissonant processes. For example, a patient might try to think him- or herself out of depression by dwelling on how bad he or she feels and why he or she feels that way. Such dwelling deepens and prolongs the depression because it locks the person onto more negative self- relevant information. Similarly, chronic worriers effectively attempt to worry themselves into a state of feeling that they will be able to cope in the future. Other coping behaviors such as avoidance and using substances to regulate emotion and cognition are problematic because they deprive the individual of an opportunity to discover that he or she can cope in situations and emotion is not dangerous. A sense of prospective danger is maintained because some coping

behaviors prevent reality testing of negative thoughts and beliefs. For example, the nonoccurrence of a catastrophe such as suffering a “mental breakdown” can be attributed to avoiding stress rather than to the fact that the belief about stress causing a breakdown is faulty Wells (2009).

2.3.4 Positive and Negative Metacognitive Beliefs

The CAS is controlled by erroneous beliefs about thinking. Two different content domains of metacognitive belief contribute to this style: (1) positive metacognitive beliefs and (2) negative metacognitive beliefs. Positive metacognitive beliefs concern the usefulness of worry, rumination, threat monitoring, and other similar strategies. Examples include, as Wells, (2009) puts it:

“If I worry I will be prepared.” “Focusing on danger will keep me safe.” “I must remember everything and then I will know if I am to blame.” “If I analyze why I feel this way I will find answers.” “I must control my thoughts or I will do something bad.”

On the surface these beliefs may seem reasonable. However, in order to show their erroneous and distorted nature, they are repeated below with some useful questions that the metacognitive therapist uses to reframe them:

“If I worry I will be prepared.” Is it possible to be prepared without worrying? Is it possible to worry about everything that could happen? Does worry give a balanced view of the future or a biased one? “Focusing on danger will keep me safe.” How do you know which danger to focus on? Is it the danger you see or the one you don’t see that will catch you out? Could focusing on danger make you less safe because you forget the usual things? “I must remember everything and then I will know if I’m to blame.” Is it possible to remember everything? How will knowing

if you're to blame help you feel better and move on? Can you move on without blaming yourself?

"If I analyze why I feel this way I'll find answers." How long have you been doing this? How much longer will it take? What if the answer is stopping your analysis? What if there is no answer other than changing the way you think?"I must control my thoughts." How do you know which ones to control? Is it possible to control all of your thoughts? Could controlling your thoughts stop you from finding out the truth about them?

The second domain of metacognitive belief concerns the negative significance and meaning of internal cognitive events such as thoughts and ordinary beliefs. There are two broad subsets of negative meta- beliefs: those that concern the uncontrollability of thoughts and those that concern the danger, importance, and meaning of them. These meta- beliefs lead to a persistence of the CAS because of a failure to attempt control and because they lead to negative and threatening interpretations of mental events. These beliefs can also be extended to emotional experiences or feeling states. Examples include:

"I have no control over my worrying/rumination." "Worrying can damage my body." "Psychological distress can make me lose my mind." "Bad thoughts have the power to make me do bad things." "Some thoughts can make bad things happen." "My thoughts can change me into something I don't want to be." "Uncontrollable thoughts are a sign of madness." "If I believe I'm bad then I must be bad." "Feeling anxious means I must be in danger." "Thinking something makes it true."

Metacognition has also been linked to emotion regulation in affective neuroscience and cognitive literatures. For example, Wells' (2009) metacognitive theory focuses on the impact of thinking

about one's own thinking on emotion regulatory strategies, and negative metacognitive beliefs (based on Wells' theory) are significantly associated with emotion dysregulation (Mazloom, Yaghubi, & Mohammadkhani, 2016). Neuroscientific studies examining regulation of emotions, thoughts, and behaviours also point to the importance of accurate appraisal of others' mental states as well as the ability to reinterpret or reappraise the behaviour of others (Ochsner & Gross, 2008). Lastly, it may be posited that decreased metacognitive capacities coupled with dysfunctional emotion regulation could play an important role in the symptomatology of mental disorders including but not limited to depression.

2.3.5 The Metacognitive Model of Depression Symptoms

The basic model is called the self- regulatory executive function model (S-REF; Wells, 2009), so called because it offers an account of the cognitive and metacognitive factors involved in the top-down control or maintenance of emotional disorder. In the model cognitive processes are spread across three interacting levels involving automatic and reflexive processing (low-level processing), conscious processing of thoughts and behaviours (labeled cognitive style), and a library of knowledge or beliefs that are metacognitive in nature stored in long-term memory. The meta- system is differentiated from the rest of the ordinary cognitive system but like other systems is distributed through different levels of processing. The meta- system holds a model or representation of current ordinary cognitive processing and guides it toward the goal of an activated plan.

A core principle of metacognitive strategy is that depression symptoms are linked to the activation of a particular toxic style of thinking called the CAS. For most people periods of emotion and negative appraisal (such as sadness, anxiety, anger, worthlessness) are isolated and

temporary. However, the CAS has effects that lock people into prolonged or repetitive disturbances of this kind. The CAS consists of a perseverative thinking style that takes the form of worry or rumination, attentional focusing on threat, and unhelpful coping behaviors that backfire (e.g., thought suppression, avoidance, substance use). This style has a number of consequences that lead to the maintenance of emotions and the strengthening of negative ideas. Generally speaking, the CAS maintains an individual's sense of threat. An example of the effects of the CAS can be seen in the development of panic disorder. Spontaneous panic attacks are quite common and happen to many people at some point in their lives. However, worrying about subsequent attacks (part of the CAS) prolongs anxiety, and monitoring of bodily sensations (part of the CAS) increases the triggering conditions (intrusion of bodily sensations) for subsequent attacks to occur. Thus, the individual who is prone to activate this cognitive- attentional response pattern is more likely to show a persistence of anxious arousal and to develop repeated panic attacks. Such a pattern will support the growth of beliefs about the uncontrollable and harmful consequences of anxiety (Wells, 2009). The CAS arises from knowledge and beliefs, but these are metacognitive in nature and not in the ordinary cognitive domain of beliefs about the self and the world. Two types of beliefs are important: (1) positive beliefs about the need to engage in aspects of the CAS (Say, "If I worry about my symptoms, I won't miss anything important") and (2) negative beliefs about the uncontrollability, dangerousness, or importance of thoughts and feelings (Say,"I have no control over my mind; my anxiety could make me go crazy"). The basic principles of the metacognitive approach are summarize:

1. It is proposed that the emotions of anxiety and sadness are basic internal signals of a discrepancy in self- regulation and of threats to well-being.

2. Such emotions are normally of limited duration because the person engages coping strategies to reduce threat and control cognition.
3. Psychological disorder results from the maintenance of emotional responses.
4. They are maintained because of the individual's thinking style and strategies.
5. The unhelpful style, found in all disorders, is called the CAS, consisting of worry/rumination, threat monitoring, unhelpful thought control strategies, and other forms of behaviour (avoidance) that prevent adaptive learning.
6. The CAS is the result of erroneous metacognitive beliefs (knowledge) controlling and interpreting thinking and feeling states.
7. The CAS prolongs and intensifies negative emotional experience through several clearly specified mechanisms/pathways.

The basic premise of metacognitive strategy is that the therapy would be conducted at the cognitive level. Metacognitive strategy usually engages the clients in reality testing of ideas in order to "encourage a more accurate description and analysis of the way things are" (Beck, Rush, Shaw, & Emery, 1979 as cited by Wells, 2009). The focus is on examining the data against which to test the patient's ideas. Reality testing also consists of identifying cognitive distortions in the patient's thoughts and beliefs. It is likely that standard CBT procedures like this accomplish metacognitive changes—for instance, they certainly rely on fostering metacognitive awareness through the daily record of automatic thoughts. But patients are left evaluating thoughts against reality, a conceptual process, rather than simply choosing not to engage with their thoughts (a preferred goal of MCS).

If the therapist chooses the CBT approach, important aspects of MCS are missing because the work conducted is at the object level. The therapist joins with the client in assuming that the

thought or belief might be correct. Therefore great conceptual activity needs to be expended in evaluating the thought. If it is correct, then energy needs to be directed at problem solving(Wells, 2009). In part this is a form of conceptual processing and goal- directed coping that our patients are already engaged in. For example, a woman recently receiving treatment for generalized anxiety asked, “How do I decide which worries I need to respond to and which ones I can dismiss as distorted?” This person and the therapist were in cognitive mode. Unfortunately, they continued to discuss how it was possible to evaluate how realistic a worry was, and if it was realistic, then how to reasonably deal with it. Although the therapist and the patient evaluate thoughts in CBT, which involves metacognitive awareness and metacognitive appraisals, treatment clearly operates at the cognitive (object-mode) level since the goal is to reality-test ordinary cognitions rather than to develop or test metacognitions.

The metacognitive strategy must shift to a metacognitive level of working instead. For example, in the case of generalized anxiety disorder cited above, the therapist might say, “It seems as if you believe that you need to think about a worry in order to be able to cope. What would happen if you decided to do nothing with your worries?” This approach may elicit metacognitive beliefs about the need to engage in sustained conceptual activity and the possible negative consequences of not doing so, which can be tested. This line of questioning is firmly grounded in the metacognitive level of working and changes the way the client experiences worry (That is, in a detached way) and explores and modifies meta- cognitive beliefs about worry. There is no attempt to work at the ordinary cognitive level of testing the reality of individual concerns. The fundamental nature of the metacognitive level of working is that it should enable the patient to become aware of maladaptive thinking styles and processes, and to change the mental model of cognition and ways of experiencing thoughts. This entails more than simply reality testing the

content of thoughts and beliefs and requires giving up maladaptive thinking styles (processes) and working at the higher level of testing the validity of beliefs about thinking (Wells 2009).

As an example, let's consider the case of a young man who believed that he was "defective." He had suffered a history of abuse. This was his evidence of being defective or "spoiled." A cognitive therapist would be likely to work at the cognitive level and to ask him to consider evidence against this idea, to examine the cognitive distortion in this belief, and to consider alternative conclusions. If the therapist used this approach, it might well be effective, but it might not provide an alternative way of relating to negative self- beliefs and memories. CBT changes the level of conviction or the content of the belief but it does not help the patient to see that he is more than and separate from his beliefs and his memories. It would be useful to stand back from the belief and see it as an event in the mind rather than an essence of self, as one might with techniques such as detached mindfulness that are used in MCS.

Detecting the CAS in Depression

When starting out practicing some MCS therapists often fail to detect the CAS. Most prominent among these difficulties is the therapist's failure to recognize worry and rumination either in the client's description of his or her thinking or as a process activated in session. It is essential that the therapist is and eventually the patient should become aware of and able to identify worry, rumination, threat monitoring, and counterproductive coping behaviours. Periods of patient silence can be an indication that rumination and worry have been activated(Wells, 2009). Extended justifications of beliefs and repeated reflections on negative emotions are usually indicative of worrying or ruminating. A preoccupation with detail in verbal descriptions of events might be a marker for rumination or avoidant coping. In order to identify the process, the

therapist must think beyond the content and validity of what the patient states and be aware of the activation of chains of negative processing. When these are observed they should be pinpointed and labeled to increase patient awareness, and the process interrupted rather than the content reality- tested. Although these processes frequently play out spontaneously in the therapeutic encounter, a method of detecting them is to ask direct questions about their occurrence. The metacognitive therapist asks questions about dwelling on thoughts, worrying, ruminating, and brooding in response to stresses and emotions. The therapist aims to quantify in terms of frequency and duration the occurrence of these thinking styles. The therapist also asks if the patient has found that his or her attention has become "stuck" on any one thing in particular and what that is. This can be the basis for identifying threat monitoring. The therapist asks if the patient has tried to control thoughts or to cope with emotions or any perceived threat, and what form these responses take and how effective they have been. The process of threat monitoring may also be observed in session(Wells, 2009).

2.4 Emotion Regulation

Emotions such as anger and sadness, are multifaceted phenomena that involve changes in all domains of subjective experience, behaviour, as well as central and peripheral physiological systems (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). Emotion which is classified in the superordinate category of affective states has typically rapid onset and short duration and usually focuses on a specific internal or external object (Berking, 2012). Emotions arise when something important to us is at stake (Gross, 2002). They serve important goal-directed functions, both intra-personally and interpersonally. However, emotional responses can also mislead and hurt us, particularly when contemporary physical and social environments differ dramatically from those that shaped our emotions over the millennia. In other words, emotions

may be problematic when they are manifested in a wrong type, occur in an inappropriate context, are too intense, or last too long. At such times that emotions seem to be ill-matched to a given situation, people frequently try to influence or regulate their emotional responses to meet their goals better (Werner & Gross, 2010).

Emotion Regulation (ER) can be defined as the "processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions". These processes may be automatic (unconscious) or controlled (conscious) that serve to up-regulate or down regulate positive or negative emotions. Moreover, Gross unpacked these processes into 5 time points in the process of emotion generation at which individuals can regulate their emotions: 1) situation selection (avoidance, social withdrawal), 2) situation modification (keeping distance, using safety signals), 3) attentional deployment (distraction, rumination), 4) cognitive change (rationalization, reappraisal), and 5) response modulation (expressive suppression, experiential avoidance). These strategies may be applied before or after experiencing emotion. Accordingly, the first four groups of strategies are called antecedent-focused, while the latter is considered response- focused strategies (Gross, 2002; Gross & Thompson, 2007).

Since the introduction of this "process model" in 1998 by Gross, it has attracted many researchers. Later, Gross in collaboration with Thompson (Gross & Thompson, 2007) expanded the conceptualization of ER as it incorporated the ideas of both of them. They suggested that ER refers to the "automatic or controlled, conscious or unconscious process of individuals influencing emotions in self, others, or both". In other words, this definition integrates Thompson's emphasis on the role of extrinsic effects on ER with Gross's (1998) process model that centered on ER in self. In general, researchers in the adult literature typically focus on

intrinsic processes of ER (that is, one regulates his or her emotions). However, researchers in the developmental literature focus more on extrinsic processes (that is, one attempt to regulate others` emotions), perhaps because extrinsic processes are so salient in infancy and early childhood (Gross & Thompson, 2007). In recent years, both intrinsic and extrinsic ER have been vigorously studied in regard to somatic and mental health, well-being, as well as child and adult psychopathology. These studies altogether, found moderate to strong associations of successful ER with better health outcomes, desirable relationships and improved academic and work functioning (John & Gross, 2004; Abdi, Babapoor & Fathi, 2010). Conversely, difficulties with ER are associated with a number of mental disorders (Kring & Sloan, 2009; Mennin & Farach, 2007). Such findings have led some authors to incorporate ER into psychopathological models of specific disorders, including depression (Kovacs, 2006; Rottenberg, Gross, & Gotlib, 2005).

Emotions are connected to our most essential needs. They rapidly alert us to situations important to our well-being. They also prepare and guide us in these important situations to take action towards meeting our needs. Emotion thus sets a basic mode of processing in action (Greenberg, 2002). Clients are helped in treatment to better identify, experience, explore, make sense of, transform and flexibly manage their emotions. As a result, clients become more skillful in accessing the important information and meanings about themselves and their world that emotions contain, as well as become more skillful in using that information to live vitally and adaptively. Emotions such as anger and sadness, are multifaceted phenomena that involve changes in all domains of subjective experience, behaviour, as well as central and peripheral physiological systems (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). Emotion which is classified in the superordinate category of affective states has typically rapid onset and short duration and usually focuses on a specific internal or external object (Berking, 2012). Emotions

arise when something important to us is at stake, they serve important goal-directed functions, both intra-personally and interpersonally (Gross, 2002). However, emotional responses can also mislead and hurt us, particularly when contemporary physical and social environments differ dramatically from those that shaped our emotions over the millennia. In other words, emotions may be problematic when they are manifested in a wrong type, occur in an inappropriate context, are too intense, or last too long. At such times that emotions seem to be ill-matched to a given situation, people frequently try to influence or regulate their emotional responses to meet their goals better (Werner & Gross, 2010).

2.4.1 Methods of Emotion Regulation in Depression

Emotion Regulation (ER) may be a central construct in understanding the causes and pathogenesis of psychopathology. Problems with emotion and ER characterize more than 75% of diagnostic categories (Werner & Gross, 2010) presented in the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychological Association, 2000). The majority of empirical studies regarding ER in clinical context are centered on anxiety disorders, mood disorders, eating disorders, and substance-related disorders (Aldao, Nolen-Hoeksema, & Schweizer, 2010). In some cases such as the mood and anxiety disorders, emotion dysregulation is so salient that these disorders are defined mainly on the basis of disturbed emotions.

In depressive disorders particularly MDD, problems in ER may be a core deficit. Many theorists argue that people who cannot effectively manage or regulate their emotional responses to daily events, experience longer and more severe periods of distress that may eventually render clinical depression or anxiety (Mennin & Farach., 2007; Nolen-Hoeksema, Wisco, & Lyubomirsky,

2008). In addition, prominent neurobiological models of depression are quite consistent with the basic models of ER, suggesting specific disturbances in the reciprocal cortical-limbic circuitry that is considered to underlie ER.

Consequently, various therapeutic approaches such as dialectical behavioural therapy (DBT; Lineahn, 2001), emotion focused therapy (EFT; Greenberg, 2002), acceptance and commitment therapy (ACT; Hayes et al., 2006), mindfulness based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002) and emotion-regulation therapy (ERT; Mennin & Fresco, 2009) incorporate some forms of emotion regulation training into their modalities. In the following sections, a collection of empirical literature is presented regarding the role of various ER strategies in depression and the efficacy of therapeutic/experimental interventions on depressive symptoms. This issue is completed with a brief review of neurobiological findings related to ER in depression.

2.4.2 Emotion Regulation Strategies in Depression

In the literature, many different emotion regulation strategies were distinguished such as suppression, reappraisal, avoidance, self-blame, other-blame, rumination, catastrophizing, positive refocusing, planning, problem solving, mindfulness, acceptance, engaging in goal-directed behaviours, and compassionately support oneself in distressing situations (Berking, 2008). According to a number of recent studies, there are strong positive or negative relationships between using these strategies and emotional problems (Mashhadi, Mir-Doroghi & Hasani, 2011; Berking & Wupperman, 2012). In general, the results suggest that individuals who use cognitive strategies such as catastrophizing, rumination, and self-blame may be at more risk of developing emotional problems, depression inclusive.

However, people who use other strategies such as positive reappraisal or problem solving may be less vulnerable (Peyvastegar & Heidari, 2008). In other words, ER strategies that are related to psychopathology considered as maladaptive, while strategies that are associated with psychosocial adjustment viewed as adaptive type. In this study, we focus on the relationship between depression and six widely studied ER strategies. Among these strategies, suppression, rumination and experiential avoidance are viewed as maladaptive, but reappraisal, mindfulness, and acceptance are assumed as adaptive strategies. First, all of these strategies are examined separately and then give a conclusive summary after all.

Suppression

Emotion suppression is thought to be a relevant ER strategy in depression (Campbell-Sills, Barlow, Brown, & Hofmann, 2006). While Gross (2002) related suppression to the expression of emotions, other researchers define emotion suppression as an attempt to reduce any of the three behavioural, subjective, or physiological components of emotional responding after their initiation (Liverant et al., 2008). Emotion suppression is often contrasted to emotional acceptance (Hofmann & Asmundson, 2008; Stein, Ives-Deliperi, & Thomas, 2008). Some studies demonstrated destructive effects on well-being when negative emotions are suppressed and not accepted (Richards & Gross, 2000; Roberts, Leven-son, & Gross, 2008). According to these research findings, MDD patients showed increased suppression of negative emotions (Campbell-Sills et al., 2006). Emotion suppression was also related to depression in adolescents (Betts, Gullone, & Allen, 2009).

In addition to the empirical evidence supporting the role of suppressing negative emotions in depressed patients, there are a few studies investigating the regulation of positive emotions in

these individuals. It is assumed that deficient up-regulation of positive emotions contributes to anhedonia in depression (Heller et al., 2009; Mohammadi, Birashk, & Gharaie, 2013). In studies conducted on college students, suppressing and reducing positive emotions has been found to be associated with depressive symptoms (Min'er & Dejun, 2001). In a prospective study with nonclinical participants, researchers found that increased dampening of positive emotions predicted depressive symptoms 3 to 5 months later (Raes, Smets, Nelis, & Schoofs, 2012). Furthermore, it has been shown that anhedonia, increase of negative emotions, and physiological distress are related to attempts in suppressing positive emotions (Nezlek & Kuppens, 2008).

Reappraisal

Cognitive reappraisal is a form of antecedent-focused ER strategy. By using reappraisal, people try to cognitively interpret an emotion-eliciting situation in a manner that changes its emotional impact (Gross & John, 2003). In an earliest experimental study, it is found that cognitive reappraisal decreases both physiological and experiential expression of negative emotions as opposed to the response-focused strategy of emotional suppression (Gross, 1998). Compared to a neutral control condition, cognitive reappraisal was found to be associated with less experienced negative emotion, less expressed emotion and a non-significant tendency toward reduction of the physiological responding. The correlational studies on ER in Iran also demonstrated the negative association between cognitive reappraisal and depressive symptoms (Abdi, Babapoor, & Fathi, 2011; Zare & Solgi, 2012). Obviously, reappraisal is a major component in classical (e.g. Beck, Rush, Shaw, & Emery, 1979) and novel (e.g. Barlow et al., 2010) cognitive behavioural therapies for depression and other emotional disorders.

Rumination

Rumination is a specific form of repetitive negative thinking investigated frequently across a range of disorders, particularly depressive and anxiety disorders. Nolen-Hoek- sema defined rumination "as a pattern of responding to distress in which an individual passively and perseveratively thinks about his or her upsetting symptoms and the causes and consequences of those symptoms, while failing to initi- ate the active problem solving that might alter the cause of that distress" (McLaughlin & Nolen-Hoeksema, 2011). Experimental studies demonstrated that inducing rumination in the context of distress could increase both depressed and anxious mood (McLaughlin, Borkovec, & Sibrava, 2007).

In a mood induction study in Iran, Mootabi, Jazayeri, Mohammadkhani, and Pourshahbaz (2007) showed that depressed mood induction has more effect on increasing sad- ness in nonclinical sample compared to depressed patients. To explain these result, they suggested that in depressed individuals, intrinsic stimuli or rumination may have more effect on arising sadness in comparison to extrinsic stimulus applied in the task of this study. In addition, questionnaire-based studies which have used measures such as the Ruminative Responses Scale (Treynor, Gonzalez, & Nolen-Hoeksema, 2003) show that rumination can predict the later development of depressive symptoms (Broderick & Korteland, 2004; Mohammadi, Farzinrad, Zargar, Merabi, & Birashk, 2013) as well as the future onset, number, and duration of major depressive episodes (Robinson & Alloy, 2003). Despite the fact that rumination has long been recognized as an important factor in the pathogenesis and maintenance of mood disorders, traditional CBTs have surprisingly not targeted rumination in a specific and proper manner (McLaughlin & Nolen-Hoeksema, 2011). However, a recent treatment (rumination-focused CBT; Watkins et al., 2007)

has been specifically developed to reduce self-focused rumination in adults, which has led to significant alleviation in depression and associated emotional disorders.

