The Effectiveness of Acceptance and Commitment Therapy (ACT) in patients presenting with Depression in Saudi Arabia.

Adel Y. Aldaha

Supervised by: Professor/ Ann Edworthy, Doctor/ Louise McHugh

This research was undertaken under the auspices of

The University of Wales Trinity Saint David

Submitted in partial fulfilment for the award of the degree of PhD

University of Wales

2018

DECLARATION
This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed ..... (candidate)

Date .....24.07.2018.....

STATEMENT 1
This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used the extent and nature of the correction is clearly marked in a footnote(s). Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

Signed ..... (candidate)

Date .....24.07.2018.....

STATEMENT 2
I hereby give consent for my thesis, if accepted, to be available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organisations.

Signed ..... (candidate)

Date .....24.07.2018.....

STATEMENT 3
I hereby give consent for my thesis, if accepted, to be available for deposit in the University's digital repository.

Signed ..... (candidate)

Date .....24.07.2018.....

ACKNOWLEDGEMENT

First, I would like to thank my thesis supervisors Prof. Ann Edworthy my angel, whose office was always open. You helped me a lot during my study, supported me and encouraged me whenever I requested it or ran into a trouble spot. I would like to thank Dr. Louise McHugh as well. You guided me to love this type of psychotherapy, brought a lot to my study and more importantly, steered me in the right direction whenever I needed it. I send all my gratitude to the staff of University of Wales Trinity Saint David as well as my fellow students for their insight, their friendship and good times spent together.

I would also like to thank the experts involved in this thesis research: Dr/ Ahmed Alhadi who supervised me when I collected data in Saudi Arabia. You helped me a lot at the clinic, getting results of better quality and with your passion for psychology, and valuable input, the collecting data could not have been successfully conducted. Many thanks also to the wonderful team at the clinic who assisted us in our research.

To my patients, who trusted me through this mental journey and agreed to be a part of this research, thank you for your commitment and your willingness in overcoming numerous obstacles

Finally, I must express my very profound gratitude to my wife who is my life. You provided me with unfailing support in the writing of this thesis, which would never have been completed without you.

To my children, who give my life a positive meaning every day.

Thank you.

Adel Aldaha

ABSTRACT

Background: Acceptance and commitment therapy (ACT) is a form of psychotherapy that uses mindfulness and acceptance techniques .It uses metaphors and stories to bring the patient to a self-awareness of the present moment. It is becoming an increasingly efficient therapy that offers flexibility in treating patients. In attempting to change a patient's point of view and feelings, its aims is to alleviate psychological health sufferings such as depression and anxiety. ACT does not always meant to eliminate psychological distress but rather it reduces it by helping people accepting their thoughts, their feelings, in a more positive light, in a constructive way. The purpose of this thesis is to determine the effectiveness of ACT on Saudi patients presenting with depression in Saudi Arabia .An important goal of this research is to add to the existing literature on ACT to fill the gap in literature and reduce the cost in time, effort, and other resources for researchers conducting new studies in the area. In particular, the study seeks to:

1: Examine the effectiveness of ACT in treating clients diagnosed with depression who were referred to the psychiatric department, (Clinical Psychology Unit) at King Khalid University Hospital, KKUH.

2: Examine the usefulness of ACT in assessing and treating depression in Saudi Arabia.

3: Determine those factors that might predict the effectiveness of using ACT.

4: Recommend ways of improving the treatment of depression in Saudi Arabia.

5: Determine whether the application and outcomes of ACT in Saudi Arabia are different from other settings; and

6: Identify the demographical groups who benefit most from ACT.

Methods: the study was carried out at the Psychiatry (Outpatient Department, OPD), the Clinical Psychology Unit, King Khalid University Hospital KKUH, Riyadh, Saudi Arabia. The sample size was composed of 34 participants recruited from the Psychiatry Department. All patients were adults (17-59). All Patients spoke Arabic as their first language and are of all citizens of Saudi Arabia. The participants were invited to attend for 16 sessions to receive ACT in the OPD at the KKUH. (2 sessions were to collect case history and apply psychological measures, 12 sessions ACT program, 2 sessions for retests). Psychological measures were used to measure participant's psychological well-beings before and after ACT. The psychological measures were reapplied after **6** months to determine the lasting effect of ACT. (Feedback).