Mindfulness

Research in ER has recently begun to explore the role of mindfulness as an important factor that might positively influence the stress response and ER in a more general way. Mindfulness is a state of consciousness originated in Eastern philosophies and religions that focuses on the practice of directing one's attention to the present moment while adopting a non-judgmental perspective toward experiences (Kabat-Zinn, 1990). Trait mindfulness has been associated with positive mental health outcomes, including life satisfaction, self-esteem, and optimism (Brown & Ryan, 2003). It has also demonstrated negative correlations with depression, anxiety, and stress-related symptoms (Cash & Whittingham, 2010; Desrosiers, Vine, Klemanski, & Nolen-Hoeksema, 2013). As expected, depressed patients get lower scores in relevant questionnaires such as Mindful Attention Awareness Scale in comparison to healthy individuals (Nejati, Zabihzadeh, Maleki, & Tehranchi, 2012). The most application of mindfulness in the treatment of mood disorders is in MBCT (Segal et al., 2002), which designed to prevent relapse of depressive episodes in remitted patients.

Similar to other countries, outcome research studies in Iran have demonstrated the efficacy of this combined model of cognitive therapy on the reduction of depressive symptoms in both nonclinical samples of college students (Kaviani, Javaheri & Bahiray, 2005) and in patients with MDD (Omidi, Mohammadkhani, Mohammadi, & Zargar, 2013). Moreover, MDD patients, which received MBCT, experienced less other psychiatric symptoms comorbid with MDD compered to treatment as usual (TAU) group (Mohammadkhani, Dobson, Hosseini-Ghaffari, & Momeni, 2011; Omidi, MohammadKhani, Dolatshahi, & Pourshahbaz, 2010).

Experiential Avoidance

Experiential avoidance (EA) is an emotion-regulation process involving attempts to suppress, avoid, control, or otherwise down-regulate unpleasant emotions, thoughts, memories, or bodily sensations (Hayes, 2004). Some researchers proposed that EA is a transdiagnostic characteristic of many forms of psychopathology, including emotional disorders (Wener & Gross, 2010). Notably, it has been shown that EA is related to the symptoms of depression (Tull, Gratz, Salters, & Roemer, 2004). More interestingly, Barnhofer, Brennan, Crane, Duggan and Williams (2014) showed that as compared to patients with remitting depressive courses, patients suffering from a more persistent period of depression, were more likely to have a history of childhood emotional abuse, and reported higher levels of EA as well as associated core beliefs. Furthermore, EA partially mediated the influence of childhood emotional abuse on persistence of the symptoms (Barnhofer et al. 2014). In one treatment study (Berking, Neacsiu, Comtois, & Linehan, 2009), reductions in EA, were predictive of the improvements in depressive symptoms among patients with borderline personality disorder. Therefore, some principle techniques of the third wave of behavioural therapies such as mindfulness and acceptance are applied primarily to reduce tendency toward EA.

Emotional Acceptance

Emotional acceptance is an important component in new generation of cognitive behaviour therapy, including ACT (Hayes, Strosahl, & Wilson, 1999) and MBCT (Segal et al., 2002). Treatment outcome research supports the efficacy of acceptance as an adaptive ER strategy with potential utility for individuals with depressive disorders (Bach & Hayes, 2002). In a recent study (Shallcross, Troy, Boland, & Mauss, 2010), trait emotional acceptance (operationalized as low scores on the Acceptance and Action Questionnaire: AAQ; Hayes et al., 2004) was found to

predict fewer depressive symptoms in the face of high stress in a group of community females at risk for developing depression.

Individuals differ in their habitual use of ER strategies, and these differences are associated with specific behavioural, affective, and interpersonal outcomes (Gross & John, 2003; John & Gross, 2004). Generally, maladaptive ER strategies such as suppression, rumination, and experiential avoidance are associated with psychopathology, greater psychological distress, poorer quality of life, stress-related symptoms, and negative affect (Aldao, Nolen-Hoeksema & Schweizer, (2010); Hofmann, Sawyer, Fang, & Asnaani, 2012). Instead, adaptive strategies, including reappraisal, mindfulness, and acceptance are related to better emotional outcomes, adjustment with physical and mental pains and greater improvements in anxious/depressive states during therapy. In addition, treatment outcome research generally demonstrated promising results for treatment approaches such as CBT, MBCT, DBT, and ACT incorporating at least an essential component of ER. In summary, habitual reliance on maladaptive ER strategies may play an important role in the generation and maintenance of depression while dispositional or even learned skills to adaptively cope with negative and positive emotions may protect people against vulnerability factors and help them to recover from depressive symptoms after being affected.

2.4.3 Neurobiological Correlates of Emotion Regulation in Depression

Following advances in interdisciplinary works over the recent years, researchers have attempted to translate cognitive and behavioural research into clinical neuroscience context. In terms of our subject, they are investigating how different clinical populations can be distinguished by specific dysfunctions in the neural mechanisms of emotion generation and regulation (Kober & Ochsner, 2011). By using variants of the experimental paradigms, a number of neuroimaging studies have

addressed ER strategies in both depressive and healthy adults. The majority of these researches have focused specifically on cognitive reappraisal strategy.

In experimental approaches inquiring this strategy, subjects were asked to reinterpret the context of an aversive scene in a manner that it was less negative to them. Taken together, these studies resulted in the identification of subcortical systems thought to generate emotion as well as prefrontal systems believed to execute various kinds of cognitive control processes and also highlighted the interaction between them (Kober & Ochsner, 2011).

The main brain areas involved in cognitive ER, i.e., amygdala and regions of the prefrontal cortex (PFC), appear to be dysfunctional in depressed people (Erk, Alexandra, Stier, Sabine, Ciaramidaro, Angela, Gapp, Volker, Weber, Bernhard, & Walter, Henrik (2010).This makes regulation of negative emotions more difficult for patients with depression compared to healthy controls. Erk et al. (2010) also investigated the temporal dynamics of cognitive reappraisal in patients with MDD and a healthy control group. Both groups were instructed to look at negative pictures and either allow all their emerging emotions, or cognitively regulate their feelings by taking the position of a detached observer. Upon analysis of these groups, depressed patients were relatively able to down-regulate negative emotions and related amygdala activation, but this ability attenuated with increasing the severity of the symptoms. Moreover, the regulatory effect in the amygdala only sustained in healthy control subjects after a 15 min delay, while in MDD patients it did not. Finally, the clinical group showed reduced PFC activation and decreased prefrontal-limbic coupling during active regulation. The authors finally concluded that although depressive patients have the capacity to regulate their emotions to a certain degree depending on their symptom severity, but this effect is not sustained over time.

Disner, Beevers, Haigh, and Beck (2011) reviewed relevant studies, which might have implications for the neurobiological bases of cognitive model of depression. Accordingly, they conclude that cognitive biases in depression are resulted from dysfunctional bottom-up processes that are usually perpetuated by diminished cognitive control. With restricted top-down cognitive control from the PFC, the bottom-up activity of subcortical regions persists, which in turn, leads to maladaptive and symptomatic consequences. These uncontrolled processes include increased amygdala reactivity (which causes the biased attention and processing), blunted response of nucleus accumbens (which contributes to obstruction of pleasure) and deviant functioning of the basal ganglia, especially caudate and putamen nucleuses (which leads to dysfunctional attitudes and biased memory). There- fore, in this cognitive formulation of depression, subcortical over activity and its accompanying cognitive biases is reinforced due to the lack of inhibitory regulation by cognitive control system.

This condition contributes to the ultimate result of heightened awareness for schema-congruent stimuli, which in turn preserves depression. On the contrary, by using CBT technique, patients learn to alleviate cognitive biases in order to finally challenge their perceived accuracy of the schema. Consequently, fewer negative stimuli elicit less bottom-up reactivity and mitigate the burden of cognitive control required to regulate subcortical regions. This notion is supported by studies showing that CBT normalizes amygdala and dorsolateral PFC activity in depressed individuals (Disner et al., 2011).

Despite the overall consensus regarding the prominent role of amygdala-PFC interaction in ER, most of the neurophysiological models (Clark & Beck, 2010) describing the interaction of these processes, are presented for both anxiety and depressive disorders. The relevance and scope of these effects for specific emotional disorders should be investigated more.

Depression and anxiety, both viewed as “distress disorders” (Watson, 2005) or emotional disorders are widely assumed to be associated with difficulties in regulating emotions (Campbell-Sills & Barlow, 2007). Many psychological and neuroscientific researches validate this notion in general and lend support to a multilevel and functional model of cognitive ER (Ochsner & Gross, 2008). In this model, cognitive strategies differ in their reliance on prefrontal and cingulate systems for attention, response selection, working memory, language, mental-state attribution, and autonomic control. The regulatory effects of any given strategy - such as reappraisal - can be understood according to that strategy’s way of control processes and the regulatory effects they implement on emotion-generative systems such as amygdala and insula. This model of ER provides a potential framework for guiding basic and translational research on psychopathology (Ochsner & Gross, 2008). Scientific testing of such working models requires suitable application of new research methods and instruments.

Both behavioral instruments (e.g. self-report questionnaires) and modern imaging technologies, in combination, can augment our understanding in this area. For example, as Kober and Ochsner (2011) warned about Light et al. (2011) findings, although right ventrolateral PFC activity might be an indicator of regulatory effort in depressed patients, it may not necessarily be a marker of ER efficacy. Indeed, by not using self-reported measures, the ability to draw robust conclusions about the efficacy of ER is limited. In spite of some authors’ warning that question the validity of self-reports, it is noteworthy that these measures correlate with both neural and physiological markers of ER (Kober &Ochsner, 2011). In addition, in recent years, the emerging advanced techniques such as“imaging genetics” render researchers very good opportunities to study behavioral, neuro-circular, and neuro-genetic (molecular) levels of ER in depression simultaneously (for more information see Hariri & Forbes, 2011).

Research findings at the cognitive-behavioral level are nearly consistent with given neurobiological results. But, some issues in this arena should be considered. First of all, the majority of behavioral researches regarding ER in depressive states have been executed in the general and normal populations, especially college students. Garnefski and Kraaij (2006) compared five specific samples (four groups of general population ranging from adolescents to elderly and one group of psychiatric patients) regarding the use of 9 cognitive ER strategies. Although people in 5 groups showed similar relationships between cognitive ER strategies and depressive symptoms, some remarkable differences were found in their reported strategies (Garnefski & Kraaij, 2006). This may be a remarkable point, particularly because the relational model of ER and depressive symptoms in healthy and clinical individuals may be different. Indeed, by investigating ER exclusively in nonclinical samples, conclusions for depressive patients remain speculative. Thus, it is strongly suggested that ER is studied in healthy individuals and depressed patients at the same time.

In addition to compare ER strategies in depressed and normal people, it is necessary to compare individuals with different clinical diagnoses. It is increasingly believed that ER is a transdiagnostic factor that plays an important role across various psychopathologies, including mood and anxiety disorders as well as eating and substance abuse disorders (Salmani & Hasani, 2013; Aldao et al., 2010; Werner & Gross, 2010). However, identifying strategies that might have stronger relation- ships to specific disorders can facilitate the improvement of existing treatments and/or development of novel in- terventions (Berking et al., 2008). In addition, Salehi, Baghban, Bahrami, and Ahmadi (2012) showed that although both ER training based on DBT and Gross`s process model were effective in the reduction of Iranian students` depression and anxiety symptoms, these results did not last the same. Indeed, for depression, only the effect of

ER training based on DBT sustained for two months. On the contrary, ER training based on process model, had stronger and more enduring effect on anxiety symptoms compared to DBT. Therefore, it is likely that various treatments comprising emotion regulation components may have different effectiveness patterns. This hypothesis should be examined in future studies investigating ER in mental disorders.

Another issue is the uniqueness vs. overlap of the constructs viewed as different ER strategies. For example, some scholars define emotion suppression as efforts to inhibit ongoing emotion-expressive behavior, whereas others refer the experiential avoidance to efforts, which inhibit the emotional experience itself. However, some researchers believe that experiential avoidance includes emotion suppression; both of them are correlated to symptoms of depression (Tull, 2004). In addition, several studies have found a direct link between rumination and avoidant behaviors such as substance use and wrist cutting behavior (Smith et al., 2007) and procrastination about referring to health care clinics when initial symptoms of breast cancer were observed (Lyubomirsky, Kasri, Chang & Chung, 2006). This mass of research altogether points to a link be- tween depressive rumination and purposeful avoidance of negative emotions. Studies which report associations between self-reported depressive rumination and experiential avoidance, lend additional support to this avoidance conceptualization of rumination (Cribb, Moulds, & Carter, 2006). This notion also reflects the mentioned question of whether these overlapped strategies are the same constructs or they are related to each other through other mechanisms.

Exploring the mechanisms through which various ER strategies act is also important. Rumination, for instance, may lead to depression and anxiety through a variety of mechanisms. Experimental manipulation, which induce rumination in distressed individuals resulted in more

negative, maladaptive thinking (Lyubomirsky, Caldwell, & Nolen-Hoeksema, 2006), less effective ability to provide solutions to problems, uncertainty and immobilization in the application of solutions, and less readiness to practice distracting, mood-enhancing activities. Survey and observational studies also demonstrate that ruminative people, experience less social support and more social friction (Nolen-Hoeksema & Davis, 1999), and are graded less favorable by others (Schwartz & McCombs, 1995). Other models have suggested that rumination is detrimental because it associates with right hemisphere activation, contributes to activation of negative beliefs about oneself, and interferes with positive restructuring of negative memories (Martin et al., 2004; Papageorgiou and Wells, 2004). Although support for some of these models has been collected, as previously noted, an alternative hypothesis is that rumination is a manifestation of experiential avoidance (Lyubomirsky, 1999).

Experiential avoidance, in turn, exerts its deleterious effects by preventing people from adaptively responding to emotional stimuli and usually has the paradoxical impact of increasing avoided materials (Hayes et al., 2004). Similar to depression, generalized anxiety disorder (GAD) and its core feature, say, worry, are associated with experiential avoidance (Newman & Llera, 2011). Given the high rate of comorbidity between GAD and depression (around 60%; Brown, Campbell, Lehman, Grisham, & Mancill, 2001), and the high correlations among measures of rumination and worry (Beck & Perkins, 2001), it can be likely inferred that rumination, similar to worry, serves an avoidance function. In a more specific context related to depression, it may be that ruminator patients avoid the experience of sadness through recursive cognition (Giorgio, 2010).

In addition to worry and rumination, some other regulatory strategies such as emotion suppression, thought suppression, reason-giving and distraction may also serve an avoidant

function (Campbell-Sills & Barlow, 2007). Future studies should also specify the mechanisms of action of treatments comprising an ER component. For example, as noted above, Salehi (2012) showed that both ER training based on Gross`s process model and DBT, could lead to post-test reduction of depressed and anxious symptoms in Iranian college students. But DBT, for instance, includes four components: ER, mindfulness, distress tolerance, and effective communication. Due to the lack of process research in this area, it is not clear that what components or techniques lead to main effect and what did not.

In clinical samples as well, even in depressed inpatients, augmentation of medication with DBT improves effectiveness of the treatment on depressive symptoms and suicidal ideation (Alizadeh, Alizadeh, & Mohamadi, 2013). But, the additive or interactive nature of this augmented effect is obscure. Omidi (2010) also indicated the efficacy of a combination of CBT and MBCT on the reduction of memory overgeneralization as well as depressive symptoms in patients with MDD. However, by this research it is difficult to accurately figure out whether remission of depressive symptoms results in better outcome in autobiographical memory test specificity or vice versa.

However, mindfulness is probably a strategy similar to acceptance that may work regardless of the modification of emotions. Berking, (2011) revealed that the ability to modify negative emotions may be the common pathway through which many emotion-regulation skills exert their influence on mental health. However, the skill of accepting/tolerating negative emotions may be valuable to mental health regardless of whether or not it help in changing emotions (Berking et al., 2011). Indeed, by learning these latter types of strategies, patients can no- tice, tolerate, and accept their emotions nonjudgmentally and without trying to change, suppress or avoid them, which in turn leads to more adjustment with everyday life (Omidi & Mohammadkhani, 2008). With this useful calming strategy in hand, the other question remains that why depressive

patients suppress or avoid emotions. Hayes et al., (1996) for example, believe that suppression may result from an increased “fear of emotions”. Therefore, we should investigate the question of whether the effect of ER strategies is conscious or a by-product of other cognitive processes.

Some other cognitive and temperamental factors such as cognitive inhibition, effortful control, emotional schemas, sensitivity to punishment, anxiety sensitivity, and negative affectivity, may also be related to ER as well as anxious/depressive symptoms (Joorman & Gotlib, 2010; Tortella-Feliu, Balle & Sese, 2010; Leahy, 2012; Amani, Shiri, Valipoor & Shiri, 2013). For instance, Joorman and Gotlib (2010) demonstrated that individual differences in using ER strategies play an essential role in depression, and deficits in inhibiting the processing of emotional material are related to the use of maladaptive ER strategies in this disorder. Exploring individual differences in executive functions, particularly, in the inhibitory control of the contents of working memory, may provide important insights into the vulnerability to depression and sustained negative affect (Joormann & Gotlib, 2010).

Both state and trait negative affects may influence the relation of ER and depression in some ways. For instance, in Berking et al. (2009) study, reductions in experiential avoidance were predictive of improvements in depressive symptoms, but higher levels of experiential avoidance also predicted less subsequent reduction in depression during treatment. These findings suggest that experiential avoidance may not be just a consequence of depressive states. Indeed, as Shahar and Herr (2011) (by employing a daily diary research design) showed, the model of the relationship between experiential avoidance and depression is more complex when changing in daily negative affect are considered.

Moreover, Tortella-Feliu, (2010) examined the mediational role of ER in the path from negative affect to anxiety and depressive symptoms in a large sample of adolescents. Their results suggest that negative affect can determine negative ER to a great extent. Furthermore, negative forms of ER significantly mediate the relationship between NA and anxiety, and the connection between negative affect and depression might be determined by anxiety (Tortella &Feliu, 2010). Preliminary results of a study completed by the authors of the present review also showed that ER may mediate the relational pathways from negative affectivity and dysfunctional cognitions to the severity of depressive symptoms in both depressed patients and normal controls (Mehrabi, 2014). Accumulating such studies may give researchers the opportunity to translate basic theories such as the Gross`s Process model of ER to therapeutic models de- signed to treat depressive disorders.

The modal or 'Process model' described by Gross (Gross & Thompson, 2007) can be applied as a useful basic framework for understanding and analyzing diverse ER strategies. According to this approach, ER strategies may have their impact at different points along the timeline of the unfolding emotion generative process (antecedent versus response focused). As alluded to above, these authors highlighted 5 points at which individuals can regulate their emotions.

Many of the clinical features of depression and other emotional disorders can be conceptualized as problematic use of these 5 families of ER strategies (Werner & Gross, 2010). So, it is possible to locate each of the emotion regulatory strategies, including the 6 processes reviewed in the current article, at one of these stations, i.e. situation selection (avoidance and withdrawal), situation modification (safety signals and rituals), attentional deployment (thought suppression, distraction, worry and rumination), cognitive change (rationalization and non-acceptance of emotional experience), and response modulation (expressive suppression, experiential avoidance

and substance use). The adaptive or therapeutic strategies such as exposure, behavioral activation, mindfulness, cognitive reappraisal, and emotional acceptance are also referred to the mentioned 5 points of this temporal sequence, respectively (Werner & Gross, 2010).

It is also noteworthy that although the effect of each ER strategy is mainly related to one point of this sequence, some of these processes may work at more than one point. Acceptance is an example of ER strategies, which includes elements of both antecedent-focused ER (cognitive reappraisal of the acceptability of emotional experience) and response-focused ER (allowing the experience of emotion without trying to alter or suppress it after the emotion has been produced) (Liverant et al., 2008).

Altogether, it seems that the 'Process model' could be a useful framework or map to formulate depressive disorders regarding their associated ER strategies. Accordingly, we noted elsewhere (Mehrabi & Taherifar, in press) that it is possible to present an integrative emotion regulation based cognitive behavior therapy (ER-CBT) that incorporates ER training into traditional CBT. Al- though such trials have been already done in the third wave of behavioral therapies (in DBT, MBCT and ACT; Zargar, Mohammadi, Omidi & Bagherian, 2013), we suggest that it is useful to exert such treatment components in both comprehensive and personalized manner at the same time. It means that instead of training just one or two theory-imposed ER strategies (cognitive restructuring (reappraisal) in CBT or mindfulness in MBCT), it is wise to enrich our formulation about the patient with all ER deficits, which he or she may exhibit and then add training of relevant ER strategies to therapeutic package offered for him or her. This is consistent with a very important issue regarding the application of ER strategies, which is the flexibility in using these processes.

Indeed, several researchers working on ER have recently emphasized the importance of flexible application of ER strategies for healthy adjustment or resilience (Bylsma, Morris, & Rottenberg, 2008;Liverant, Gabrielle, Brown, Timothy, Barlow, David, & Roemer, Lizabeth. 2008; Bonanno, 2004) argued that successful adaptation does not result from exclusive use of one universally beneficial ER strategy, but rather from the ability to flexibly sup- press or enhance emotional responding. This perspective necessarily raises questions about the factors that deter- mine the given efficacy of particular ER strategies i.e., what situational characteristics or dispositional traits determine the effectiveness of these strategies for specific individuals (Liverant et al., 2008). Finally, an important and interesting issue for ER research is the cultural and gender differences in ER regarding depression. Some researchers, especially in Eastern Asia have recently focused on this area (Kwon, Yoon, Joormann, & Kwon, 2013), but such comparative studies have rarely been originated in Islamic countries. Development of such cross-cultural researches in Iran with rich cultural and even sub-cultural sources is warranted.

In this article, we reviewed some of the latest studies regarding ER in depression in English and Persian literature. Findings of the cognitive-behavioral and neurobiological studies investigating the association of depression with 6 ER strategies (that is, suppression, rumination, experiential avoidance, reappraisal, mindful- ness, acceptance) presented and integrated particularly by using the Gross`s process model of ER. Overall results of both Western and Iranian studies confirmed the important role of ER strategies in maintenance of and recovery from depressed episodes. However, cautiously speaking, whether emotion dysregulation is a causal factor leading to the symptoms of mood disorders is currently unknown. Nevertheless, recent evidence suggests that maladaptive ER is a part of the phenomenology of these disorders. More prospective research is needed in which ER is precisely measured and followed over time. In this respect, good

descriptive psychopathology is a necessary foundation for progress accompanying measurement methods and tools, prediction of illness course and effective interventions. Future research should also work on determining how ER is changed by therapy in depressed patients. By more understanding about the process of change in psychotherapy, scientific knowledge can be used to develop novel therapies that are more tailored to the unique characteristics of the disorder or the individual characteristics of the patient. ER-CBT model that proposed in this paper could be a raw but test- able example of such trials.

2.5 Theoretical Framework

2.5.1 Beck's Cognitive Theory of Depression

This theory focuses on the role cognitive processes play in depression. This theory assumes that depression is maintained (and perhaps caused) by the manner in which people think about themselves and process personal information. Aaron Beck was one of the first theorists to advocate this position (Beck, 1967). As a therapist with an active clinical practice, Beck sought to understand the nature of depression in order to devise effective treatment strategies. Beck began by developing a precise description of the disorder, with special attention given to distinguishing primary symptoms from more secondary ones (on the assumption that if he *cured* the primary symptoms, the secondary ones would resolve as well). As his work has evolved, Beck has added causal elements to his descriptive account of depression. The figure below presents a schematic representation of his theory.

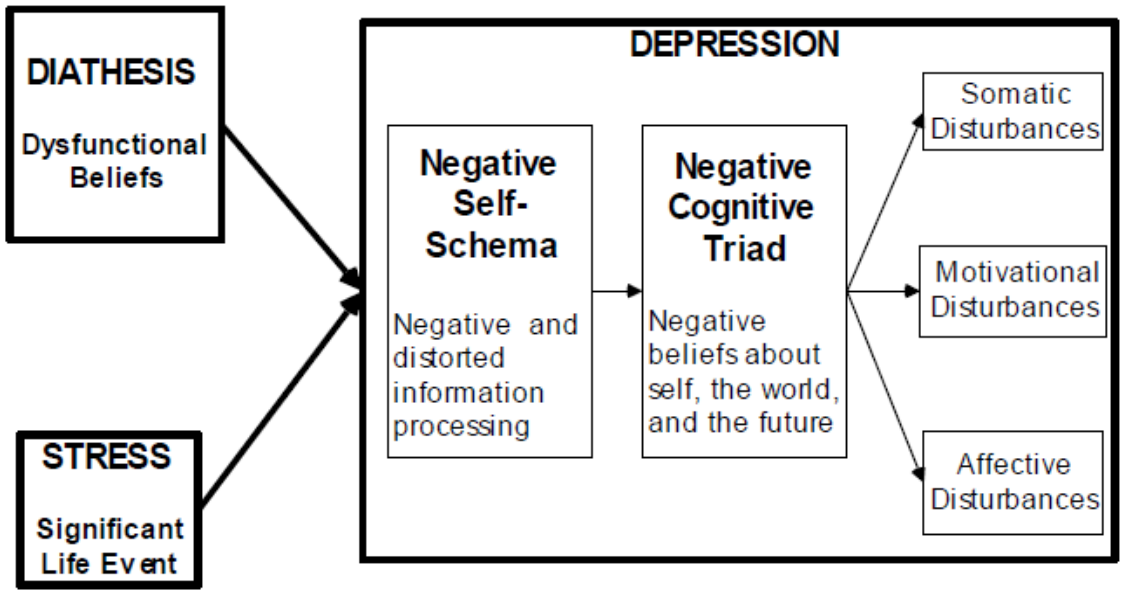


Figure 2: Beck's Cognitive Model of Depression

Dysfunctional beliefs are held to be a vulnerability factor (a diathesis). When activated by appropriate environmental events (stress), these dysfunctional beliefs lead a person prone to depression to interpret experiences in negative and distorted ways. These negative interpretations, in turn, lead to negative views of oneself, one's world, and one's future. These beliefs, which refer to as the negative cognitive triad, are viewed as the primary symptom of depression, giving rise to other features of the disorder, including somatic (sleeplessness), motivational (passivity) and affective (sadness) disturbances. (Beck, 1991).

The Negative Cognitive Triad is the Primary Feature of Depression

Beck's most central assumption is that depression is principally a cognitive disorder characterized by three negative, self-relevant beliefs: (1)a negative view of the self (when depressed, people believe they are defective, deficient, and worthless); (2)a negative view of the world (when depressed, people are dissatisfied with their current life situation and believe the

world is making unreasonable demands upon them); and (3)a negative view of the future (when depressed, people are pessimistic about their ability to attain desired outcomes). Beck refers to these beliefs (which encompass feelings of hopelessness and worthlessness) as the *negative cognitive triad* and assumes that they are the central feature of all types of depression. This means that other aspects of depression, such as somatic disturbances (trouble sleeping), motivational disturbances (passivity and withdrawal), and affective disturbances (intense sadness), arise in response to these beliefs (Beck et al., 1979).

Beck also believes that these thoughts have an automatic, reflexive quality. They seem to appear "out of nowhere," without provocation or conscious awareness. As depression worsens, they become increasingly repetitive and intrusive. In extreme cases, they may virtually dominate thinking, making it difficult for the depressed person to concentrate and engage in normal activities. A large part of the therapy Beck developed to treat depression involves monitoring these thoughts, noting when they occur and underwhat circumstances. By doing so, Beck argues, one can gain control over these thoughts and eliminate them (Beck et al., 1979).

Negative Self-Schemas in the Maintenance of Depression

The figure also shows that negatively biased information processing supports and maintains these negative beliefs. Beck discusses these information-processing tendencies in terms of a negative self-schema. Schemas are hypothetical cognitive structures that guide the processing of information. According to Beck, people who are depressed possess a negative self-schema that leads them to process personal information in a negatively biased and distorted fashion. They dwell on the negative aspects of their life and interpret events in self-defeating ways. These tendencies, in turn, fuel and sustain the negative cognitive triad. A negative self-schema thus

explains “why a depressed patient maintains his pain-inducing and self-defeating attitudes despite objective evidence of positive factors in his life.

Beck believes that these interpretations are often distorted and illogical and that they result from faulty information-processing tendencies. These tendencies include (1) *Selective abstraction* (focusing on a detail out of context), (2) *Arbitrary inference* (drawing conclusions in the absence of supporting evidence), (3) *Overgeneralization* (applying conclusions too broadly), and (4) *Absolutistic* or *dichotomous thinking* (the tendency to think in categorical—black or white—terms). Toillustrate, imagine that a friend forgets to return your phone call. A depressed person will interpret this oversight as a sign of disrespect and an indication that he or she is entirely unlovable. These interpretations persist, Beck argued, even in the face of evidence that more benign interpretations are plausible (the friend simply forgot or never got the message).

In milder depressions the patient is generally able to view his negative thoughts with some objectivity. As the depression worsens, his thinking becomes increasingly dominated by negative ideas, although there may be no logical connection between actual situations and his negative interpretations. As the prepotent idiosyncratic schemas lead to distortions of reality and consequently to systematic errors in the depressed person’s thinking, he is less able to entertain the notion that his negative interpretations are erroneous. (Beck et al., 1979)

Beck contrasts the biased and illogical information processing found during depression with that found in non-depressed individuals. According to Beck, non-depressed individuals process personal information in a logical and unbiased manner, generally reaching accurate and rational conclusions.

Dysfunctional Beliefs as Vulnerability Factors in Depression

Dysfunctional beliefs form the third component of Beck's cognitive theory. Dysfunctional beliefs are excessively rigid beliefs about oneself and the world. They develop early in childhood and involve unrealistic and perfectionistic standards by which people judge themselves. For example, a person prone to depression is apt to endorse the following statements: "If I do not perform as well as others, it means that I am an inferior human being," or "My value as a person depends greatly on what others think of me" (Beck et al., 1979).

According to Beck, these absolutistic, contractual beliefs (which parallel the conditions of worth we discussed earlier) make a person vulnerable to depression when a matching life event occurs. By way of illustration, imagine that a person experiences the unwanted dissolution of an important interpersonal relationship. If the person possesses a matching dysfunctional attitude ("I am nothing if a person I love doesn't love me"), the person begins to view the situation in unrealistically negative terms. The person may assume excessive responsibility for the event, selectively recall other failed romantic involvements, and so forth. These information processing biases lead to the negative cognitive triad (a negative view of oneself, one's life, and one's future), which triggers other aspects of depression.

2.5.2 Brown's Model of Self-Esteem and Depression

Negative social experiences (particularly the loss of one's mother in childhood and the lack of an intimate, confiding relationship in adulthood) give rise to low self-esteem. Low self-esteem then acts as a diathesis for depression when a negative event occurs (Brown & Harris, 1978).He conducted a longitudinal study to test this model. In accordance with predictions, low self-esteem (as indexed by the number of negative self-referent statements a participant made during

an interview) functioned as a vulnerability factor when accompanied by a stressful life event. The effect was such that women with low self-esteem were nearly twice as likely as women with high self-esteem to develop depression when faced with a negative life event. Thus, low self-esteem puts people at risk for developing depression when negative life events occur.

2.5.3 Brown'sSelf-worth Contingency Models of Depression

Self-worth contingency models provide another perspective on the role of self-esteem in depression. These models begin by assuming that people strive to feel good about themselves (that is to satisfy their self-enhancement needs). People prone to depression have highly conditional feelings of self-worth. They feel good about themselves when certain conditions are met (say, they are succeeding at their work or schooling) but bad about themselves when these conditions are not being met. Depression arises, according to these models, when experiences threaten these "conditions of self-worth" and people perceive they won't be able to meet their self-enhancement needs in the future Brown & Ryan (2003).

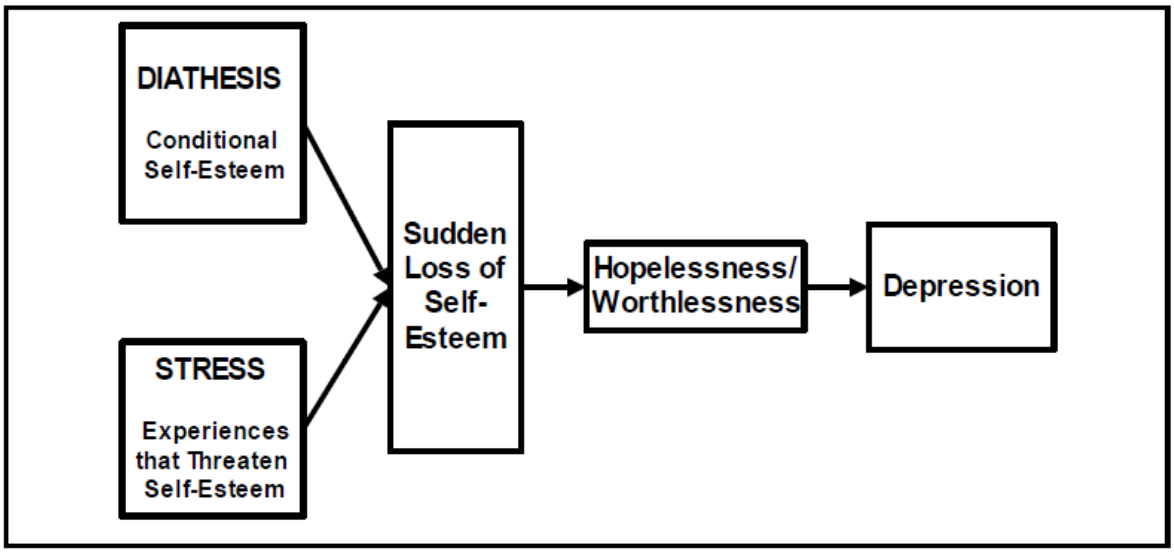


Figure 3: Self-worth Contingency Models of Depression

Highly conditional self-esteem is a diathesis. Depression arises when negative events threaten these “conditions of self-worth” and people perceive they will no longer be able to meet these needs in the future.

2.5.4Freud’s Psychoanalytic Theory

Freud (1917) as cited by Robert (1979) proposed that many cases of depression were due to biological factors. However, Freud also argued that some cases of depression could be linked to loss or rejection by a parent. Depression is like grief, in that it often occurs as a reaction to the loss of an important relationship. However, there is an important difference, because depressed people regard themselves as worthless. What happens is that the individual identifies with the lost person, so that repressed anger towards the lost person is directed inwards towards the self. The inner directed anger reduces the individual’s self-esteem, and makes him/her vulnerable to experiencing depression in the future.

Freud distinguished between actual losses (e.g. death of a loved one) and symbolic losses (e.g. loss of a job). Both kinds of losses can produce depression by causing the individual to re-experience childhood episodes when they experienced loss of affection from some significant person (a parent). Later, Freud modified his theory stating that the tendency to internalize loss objects is normal, and that depression is simply due to an excessively severe super-ego. Thus, the depressive phase occurs when the individual’s super-ego or conscience is dominant. In contrast, the manic phase occurs when the individual’s ego or rational mind asserts itself, and s/he feels control.

In order to avoid loss turning into depression, the individual needs to engage in a period of mourning work, during which s/he recalls memories of the lost one. This allows the individual to

separate him/herself from the lost person, and so reduce the inner-directed anger. However, individuals vary dependent on others for their sense of self-esteem may be unable to do this, and so remain extremely depressed.

2.5.5 Seligman'setal Learned Helplessness Theory of Depression

Seligman, Castellon, Cacciola, Schulman, Luborsky, Ollove & Downing (1988) proposed a cognitive explanation of depression called learned helplessness. According to Seligman's learned helplessness theory, depression occurs when a person learns that their attempts to escape negative situations make no difference. As a consequence they become passive and will endure aversive stimuli or environments even when escape is possible. Seligman based his theory on research using dogs.A dog put into a partitioned cage learns to escape when the floor is electrified. If the dog is restrained whilst being shocked it eventually stops trying to escape. Dogs subjected to inescapable electric shocks later failed to escape from shocks even when it was possible to do so. Moreover, they exhibited some of the symptoms of depression found in humans (lethargy, sluggishness, passive in the face of stress and appetite loss). This led Seligman et al (1988) to explain depression in humans in terms of learned helplessness, whereby the individual gives up trying to influence their environment because they have learned that they are helpless as a consequence of having no control over what happens to them.Although this account may explain depression to a certain extent, consequently, the theory introduced a cognitive version by reformulating learned helplessness in term of attributional processes (i.e. how people explain the cause of an event) thereby incorporating cognitions (thoughts).

The depression attributional style is based on three dimensions, namely *locus* (whether the cause is internal - to do with a person themselves, or external - to do with some aspect of the

situation), *stability* (whether the cause is stable and permanent or unstable and transient) and *global* or *specific* (whether the cause relates to the 'whole' person or just some particular feature characteristic).

In this new version of the theory, the mere presence of a negative event was not considered sufficient to produce a helpless or depressive state. Instead, Abramson et al. argued that people who attribute failure to internal, stable, and global causes are more likely to become depressed than those who attribute failure to external, unstable and specific causes. This is because the former attributional style leads people to the conclusion that they are unable to change things for the better.

2.5.6 Flavell's Theory of Metacognition

Metacognition is defined in simplest terms as "thinking about your own thinking." The root "meta" means "beyond," so the term refers to "beyond thinking." Specifically, this means that it encompasses the processes of planning, tracking, and assessing your own understanding or performance.The phrase was termed by American developmental psychologist John H. Flavell in 1979, and the theory developed throughout the 1980s among researchers working with young children in early cognitive stages.Flavell identified what he believed to be two elements of metacognition: knowledge of cognition and regulation of cognition (Flavell, 1985).

Types of Metacognitive Knowledge

Declarative Knowledge: "Person's knowledge," or understanding one's own capabilities. This type of metacognitive knowledge is not always accurate, as an individual's self-assessment can easily be unreliable.Procedural knowledge — "task knowledge," including content (what do I

need to know?) and length (how much space do I have to communicate what I know?). Task knowledge is related to how difficult an individual perceives the task to be as well as to their self-confidence.

Strategy Knowledge: “Conditional knowledge," or one’s ability to use strategies to learn information, as well as for adapting these strategies to new situations. This is related to the age or developmental stage of the individual. For example, a kindergartener can be taught strategies, but needs to be reminded to use them, such as sounding out words when learning to read. In contrast, an upper elementary student understands this strategy and knows when it will be effective under different circumstances.

Metacognitive Regulation

Regulation is used to describe how individual monitor and assess their knowledge. This includes knowing how and when to use certain skills, and helps individuals to control their learning. An example of this would be a student reflecting on his or her own work, a task that is often assigned while in school. Later on, individuals assess themselves by asking, “How am I doing? How could I do this more efficiently or accurately next time?"

Metacognitive Experiences

Metacognitive experiences are the experiences an individual has through which knowledge is attained, or through which regulation occurs. For example, declarative knowledge of one’s own abilities could be attained by receiving a series of A+ spelling tests in a row. This would give the individual the knowledge that they have high achieving capability in that spelling area.

Metamemory

Metamemory is knowledge of what memory is, how it works, and how to remember things. These skills develop over time and improve more readily with instruction. An example of this would be students utilizing a pneumonic device or acronym to learn and easily recall information to prepare for a test.

Key Factors in Metacognition

Motivation is essential in metacognition. Students who are not motivated to complete tasks may struggle with self-reflection. Though metacognitive strategies can be taught and learned over time, students must be motivated in order for them to be effective. To help these individuals to succeed, it may be necessary to teach self-evaluation skills and to identify what finished work looks like.

2.5.7 The James-Lange Theory of Emotion and Emotion Regulation

The James-Lange theory was developed in the late 1800s by William James and Carl Lange, who each separately published similar writings about the nature of emotion. According to James and Lange, emotions consist of the body's physical responses to something in the environment. When you witness something emotional, this leads to changes in the body. For example, your heart rate or blood pressure might increase, you might start sweating, or you might start breathing more quickly.

James famously explained the theory in his book *The Principles of Psychology*: he writes that "we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble, because we are sorry, angry, or fearful, as the case may be." In other

words, our emotional reactions consist of our physical responses to potentially emotional events in the environment. James suggests that these physical reactions are key to our emotions and that, without them, our experiences would be "pale, colourless, and destitute of emotional warmth."

Examples**:** to understand the James-Lange theory, consider the following example. Imagine you're walking on a darkened road and you hear a rustling in the bushes nearby. Your heart starts racing and you feel ready to start running if need be. According to James, these bodily sensations would constitute an emotion—in this case, the feeling of fear. Importantly, our heart doesn't start beating faster *because* we feel afraid; instead, these changes in our body comprise the emotion of fear.The theory seeks to explain not just negative states—like fear and anger—but positive ones as well. For example, the emotion of amusement is typically accompanied by laughter.The James-Lange theory has been somewhat controversial—when writing about his theory, James acknowledged that many other researchers took issue with aspects of his ideas. One of the most well-known critiques of the James-Lange theory is the Cannon-Bard theory, put forward by Walter Cannon and Philip Bard in the 1920s. According to this theory, many emotions produce similar physiological responses: for example, think about how both fear and excitement lead to a faster heart rate. Because of this, Cannon and Bard suggested that emotions can't only consist of our physiological response to something in the environment. Instead, Cannon and Bard suggest, emotional and physiological responses both happen—but these are two separate processes.

A later theory, the Schachter-Singer theory of emotion (also called the two-factor theory), suggests that emotion results from *both* physiological and cognitive processes. Essentially, something emotional will trigger changes in the body, and our brain then tries to interpret what

these changes mean. For example, if you're walking alone at night and hear a loud noise, you'll become startled—and your brain will interpret this as fear. However, if you're walking into your home and are suddenly started by your friends jumping out to greet you on your birthday, your brain will recognize that you're at a surprise party and you'll be more likely to feel excited. Like the James-Lange theory, the Schachter-Singer theory acknowledges the role of physiological changes in our emotions—but it suggests that cognitive factors also play a role in the emotions we experience.

While newer theories of emotion have been developed since the James-Lange theory was first proposed, it has still been an influential theory in the field of psychology. Since the theory was developed, numerous researchers have sought to understand how different types of bodily responses relate to emotions. For example, research has looked at whether different emotions are associated with different types of responses by the body's autonomic nervous system. In other words, the James-Lange theory has inspired a significant amount of research on the connections between our bodies and our emotions, a topic which is still an active area of research today. This theory relates directly to emotion regulation in the sense that an individual confronted with emotionally arousing situation could devote efforts to controlling the inner feelings by reinterpreting them in a positive ways that bodily reactions could handle thereby maintaining calm in the wake of challenging situations.

Conceptual Framework

The flow chart of key variable in figure 2.1 shows various symptoms of depression and suicidal ideation and the modification techniques used to manage the symptoms.

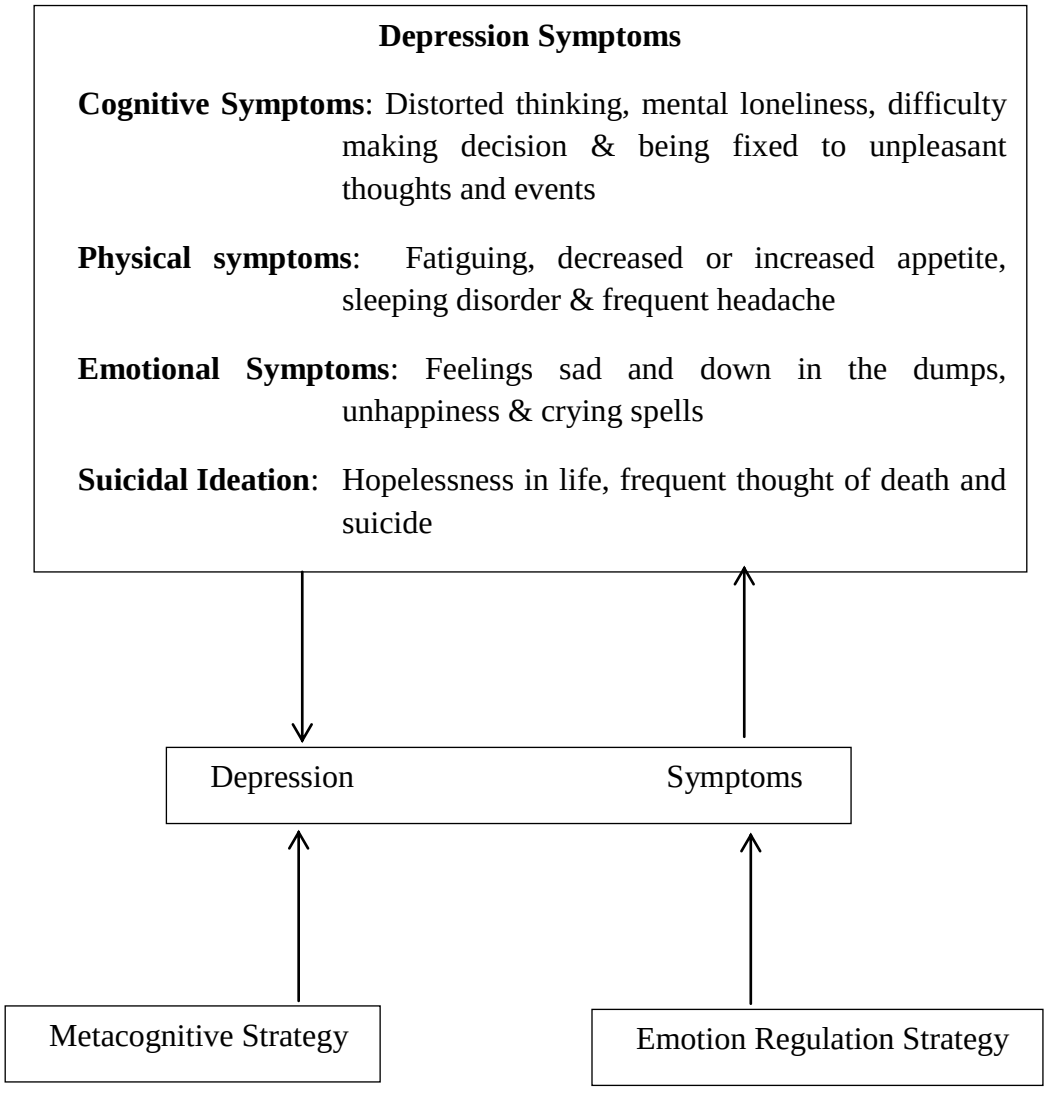


Figure 4: Conceptual Framework Chart

Source: Researcher's Concept (2021)

2.6 Review of Empirical Studies

Dugas (2012) conducted a study on Metacognitive Therapeutic strategies for Major Depressive Disorder: Development and Clinical Potential**.** Metacognitive model of psychological dysfunction shows clinical promise for treating multiple Axis I disorders. This study explores the fundamentals of this model and the self-perpetuating cycle of counterproductive coping behaviors underlying it. Specifications of the general model for rumination and depression were treated, and empirical tests of a clinical metacognitive model of major depressive disorder (MDD) were conducted. The metacognitive therapy (MCT) treatment package for MDD was employed. Quasi-experimental research design was employed with a sample of 12 clients diagnosed with depression. Beck Depression Inventory and Beck Anxiety Inventory were the instruments for data collection. Finally, results show that metacognitive therapy appears potent and efficient for reducing depression, and this treatment package is a novel approach to combating Major Depressive Disorder.