Results: The results show a significant reliable improvement in Saudi patients suffering with depression and anxiety disorders treated through ACT in the experimental group as compared to the patients from the control group. When calculating the change in scores for the WBSI for instance, once the change score exceeded the RCI (calculated based on the reliability of WBSI), the patient is said to have "significantly improved". Contrarily, the patient is said to have not improved if the change is slower than the RCI. These analyses were performed using measurement with the RCI applied to all ages within both experimental and control groups.

Generally, all patients in the Experimental group showed significant improvements while the control group showed no significant improvement. It was noted that the female participants responded better to ACT than the males. In addition, the interpretation of these treatment effects was assessed using Cohen's D in order to assess effect sizes which was a very useful approach to examine all continuous measurement on all score rates.

Conclusion: The study suggest that ACT is an effective recent model that is able to provide patients with means of coping with mental health disorders and can decrease psychological effects such as depression and anxiety.

Keywords: Acceptance and Commitment Therapy, Mindfulness, Anxiety, Depression, Culture, Saudi Arabia.

CONTENTS

CHAPTER ONE- INTRODUCTION

1.1 Historical Background of Therapies used to treat Depression 1

1.2 *Psychoanalysis therapy* *2*

1.3 *Behavioural therapy*.....*4*

1.4 *Cognitive therapy*.....*6*

1.5 *Rational emotive therapy* *8*

1.6 *Cognitive Behavioural Therapy (CBT)*.....*9*

1.7 *Acceptance Commitment Therapy (ACT)* *11*

CHAPTER TWO- LITERATURE REVIEW

2.1The third wave therapies 14

2.2 Mindfulness.....15

2.3 Acceptance and Commitment Therapy (ACT) 22

2.4 ACT as an Intervention for Affective Disorders.....33

2.5 Depression.....45

2.5.1 *Definition of Depression* *45*

2.5.2 *Prevalence of Depression* *47*

2.5.3 *Depressive symptoms* *49*

2.5.4*Theories of depression* *50*

2.5.4.1 Learning Theory of Depression *50*

2.5.5 Cognitive Theories of Depression.....51

2.5.5.1 Hopelessness theory of depression *51*

2.5.5.2 Attribution model of depression.....*52*

2.5.5.3 Back's cognitive theory of depression.....*52*

2.5.6 Types of interventions used in treating depression.....53

2.6 Depression from ACT Point of View.....57

2.6.1 *Language and Depression* *57*

2.6.2 *Evaluating* *60*

2.6.3*Reason giving*.....*61*

2.6.4 *Storytelling*.....*62*

2.6.5 *Psychological Inflexibility*.....*62*

2.6.6 *Fusion*.....*63*

2.6.7 *Experiential avoidance* *64*

2.6.8 *Attachment to a conceptualized self*.....*66*

2.6.9*Living in past/future*.....*67*

2.6.10 *Excessive rule-following* *68*

2.6.11 *Lack of valued action*.....*69*

2.7 The impact of cultural differences on the effectiveness of Acceptance Commitment Therapy for patients with Depression

CHAPTER THREE- METHODOLOGY

3.1 Statement of the Problem.....81

3.2 Significance of the Study 82

3.3 Pilot study 82

3.4 Research Aims and Objectives 83

3.5 Design 83

3.5.1 *Study design* *83*

3.5.2 *Study setting* *84*

3.5.3 *Sample size* *84*

3.5.4 *Sampling technique*: *(inclusion / exclusion criteria of selection)* *84*

3.6 Data analysis plan 90

3.7 Method/ Procedures 90

3.8 Measures 91

3.8.1 *PHQ-9, Patient Health Questionnaire-9 (PHQ-9)* *92*

3.8.2 *Beck Depression Inventory (BDI)* *92*

3.8.3 *Taylor Manifest Anxiety Scale (TMAS)*.....*93*

3.8.4 *Generalized Anxiety Disorder-7 (GAD-7)* *94*

3.8.5 *Kentucky Inventory of Mindfulness Skills (KIMS)* *94*

3.8.6 *The Mindfulness Attention Awareness Scale (MAAS)*.....*96*

3.8.7 *White Bear Suppression Inventory (WBSI)* *96*

3.8.8 *Automatic Thoughts Questionnaire (ATQ-F)*.....*97*

3.8.9 *Automatic Thoughts Questionnaire (ATQ-B)*.....*97*

3.9 Ethical considerations 91

CHAPTER FOUR- DATA ANALYSIS AND RESULT

4.1 Empirical Analysis of the Statistical and Clinical Significance.....99

(Assumptions and Tests of Significance)