Dammen, Papageorgiou and Wells, (2016) conducted a two year follow up study of group metacognitive therapy for depression in Norway. Preliminary data support the implementation of individual metacognitive therapy (MCT) for depression and recently published data indicate that group MCT in the treatment of depression is effective and well-accepted. This study examined 12 and 24 months follow up of clients treated with group MCT. They conducted a one and two year follow-up of an open trial of group MCT. 11 patients who were consecutively referred by general practitioners to a specialist psychiatric practice in Norway participated in an open trial of the effects and feasibility associated with group MCT for depression. All of the patients met the DSM-IV criteria for major depressive disorder (MDD) and were followed up for 6 months, one and two years. The primary symptom outcome measure was severity of depression whilst

secondary outcome measures included levels of anxiety, rumination, and metacognitive beliefs. They also assessed recovery rates and changes in comorbid Axis I and Axis II diagnoses at one and two years follow up. Result indicated large clinically significant improvements across all measures that were detected at post-treatment were maintained at one year and two year-follow up. Based on objectively defined recovery criteria, 70% of the patients were classified as recovered at 1 year and 80% at 2 year follow up. It is concluded that group MCT in the treatment of depression had sustained efficacy after one and two years, beyond what has been typically reported for cognitive behavioral therapy (CBT).

Sayyadi and Yunusa (2015) studied the influence of metacognitive evaluation strategy in reducing test anxiety among low achieving secondary school students in Mathematics in Katsina metropolis. The study employed quasi- experimental design involving pretest posttest control group. Simple random sampling technique was used with a sample of 10 students in experimental and control groups. West Side Academic Anxiety Scale was the instrument for data collection. Independent sample t-test was used to analyse the data collected in the study. The findings of the study revealed that metacognitive evaluation strategy was effective in reducing test anxiety among low achieving secondary school students in Mathematics in Katsina state, Nigeria.

Bahadori, Jahanbakhsh, Hosseinpour and Faramarzi (2014) did a study on effect of meta-cognitive therapy on self-assertiveness skill in patients with social phobia disorder. The study aimed at determining the effect of meta-cognitive therapy on the rate of self-assertiveness skill in patients with social phobia disorder. The experimental study was conducted with pretest-posttest and follow-up design, using control group. From all social phobia disorder patients visited in psychology clinics in Shiraz, south western part of Iran in 22 patients were selected through the

objective sampling method and randomly divided into two experimental (11 persons) and control (11 persons) groups. The instruments of this study were social phobia symptoms assessment questioner (SPSAQ) and self-assertiveness scale (SAS). The experimental group received 8 weeks of Wells' meta-cognitive therapy sessions. Data were analyzed through covariance analysis method. The results showed that the mean of the self-assertiveness scores in post-test and follow up in the experimental group is significantly higher than that of the control group ($p<0.05$). The results of analysis of multivariate covariance showed that MCT had a significant effect on increscent of the self-assertiveness skill scores of posttest (0.39) and follow up (0.38) in patients with social phobia disorder ($p<0.001$). Conclusion: This intervention is believed to improve self-assertiveness skill in SPD patients by facilitating transmission from the object mode to the metacognitive mode and enhancing the efficient and flexible coping skills.

Zafarizadeh, Bahrami, Kaveh-Farsani, Heydari, and Kor (2014) examined the effect of metacognitive therapy on traumatic stress disorder symptoms in survivors of accidents in Shahr-e-Kord, Iran.The aim of this study was to evaluate the effect of metacognitive therapy on reduction of PTSD symptoms between accident survivors of Shahr-e-Kord city. The research is semi-experimental. A hospital was selected by cluster sampling for choosing sample, 36 male who were accident survivors, were selected by using interview based on DSM-IV-TR who experienced PTSD situation. The subjects were randomly assigned into experimental group (N=18), control group (N=18). There were attrition in sample that finally experimental and control groups included 15 subjects. The experimental group received eight (90 min) weekly sessions of metacognitive therapy. These tools were used in this research: 1-Clinical interview based on DSM-IV-IR, 2-Mississipi PTSD scale (Used in pretest-posttest and follow up sessions). The results showed that metacognitive therapy reduced PTSD symptoms in experimental group

in post-test and two-month follow up sessions ($p<0.01$). Conclusion: Statistically significant differences between pre-test and post-test results in experimental group confirmed the effect of metacognitive therapy on reduction of PTSD symptoms.

Wenn, O'Connor; Breen, Robert, Kane and Rees(2015) examined the efficacy of metacognitive therapy for prolonged grief disorder: protocol for a randomised controlled trial.Thestudy describes the protocol for an evaluation of a metacognitive therapy programme designed specifically for PGD, to reduce the psychological distress and loss of functioning resulting from bereavement. The proposed trial comprises three phases. Phase 1 consists of a review of the literature and semi-structured interviews with key members of the target population to inform the development of a metacognitive therapy programme for Prolonged Grief. Phase 2 involves a randomised controlled trial to implement and evaluate the programme. Male and female adults (N=34) were randomly assigned to either a wait list or an intervention group. Measures of PGD, anxiety, depression, rumination, metacognitions and quality of life were taken atpretreatment and post-treatment and at the 3rd month and 6thmonth follow-up. The generalised linear mixed model wasused to assess treatment efficacy. Phase 3 tested the social validity of the programme. The result of the study revealed the efficacy of a targeted metacognitive treatment programme for PGD has proved to be promising in reducing prolong grief disorder after the treatment.

Vakili andLadan(2016) conducted a study on the Effectiveness of the Metacognitive Model in Treating a Case of Post-Traumatic Stress Disorder. The study aimed at evaluating the effectiveness of the metacognitive model in treating post-traumatic stress disorder. Quasi-experimental research design was employed. In a single-subject experimental trial of multiple baseline type, the treatment process was carried out on an 18–year-old male subject. The patient satisfied the DSM-IV criteria for PTSD and was assessed for pre- duration and post treatment.

The scales used in this study included: Impact Event Scale-Revised (IES-R), Beck Depression Inventory (BDI-II), Beck anxiety Inventory (BAI), and Subjective Units Distress Scale (SUDs). In addition, all scales were again completed by the subject at 1-month, 3- month, and 6- month follow-ups. Results showed that the treatment led to reductions in symptoms of PTSD, anxiety, depression and distress. Gains were maintained at follow-ups. Finally, the study shows that the treatment approach which is based on the metacognitive model, appears to be effective in the treatment of post-traumatic stress disorder.

Hasirbaf1 andMaalavi, (2017) did a study on Effect of metacognitive therapy on the treatment of behavioral disorders in adolescents in General Psychology, inIran. This study was to evaluate the effect of metacognitive strategies on the treatment of behavioral disorders in adolescents. Anxiety and aggression disorders are common behavior among young people with two types of disorder. This is descriptive and analytic study. The study population is young people who have referred to psychotherapy and counseling centers in Tehran. The sample size consisted of 220 patients who were randomly selected. t-test was used for calculating variables. Also, questionnaires and interviews were used to collect data. The questionnaire consisted of 45 questions, and each of the variables were studied. SPSS software was used to analyze the data. The level of significance for both variables equals 0.01 which is less than 0.05. As a result, it was found that metacognitive therapy has a significant and positive effect on the treatment of behavioral disorders, especially anxiety, depression and aggression and negative ideations in adolescents.

Normann& Morina (2018) conducted a systematic search of trials on MCT for young and adult clients with psychological complaints with a minimum of 10 participants in the MCT condition included. A total of 25 studies that examined a variety of psychological complaints met our

inclusion criteria, of which 15 were randomized controlled trials. The study identified only one trial that was conducted with children and adolescents. In trials with adult clients, large uncontrolled effect size estimates from pre- to post-treatment and follow-up suggest that MCT is effective at reducing symptoms of the targeted primary complaints, anxiety, depression, and dysfunctional metacognitions. The comparison with waitlist control conditions also resulted in a large effect (Hedges' g = 2.06). The comparison of MCT to cognitive and behavioral interventions at post-treatment and at follow-up showed pooled effect sizes (Hedges' g) of 0.69 and 0.37 at post-treatment (k = 8) and follow-up (k = 7), respectively. Findings indicate that MCT is an effective treatment for a range of psychological complaints. To date, strongest evidence exists for anxiety and depression. Current results suggest that MCT may be superior to other psychotherapies, including cognitive behavioural interventions.

Shameli,Honarmand, Naa'mi and Davodi, (2018)conducted a study onthe Effectiveness of Emotion-Focused Therapy on Emotion Regulation Styles and Severity of Obsessive-Compulsive Symptoms in Women With Obsessive-Compulsive Disorder. The study aimed to investigate the effect of emotion-focused therapy on emotional regulation styles and severity of obsessive-compulsive symptoms in women with Obsessive-Compulsive Disorder (OCD). The study employed quasi-experimental design with pre-test-post-test and control group with follow-up. The population included all women with OCD referring to clinics and counseling centers of Ahvaz City, Iran. In order to select the eligible samples, 30 women were recruited from the patients referred to the treatment centers by convenience sampling method, but some of them were excluded due to discontinuation of treatment sessions. Finally, a sample of 24 patients was evaluated in experimental group (12 subjects) and control group (12 subjects). To collect data, we used the Yale-Brown obsessive-compulsive scale and affective styles questionnaire. The

obtained data were analyzed using covariance analysis in SPSS V. 22. Results Multivariate ANOVA test results showed that there was significant difference between test and study groups in terms of concealing style (P≥0.01, F=7.70) and severity of obsessive-compulsive symptoms (P≥0.001, F=20.48) after intervention. Moreover, between female patients in both group, a significant difference was found with respect to concealing style (P≥0.05, F=2.60) and severity of obsessive-compulsive symptoms (P≥0.001, F=29.99) during follow-up period. Conclusion Based on the results, emotion-focused therapy is an effective treatment to reduce the symptoms of obsessive-compulsive symptoms in patients with OCD.

Mehrabi, Mohammadkhani, Dolatshahi, Behrooz, Pourshahbaz and Mohammadi (2014) did a study on Emotion Regulation in Depression. The aim of this studywas to review the recent literature focusing on the role of Emotion Regulation in depression. The paper, presented a brief review of the latest studies regarding depression and 6 relevant emotion-regulation strategies (i.e. suppression, rumination, experiential avoidance, reappraisal, mindfulness, and acceptance). Then, we attempt to integrate findings of these cognitive-behavioral and neurobiological investigations utilizing the Gross`s process model of emotion regulation. According to the research results, we can generally conclude that emotion regulation is an important mediator/moderator mechanism in the pathogenesis of depression that could also be a good target for intervention in psychotherapy.

Javidan and Mohammadi,(2017)conducted a study to compare cognitive distortions and emotion regulations in people with depressive disorder, obsessive - compulsive disorder and normal individuals. Interms of goal, this research was applied, and interms of method,it was expost facto or causal - comparative. 50 depressed patients, 50 obsessive - compulsive order patients and 50 normal individuals were selected as samples of this research by purposive sampling method. The

data was analyzed using analysis of variance (ANOVA) and Turkey test. In terms of cognitive distortions and emotion regulation, there was significant difference between depressed patients and normal individuals and also significant difference was observed between obsessive - compulsive disorder patients and normal individuals but there was no significant difference between depressed patients and obsessive - compulsive disorder patients. The research suggested that people with depressive and obsessive - compulsive dis orders, have significant distortions in recognition of themselves compared to normal people and also use more negative emotional strategies in facing with stressful events in their lives, so, they experience more anxiety and stress. This study indicated that people with obsessive - compulsive and depressive disorder s have more cognitive distortions than normal people and use maladaptive strategies of emotion regulation in coping with negative events.

Omran, (2011) conducted a study on Relationships between cognitive emotion regulation strategies with depression and anxiety. Four hundred eighty four undergraduate students (265 males) with randomize cluster sampling were selected from various departments of Shiraz University. The age of the samples ranged from 18 to 32 years with a mean of 22.14 (SD = 4.02). Psychometric properties of Cognitive Emotion Regulation Questionnaire (CERQ) in an Iranian sample were examined. The result of factor analysis, subscales correlations, internal consistency and test-retest coefficients showed good psychometric properties of CERQ in Iran. Secondly, relationships between cognitive emotion regulation strategies with depression and anxiety were studied by multiple regression analysis. The result showed that catastrophizing, self-blame and rumination were related with high level of anxiety and depression and refocusing, positive reappraisal and planning subscales related with low level of anxiety and depression.

Antonia, Seligowski, Daniel, Lee, Joseph, Bardeen and Holly (2014) conducted a study onEmotion Regulation and Posttraumatic Stress Symptoms: A Meta-AnalysisEmotion regulation (ER) has been identified as a critical factor in the development and maintenance of posttraumatic stress symptoms. The current meta-analysis aimed at providing a thorough, quantitative examination of the associations between PTS and several aspects of ER. The cross-sectional association between PTS symptoms and ER was reported, participants were 18 years old, and sufficient information was reported to calculate effect sizes. From the 57 studies that were included, 74 effect sizes were obtained. All studies were independently coded by two of the study authors for the following: citation, sample type, total N size (and group n's), mean age of participants, type of traumatic event, study design, PTS measure(s), ER measure(s), and effect size information. Eight random effects models were conducted: seven for individual ER strategies (rumination) and one for general emotion dysregulation. The largest effects were observed for general emotion dysregulation, rumination, thought suppression, and experiential avoidance, Medium effects were observed for expressive suppression and worry. Significant effects were not observed for acceptance or reappraisal. Moderator analyses (sample and trauma type) were conducted for general emotion dysregulation, experiential avoidance, and thought suppression; no significant differences were observed. Findings from the current analysis suggest that several aspects of ER are associated with PTS symptoms across a variety of samples. Additionally, the current study highlights a number of limitations in the existing ER and PTS symptom literature.

Esmaeilinasaba, Khoshkb and Amirhossein (2016)conducted a study on Emotion Regulation and Life Satisfaction in University Students: This study aimed to compare gender differences in nine strategies of cognitive emotion regulation and to predict life satisfaction through these strategies.

The participants consisted of 302 students (202 female and 100 male) of Allameh Tabataba'i University that were selected through Multi-stage cluster sampling and assessed by Satisfaction with Life Scale (SWLS), and Cognitive Emotion Regulation Questionnaire (CERQ). The results showed that females reported more usage of Rumination while strategies of Positive refocusing, Refocus on planning and Positive reappraisal were often used by males. Also multiple regression analysis in females showed that Rumination predicted life satisfaction negatively and strategies of Positive reappraisal and putting into perspective, predicted life satisfaction positively, whereas in males strategies of Positive reappraisal and Refocus on planning predicted life satisfaction positively. The results demonstrated that there were some differences between males and females in selecting cognitive emotion regulation strategies and also a number of these strategies have a crucial role in predicting life satisfaction. Thus, teaching some adaptive strategies and removing maladaptive strategies might prove useful in increasing life satisfaction.

2.7 Summary

This chapter as the name suggests reviewed adequately literature pertaining the major variables under study. The chapter provided conceptual framework which depicted diathesis stress model of depression to elucidate how depression sets in in individuals and if not treated appropriately at the onset, it leads to long term involvement in depressive episode. The chapter discussed the prevalence of depression among students vindicating that depression is more prevalent among students population. Common causes of depression among students and the general population has been extrapolated with the consequences of depression on students. Depression symptoms in children and teens with age group psychopathological symptoms and the symptoms of depressive disorder have been provided in details. Types, incidence, risk factors and managing depression constitute the main thrust of the chapter. Treatment effectiveness in resource-constrained setting

has been explain with a view to tackle depression even with constraints in resources. This paved the way for reducing the burden of depression among students and general population.The chapter extensively explained metacognition and it's nature with serves as a background to explaining the cognitive attentional syndrome CAS, it's consequences leading to manifestation of cognitive, physical and emotional symptoms and suicidal ideation, negative and positive metacognitive beliefs, metacognitive models of depression were in length dealt with.

Emotion regulation being the second treatment technique in this study has been adequately reviewed with methods of emotion regulation in depression and it's empirical examinations in depression.A number of theories that are relevant to the variables of the study have been reviewed namely: Beck's cognitive theory of depression, George Brown's model of self-esteem and Depression, self-worth contingency models of depression, Freud's psychoanalytic theory of depression, Learned helplessness theory of depression, Flavell's theory of metacognition and James-Lange theory of emotion and Emotion Regulation were all reviewed in the chapter. The chapter finally reviewed empirical studies that relevant to the study with a view to making comparison and elaborate discussion of findings in chapter four of this research.

The empirical studies reviewed in this chapter focus attention on clients in the clinical setting, some concentrated on university students, many of the studies used true experimental designs, some conducted systematic trials in their approaches, many of the studies were conducted in the western world and few in Nigeria, some studies reviewed used MANOVA as statistical tools in their analysis with large population in their studies however, this research stands unique as it distinguishes itself in title, design, population, location and purpose.Suffice it to say that this study adopted quasi experimental design focusing on specifically SS2 students in Zaria metropolis diagnosed with moderate depression symptoms.The study is also unique as it

examines effect of metacognitive and emotion regulation strategies on three components/ indices of depression namely cognitive, emotional and physicalsymptoms of depression and suicidal ideation among boarding secondary school students in Zaria metropolis. Thus, this research is deemed different from all studies conducted and its focus is timely as it applies the strategies on boarding secondary school students in Zaria thereby bridging the gapthat exists in the literature.

CHAPTER THREE

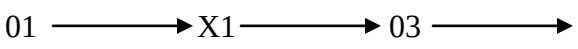
METHODOLOGY

3.1 Introduction

This chapter presents research design employed in the study. It covers population, sample and sampling technique, validity and reliability of the instrument, procedure for data collection and analysis.

3.2 Research Design

This research employed pre-test post-test quasi-experimental design in investigating effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis. Pre-test post-test quasi-experimental design is one of the most frequently used quasi experimental research designs in which group of research participants or subjects is pretested, given some treatment or independent variable manipulation, then posttested. If the pre-test and posttest scores differ significantly, then the difference may be attributed to the effect of independent variable (Colman, 2015). This research design was deemed fit in this study because the two independent variables, metacognitive and emotion regulation strategieswere manipulated to determine their effectiveness on depression symptoms among secondary school students in Zaria metropolis. Thus, the design is pictorially represented in the figure below:



02 ⟶ X2 ⟶ 04 ⟶

Figure 4: Pre-test Post-test Quasi-experimental Design

Where:

01 refers to pre-test administered to treatment group 1 (Metacognitive Strategy)

02 refers to pre-test administered to treatment group two (Emotion Regulation Strategy)

X1 refers to treatment for group one (Metacognitive Strategy)

X2 refers to treatment for group two (Emotion Regulation Strategy)

03 refers to Post-test for group one (Metacognitive Strategy)

04 refers to post-test for group two (Emotion Regulation Strategy)

3.3 Population

The population of this study stood at 779 Senior Secondary 2 students at Government Secondary School (WTC) and Barewa College, Zaria, while the target population of the study comprised of 79 SS 2 students who were identified with moderate cognitive, physical and emotional symptoms of depression using Depression Symptoms Checklist by Robert, Williams and Williams, (2020). Both the two schools are boarding; Government Girls Secondary School (WTC) Zaria is a girls' school while Barewa College, Zaria is a boys' school. This selection of boarding schools was based on the premise that boarding school system makes it feasible for an experiment to be conducted and any change observed could be attributed to effect of the treatment rather than

extraneous variable since students do not go out of the schools and have access to other external factors that may disrupt the treatment administered. The study targeted SS two students who wereexpected to have been adjusted in the school since they stayed halfway of their secondary school education. They were also targeted because they were the most stable set which could be followed up if need be.

Table 1: Distribution of the General Population of Senior Secondary School Students of Government Girls Secondary School (WTC) and Barewa College, Zaria and Target Population Identified

Schools	General Population	Target Population	Percentage
G.G. S.S. (WTC)	338	46	58%
Barewa College	441	33	42%
Total	779	79	100%

Table 3.1, shows that 46 students constituting 58% were identified with moderate depression symptoms at Government Girls Secondary School while 33 students representing 42%were identified at Barewa College, Zaria. It could be observed that the population of students with depression symptoms was higher at G.G.S.S. (WTC) constituting 58% than at Barewa College. The researcher discovered that many students identified with the depression symptoms were victims of Boko Haram insurgency from Maiduguri whose parents were either killed or displaced. The students were sponsored by their Government throughout their secondary school education. Most of these students exhibited symptoms of depression.

3.4 Sample and Sampling Technique

A total of 79 SS 2 students were identified with moderate level of depression at Government Girls Secondary School (WTC) Zaria and Barewa College, Zaria. A sample of 20 students in each schoolwas randomly selected. Selection of students with moderate level of depression was based on the researcher's assumption that mild depression did not constitute too much problem and could be adjusted by reinforcement from the environment while severe or extreme depression may require clinical attention. Thus, students with moderate level of depression symptoms were considered fit for this study.

3.5 Instrumentation

The instruments used in this study wereRobert, Williams and Williams Depression Symptoms Checklist and Burns Depression Questionnaire (as adapted). The former has 12 items measuring symptoms of depression. It was measured on 4-point likert scale ranging from not at all, several days,almost every day to everyday.

Scoring Guide

0-10 mild depression symptoms

11- 20 moderate depression symptoms

21-30 high depression symptoms

31- 36 Extreme depression symptoms

The researcher targeted those students with moderate depression symptoms based on the assumption that moderate depression could be treated within the purview of psychological techniques.

Burns Depression questionnaire has a total of 28 items measuring cognitive, physical, emotional symptoms of depression and suicidal ideation. Items one to eight measure cognitive symptoms, nine to fourteen measure physical symptoms while fifteen to twenty three measure emotional symptoms respectively. The instrument was measured on five point-Likert scale ranging from not at all (0), somewhat (1), moderately (2), a lot (3), to extreme (4) which rates the level of depression symptoms among secondary school students In Zaria metropolis.

3.5.1 Validity of the Instrument

To establish the validity ofRobert, Williams and Williams Depression Symptoms Checklist and Burns Depression Questionnaire,face validity was doneby three Professors in the Department ofEducational Psychology and Counselling, Ahmadu Bello University, Zaria. Some items were fine-tunedand rearranged to suit the objectives of the research. After meticulous scrutiny, the instrument was certified to be pertinent to measure what was purported to measure. All their observations were effected accordingly such as sorting and rearranging the items based on symptoms of depression.

3.5.2 Pilot Testing

To establish the reliability ofBurns Depression Questionnaire, pilot testing was conducted at Government Secondary School Commercial, Zaria. Forty copies of the instruments were administered to the SS two students of the school but only twenty two students were found with

moderate level of depression symptoms which was the criterion for this research. The selection of the school was based on the assumption that the students in the school share the same characteristics with students at Barewa College and WTC secondary schools, Zaria. The schools were all boarding comprising both male and female students within Zaria metropolis.

3.5.3 Reliability of the Instrument

To establish the reliability of the adapted instrument, Cronbach alpha was used to analyze the data collected. Thus, the instrument has the reliability of .808. Componential analysis of the instrument revealed that cognitive symptoms has the reliability of .953, physical symptoms has .853 while emotional symptoms has .939 and suicidal ideation .986 respectively as could be found in appendix F. The reliability coefficients vindicated that the instrument wasreliable for data collection in this study because of the closeness of the values to one.

3.6 Procedure for Data Collection

The researcher collected a letter of introduction from the Department of Educational Psychology and Counselling, ABU, Zaria to Zonal Education Office, Zaria where data of students withinZaria metropolis were given for the purpose of this research. The Director Zonal Education Office, Zaria endorsed the request and directed the principals of Barewa College and WTC secondary schools to allow the researcher to conduct the study. Evidence could be found as attached in the appendix segment. The researcher employed the services of research assistants in both schools who were teachers in the said schools. They were taught about the items of the instrument and trained on how to assist the researcher during the conduct of the study which they complied strictly.

Treatment Procedures

Data were collected in three phases: pre-test, treatment phase and post-test:

Pre-test Phase

Prior to the treatment, the researcher introduced himself to the students and explainedthe purpose of his coming to the students thereby creating cordial relationship, understanding and mutual rapport as bases for successful treatment sessions. In the course of doing so, the researcher assessed and observed students' mental health problems more specifically those with vulnerable symptoms of depression. Depression Symptoms checklist was administered to students with a view to identifying students with moderate depression symptoms. After identifying the target students, the researcher administered Burns Depression Questionnaire at the subsequent week to those identified students thereby obtaining pre-test data. This process was done in both the schools for this research namely, Barewa College and Government Girls Secondary School (WTC). The two treatment techniques were assigned to school using balloting technique. Each group was exposed to treatment for the period of six weeks. The detailed treatment packages for metacognitive and emotion regulation strategies were attached as appendix E of this work. However, the summary of the treatment sessions were provided below:

Treatment Sessions

Treatment 1: Metacognitive Strategy

Key Elements of Metacognitive Strategy

1: Week one: Introduction and Planning Stage: Introductionandestablishing rapport and cordial relationship with the participants. Elicitation and consolidation of knowledge concerning the nature and rates of depression symptoms (worry, fatigue, lack of interest in pleasurable events, being moody, intrusions, flashbacks, nightmares, and arousal symptoms).

2. Week two: Monitoring of Worry Postponement: Reinforce awareness of the problematic nature of perseveration and to facilitate alternative response to symptoms. There are three basic components to this: (1) the advantages/ disadvantages analysis, (2) practice of detached mindfulness, (3) worry postponement

3. Week three: Self-regulation of Detached Mindfulness: Training detached mindfulness. Detached mindfulness for homework in response to intrusive thoughts, flashbacks, and nightmares, and are asked to discontinue daily worry/rumination-based thinking by using the postponement strategy.

4. Week Four: Evaluation and Monitoring Progress: Monitoring progress with detached mindfulness homework and worry-postponement and facilitates continued practice and generalization of the techniques

5. Week Five: Attentional Modification: Changing students' sensitiveness to depression symptoms, and applying attentional coping strategy that maintains the perception of danger of cognitive, emotional and physical symptoms of depression.

6. Week Six: Review Progress with Abandonment of Threat Monitoringand Termination: Application of the experiences acquired during the sessions and applying them during the client's normal daily routine. Homework assignments: Instruct the client to enact metacognitive strategy in the "real world" thereby managing their depressive symptoms.

Treatment 2: Emotion Regulation Strategy

1. **Week One:Introduction, Mindful Awareness and Emotion Regulation Skills:**Establishing cordial relationship with the participants surrounding the challenges of distress associated with depression.

2. **Week Two:Cue Detection and Self-Monitoring.**Utilization of cue detection, referred to as "Catch Yourself Reacting" (CYR), as a means of gaining awareness of one's emotional experience and its different components.

3. **Week Three**: **Emotion Regulation Skills:** Identify mindful emotion regulation skills deployed at the moment and alternative or "counteractive" behavioural responses that they imagined or engaged that would be more functional for achieving their goals.

4. **Week Four:Reappraisal of Experiential Exposure:**Changing a situation's meaning in a way that alters its emotional impact and exercises to reduce depression symptoms.

5. **Week Five: Suppression of Expression and Imaginal Exposure:** Inhibition of ongoing emotion-expressiveness behaviour.

6. **Week Six:Attention Modification and Termination:**An attentional coping strategy that changes the perception of depression symptoms. Series of imaginal exposure centered on envisioning and taking proactive measures.Termination and consolidating treatment gains.

Post-test Phase

At the termination of the treatment sessions for both treatment groups one and two, Burns Depression Scale as adapted was re-administered as posttest in order to compare the level of depression symptoms before and after treatment sessions.

Control of Extraneous Variables

Extraneous variables can contribute to systematic error and random error. Both sources of error reduce the internal validity (quality) of research and make interpretation of results difficult. The researcher tried to reduce or eliminate issues such as experimenter bias and testing effects, familiarity with instruments for data collectionand other sources of error. The researcher is aware of both the sources of extraneous variability and the techniques that can be used to reduce or eliminate extraneous variables as follows:

i- Control through Assignment to Conditions

The purpose of random assignment was to avoid bias in the composition of the different groups. The two groups are essentially equal, any differences subsequently found could be attributed with some confidence to the effect of the treatments themselves, assuming that everything else was held constant. The researcherensured that the independent variables, and not the method of assigning participants to groups, gave rise to the obtained differences. Thus, participants in both metacognitive and emotion regulation strategieswere in the same condition of moderate depression before assignment to treatment condition through draw method.

ii- Control through Experimental Setting

Experimental control was enhanced by selection of a setting that the researcher could control. That is, control the size, temperature and location of the setting. The researcher controlled when participants get to the setting, where they sit, what they see, hear, smell, taste, and touch. In other words, control the environmental stimuli that they experienced. In both the two groups, the environmental settings were appropriately managed and controlled to ensure equality.

iii- Control through Experiment Consent and Instructions

Clear communication to participants was made and their consent was solicited for participation in the study and abiding by the instructions could control such extraneous variables. The language used calm and professional with a view to observing natural behaviour. This made participants to feel relaxed and not experienced apprehension about being evaluated or observed.

iv- Control through Experimenter Interactions

Experimenter interaction can be a source of extraneous variability, including experimenter bias in observations, experimenter effects, enhancement of demand characteristics and enhancement of evaluation apprehension. One additional dimension that deserves attention is the professional demeanor of the experimenter during interactions with the participants. The quality of data obtained from participants was directly related to the seriousness with which they assume their role as research participants. The researcher dressed professionally, appeared prepared, and focused on the study.This on the flipside motivated the participants to remain focused in the study.

v- Control through Observation and Measurement

Observation without awareness of the participants during the course of the research wasused; demand characteristics and evaluation apprehension were greatly reduced. This enabled the researcher to measure their actual depression symptoms.

vi- Control of Experimental Mortality

When participant withdraw from the experiment before the end, it might distort the experimental outcomes. Thus, to curb this possibility, the researcher sampled 23participants in both the groups so as to bridge gaps when mortality arises.

vii- Statistical Control

Another method that works to bring down the effect of extraneous variables is the method of statistical control. Among the various statistical tools and techniques, Analysis of Covariance (ANCOVA) helps in reducing the impact of the extraneous factors on the study. ANCOVA was one of the statistical techniques used in this study.

3.7 Procedure for Data Analysis

The data collected in this study were subjected to statistical analyses using descriptive and inferential statistics. Paired sample t-test was used to test hypotheses 1-8 while ANCOVA was used to test hypothesis 9-12at 0.05 alpha level of significance. The analyses were conducted using Statistical Package for Social Science (SPSS version 26).

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents results of the study based on the data collected at three phases namely, pre-test, treatment sessions and post-test respectively. The data collected were subjected to statistical analysis using paired sample t-test and analysis covariance to compare the level of depression symptoms before and after the treatment sessions.The chapter therefore tested the hypotheses formulated for the study;summary and discussion of findings were provided accordingly.

4.2 Results

Hypothesis 1: There is no significant difference between pre and posttest mean scores of cognitive symptoms of depression among secondary school students in Zaria metropolis exposed to metacognitive strategy.

Table 2: Paired Sample t-test on Effectof Metacognitive Strategy Intervention on Cognitive Symptoms of Depression

Groups	N	Mean	SD	t	df	P
Pretest	20	13.43	6.44	6.08	19	.000
Posttest	204.26	3.48				

Table 2 shows significant effect of metacognitive strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis as vindicated by the mean of 13.43 for pre-test and the mean of 4.26 for post-test; t= 6.08 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect of

metacognitive strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 2: There is no significant difference between pre and posttest mean scores of physical symptoms of depression among secondary school students in Zaria metropolis exposed to metacognitive strategy.

Table 3: Paired Sample t-test on Effect of Metacognitive Strategy Intervention on Physical Symptoms of Depression

Groups	N	Mean	SD	t	df	P
Pretest	20	11.69	4.78	6.21	19	.000
Posttest	20	4.65	3.06			

Table 3 shows significant effect of metacognitive strategy on physical symptoms of depression among secondary school students in Zaria metropolis as shown by the mean of 11.69 for pre-test and the mean of 4.65 for post-test; t= 6.21 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect of metacognitive strategy on physical symptoms of depression among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 3: There is no significant difference between pre and posttest mean scores of emotional symptoms of depression among secondary school students in Zaria metropolis exposed to metacognitive strategy.

Table 4: Paired Sample t-test on Effect of Metacognitive Strategy Intervention on Emotional Symptoms of Depression

Groups	N	Mean	SD	t	df	P
Pretest	20	14.30	6.16	6.37	19	.000
Posttest	20	4.95	3.87			

Table 4 shows significant effect of metacognitive strategy on emotional symptoms of depression among secondary school students in Zaria metropolis as indicated by the mean of 14.30 for pre-test and the mean of 4.95 for post-test; t= 6.37 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect of metacognitive strategy on emotional symptoms of depression among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 4: There is no significant difference between pre and posttest mean scores of suicidal ideation among secondary school students in Zaria metropolis exposed to metacognitive strategy.

Table 5: Paired Sample t-test on Effect of Metacognitive Strategy Intervention on Suicidal Ideation

Groups	N	Mean	SD	t	df	P
Pretest	20	4.36	4.57	2.312	19	.031
Posttest	202.09	1.84				

Table 5 shows significant effect of metacognitive strategy on suicidal ideation among secondary school students in Zaria metropolis as proven by the mean of 4.36 for pre-test and the mean of 2.09 for post-test; t=2.312 and p= 0.031 which is lower than 0.05 level of significance. Thus, the

null hypothesis which states that there is no significant effect of metacognitive strategy on suicidal ideation among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 5: There is no significant difference between pre and posttest mean scores of cognitive symptoms of depression among secondary school students in Zaria metropolis exposed to emotion regulation strategy.

Table 6: Paired Sample t-test on Effect of Emotion Regulation Strategy Intervention on Cognitive Symptoms of Depression

Groups	N	Mean	SD	t	df	P
Pretest	20	11.50	3.41	6.52	19	.000
Posttest	20	5.00	2.73			

Table 6 shows significant effect of emotion regulation strategy on cognitive symptoms among secondary school students in Zaria metropolis as shown by the mean of 11.50 for pre-test and the mean of 5.00 for post-test; t= 6.52 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect of emotion regulation strategy on cognitive symptoms among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 6: There is no significant difference between pre and posttest mean scores of physical symptoms of depression among secondary school students in Zaria metropolis exposed to emotion regulation strategy.

Table 7: Paired Sample t-test on Effect of Emotion Regulation Strategy Intervention on Physical Symptoms of Depression

Groups	N	Mean	SD	t	df	P
Pretest	20	9.35	2.51	10.56	19	.000
Posttest	20	3.75	1.77			

Table 7 shows significant effect of emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis as the mean of 11.50 for pre-test and the mean of 5.00 for post-test indicated; t= 10.56 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect of emotion regulation strategy on physical symptoms among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 7: There is no significant difference between pre and posttest mean scores of emotional symptoms of depression among secondary school students in Zaria metropolis exposed to emotion regulation strategy.

Table 8: Paired Sample t-test on Effect of Emotion Regulation Strategy Intervention on Emotional Symptoms of Depression

Groups	N	Mean	SD	t	df	P
Pretest	20	12.35	3.91	5.81	19	.000
Posttest	20	5.05	3.64			

Table 8 shows significant effect of emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis as vindicated by the mean of 12.35 for pre-test and the mean of 5.05 for post-test; t=5.81 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect

of emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 8: There is no significant difference between pre and posttest mean scores of suicidal ideation among secondary school students in Zaria metropolis exposed to emotion regulation strategy.

Table 9: Paired Sample t-test on Effect of Emotion Regulation Strategy Intervention on Suicidal Ideation

Groups	N	Mean	SD	t	df	P
Pretest	20	7.00	2.88	7.03	19	.000
Posttest	20	2.15	2.03			

Table 9shows significant effect of emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis as vindicated by the mean of 7.00 for pre-test and the mean of 2.15 for post-test; t= 7.03 and p= 0.000 which is lower than 0.05 level of significance. Thus, the null hypothesis which states that there is no significant effect of emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis is hereby rejected.

Hypothesis 9: There is no significant differential effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria Metropolis.

Table 01: ANCOVA Showing Differential Effect of Metacognitive and Emotion Regulation Strategy Interventions on Cognitive Symptoms Depression

Descriptive Statistics

Dependent Variable: MCS_ERS cognitive symptoms

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	4.2609	3.48004	20
EMOTION REGULATION STRATEGY	5.0000	2.73380	20

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS cognitive symptoms

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5.866[a]	2	2.933	.287	.752
Intercept	111.992	1	111.992	10.969	.002
Pre-test	.022	1	.022	.002	.963
SCHOOL	5.572	1	5.572	.546	.464
Error	408.413	40	10.210		
Total	1326.000	43			
Corrected Total	414.279	42			

a. R Squared = .014 (Adjusted R Squared = -.035)

Table 01 shows the result of the analysis of covariance testing differential interaction effect of metacognitive and emotional regulation strategies on cognitive symptoms of depression. After adjusting the covariates, the result indicated no significant differential effect between metacognitive and emotional regulation strategies on cognitive symptoms of depression among secondary school students in Zaria metropolis f=.546, p= .464 which is greater than 0.05 level of significance. This indicates that both the treatments were concurrently effective on cognitive depression symptoms. Thus, the null hypothesis which states that there is no significant

differential effect of metacognitive and emotion regulation strategies on cognitive depression symptoms among secondary school students in Zaria Metropolis is hereby retained.

Hypothesis 10: There is no significant differential effect of metacognitive and emotion regulation strategies on physical symptoms of depression among secondary school students in Zaria Metropolis.

Table 02: ANCOVA Showing Differential Effect of Metacognitive and Emotion Regulation Strategy Interventions on Physical Symptoms Depression

Descriptive Statistics

Dependent Variable: MCS_ERS Physical symptoms

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	4.6522	3.06903	20
EMOTION REGULATION STRATEGY	3.7500	1.77334	20

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS Physical symptoms

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	14.972[a]	2	7.486	1.149	.327	.054
Intercept	50.777	1	50.777	7.791	.008	.163
Pretest	6.265	1	6.265	.961	.333	.023
SCHOOL	6.253	1	6.253	.959	.333	.023
Error	260.703	40	6.518			
Total	1046.000	43				
Corrected Total	275.674	42				

a. R Squared = .054 (Adjusted R Squared = .007)

Table 02 shows results of the analysis of covariance testing differential interaction effect of metacognitive and emotional regulation strategies on physical symptoms of depression. After

adjusting the covariates, the result indicated no significant differential effect between metacognitive and emotional regulation strategies on physical symptoms of depression among secondary school students in Zaria metropolis f= .959, p= .333 which is greater than 0.05 level of significance. This indicates that both the treatments were effective on physical symptoms of depression. Thus, the null hypothesis which states that there is no significant differential effect of metacognitive and emotion regulation strategies on depression symptoms based on age among secondary school students in Zaria Metropolis is hereby retained.

Hypothesis 11: There is no significant differential effect of metacognitive and emotion regulation strategies on Emotional symptoms of depression among secondary school students in Zaria Metropolis**.**

Table 03: ANCOVA Showing Differential Effect of Metacognitive and Emotion Regulation Strategy Interventions on Emotional Symptoms of Depression

Descriptive Statistics

Dependent Variable: MCS_ERS Emotional symptoms

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	4.9565	3.87859	20
EMOTION REGULATION STRATEGY	5.0500	3.64872	20

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS Emotional Symptoms

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.697[a]	2	.849	.058	.943	.003
Intercept	101.926	1	101.926	7.002	.012	.149
Pretest	1.604	1	1.604	.110	.742	.003
SCHOOL	.259	1	.259	.018	.895	.000
Error	582.303	40	14.558			
Total	1659.000	43				
Corrected Total	584.000	42				

a. R Squared = .003 (Adjusted R Squared = -.047)

Table 03 shows results of the analysis of covariance testing differential interaction effect of metacognitive and emotional regulation strategies on emotional symptoms of depression. After adjusting the covariates, the result reveals no significant differential effect between metacognitive and emotional regulation strategies among secondary school students in Zaria metropolis f= .018, p= .895 which is greater than 0.05 level of significance. This indicates that the treatments were both effective emotional symptoms of depression. Thus, the null hypothesis which states that there is no significant differential effect of metacognitive and emotion regulation strategies on emotional symptoms depression among secondary school students in Zaria Metropolis is hereby retained.

Hypothesis 12: There is no significant differential effect of metacognitive and emotion regulation strategies on suicidal ideation among secondary school students in Zaria Metropolis**.**

Table 04: ANCOVA Showing Differential Effect of Metacognitive and Emotion Regulation Strategy Interventions on Suicidal Ideation

Descriptive Statistics

Dependent Variable: MCS_ERS Suicidal ideation

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	2.0909	1.84930	20
EMOTION REGULATION STRATEGY	2.1500	2.03328	20

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS Suicidal ideation

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.343[a]	2	.172	.045	.956	.002
Intercept	18.048	1	18.048	4.691	.037	.107
Pretest	.307	1	.307	.080	.779	.002
SCHOOL	.079	1	.079	.020	.887	.001
Error	150.061	39	3.848			
Total	339.000	42				
Corrected Total	150.405	41				

a. R Squared = .002 (Adjusted R Squared = -.049)

Table 04 shows results of the analysis of covariance testing differential interaction effect of metacognitive and emotional regulation strategies on suicidal ideation. After adjusting the covariates, the result reveals no significant differential effect between metacognitive and emotional regulation strategies on suicidal ideation among secondary school students in Zaria metropolis f= .020, p= .887 which is greater than 0.05 level of significance. This indicates that the treatments were both effective on suicidal ideation. Thus, the null hypothesis which states that there is no significant differential effect of metacognitive and emotion regulation strategies on suicidal ideation among secondary school students in Zaria Metropolis is hereby retained.

4.2.1 Summary of Findings

The following are the summary of findings based on the data collected and analysed in this study:

1. There is significant effect of metacognitive strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis with the mean of 13.43 for pre-test, 4.26 for post-test; p = .000.

2. There is significant effect of metacognitive strategy on physical symptoms of depression among secondary school students in Zaria metropolis with the mean of 11.69 for pre-test,4.65 for post-test; p = .000.
3. There is significant effect of metacognitive strategy on emotional symptoms of depression among secondary school students in Zaria metropolis with the mean 14.30 for pre-test, 4.95 for post-test; p = .000.
4. There is significant effect of metacognitive strategy on suicidal ideation among secondary school students in Zaria metropolis with the mean of 4.36 for pre-test, 2.09 for post-test, p = .031.
5. There is significant effect of emotion regulation strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis with the mean of 11.50 for pre-test, 5.00 for post-test; p = .000.
6. There is significant effect of emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis with the mean of 9.35 for pre-test and 3.75 for post-test for post-test; p= .000.
7. There is significant effect of emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis with the mean of 12.35 for pre-test, 5.05 for post-test; p= .000.
8. There is significant effect of emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis with the mean of 7.00 for pre-test, 2.15 for post-test; p = .000.

9. There is no significant differential effect of metacognitive and emotion regulation strategies on cognitive symptoms of depression among secondary school students in Zaria metropolis f= .546, p= .464.
10. There is no significant differential effect of metacognitive and emotion regulation strategies on physical symptoms of depression among secondary school students in Zaria metropolis f= .959, p = .333.
11. There is no significant differential effect of metacognitive and emotion regulation strategies on emotional symptoms of depression among secondary school students in Zaria metropolis f= .018, p= .895.
12. There is no significant differential effect of metacognitive and emotion regulation strategies on suicidal ideation among secondary school students in Zaria metropolis f= .020, p= .887.

4.3 Discussion of Findings

This study examine the effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis.

The result of this study revealed significant effect of metacognitive strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis. This finding is in congruence with Dugas (2012) who conducted a study on metacognitive therapeutic strategies for major depressive disorder: Development and clinical potential**.** Metacognitive model of psychological dysfunction shows clinical promise for treating multiple axis I disorders including cognitive symptoms. The study explores the fundamentals of this model and the self-perpetuating cycle of counterproductive coping behaviours underlying it. The results show that

metacognitive therapy/strategy appears potent and efficient for reducing depression, and this treatment package is a novel approach to combating Major Depressive Disorder. The finding also corroborates Dammen, Papageorgiou and Wells, (2016) who conducted a two year follow up study of group metacognitive therapy for depression in Norway. The participants exhibited symptoms of depression including cognitive symptoms. Result indicated large significant improvements across all measures that were detected at post-treatment and were maintained at one year and two year-follow ups. Based on objectively defined recovery criteria, 70% of the clients were classified as recovered at 1 year and 80% at 2 year follow up. Supporting this finding, Sayyadi and Yunusa (2015) studied the influence of metacognitive evaluation strategy in reducing test anxiety among low achieving secondary school students in Mathematics in Katsina metropolis. The findings of the study revealed that metacognitive evaluation strategy was effective in reducing test anxiety among low achieving secondary school students in Mathematics in Katsina state, Nigeria. The above three studies proved the efficacy of metacognitive strategy in the treatment of test anxiety, cognitive symptoms of depression and other mental health problems.