4.2 Variables 100

4.2.1 *Independent Variables* *101*

4.2.2 *Dependent Variables* *103*

4.3 Data Analysis Tool and Assumptions (ANOVA) 103

4.4 Other Statistical Significance 119

4.4.1 *Attrition Rate* *119*

4.4.2 *Wilk's Lambda* *120*

4.4.3 *Test of Between Subject Effects* *123*

4.4.4 *Pair-Wise Comparison* *124*

4.4.5 *Profile Plots* *126*

4.5 Clinical Significance 134

4.5.1 *Cut-Off Score* *135*

4.5.2 *Reliability Change Index* *138*

4.6 **Results** **140**

4.6.1 Participants Change Scores 140

4.6.2 Assessing Treatment Effect for the Measures using *Cohen's D* *156*

4.6.3 Examining the Usefulness of ACT and other Measures 158

4.6.3.1 *Cohen's U_3* *159*

4.6.3.2 *Overlaping Coefficient (OVL)* *159*

4.6.3.3 *Probability of Superiority* *159*

4.6.3.4 *Number to be treated* *159*

CHAPTER FIVE- SYSTEMATIC REVIEW

The Effectiveness of Acceptance and Commitment Therapy (ACT) in Patients Presenting with Depression: A Systematic Review and Meta-Analysis

5.1 Abstract 164

5.2 Method 171

5.2.1 *Eligibility Criteria* *172*

5.2.2 *Information Sources* *172*

5.2.3 *Search Strategy* *172*

5.2.4 *Study Selection* *173*

5.2.5 *Data Collection Process* *174*

5.2.6 *Data Items* *174*

5.2.7 *Risk of Bias in Individual Studies* *176*

5.2.8 *Planned Methods of Analysis* *175*

5.2.9 *Risk of Bias across Studies* *175*

5.3 Results 177

5.3.1 *Study Selection* **177**

5.3.2 *Study Characteristics* *178*

5.3.3 *Risk of Bias within Studies* *186*

5.3.4 *Summary Measures* *206*

5.3.5 *Syntheses of Results* *208*

5.3.6 *Participant Attrition* *224*

5.3.7 *Risk of Bias across Studies* *225*

5.4 Discussion 226

5.4.1 *Summary of Overall Study* *226*

5.4.2 *Results vs Existing Literature* *227*

5.4.3 *Review Questions vs Review Findings* *228*

5.4.4 *Limitations* *229*

5.4.5 *Future Research Suggestions* *231*

CHAPTER SIX- DISCUSSION AND CONCLUSION 232

6.2 Strengths and Limitations 249

6.3 Future Work 252

LIST OF TABLES

CHAPTER THREE

Table 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10 Therapeutic Sessions of Acceptance and Commitment Therapy for Depression

CHAPTER FOUR

Table 4.1 Within-Subjects Factors

Table 4.2 Between-Subjects Factors

Table 4.3 Participant Detail

Table 4.4 Dependent Variables

Table 4.5 Mixed ANOVA Statistical Assumptions

Table 4.6 Scoring of Dependent Variable Scales

Table 4.7 Percentiles

Table 4.8 Test for Normality – Kolmogorov Smirnov[a]

Table 4.9 Levene's Test of Equality of Error Variances[a]

Table 4.10 Mauchly's Test of Sphericity[a]

Table 4.11.1 Tests of Within-Subjects Effects: BDI

Table 4.11.2 Tests of Within-Subjects Effects: PHQ-9

Table 4.11.3 Tests of Within-Subjects Effects: TMAS

Table 4.11.4 Tests of Within-Subjects Effects: GAD-7

Table 4.11.5 Tests of Within-Subjects Effects: KIMS

Table 4.11.6 Tests of Within-Subjects Effects: MAAS

Table 4.11.7 Tests of Within-Subjects Effects: WBSI

Table 4.11.8 Tests of Within-Subjects Effects: ATQ-F

Table 4.11.9 Tests of Within-Subjects Effects: ATQ-B

Table 4.12 Case Processing Summary: Attrition Rate

Table 4.13 Multivariate Tests[a]: Wilk's Lambda

Table 4.14 Tests of Between-Subjects Effects

Table 4.15 Pairwise Comparisons

Table 4.16 Cut-Off Scores

Table 4.17 Reliability Change Index (RCI)

Table 4.18 RCI Results

Table 4.19.1 Experimental Group Reliable Change (BDI)

Table 4.19.2 Control Group Reliable Change (BDI)

Table 4.19.3 Experimental Group Reliable Change (PHQ-9)

Table 4.19.4 Control Group Reliable Change (PHQ-9)