The finding of this study revealed significant effect of metacognitive strategy on physical symptoms of depression among secondary school students in Zaria metropolis. This Finding is in agreement with Bahadori, Jahanbakhsh, Hosseinpour and Faramarzi (2014) who did a study on effect of meta-cognitive therapy on self-assertiveness skill in patients with social phobia disorder. This intervention proved to improve self-assertiveness skill in clients by facilitating transmission from the object mode to the metacognitive mode and enhancing the efficient and flexible coping skills thereby reducing the symptoms including physical symptom. In line with this finding, was also a study Zafarizadeh, Bahrami, Kaveh-Farsani, Heydari, and Kor (2014)

who examined the effect of metacognitive therapy on traumatic stress disorder symptoms in survivors of accidents in Shahr-e-Kord, Iran. The results showed that metacognitive therapy reduced PTSD symptoms of depression and anxiety in experimental group in post-test and two-month follow up sessions. This finding justifies the fact that metacognitive strategy is efficacious in managing depressive symptoms as could be deduced from two months follow up conducted to check the stability of the effect.

The study also indicated significant effect of metacognitive strategy on emotional symptoms of depression among secondary school students in Zaria metropolis. This finding is incongruence with Wenn, O'Connor; Breen, Robert, Kane and Rees (2015) as they examined the efficacy of metacognitive therapy for prolonged grief disorder: protocol for a randomised controlled trial. The study describes the protocol for an evaluation of a metacognitive therapy programme designed specifically for PGD, to reduce the psychological distress which includes emotional depression symptoms and loss of functioning resulting from bereavement. The result of the study revealed the efficacy of a targeted metacognitive treatment programme for PGD as proved to be promising in reducing prolong grief disorder after the treatment. The result has been in line by Vakili and Ladan (2016) who conducted a study on the effectiveness of the metacognitive model in treating a case of post-traumatic stress disorder. Results showed that the treatment led to reductions in symptoms of PTSD, anxiety, depression and distress. Gains were maintained at follow-ups. These findings attested to the efficacy of strategy as vindicated by the follow up gains.

The finding of the study showed significant effect of metacognitive strategy on suicidal ideation among secondary school students in Zaria metropolis. This result has been in line with the literature as Hasirbaf1 and Maalavi, (2017) did a study on effect of metacognitive therapy on the

treatment of behavioral disorders in adolescents in General Psychology, in Iran. This study was to evaluate the effect of metacognitive strategies on the treatment of behavioral disorders in adolescents. Anxiety and aggression disorders are common behaviour targeted by the study. Result found that metacognitive therapy has a significant and positive effect on the treatment of behavioral disorders, especially anxiety, depression, aggression and negative ideations in adolescents. In line with this finding, Normann& Morina (2018) conducted a systematic search of trials on MCT for young and adult clients with psychological complaints with a minimum of 10 participants in the MCT condition included. A total of 25 studies that examined a variety of psychological complaints met our inclusion criteria, of which 15 were randomized controlled trials. The study identified only one trial that was conducted with children and adolescents. In trials with adult clients, large uncontrolled effect size estimates from pre- to post-treatment and follow-up suggest that MCT is effective at reducing symptoms of the targeted primary complaints, anxiety, depression, and dysfunctional metacognitions. Findings indicate that MCT is an effective treatment for a range of psychological complaints such as suicidal ideation and urges.

The possible explanation as to why these findings are in line proved the efficacy of metacognitive strategy in modifying distorted beliefs and perseverative thinking style referred as cognitive attentional syndrome, the style of thinking that made vulnerable people to fix their attention to negative thoughts. Metacognitive strategy challenged this distorted thinking thereby making those with the depressive episodes to manage the symptoms so as to become adjusted. All the studies followed the same pattern and steps, as such arriving at the same management level of the depression and other mental health problems.

Drawing analogy from the theory of beckfocuses on the role cognitive processes play in depression. This theory assumes that depression is maintained (and perhaps caused) by the manner in which people think about themselves and process personal information. Beck was one of the first theorists to advocate this position. As a therapist with an active clinical practice, Beck sought to understand the nature of depression in order to devise effective treatment strategies. Beck began by developing a precise description of the disorder, with special attention given to distinguishing primary symptoms from more secondary ones (on the assumption that if he *cured* the primary symptoms, the secondary ones would resolve as well). As his work has evolved, Beck has added causal elements to his descriptive account of depression. Dysfunctional beliefs are held to be a vulnerability factor (a diathesis). When activated by environmental events (stress), these dysfunctional beliefs lead a person prone to depression to interpret experiences in negative and distorted ways. These negative interpretations, in turn, lead to negative views of oneself, one's world, and one's future. These beliefs, which refer to as the negative cognitive triad, are viewed as the primary symptom of depression, giving rise to other features of the disorder, including somatic (sleeplessness), motivational (passivity) and affective (sadness) disturbances. The theory of metacognitive strategy sought to modify the said negative metacognition and beliefs about oneself and environment by challenging the cognitive attentional syndrome which is the negative interpretation of events that perpetuate the state of worry and rumination and fixation of attention to negative aspects of life event leading to experience of depression. Metacognitive strategy challenges the CAS leading to cognitive, physical and emotional symptoms of depression and suicidal urges.

The result of this study found significant effect of emotion regulation strategy on cognitive symptoms of depression among secondary school students in Zaria metropolis. This finding is in

line with Omran, (2011) who conducted a study on effect of cognitive emotion regulation strategies on depression and anxiety. Findings revealed cognitive emotion regulation strategies with depression and anxiety were analysed by multiple regression analysis. The result showed that catastrophizing, self-blame and rumination were related with high level of anxiety and depression and refocusing, positive reappraisal and planning subscales related with low level of anxiety and depression and that the symptoms were moderated by emotion regulation strategy. The finding is in line with Javidan and Mohammadi, (2017) conducted a study to compare cognitive distortions and emotion regulations in people with depressive disorder, obsessive - compulsive disorder and normal individuals. In terms of cognitive distortions and emotion regulation, there was significant difference between depressed patients and normal individuals and also significant difference was observed between obsessive - compulsive disorder clients and normal individuals with emotion regulation significantly moderated cognitive symptoms of depression.

Theresult of the study showed significant effect of emotion regulation strategy on physical symptoms of depression among secondary school students in Zaria metropolis. Mehrabi, Mohammadkhani, Dolatshahi, Behrooz, Pourshahbaz and Mohammadi (2014) who did a study on Emotion Regulation in Depression supported this finding. Their results generally concluded that emotion regulation is an important mediator/moderator mechanism in the pathogenesis of depression physical symptoms inclusive. Also to corroborate this finding, Shamel, Honarmand, Naa'mi and Davodi, (2018) conducted a study on the effectiveness of emotion-focused therapy on emotion regulation styles and severity of obsessive-compulsive symptoms in women with obsessive-compulsive disorder. Results indicated emotion-focused therapy is an effective

treatment to reduce the symptoms of obsessive-compulsive symptoms such as cognitive and emotional and physical in clients.

The finding of this study revealed significant effect of emotion regulation strategy on emotional symptoms of depression among secondary school students in Zaria metropolis. This result also has a similarity with Shamel, Honarmand, Naa'mi and Davodi, (2018) who conducted a study on the effectiveness of emotion-focused therapy on emotion regulation styles and severity of obsessive-compulsive symptoms in women with obsessive-compulsive disorder. Results indicated emotion-focused therapy is an effective treatment to reduce the symptoms of obsessive-compulsive symptoms such as cognitive and emotional and physical in clients. In congruence with this finding was a study by Antonia, Seligowski, Daniel, Lee, Joseph, Bardeen and Holly (2014) who conducted a study on Emotion Regulation and Posttraumatic Stress Symptoms. Findings from the current analysis suggest that several aspects of ER are associated with reduced symptoms across a variety of samples.

This study indicated significant effect of emotion regulation strategy on suicidal ideation among secondary school students in Zaria metropolis. This finding is in line with Esmaeilinasaba, Khoshkb and Amirhossein (2016) who conducted a study on emotion regulation and life satisfaction in university students. The results demonstrated that there were some differences between males and females in selecting cognitive emotion regulation strategies and also a number of these strategies have a crucial role in predicting life satisfaction. Thus, emotion regulation adaptive strategies and removing maladaptive strategies proved to be useful in increasing life satisfaction and reduce suicidal ideation. This justifies the efficacy of emotion regulation strategy in enhancing life’s satisfaction thereby avoiding negative thoughts such as suicidal ideation.

The findings of this study and other empirical studies are in agreement which shows that the emotion regulation strategies are effective in managing depression symptoms and other psychological problems on one hand and proved that the strategy employed in this study was in congruence with the standard practice of the strategy. This could be deduced by the fact that most of the studies were conducted abroad with different sample of behaviour problems such as anxiety and different aspects of depression including obsessive-compulsive symptoms among others. It could be deduced from the compatibility of the findings, that irrespective of the environment, population and statistical analytical tool employed, emotion regulation strategy is efficacious in handling psychological and mental health problems.

The theory of Brown highlightedself-worth contingency models of depression. These models assume that people strive to feel good about themselves (that is to satisfy their self-enhancement needs). People prone to depression have highly conditional feelings of self-worth. They feel good about themselves when certain conditions are met (saythey are in a romantic relationship; they are successful at their work or schooling) but bad about themselves when these conditions are not being met. Depression arises, according to these models, when experiences threaten these "conditions of self-worth" and people perceive they would not be able to meet their self-enhancement needs in the future.

Emotions, according to James and Lange, consist of the body's physical responses to something in the environment. When one witnesses something emotional, this leads to changes in the body. One's heart rate or blood pressure might increase, one might start sweating, or breathing more quickly. James famously explained the theory in his book *The Principles of Psychology*: he writes that "we feel sorry because we cry, angry because we strike, afraid because we tremble, and not that we cry, strike, or tremble, because we are sorry, angry, or fearful, as the case may

be." In other words, our emotional reactions consist of our physical responses to potentially emotional events in the environment. James suggests that these physical reactions are key to our emotions and that, without them, our experiences would be pale, colourless, and destitute of emotional warmth. Emotion regulation strategy involves the application of strategies to manage and regulation emotional experiences with a view a reducing depression symptoms. The strategy employed emotional suppression, reappraisal, mindfulness, experiential avoidance and emotional acceptance with a view to managing emotional disturbances leading to cognitive, physical and emotional symptoms of depressions and suicidal ideation.

Finding of this research showed no significant differential effect of metacognitive and emotion regulation strategies on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis. This means that both the strategies were effective in managing the symptoms of depression. These findings prove the efficacious validity of both metacognitive and emotion regulation strategies in the treatment of depressive symptoms as supported by the empirical studies such as Dugas (2012), Dammen, Papageorgiou and Wells, (2016), Sayyadi and Yunusa, 2015 whose studies confirmed the efficacy of metacognitive strategy for the treatment of anxiety and depressive symptoms. While researchers such as Omran, (2011), Javidan and Mohammadi, (2017); Mehrabi, Mohammadkhani, Dolatshahi, Behrooz, Pourshahbaz and Mohammadi (2014) confirmed the efficacy of emotion regulation strategy on depression symptoms and posttraumatic stress disorder. The researcher observed that many studies employed emotion regulation on female participants and coincidentally, this study also used the strategy on female participants. The possible explanation could be that females may display more emotional symptoms when confronted with psychological problems than their male counterparts, thus, motivating

researchers to employ emotion regulation strategy on female sample. However, in this study, the use of emotion regulation strategy on female participants was by chance as the researcher used randomized technique to arrive at the decision. By and large, by these findings, it proved beyond reasonable doubts that both metacognitive and emotion regulation strategies were promising in managing depression symptoms among secondary school students in Zaria metropolis.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the study, conclusion drawn from the findings of the study, contributions to knowledge and proffers recommendations in line with the findings of the study.

5.2 Summary

This study investigated effect of metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis.Depression is found to be the most common of the affective disorders ranging from a very mild condition bordering on normality to severe depression accompanied by hallucinations and delusions. When the negative reactions to life`s situations become repetitively intense and frequent we develop symptoms of depression. Life throws up innumerable situations, which we greet with both negative and positive emotions such as excitement, frustration, fear, happiness, anger, sadness. Depression is prevalent among all age groups in almost all walks of life. Mental health disorders such as depression according to the World Health Organization, (2008) are among the leading causes of disability worldwide. Depression is a common mental health problem, ranking third after cardiac and respiratory diseases as a major cause of disability. It is an affective disorder that presents with negative mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. It is also characterized by changes in mood status presenting as feelings of sadness which may fluctuate from slight hopelessness to severe feelings of disappointment. It is a disorder that can be reliably diagnosed and treated by psychological techniques. If left untreated in the early age of occurrence, it may lead to different

problems such as school failure, conduct disorder, delinquency, eating disorders such as anorexia and bulimia, school phobia, panic attacks, substance abuse, problem of thinking and making decisions, and, in in an extreme cases if not checked it leads to recurring thoughts of death or suicide. The prevalence of depression has been found to be more prevalent in students' population compared to the rest of the population which affects students' adjustment and eventually their academic performance. This motivated the conduct of this study. The study was guided by twelve objectives which were transformed into research questions, hypothesis and basic assumptions for the study. The study added value to knowledge in the area of psychotherapy for managing mental health problems among students.Thus, teachers, students, parents, school administrators, educational administration and planners, government and all stakeholders in education stand to benefit from this study as it provides empirically based data and recommendations with a view to enhancing mental wellbeing of students for better adjustment in school and society. The study focuses on SS2 students as it delimits SS1 and 3.

The study reviewed relevant literaturewhich include conceptual framework, concept of depression, prevalence of depression among students, common causes of depression among students, general causes of depression, consequences of depression on students, types of depression, incidence and risk factors of depression, managing and treatment of depression, concept of metacognition, foundations of metacognitive therapy skills, emotion regulation, methods of emotion regulation in depression among other concepts. Theoretical framework was provided including Beck's cognitive theory of depression, George Brown's model of self-esteem and Depression, self-worth contingency models of depression, Freud's psychoanalytic theory of depression, Learned helplessness theory of depression, Flavell's theory of metacognition and James-Lange theory of emotion and Emotion Regulation were all reviewed in the chapter. The

chapter finally reviewed empirical studies that are relevant to the study and summary of literature review so provided.

The study employed pre-test and post-test quasi experimental research design with the target population of the study comprising of 79 SS 2 students who were identified with moderate cognitive, physical and emotional symptoms of depression using Depression Symptoms Checklist by Robert, Williams and Williams, (2020). The study used a sample of 20 students from each school, Burns depression questionnaire was the instrument for data collection. Data were collected at pre-test, treatment and post-test and were analysed using paired sample t-test and analysis of covariance.

Results of the study revealed that:

1- There is significant effect of metacognitive strategy on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis.
2- There is significant effect of emotion regulation strategy on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis.
3- There is no significant differential effect of metacognitive and emotion regulation strategies on cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students in Zaria metropolis.

Chapter five of this study presented summary of the work, conclusion, contributions to knowledge and recommendations.

5.3 Conclusion

Based on the findings of the study, it is concluded that metacognitive strategy was significantly effective in reducing cognitive, physical and emotional symptoms of depression and suicidal ideation. It was also concluded that emotion regulation strategy was effective in reducing cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students. It is also concluded that there is no significant differential effect between metacognitive and emotion regulation strategies on depression symptoms among secondary school students in Zaria metropolis.

5.4 Contributions to Knowledge

The following are the contributions this study offers to knowledge:

1- This study established the efficacy of metacognitive strategy in reducing cognitive, physical and emotional symptoms of depression among secondary school students in Zaria metropolis.
2- This study also established the efficacy of metacognitive strategy in managing suicidal ideation among secondary school students in Zaria metropolis.
3- The effect of emotion regulation strategy on cognitive, physical and emotional symptoms of depression among secondary school students in Zaria metropolis has been established by the study.
4- The effect of emotion regulation strategy suicidal ideation among secondary school students in Zaria metropolis has been established by the study.

5- The study confirmed the concurrent efficacy of both metacognitive and emotion regulation strategies on cognitive, physical and emotional symptoms of depression among secondary school students in Zaria metropolis.
6- The study confirmed the concurrent efficacy of both metacognitive and emotion regulation strategies on suicidal ideation among secondary scho5.ol students in Zaria metropolis.

5.5 Recommendations

The following are the recommendations based on the findings and conclusions of the study:

1. Educational psychologists, counsellors and social workers should use metacognitive strategy in handling cognitive attentional syndrome leading to cognitive, physical and emotional symptoms of depression and suicidal ideationamong secondary school students.
2. Educational psychologists, counsellors and social workers should use emotion regulation strategy so as to manage cognitive attentional syndrome leading to cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students.
3. Educational psychologists and counselors should organize workshops, seminars, conferences, and symposia to sensitize parents, teachers and caregivers on the new strategies of metacognition and emotion regulation in managing cognitive attentional syndrome leading to cognitive, physical and emotional symptoms of depression and suicidal ideation among secondary school students.

4. Parents and guardians should be sensitized to observe depression symptoms among their children and refer them to psychologists and counselors immediately.

5.6 Suggestions for Further Studies

Based on the findings and conclusion of the study, the following areas should be explored to provide rewarding research findings:

1- Effect of metacognitive and emotion regulation strategies on mild and high depression symptoms among SSI and SS3secondary school students in Zaria metropolis.
2- Effect of metacognitive and emotion regulation strategies on depression symptoms among students of tertiary institutions in Zaria metropolis.
3- Effect of metacognitive regulation technique and cognitive emotion regulation strategy onmild and high depression symptoms among secondary school students in Zaria metropolis.
4- Effect of metacognitive and emotion regulation strategies on depression symptoms based on gender, age group and socioeconomic status of students.
5- Effect of metacognitive and emotion regulation strategies on posttraumatic stress disorder symptoms among victims of banditry in Zaria metropolis.

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APPENDIXES

Appendix (A)

Depression Symptoms Checklist

Depression Screening Checklist	Not at all	Several days	Almost everyday	Every day
1. I have little interest or pleasure in doing things.				
2. I am feeling down, worthless and hopeless.				
3. I have trouble falling or staying a sleep, or sleeping too much.				
4. Feeling tired or having little energy.				
5. I have poor appetite or overeating.				
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down.				
7. I have trouble concentrating on things such as reading the newspaper or watching television.				
8. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual.				
9. Thoughts that you would be better off dead or of hurting yourself in some way.				
10. I spend less time with family and friends.				
11. Feeling sad or down in the dumps				
12. I lack interest in work and other activities.				

Robert,Williams& Williams (2020).

Appendix (B)

Burn's Depression Questionnaire

Instructions: Put a check to indicate how much you have experienced each of the symptoms during the past week including today. Please, answer all 26 items.

Burn's Depression (1999)

Instructions: Put a check to indicate how much you have experienced each of the symptoms during the past week including today. Please, answer all 26 items.

Cognitive Symptoms of Depression	**Not at all 0**	**Somewhat 1**	**Moderately 2**	**A lot 3**	**Extreme 4**
1. Guilt and shame					
2. Criticizing yourself or blaming others					
3. Difficulty making decisions					
4. Loss of interest in family, friends peer group					
5. Loneliness					
6. Loss of motivation					
7. Loss of interest in work and other activities					
8. Avoiding work and other activities					
Physical Symptoms of Depression					
9. Feeling tired					
10. Difficulty sleeping or sleeping too much					
11. Decreased or increased appetite					
12. Loss of interest in sports activities					
13. Worrying about your health					
14. frequent headache					
Emotional Symptoms					
15. Feeling sad or down in the dumps					
16. Feeling unhappy or blue					
17. Crying spells or tearfulness					
18. Loss of pleasure or satisfaction in life					
19. Feeling discouraged					
20. Feeling hopeless					
21. Loss self-esteem					

22. Feeling worthless or inadequate					
23. Spending less time with family and friends					
Suicidal Urges					
24. I am having suicidal thoughts					
25. I am thinking of ending my life					
26. I have a plan of harming myself					
27. This life doesn't worth living					
28. The more one lives, the more unpleasant experiences, it better for one to quit.					

Burns, D. (1999) Depression Questionnaire

Scoring Guide

Total Score	Level of Depression
No Depression	0---5
Normal but unhappy	6---10
Mild depression	11---25
Moderate depression	26---50
Severe depression	51---75
Extreme depression	76---100

APPENDIX C

INTRODUCTORY LETTER

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Vice-Chancellor: Professor Kabir Bala *MBA, Ph.D, FNIOB, MAPM MCABE, MSClarb*
Head of Department: Professor Mustapha Ibrahim Abdullahi *B.A Ed (BUK), M.Ed (UNILORIN), PhD (BUK)*

Our Ref: The Director, Date: 2/6/2021
Quality Assurance Authority Office,
Zaria Division.

Dear Sir,

STUDENTS' FIELD RESEARCH

The Department of Educational Psychology and Counselling, Ahmadu Bello University, Zaria requires each student working for a Degree to Complete a research Thesis/Dissertation/Project. Our Students entering the final year of their studies will be collecting data during the year.

Most of them will need to be allowed access to certain relevant documents and some valuable information which you may have.

Please, give assistance as much as possible.

TOPIC OF RESEARCH:

Effect of Metacognitive and Emotion Regulation Strategies on Depression Symptoms among Secondary School Students in Zaria metropolis, Kaduna State, Nigeria.

Thank you for your continuing cooperation.

Yours Faithfully,

Research Adviser

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AD/ZD 3/6

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY AND COUNSELL.

Faculty of Education

AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

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Head of Department: Professor Mustapha Ibrahim Abdullahi *B.A Ed (BUK), M.Ed (UNIILORIN), PhD (BUK)*

Our Ref: The Principal, *Date:* 2/6/2021

Government Girls Secondary School,
(WTC) Zaria

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Head of Department: Professor Mustapha Ibrahim Abdullahi *B.A Ed (BUK), M.Ed (UNILORIN), PhD (BUK)*

Our Ref: The Principal,

Barewa College, Zaria

Date: 2/6/2021

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APPENDIX D

STUDENTS POPULATION FROM THE MINISTRY OF EDUCATION

REGISTRY

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY, KADUNA

ZONAL EDUCATION OFFICE, ZARIA

STUDENTS POPULATION - 16/3/2018

S/N	Name of School	JS	SS	TOTAL
1.	Alhudahuda College	2426	2445	4871
2.	Barewa College	954	1354	2308
3.	GCC Zaria	423	177	600
4.	GSS Awai	313	68	381
5.	GSS T/Saibu Snr	-	401	401
6.	GSS Gyallesu	1359	751	2110
7.	GGSS D/Bauchi Snr	-	890	890
8.	GSS Likoro	813	151	964
9.	GGSS K/Gayan	3467	895	4362
10.	GGSS Chindit Jnr	1140	-	1140
11.	GSS K/Jatau	2253	294	2547
12.	GGSS Pada Jnr	2150	-	2150
13.	GJSS Aba	305	-	305
14.	GJSS Gimba	724	-	724
15.	GJSS Mangi	65	-	65
16.	GSS T/Saibu Jnr	1069	-	1069
17.	GSS Richifa	421	95	516
18.	GSS Chindit Snr	-	750	750
19.	GSS Zaria Snr	-	625	625
20.	GGSS (WTC) Zaria	732	620	1352
21.	GSS Aminu Snr	-	705	705
22.	GJSS T/Wada	2704	-	2704
23.	GSSS Kaura	-	961	961
24.	GSS Chindit Jnr	1463	-	1463

25.	GGSS Pada Snr	-	702	702
26.	GSS Magajiya Jnr	829	-	829
27.	GGSS D/Bauchi Jnr	2214	-	2214
28.	GSS Muchia Jnr	2101	-	2101
29.	SIASSS K/Karau A	334	164	498
30.	GSS Magajiya Snr	-	722	722
31.	SSS Kufena	645	605	1250
32.	GSS Kugu	1482	268	1750
33.	GSS Yakasai	376	156	532
34.	GSS K/Kuyanbana	1519	717	2236
35.	GSS Dakace	1641	509	2150
36.	GSS Zaria Jnr	~~1718~~ 1818	-	~~1718~~ 1818
37.	GSS Bogari	691	89	780
38.	GJSS Chikaji	2343	-	2343
39.	GJSS R/Doko	2933	-	2933
40.	SIASSS K/Karau B	2205	655	2860
41.	GGSS Chindit Snr	-	~~546~~ 609	~~546~~ 609
42.	GSS K/Doka	2515	588	3103
43.	GSS Aminu Jnr	2158	-	2158
44.	GSS T/Jukun	2345	1012	3357
45.	GSS Dinya	574	86	660
46.	GSS Muchia Snr	-	978	978
47.	GJSS Matari	186	-	186
48.	GJSS Kinkiba	564	-	564
	Total	**~~53,300~~** 400	**~~17,833~~** 96	**71,133** 71 221

HOD
Planing Research & Statistic
MOEST
Zonal Education Office Zaria.