Table 4.19.5 Experimental Group Reliable Change (TMAS)

Table 4.19.6 Control Group Reliable Change (TMAS)

Table 4.19.7 Experimental Group Reliable Change (GAD-7*)*

Table 4.19.8 Control Group Reliable Change (GAD-7)

Table 4.19.9 Experimental Group Reliable Change (KIMS)

Table 4.19.10 Control Group Reliable Change (KIMS)

Table 4.19.11 Experimental Group Reliable Change (MAAS)

Table 4.19.12 Control Group Reliable Change (MAAS)

Table 4.19.13 Experimental Group Reliable Change (WBSI)

Table 4.19.14 Control Group Reliable Change (WBSI)

Table 4.19.15 Experimental Group Reliable Change (ATQ-F)

Table 4.19.16 Control Group Reliable Change (ATQ-F)

Table 4.19.17 Experimental Group Reliable Change (ATQ-B)

Table 4.19.18 Control Group Reliable Change (ATQ-B)

Table 4.20 Effect Size

Table 4.21 Interpretation of Cohen's D

CHAPTER FIVE

Table 5.1 Extracting a Sample Size for the Systematic Review

Table 5.2 Articles Included in the Systematic Review

Table 5.3 Risk of Bias within Studies

Table 5.4 Forest plot of ACT studies versus control on primary outcome measures

Table 5.5 Summary of recommendations to maximize the internal validity and to improve the reporting of future randomized, controlled trials of psychological therapies

LIST OF FIGURES

CHAPTER THREE

Figure 4.1 Profile Plots of BDI 1 and BDI 2

Figure 4.2 Profile Plots of PHQ 1 and PHQ 2

Figure 4.3 Profile Plots of TMAS 1 and TMAS 2

Figure 4.4 Profile Plots of GAD-7 1 and GAD-7 2

Figure 4.5 Profile Plots of KIMS 1 and KIMS 2

Figure 4.6 Profile Plots of MAAS 1 and MAAS 2

Figure 4.7 Profile Plots of WBSI 1 and WBSI 2

Figure 4.8 Profile Plots of ATQ-F1 and ATQ-F 2

Figure 4.9 Profile Plots of ATQ-B1 and ATQ-B 2

LIST OF APPENDICES

APPENDIX 1- Participant Information Sheet

APPENDIX 2- CONSENT FORM

APPENDIX 3- PHQ-9 Depression

APPENDIX 4- Beck's Depression Inventory

APPENDIX 5- Taylor Manifest Anxiety Scale

APPENDIX 6- GAD-7 Anxiety

APPENDIX 7- Kentucky Inventory of Mindfulness Skills (KIMS)

APPENDIX 8- The Mindfulness Attention Awareness Scale (MAAS)

APPENDIX 9- White Bear Suppression Inventory (WBSI)

APPENDIX 10- Automatic Thoughts Questionnaire (ATQ), second version

APPENDIX 11- Debriefing Form

APPENDIX 12- Demographics

APPENDIX 13- Participant Letter

CHAPTER ONE

Introduction

1.1 Historical Background of Psychotherapy.

Psychotherapy bases itself on psychogenesis (from the Greek words psyche meaning mind or feelings, and genesis meaning origin) which refers to the origin and development of psychological processes. It assumes that social and psychological factors are responsible for altering mental functioning and, as a result, psychological therapies should be used to treat mental illnesses. Among the earliest forms of psychological treatments is suggestibility and hypnosis. One of the first people to use this approach is Franz Anton Mesmer (1734-1815) who treated patients experiencing psychological problems by giving them solutions with high iron content and passing magnets over their body as he believed that this would align the internal magnetic force in the patient. In addition he also utilized a suggestion/hypnosis technique that led his patients to fall into a trance. Mesmer then abandoned the use of the iron solution and magnet and continued using the suggestion technique which proved effective at the time.

To date, the most common therapies used to treat depression in Saudi Arabia are CT and CBT in full Therapies. This research looks at the introduction of Acceptance and Commitment Therapy (ACT) in clients at King Khalid University Hospital (KKUH) in Saudi Arabia, as well as analysing the effectiveness of this treatment.

History of therapies used to date

1.2 Psychoanalysis therapy

Psychoanalysis emerged from hypnotism and became a distinct methodology and treatment in its own right (Mitchell & Black 1995). The main figure in psychoanalysis is Sigmund Freud (1856-1939) who was heavily influenced by the work of Charles Darwin, leading him to believe that human nature was rooted in its animal past; reinforcing the importance of biological instincts motivation behaviour and the fact that behaviour is not always rational. Another predominate feature of Freud's theoretical framework was a belief in the central importance of sexual motivation underpinning the perpetuation of the species. He was a neurologist by training and worked with Charcot who used hypnosis in the treatment of hysteria.