26/12/2019

APPENDIX E

TREATMENT PACKAGES

Experimental Group1: Metacognitive Strategy adopting Wells Metacognitive Therapy

Structure and Duration of Treatment Sessions were Held on a Weekly Basis

The initial sessions last 45 to 60 minutes, once clients are engaged and able to effectively implement control over worry and detached mindfulness, the duration of sessions could be reduced to 30 minutes. Effective mastery is indicated by the presence of each of the following: (a) the individual reports having successfully disengaged worry/rumination from the occurrence of intrusions, arousal, and orienting responses; (b) the individual accepts symptoms as a normal part of adaptation that do not require active avoidance or suppression; (c) the individual reports allowing intrusions/memories/thoughts related to the psychological disturbance to occupy their own "mental space" while watching the spontaneous behaviour of them as a passive observer. In the preliminary evaluation of the effectiveness of core treatment, 8 sessions are required in order to achieve depression-free outcomes. The rate of progress through the different treatment phases influences the number of sessions required.

Week 1: Introduction and Planning Stage:

Objectives: The researcher introduces himself and self-introduction by the participants. The researcher explains the mission of the treatment to the clients thereby establishing therapeutic rapport with the clients.

Step 1: Elicitation and consolidation of knowledge concerning the nature and rates of cognitive, emotional and physical symptoms depression. Researcher tries to discover participants' worry, fatigue, lack of interest in pleasurable events, being moody, intrusions, flashbacks, nightmares,

and arousal symptoms. Following this, an individual case conceptualization is constructed based on the metacognitive model. The task of conceptualization is simplified by directing the course of questions to exploring a series of specific and recent episodes in which the client was troubled by symptoms associated with the trauma, or in which there was an exacerbation of anxious affect. The aim is to elicit examples of each of the elements in the model. Much of the discussion focuses on exploring the presence and extent of (a) worry/rumination about the life (b) attentional monitoring strategies, (c) strategies for coping with symptoms/distress (e.g., avoidance, thought control, distraction) (d) beliefs about symptoms, worry, and attentional strategies. An effective sequence for obtaining this material is to begin by asking about symptoms and then exploring the strategies used to manage or avoid symptoms. The therapist next asks directly about attentional monitoring for threat, and worry/rumination. Questions are then targeted at eliciting beliefs about symptoms, worry/rumination, and threat monitoring. This sequence is illustrated in the following dialogue which was the grounding for the conceptualization:

Step 2: Elicitation of Depression Symptoms

Researcher: I would like to begin by asking about the symptoms you have been experiencing in the past month. Can you describe them to me? Participants: I feel as if I am not myself. Like I do not enjoy usually pleasurable events. Researcher: Is it like being detached from things around you? P: Yes, it's unreal. I have to check my pulse and heart to make sure I'm still happy. T: What about other symptoms such as distressing thoughts or memories? P: I keep seeing myself on the floor and I can feel pain in my legs and headache. I can actually feel the pain again. T: What about feeling anxious or frightened? P: I feel scared all the time when I go out around school premises, I constantly think something bad may happen to me.

Step 3: Strategies (Attention and Coping)

T: Do you do anything to try and reduce or avoid these symptoms? P: I avoid things. T: What are you avoiding? P: Walking in streets where there is a lot of traffic, holes in the street, crossing the road. T: Do you avoid things that remind you of what happened? P: I avoid watching hospital scenes on the television. T: Do you avoid the scene of the accident? P: If possible. But I have to go there. I look away when driving past, but sometimes I force myself to look at the whole scene to see if it was my fault. I only look at the whole scene when I feel I can cope, but it's only for a few seconds. T: What do you do when you are looking? P: I try to look at all of the possibilities to analyze what happened. But when I see myself on the floor with the pain and blood, I look away, and try not to think about it. T: You mentioned something I'd like to ask you more about. You said you try not to think about it. Do you try to control your thoughts at other times too? P: Yes, I try not to think about what happened. If I get a thought I try to push it out of my mind or think about something else. T: Have you found that what you pay attention to has changed since the event? P: Yes, I pay more attention to things that are not safe. I'm constantly looking around for traffic and listen- ing for sounds of lorries. It can be anything, I've been watching a ceiling fan at work because it's wobbling.

Step 4: Worry/Rumination

T: You mentioned paying more attention to danger, and it sounds like you are spending time worrying and dwelling on what happened. P: Yes, everyday I'm worrying, and so I end up avoid- ing things. T: How much of the day are you worrying about bad things that could happen? P: It's usually in the background and when I have to go out I get really worried. T: How much of the day are you dwelling and rumi- nating about what happened? P: I have periods when I think

about it a lot, usually when I feel depressed. But I try not to get into that state. T: What are you trying to achieve by worrying about things? P: I'm trying to be cautious and avoid accidents. T: What are you trying to achieve by repeatedly thinking about what happened? P: I'm trying to work out if it was my fault.

Step 5: Metacognitive Beliefs about Worry// Rumination and Attention

T: Do you think worrying is helpful in any way? P: It makes me more aware of the potential risks

T: How does that work? P: It makes me think of what could happen so that I act more cautiously. But it also means I don't do so many things now. T: Is being cautious something you do? P: Yes, I make an effort to be cautious. T: How do you do that? P: I keep a lookout for danger. T: So it sounds as if you believe that worrying and keeping a lookout for danger keep you safe.

Step 6: Metacognitive Beliefs about Symptoms

T: Do you worry about your symptoms? P: Yes, I think it's not normal to be like this and I'm concerned it means I'm losing it. T: What do you mean by losing it? P: That I can't cope anymore. Maybe there's some- thing wrong with my mind. T: What's the worst that could be wrong? P: Well, I'm afraid this problem means that I can't cope as well as other people. T: Do you ever believe that you are going crazy? P: Not crazy. Just that I'm mentally weak some way. T: Do you do anything to stop yourself from losing it? P: I try to control my thoughts. T: Do you think anything bad could happen if you didn't do that? P: I suppose I could lose it. T: So it sounds as if you believe that if you don't control your thoughts that could happen? P: Yes.

Step 7: F**ollowing case conceptualization the researcher moves onto socialization**. This consists of presenting the formulation in which the researcher stresses that depression symptoms are a normal part of adapting to negative experiences-- that, under normal circumstances, the symptoms subside over time as necessary information about the negative life events and how to deal with it is learned. However, this process of adaptation can be disrupted when individuals engage in specific types of thinking and behaviour. Several factors can block adaptation, and these include:

* worrying or ruminating about the trauma or one's responses • paying too much attention to threat and danger after the event * trying to avoid or excessively control thoughts about the trauma * negative beliefs about the meaning or consequences of symptoms

The nature and pervasiveness of worry/rumination is then highlighted by asking patients about the thoughts they have had during the day about their traumatic experience or reaction to it. This typically results in the description of many negative thoughts and beliefs and the report of circular thinking based on: "what if .... if only .... why .... and why me?" type questions. It is not a principle focus of treatment to challenge the content of these ruminative thoughts, but to enable clients to discontinue this verbal iterative style of negative thinking. Thus, although these "automatic thoughts" are elicited, this is done only to highlight the extent of the patient's rumination. The thoughts are not challenged/balanced in the traditional cognitive-behavioural sense. Clients are introduced to the idea that their intrusive thoughts, flashbacks, nightmares, startle responses, and arousal symptoms are normal and necessary following depressive events in life. The symptoms are a sign that their cognitive system is attempting to process the depression and recalibrate or adjust to the event that has taken place. However, their responses and coping strategies have the effect of preventing this processing from taking place. The therapist

emphasizes that it is important not to avoid these symptoms because they are part of an automatic adaptation process.

Step 8: The next step is to provide an overview of the nature and goals of treatment. The case formulation provides a vehicle for doing this. The therapist describes to the clients how treatment will consist of emptying the "maladaptive" box in the formulation and putting new strategies that the clients will learn in treatment into the adaptive box in order to exit the depression cycle. The clients are given a copy of the conceptualization to take home and think about before the next session.

Week 2:**Monitoring of Worry Postponement**

The aim of the next session(s) is to reinforce awareness of the problematic nature of perseveration and to facilitate alternative responding to symptoms of depression. There are three basic components to this: (1) the advantages/ disadvantages analysis, (2) practice of detached mindfulness, (3) worry postponement.

Step 1: Advantages-disadvantages Analysis: The first step is to help clients see that engaging in worry/rumination serves no purpose and contributes to "locking" them into merely replaying negative aspects of the depression or their dissatisfaction with their own coping responses. The therapist guides the clients through an advantages/disadvantages analysis of worry/rumination as a means of socialization and motivating clients to abandon preservative styles of thinking. The therapist inquires as to whether there are any advantages to rumination and a list of advantages is drawn up. This is followed by drawing up a list of disadvantages. The disadvantages are prompted by questions such as the following: What happens to your anxiety when you worry? Does worrying help you move on from the depression? Is worrying realistic or just negative?

Does worrying help you feel better about yourself?. Does worrying create problems ? Does worrying help you see the situation more clearly? The next step is to weaken beliefs about the advantages of perseveration. Frequently, an advantage to rumination that clients report is that it may help them to find answers. This belief can be weakened by asking the clients why this has not happened yet given that they appear to have spent a considerable amount of time thinking about what has happened. Clients quickly come to accept that perhaps there are no answers and this therefore becomes a reason to abandon ruminative thinking. In some instances, clients express the belief that worrying acts as a safety strategy by enhancing preparedness or cautiousness. A two-pronged approach is used here. The disadvantages of worry are contrasted with the advantages with the aim of showing how the disadvantages outweigh the advantages. The therapist then questions whether preparedness and cautiousness can be achieved without worrying (How can you be cautious without worrying?). The aim here is to show how worrying and cautiousness are not synonymous and therefore one can decide to reduce worry without sacrificing safety. An advantages/disadvantages analysis is also undertaken in examining the motivations for other unhelpful coping behaviours included in the conceptualization such as alcohol use, trying to suppress thoughts, and so on. When thought suppression is a feature of the formulation, a within-session suppression experiment is used to show how attempts to avoid and control thoughts can be disadvantageous. Here the therapist asks the patient to try not to think a target thought (e.g., "Try not to think about a blue tiger") for a period of two minutes. Typically patients report that they experience the thought and this is used as an illustration of how trying to suppress thoughts is not particularly effective.

Week 3: Self-regulation of Detached Mindfulness: Individuals with depression repeatedly engage with hopelessness, intrusive thoughts and symptoms in counter- productive ways

involving worry/rumination, over control, attentional monitoring for threat, and negative appraisals. Some of these responses exaggerate the current sense of danger, and each of them can interfere with the processes involved in normal adaptation. A goal of treatment is to drop these unhelpful influences on adaptation so that normal adaptation processes may resume. An initial step in achieving this consists of training in "detached mindfulness" (Wells & Matthews, 1994), which increases awareness of unhelpful thinking styles, disrupts them, and facilitates flexible control over responding. Detached mindfulness refers to taking a perspective on one's own thought processes in which they are observed in a detached way, without interpreting, analyzing, controlling, or reacting to them in any way. Clients are instructed to respond in a particular way when they experience intrusive thoughts, flashbacks, and nightmares as follows:

"When you have an suicide thought, flashback of negative life event, or have had a nightmare, it is important that you do the following. Acknowledge to yourself that these symptoms are occurring, and remind yourself that engaging with these symptoms is unhelpful. Some people find it helpful to say to themselves: This is just a symptom, I don't need to do anything with it. I am just going to leave it alone. I am not going to try to avoid it or equally ruminate on it. Remember that engagement with these symptoms includes questioning the meaning of the symptom, trying to work out what has happened to you, ruminating about why it should have happened, asking What if..., Why .... Why me .... or If only . . . type questions, worrying about symptoms, trying to control or avoid thoughts or symptoms. It is important to let your thoughts or symptoms occupy their own space and time without engaging with them."

To facilitate comprehension, several analogies are used in sessions to demonstrate the way that intrusive symptoms should be treated.

Step 1: Practical Illustrations: Use of the detached mindful mode and the consequences of engagement with symptoms is then illustrated in the therapy session. In one experiment clients are asked to first create a mental image of a green tiger, and then to engage with the image by trying to exclude all thoughts of tigers from consciousness. This is then contrasted with forming an image of a green tiger and observing the image without doing anything with it. Patients typically report difficulty excluding thoughts of tigers, but find that if they assume detached mindful observation, that thoughts of tigers take on their own life and become less salient. In another experiment, clients can be asked to sit quietly and observe in a detached way a bodily sensation. For instance, patients are asked to passively observe the sensations in their mouth without moving their mouth-parts or swallowing for a period of 3 to 4 minutes. A useful strategy for facilitating detached mindfulness is for the therapist to ask the patient to sit quietly and let his or her thoughts roam freely during a free-association exercise while observing these internal events. The instructions for this task are as follows:

"One way to experience the sense of detached mindfulness that will allow you to apply it to your distressing thoughts is to practice first with more general thoughts and feelings. In a moment I will say a series of words and what I would like you to do is sit and passively watch the movement of thoughts in your mind and feelings in your body as I say different words. For example, I might say the word blue and your task is to watch what happens in your mind and body as a result. Do not try to deliberately form any thoughts or activate any feelings or memories--sometimes nothing related to the word may happen, that doesn't matter, you just need to watch your spontaneous thoughts and feelings without influencing them

Step 2: Worry Postponement. Once the clients understand the idea of detached mindfulness and in-session practice has been completed, the therapist moves on to reducing

worry/rumination. For this purpose the therapist introduces the worry-postponement strategy. The instruction is given that whenever intrusive symptoms occur, the clients should acknowledge that the thought/flashback/ nightmare has occurred, and tell him- or herself not to worry or ruminate about the trauma or symptoms now, just let the symptom fade in its own time, and actively think about it later. Patients are asked to allocate 15 minutes each evening as a designated worry or analysis time. The worry time should take place at least 2 hours before they go to bed, and they should review the whole day. If patients happen to remember what had been worrying them, they can decide to engage in as much worry/rumination as they feel they need to over the 15-minute period. However, it is emphasized that this is not compulsory and many patients decide not to worry. At the end of this period patients are asked to stop worrying and to deal with any further worry as they had in the day, by applying detached mindfulness, and carrying any thoughts over to the next day's worry period if necessary. Application of detached mindfulness and worry postponement. Clients are instructed to apply detached mindfulness for homework in response to intrusive thoughts, flashbacks, and nightmares, and are asked to discontinue daily worry/rumination-based thinking by using the postponement strategy. Careful therapist monitoring is required to ensure that clients are applying the method consistently to the full range of intrusive thoughts and worry/rumination experienced.

Week 4: Evaluation and Monitoring of Progress: Objective of this session is to assess whether techniques are being used consistently and frequently. The therapist monitors progress with detached mindfulness homework and worry postponement; facilitates continued practice and generalization of the techniques. The use of detached mindfulness is assessed by asking patients to estimate the percentage of time that they have been able to apply detached mindfulness to intrusive thoughts. It is important that the therapist and patient do not confuse this as a rating of

the amount of distress. The next question asked by the therapist assesses if there has been any decrease in usage of the technique over time, and if so, what the cause of this is. In some cases this is due to a reduction in distress associated with intrusions. The therapist should emphasize that the main aim of the technique is not to change distress but to "unlock barriers to natural processing," and therefore it is necessary to apply the technique to most instances of intrusions. The third question the therapist asks concerns the breadth of application of detached mindfulness. It is important that the patient applies it to all types of distressing intrusions related to the trauma and its consequences. In particular, some patients report a specific recurring intrusion that predominates, and having applied detached mindfulness to this intrusion they notice that other intrusions take precedence, but they do not apply detached mindfulness to these new events as they should. To assess consistency of usage of controlled worry periods, the therapist asks about the amount of time spent worrying/ruminating per day, and how often the patient has succeeded in postponing worry/rumination. Any drop off of usage of the technique should be explored.

Reduction in the frequency of postponement strategies are to be expected if there has been a reduced frequency of worry generalization. The therapist then proceeds to introduce the idea that worry/rumination postponement can be applied to all types of worry and persistent negative thinking. At this stage it helps to list a range of current concerns that the patient has had in the past week in order to raise awareness of the pervasiveness of perseverative thinking, All types of dwelling and worry are then targeted for subsequent homework practice of postponed worry periods. Further practice of detached mindfulness can be implemented in these sessions if necessary, The therapist then moves on to introducing the application of detached mindfulness to the after-effects of nightmares. Some clients report that after trauma-related dreams/nightmares

they are troubled by thoughts or feelings elicited by them. The therapist instructs patients to apply the technique of detached mindfulness to such after-effects when they occur.

Step 2: Eliminating other Maladaptive Strategies: At this point in treatment, the therapist undertakes a review of the clients' use of other coping strategies that are counterproductive for adaptation. These strategies include use of alcohol or other substances to avoid thoughts and feelings, thought suppression strategies, avoidance of stimuli such as television news, and so on. The therapist helps the clients to see how these strategies are a problem. For example, many of these strategies can be seen as a form of avoidance of thoughts and memories of trauma, and this leads to a discussion of the problems caused by cognitive avoidance. Once the patient identifies the unhelpful con-, sequences of these strategies, the therapist asks the pa- tient to ban them for homework.

Week 5: Attentional Modification

The attentional phase of core treatment is introduced when clients have in the past week: (a) mastered the use of detached mindfulness and reported success in using the strategy in response to at least 75% of intrusive symptoms, and (b) successfully abandoned worry/rumination and all forms of dwelling on past, present, and future events such that no episodes last longer than approximately 2 to 3 minutes. In this phase, treatment focuses on hypervigilance, and attentional coping strategy that maintains the perception of danger and anxiety.

Step 1: Exposing clients to two types of attentional monitoring strategies that are problematic: attention to internal sources of threat (i.e., sensations and feelings) and external attention to threat in the form of scanning the environment for danger. Systematic manipulations of attention are an important component of the core treatment as they shift clients out of threat-modes of

processing that repeatedly generate information concerning danger. Rather than persisting in a loop of repeated processing of danger, clients should be moving on to developing a plan for dealing with danger, and for controlling cognition that allows threat-related processing to decay. The search for threat is not synonymous with having a plan for dealing with threat once detected, perceiving the self as an effective agent of coping, and allowing cognition to return to the normal (nonthreatening) environment. Stage 1: Explanation and rationale: The following outline is used as a basis for therapists to describe the role that attention plays in the maintenance of depression.

You have seen how worry/rumination and attempts to control symptoms can maintain your problem, and you have been successful in reducing those responses. We should now consider another important aspect of the problem that can keep your sense of danger and anxiety going. This is the role played by your focus of attention. Following trauma, it is quite natural for people to become overly aware of people or objects around them that are reminders of the trauma. This is one type of attention that can maintain a sense of danger and stop you from returning to a balanced view of the world. For some people, there is a tendency to focus too much on internal thoughts about the depression symptoms. For instance, when in a situation similar to that in which the trauma occurred, the person focuses on a memory or picture of what happened. This is often an image fragment of a particular moment, which may be the worst moment. Focusing in this way increases the sense of threat and anxiety, and takes attention away from focusing on current events that could provide a better sense of safety and control."

The rationale is illustrated by asking questions concerning the consequences of idiosyncratic threat-monitoring strategies. For instance, the therapist asks: Do you think there are any problems with constantly scanning the environment for signs of threat? Is scanning for threat likely to increase or decrease your depression? Does paying attention to threat give you a

balanced picture of how safe a situation is? Does paying attention to threat mean you will cope better? This process is under- taken for external attentional monitoring for threat and also for internal monitoring. The therapist therefore moves toward a conceptualization of hypervigilance as being another form of unhelpful preoccupation similar to worry/rumination. Before the patient is willing to give up threat monitoring, it is often necessary to weaken the positive beliefs supporting its usage. The therapist does this by questioning whether hypervigilance would have actually averted the traumatic event, how the person would know exactly what to be hypervigilant for, and by examining counter- evidence concerning the potential unhelpful role of hypervigilance. The following transcript illustrates a typical line of questioning used to raise awareness of the role of attention and to weaken beliefs about its usefulness:

T: Have you noticed that what you pay attention to has changed since you were attacked? P: I'm not sure. T: For instance, do you find that you notice certain things more than you did before? P: I've noticed how much crime there is, it always seems to be in the news. T: Do you think that is because crime has suddenly increased since your assault, or has something else changed? P: Well it's obviously in my mind, it's the way I'm thinking about things. T: Yes, that's an important observation. Something has changed in what you pay attention to. Has your attention changed in any other way? For example, what do you pay attention to when you go out now? P: I'm on the lookout for groups of youths, and when I see them I walk the other way. T: Any other changes to what you look for? P: I'm always looking to see if I can see anyone looking suspicious. T: Do you think there are any problems with using your attention in this way? P: Well, it makes me feel safe, and if I'd done this before maybe I would have been safe. T: That sounds like an advantage. If you had been like this, would that have prevented the attack? P: No, probably not, as they were not acting suspiciously. T: So it may not have helped. Can you see any dis- advantages of doing

this? For example, does it help you to feel calm when you are out? P: No, it does the opposite, because I see danger everywhere. T: So the question is, is there really danger every- where or is your strategy keeping your anxiety and stress going? P: I'm keeping it going. T: So we need to take a look at doing something about your attention.

Stage 2: Awareness and Abandonment: Once the problem with threat monitoring is understood, the therapist asks the clients to consciously acknowledge the direction of their attention the next time they feel anxious in a situation and to stop threat monitoring. In order to apply this technique patients are encouraged to return to their normal routine of daily life. In most cases this does mean returning to the situation in which the trauma occurred, or in similar situations. This is the only point in the core treatment where a degree of in-vivo exposure may take place. However, it is not habituation but the facilitation of awareness of and disruption of threat monitoring that is the goal of this procedure.

Week 6:Review Progress with Abandonment of Threat Monitoring and its application during the client's normal daily routine and Termination. The first thing assessed by the therapist is the extent to which the clients have been returning to his or her normal routine. At this stage, depending on the nature and severity of threat, there should be some indication of a return to situations that were usually frequented. If avoidance of low-risk situations is an issue, then clients are encouraged to go into these situations for homework while practicing abandonment of threat monitoring and attention refocusing. After abandonment of threat monitoring, the next step is active attention refocusing, consisting of asking patients to deliberately redirect attention away from themselves and away from threat, and onto nonthreatening aspects of the external environment when in situations that remind them of the trauma. (Note, however, that in our preliminary evaluation of the effects of the core treatment,

we did not use this additional strategy. We found that it was unnecessary as clients responded well to the basic instruction to be aware of and abandon threat monitoring). The therapist introduces the idea that, "in order to allow thinking to re-tune to the normal environment it is helpful to practice focusing attention on the environment in a benign way. This means looking for signs of safety instead of signs of improbable threat." This is done by practicing different focusing strategies during the treatment session. First, the therapist asks the clients to sit in the waiting room and focus on aspects of the environment that signal that it is a safe place from worry and negative life events. This is followed by walking in the street with the therapist and practicing focusing on safety signals. Finally, a strategy is practiced involving focusing on neutral external stimuli (i.e., unrelated to concepts of depressive symptoms) such as focusing on the array of different colours that can be seen.

Relapse Prevention: During the final session of treatment the original formulation is discussed with personalized examples from the client's experience of how tackling rumination via the use of detached mindfulness and controlled worry periods has placed the individuals' concerns in perspective. Should clients find themselves disturbed by memories of negative life events in the future, they are advised to look for signs of worry/rumination. On noticing worry or rumination they should once again adopt the techniques they have learned until the symptoms subside. This leads to termination of the treatment sessions.

Experimental Group 2: Emotion Regulation Strategy Sessions

Week I: Introduction, Mindful Awareness and Emotion Regulation Skills

Objectives: The researcher introduces himself and self-introduction by the participants. The researcher explains the mission of the treatment to the clients thereby establishing therapeutic rapport with the clients.

Step 2: Psycho-education: This component emphasizes psycho-education surrounding the challenges of distress associated with depression. At the outset, normative functioning related to the three target mechanisms in ER is contrasted with the characteristics of chronic anxiety and recurring depression. Clients are encouraged to provide personally relevant examples that depict their struggles as a way for them to begin to see both past and current patterns through the lenses of ER. At this introductory stage of therapy, clients are encouraged to adopt an open perspective and to start noticing the way they are swayed by emotions and motivations. Clients also learn about the role of reactive self-referential responses and contextualize these cognitive processes as poor ways of managing intense emotions such as sadness, anxiety, or fear and the motivational impetuses they engender. Throughout this early part of ER, clients learn that they often utilize negative self-evaluation such as rumination and self-criticism but also that their guilt and shame also are likely indicators of underlying anxiety and sadness.

Relatedly, Therapist discuss how emotions may send them motivational messages that compel them to feel pulled toward security and/or reward. In introducing the motivational model, security is described as the ways in which an individual feels pulled toward emotional safety, often resulting in avoidance, escape, or a lack of action altogether. In contrast, the reward system

is described as drawing a person toward approaching things, with an emphasis on thriving rather than simply surviving.

Week 2: Cue Detection and Self-Monitoring

An integral component of ER involves the utilization of cue detection, referred to in ER as "Catch Yourself Reacting" (CYR), as a means of gaining awareness of one's emotional experience and its different components. This exercise is similar to self-monitoring, chain analysis or functional analysis. Clients complete CYR forms in moments when they notice intense or difficult emotions. CYR forms help clients identify triggers of emotional responses in specific moments, emotions, motivational impetuses, "reactive" self-referential responses (i.e., worry, rumination, and self-criticism), and "reactive" behavioural responses (i.e., physical avoidance, compulsive behaviours, "emotional" eating or drinking).

Step 1: Utilization of Cue Detection: Clients also identify mindful emotion regulation skills that they deployed in the moment and alternative or "counteractive" behavioural responses that they imagined or engaged that would be more functional for achieving their goals. Clients are instructed to complete CYR forms several times each week as a way of promoting cue detection outside of session. Each subsequent ER session typically begins with a review of an emotionally poignant moment that prompted the completion of a CYR. When a client does not complete their CYR forms over the past week, or when a particular CYR event did not resolve favourably, therapists lead clients in a practice referred to as a "Do-Over," which involves a vivid reimagining of the event and their emotional responding to the event, and results in the completion of a CYR in the moment within the therapy room. An example of a Do-Over conducted with one Lores occurred regarding an instance when she became anxious about

reaching out to her friends to invite them to dinner. This imagery exercise encouraged Lores to imagine the exact moment when she noticed her anxiety and subsequent strong pulls toward security. In doing so, Lores was better able to identify how anxiety led her to become worried and self-critical, and that these negative self-reactions resulted in her experiencing feelings of guilt, shame, loneliness, and sadness.

Week3:Emotion Regulation Skills

Step 1: The emotion regulation skills utilized in ERT are based upon mindfulness meditation practice and implementation. Clients receive recordings of guided meditations that reflect the ER skills described below. Therapist records these meditation exercises so that clients can practice these "off-line" meditation practices at a set time each day to build the particular skill. Each skill also has a briefer "on-the-spot" practice that can be completed in the moment when the client is experiencing an intense or stressful event. In the final session of Phase I, clients are presented with the complete ERT Toolbox, which outlines four main regulatory skills and associated practices. Clients also review the other components of the treatment covered thus far and therapist underscore the necessity in implementing ER skills as a way to get in touch with their experience from a different motivational configuration in service of responding to their emotions in a counteractive, rather than reactive, manner.

Step 2: Clients learn attention regulation practices intended to cultivate one's capacity for *orienting* to their emotional experiences and *allowing* or sustaining their attention on the emotional experiences. These two skills are designed to help them identify and maintain awareness of their emotions and the ensuing motivational pulls that underlie the arising of her emotions. In orienting, clients are taught to attend to their breath and body, noticing feelings of

tension versus relaxation so that they can reliably attend to visceral sensations as well as their own emotional experience. In allowing, clients are taught that rather than suppressing their intense emotions, they can welcome them as part of their unfolding experience. The allowing practices assist clients to maintain attention on whatever arises without relying on internal (e.g., one's breath) or external (e.g., sounds, etc.) cues as an anchor for the practice.

Step 3: After gaining competency in the attention regulation skills of orienting and allowing, clients like are taught metacognitive regulation skills intended to help not only detect emotions and underlying motivational pulls but also create a healthy distance in order to generate emotional clarity rather than being reactive and automatically pulled to action. The first of these skills is decentering or *distancing* as it is described to clients. Decentering helps clients gain temporal distance and perspective from emotionally evocative stimuli (e.g., viewing inner experiences as temporary; as well as spatial distance (e.g., viewing inner experiences as physical objects that are separate from oneself; Decentering allowed clients to view this state of depression as a temporary product of their mind that was not all defining of them and consuming.

The other metacognitive regulation skill in ER is cognitive reappraisal or *reframing* as it is described to clients. Reframing refers to the ability to change one's evaluation of an event so as to alter its emotional significance. Within the context of ER, reframing is approached in terms of meditation practice intended to help clients develop courageous and compassionate self-statements, where clients are taught to re-evaluate a situation in a manner that appreciates and validates the presence of emotional pain and provides compassion for such experiences Through the utilization of this skill, clients learn to approach their emotional experience with compassion toward themselves rather than being overcome by self-criticism through envisioning

compassionate statements that they receives from other people and translating them to be offered to themselves. Through the cultivation of reframing, clients will eventually be able to generate courageous statements that tell them that they are stronger than their anxiety and depressed mood. In moments where clients experience self-criticism, they call to mind this courageous reframe by keeping a business card with this statement in her bag or pocket that they are able to read as a reminder to utilize this skill.

Step 4: Taking Action: A final concept taught to clients is Taking Counteraction, which is congruent with the notion of opposite action, as a way of restoring motivational balance and with an "outside-in" approach discussed in behavioural activation treatments. Taking counteraction involves encouraging clients to envision how their thoughts and actions would look if they were to act in a manner opposite to their current feelings and motivational pulls.

Week 4: Reappraisal of Experiential Exposure:

Whereas the first half of ERT represents the movement from being "reactive" to "counteractive" in response to emotional states, the second half invites clients to become "proactive" in service of broadening one's behavioural repertoires. In this way, taking a proactive stance involves exposure to meaningfully rewarding, but often anxiety-inducing experiences. Exposure exercises are typically understood as a way to *reduce* emotion (especially fear). However, recent empirical and theoretical advances have advocated for a broader focus than simple emotion reduction. Indeed, modern learning theory suggests that exposure is effective, not because previously associated emotional meanings are unlearned or erased, but because new emotional meanings are strengthened. Informed by important basic findings about the nature of classical extinction and inhibitory learning

Specifically, ERT delineates three main exposure components to promote proactive living: (1) imagery related to taking proaction; (2) experiential dialog tasks to explore perceived internal conflicts related to motivational impetuses that may prevent proactions and (3) planned between-session exercises wherein clients engage proactions in their everyday life. Finally, experiential engagement continues into the concluding sessions, wherein treatment gains are consolidated and the client prepares for the end of treatment. Clients and therapists discuss how their acquired ERT skills can continue to be utilized in service of responding to difficult events that might arise after the conclusion of treatment. In doing this, potentially stressful and painful life circumstances are explored in experiential exposure exercises that center on hypothetical situations related to core themes that may appear in the future.

Step 2: Values Identification and Proaction

By the beginning of Phase II, clients have acquired skills that assist them in taking a more forward looking or "proactive" orientation toward life rather than responding reactively through worry and rumination as a result of their intense emotions. The goal of this part of the treatment involves the client's ability to use mindful emotion regulation skills that facilitate taking proactions that reflect a meaningful and rewarding life path. Identifying meaningful proactions are accomplished by working with clients to delineate personal values, which represent a person's highest priorities and most cherished principles. Taking proactions from a valued perspective involves intentionality and "top-down" processing of personal meaning and goal setting. However, the motivational configuration of the individual at any given point in time may introduce conflicts and pull the individual in a value incongruent direction. Therefore, ERT expands values-based processing to address more than just "top-down" decisions related to the

person's values. It strives to strike a balance with "bottom-up" influences of security and reward motivational impetuses.

Clients complete exercises to help elucidate their values. In identifying these values, clients are presented with different life domains (i.e., family, interpersonal relationships, community, self-care) and they are asked to identify how important the particular domain is to them on a 0–10 scale and how consistently they are living by this value on the same scale. Value domains that contain a large discrepancy between its importance and how consistently the client is living by the value are optimal candidates for Phase II exercises .

Week 5: Suppression of Expression and Imaginal Exposure

To assist clients in adopting a proactive orientation toward life, this step consists of a series of imaginal exposures centered on envisioning taking proactions. Specifically, imaginal exposure tasks that focus on engaging in specific proactions are conducted (1) to provide the client with an experientially rich rehearsal of the steps that might be necessary to take a proaction, and (2) to confront the emotional challenges that are likely to come up as the client imagines engagement of this proaction. In this imagery exposure task (called the "Do It" in session), therapists help clients imagine each step involved in engaging this action, while noticing changes in motivational impetuses and encouraging utilization of skills to address arising difficulties and obstacles. To begin this exercise, clients first imagine a safe space where they do not feel a strong need for security. Throughout the exercise, it is typical for clients to feel pulled toward wanting more security as they envision taking the proaction and begin to get in touch with the anxiety that may be associated with this action. This strong pull toward security and any associated discomfort sets the stage for the conflict dialog task

Step 2: Exploring Conflict Themes in Obstacles to Proaction

Experiential exposure component involves addressing perceived obstacles which reflect the client's internal struggle that may be holding her or him back from engaging proaction. In ERT, obstacles are approached via "conflict themes" including primarily: (1) a motivational conflict (e.g., security motivations that are blocking or interrupting reward efforts); and, (2) self-critical reactive responses to emotions (i.e., judgmental negative beliefs about one's emotional responses and associated motivations). These conflict themes are addressed within session using an experiential dialog task. In ERT, the motivational conflict is addressed by encouraging clients to engage in a dialog between the parts of themselves that represent the conflict: the part that is strongly motivated to obtain security, and the part that is motivated toward a more unified motivational stance conducive to action. Throughout the dialog, clients physically move between two different chairs within the therapy room, and, with the therapist's coaching, alternate speaking from the security side of themselves that is currently holding them back and the proactive side of them, who want to engage in the action and see the importance in doing so. Ultimately, the goal of this task involves reaching a compromise between the two sides and ideally allowing the client to become more proactive in taking an action. This dialog task serves two main purposes. First, it represents an exposure to conflict themes, which can cultivate a greater sense of emotional tolerance. Secondly, the task aims at generating new perspectives (i.e., new meaning) on the obstacles that hinder proactive engagement. Clients are invited to use this greater emotional tolerance and these new perspectives to reflect on their stated values and bring about a greater commitment to taking action to cultivate them.

Step 3: Between-Session Proactions

In an effort to promote a proactive approach toward life not only within session, but between sessions as well, clients and therapists work together at the end of each ERT session to identify an action that they can take during the week to move them closer toward their value in any given domain. Ideally, optimal candidates for planned actions are centered on the imaginal exposure and conflict dialog task that they completed during session. However, in the event that these tasks presented emotions that were too intense for the individual to confront and they are unwilling or unable to complete the action presented throughout the session, a smaller, more manageable action is chosen with guidance from the therapist.

Similar to the CYR form that is used to promote self-monitoring and counteraction in the first half of ERT, clients are encouraged to complete a See Yourself Acting (SYA) form during the second half that facilitates planned proactions that take place between sessions. The SYA form is comprised of two parts, and is specifically designed to assist the client in working through the different emotions, reactive responses, and levels of security and reward that are present prior to completing the action in the first part. Further, after completing the action, clients complete a second column of the form, which fosters the processing of the experience, including the outcome of attempting to take the action and any emotions and reactive responses that actually came up while completing it as well as their actual levels of security and reward that were present. Ideally, clients complete the first part of the SYA form in session with the client as a way to troubleshoot potential internal (i.e., emotional and motivational) and external (i.e., logistical) obstacles that may be presented in their attempt to complete the action. Clients then complete the second part of the form after attempting to engage the action between sessions, and

bring the completed form back with them to the next session to discuss the outcome with their clinician.

Week 6: Attention Modification and Termination

The final sessions focus on the termination of the therapeutic relationship and assisting the client in becoming more independent in her or his ability to take larger steps toward a proactive life following the end of ERT. For Lores, these final sessions will specifically focus on goal-setting in further envisioning her life if she could overcome anxiety and a strong pull toward security as well as ways to reduce her tendency to ruminate and the mood variations that she is prone to experiencing. During these final meetings, Lores and her clinician strategize about the skills that she can use when her emotions become intense. At this point, clients and therapists reflect together on the progress that has been made throughout the course of ERT in reviewing the ERT Toolbox and identifying points throughout the treatment where they have noticed change within themselves in an effort to further establish self-efficacy. Finally, ERT therapists and clients say their goodbyes, with the goal of the client continuing to utilize their ERT skills following the termination of treatment.

APPENDIX F

SPSS OUTPUT

Reliability for Burns Depression

Case Processing Summary

		N	%
Cases	Valid	22	100.0
	Excluded[a]	0	.0
	Total	22	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.740	.808	28

COGNITIVE SYMPTOMS OF DEPRESSION

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.953	8

PHYSICAL SYMPTOMS OF DEPRESSION

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.858	.858	6

EMOTIONAL SYMPTOMS OF DEPRESSION

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.936	.939	9

SUICIDAL URGES

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.986	.986	5

HYPOTHESIS 1

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MCSPTCOGSYMPTOMS	13.4348	23	6.44435	1.34374
	MCSPOSTTCOGSYMPTOMS	4.2609	23	3.48004	.72564

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MCSPTCOGSYMPTOMS & MCSPOSTTCOGSYMPTOMS	23	.029	.895

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	MCSPTCOGSYMPTOMS - MCSPOSTTCOGSYMPTOMS	9.17391	7.23409	1.50841	6.04566	12.30217	6.082	22	.000

HYPOTHESIS 2

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MCSPTPHYSSYMPTOMS	11.6957	23	4.78097	.99690

	MCSPOSTPHYSSYMPTOMS	4.6522	23	3.06903	.63994

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MCSPTPHYSSYMPTOMS & MCSPOSTPHYSSYMPTOMS	23	.092	.678

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MCSPTPHYSSYMPTOMS – MCSPOSTPHYSSYMPTOMS	7.04348	5.43957	1.13423	4.69123	9.39573	6.210	22	.000

HYPOTHESIS 3

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MCSPTEMOTSYMPTOMS	14.3043	23	6.16024	1.28450
	MCSPOSTTEMOTSYMPTOMS	4.9565	23	3.87859	.80874

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MCSPTEMOTSYMPTOMS & MCSPOSTTEMOTSYMPTOMS	23	.075	.735

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MCSPTEMOTSYMPTOMS – MCSPOSTTEMOTSYMPTOMS	9.34783	7.02986	1.46583	6.30789	12.38777	6.377	22	.000

HYPOTHESIS 4

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MCSPTSUICIDEATION	4.3636	22	4.57265	.97489
	MCSPOSTTSUICIDALIDEATION	2.0909	22	1.84930	.39427

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MCSPTSUICIDEATION & MCSPOSTTSUICIDALIDEATION	22	.182	.418

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MCSPTSUICIDEATION – MCSPOSTTSUICIDALIDEATION	2.27273	4.61036	.98293	.22861	4.31685	2.312	21	.031

HYPOTHESIS 5

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ERS PT Cog Symptoms	11.5000	20	3.41051	.76261
	ERS Postt Cog Symptoms	5.0000	20	2.73380	.61130

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	ERS PT Cog Symptoms & ERS Postt Cog Symptoms	20	-.040	.869

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	ERS PT Cog Symptoms – ERS Postt Cog Symptoms	6.50000	4.45445	.99604	4.41525	8.58475	6.526	19	.000

HYPOTHESIS 6

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ERS PT Phys Symptoms	9.3500	20	2.51888	.56324
	ERS Postt Phy Symptoms	3.7500	20	1.77334	.39653

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	ERS PT Phys Symptoms & ERS Postt Phy Symptoms	20	.433	.057

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	ERS PT Phys Symptoms – ERS Postt Phy Symptoms	5.60000	2.37088	.53014	4.49040	6.70960	10.563	19	.000

HYPOTHESIS 7

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ERS PT Emot Symptoms	12.3500	20	3.91051	.87442
	ERS Postt Emo Symptoms	5.0500	20	3.64872	.81588

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	ERS PT Emot Symptoms & ERS Postt Emo Symptoms	20	-.101	.672

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	ERS PT Emot Symptoms – ERS Postt Emo Symptoms	7.30000	5.61108	1.25468	4.67393	9.92607	5.818	19	.000

HYPOTHESIS 8

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ERS PT Suic Ideation	7.0000	20	2.88371	.64482
	ERS Postt Sui Ideation	2.1500	20	2.03328	.45465

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	ERS PT Suic Ideation & ERS Postt Sui Ideation	20	.251	.285

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	ERS PT Suic Ideation – ERS Postt Sui Ideation	4.8500	3.08263	.68930	3.40728	6.292 72	7.036	19	.000

HYPOTHESIS 9

Between-Subjects Factors

		Value Label	N
SCHOOL	1	METACOGNITIVE STRATEGY	23
	2	EMOTION REGULATION STRATEGY	20

Descriptive Statistics

Dependent Variable: MCS_ERS cognitive symptoms

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	4.2609	3.48004	23
EMOTION REGULATION STRATEGY	5.0000	2.73380	20
Total	4.6047	3.14067	43

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS cognitive symptoms

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5.866[a]	2	2.933	.287	.752	.014
Intercept	111.992	1	111.992	10.969	.002	.215
Pre-test	.022	1	.022	.002	.963	.000
SCHOOL	5.572	1	5.572	.546	.464	.013
Error	408.413	40	10.210			
Total	1326.000	43				
Corrected Total	414.279	42				

a. R Squared = .014 (Adjusted R Squared = -.035)

HYPOTHESIS 10

Between-Subjects Factors

		Value Label	N
SCHOOL	1	METACOGNITIVE STRATEGY	23
	2	EMOTION REGULATION STRATEGY	20

Descriptive Statistics

Dependent Variable: MCS_ERS Physical symptoms

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	4.6522	3.06903	23
EMOTION REGULATION STRATEGY	3.7500	1.77334	20
Total	4.2326	2.56197	43

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS Physical symptoms

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	14.972[a]	2	7.486	1.149	.327	.054
Intercept	50.777	1	50.777	7.791	.008	.163
pretest	6.265	1	6.265	.961	.333	.023
SCHOOL	6.253	1	6.253	.959	.333	.023
Error	260.703	40	6.518			
Total	1046.000	43				
Corrected Total	275.674	42				

a. R Squared = .054 (Adjusted R Squared = .007)

HYPOTHESIS 11

Between-Subjects Factors

		Value Label	N
SCHOOL	1	METACOGNITIVE STRATEGY	23
	2	EMOTION REGULATION STRATEGY	20

Descriptive Statistics

Dependent Variable: MCS_ERS Emotional symptoms

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	4.9565	3.87859	23
EMOTION REGULATION STRATEGY	5.0500	3.64872	20
Total	5.0000	3.72891	43

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS Emotional Symptoms

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1.697[a]	2	.849	.058	.943	.003
Intercept	101.926	1	101.926	7.002	.012	.149
pretest	1.604	1	1.604	.110	.742	.003
SCHOOL	.259	1	.259	.018	.895	.000
Error	582.303	40	14.558			
Total	1659.000	43				
Corrected Total	584.000	42				

a. R Squared = .003 (Adjusted R Squared = -.047)

HYPOTHESIS 12

Between-Subjects Factors

		Value Label	N
SCHOOL	1	METACOGNITIVE STRATEGY	22
	2	EMOTION REGULATION STRATEGY	20

Descriptive Statistics

Dependent Variable: MCS_ERS Suicidal ideation

SCHOOL	Mean	Std. Deviation	N
METACOGNITIVE STRATEGY	2.0909	1.84930	22
EMOTION REGULATION STRATEGY	2.1500	2.03328	20
Total	2.1190	1.91531	42

Tests of Between-Subjects Effects

Dependent Variable: MCS_ERS Suicidal ideation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.343[a]	2	.172	.045	.956	.002
Intercept	18.048	1	18.048	4.691	.037	.107
pretest	.307	1	.307	.080	.779	.002
SCHOOL	.079	1	.079	.020	.887	.001
Error	150.061	39	3.848			
Total	339.000	42				
Corrected Total	150.405	41				

a. R Squared = .002 (Adjusted R Squared = -.049)