Another important figure in psychoanalysis is Joseph Breuer (1842-1925) who worked very closely with Sigmund Freud. Breuer observed that many of his patients exhibited hysterical symptoms such as the ones experienced by Anna O Breuer. Indeed, he found out that if he was able to get Anna O Breuer to trace a particular symptom back to its origin, she would experience an emotional release, which Breuer referred to as a "catharsis". Although his cathartic method had some success, relief of symptoms was only temporary. It was however sufficient to convince Freud that whilst the memory of a traumatic event might be actively repressed into the unconscious, it will continue to influence the person's behaviour as an hysteric symptom; the form of hysterical symptom bears a symbolic relationship to the traumatic event that caused it and a symptom can be alleviated if the person gains insight into the originating event. He also believed that he detected a strong undercurrent of sexuality in the case of Anna O Breuer (Ellenberger, 1970)

Freud and Breuer disagreed on the importance of sex as a major force responsible for hysterical symptoms and eventually Breuer broke off their working relationship. Freud however continued to believe that unresolved sexual problems lay at the heart of hysteria,

usually as a result of childhood sexual abuse by a parent or another adult. Freud later abandoned his belief that hysteria was a direct result of unresolved sexual conflict based on abuse and then believed that sexual events in childhood were not real, but imagined, and could be present in some form from infancy, not simply in adolescence, which led him to his theory of the stages of sexual development (Ellenberger F Henri, 1970).

Freud used the method of Free Association to elicit information that the patients had repressed into unconsciousness from a conscious awareness. This method was employed by placing patients in a relaxed position and encouraging them to say whatever came into their mind. Dream analysis was also used to explore the unconscious and he was also influenced by "resistance", when patients exhibited long periods of silence, implying that they felt unable to express themselves (Mitchell & Black, 1995).

Freud's theory of psychoanalysis is often considered as being unscientific: individuals being often unaware of the factors that determine their emotions and behaviours. Psychoanalytic treatment explores how these unconscious factors affect current relationships and patterns of thought, emotion and behaviour. The treatment traces these patterns back to their historical origins, considers how they have changed and developed over time, and helps the individual to better cope with the realities of their current life situation. Analysis can be viewed as an intimate partnership in the course of which the patient becomes aware of the underlying sources of his or her difficulties, not simply intellectually but emotionally as well – in part by re-experiencing them with the analyst.

1.3 Behavioural therapy

Behaviour therapy (BT), which grew out of the conceptual framework of behaviourism, had its formal beginnings in the 1950s with simultaneous advances occurring in the United

States, South Africa, and Great Britain (Spiegler & Guevremont, 1993). Behavioural therapy is based on the principle that there are two forms of conditioning that are critical for the emergence of behaviour. These are referred to as classical and operant conditioning (Joseph, 2001). These two forms of conditioning have been the corner stone of the behavioural therapy. From the behavioural point of view, abnormal behaviours result from the association of stimuli and responses. As a result, the treatment logically involves learning new, more adaptive responses. The repetition of this practice makes the new responses stronger and weakens the previous maladaptive response (kanzantzis & Abate, 2007). Thus, behavioural therapeutic techniques embody the classical conditioning theory of Pavlov and Watson and the operant conditioning theory of Thorndike and Skinner.

Clinical interventions that preceded Behavioural therapy had a poor link to scientifically established principles with vague specification of interventions, and weak scientific evidence in support of these interventions (Hayes, 2004). Thus, two features of behavioural therapy that distinguished it from existing clinical interventions at the time were the application of principles from behaviour analysis to clinical phenomena and the insistence on the empirical evaluation of the BT interventions. In the United States, Lindsley and Ayllon, graduate students of Skinner at Harvard University, systematically applied learning principles to change behaviours of psychiatric patients (Spiergler & Guevremont, 1993). In the early 1960s, Ayllon and Azrin, another former graduate student of Skinner, developed the first comprehensive token economy (Spiergler & Guevremont, 1993). Meanwhile, in South Africa, Wolpe developed several bedrock behaviour therapies, including systematic desensitization and assertiveness training; Wolpe's approach focused on replacing maladaptive responses (i.e., anxiety, avoidance) with more adaptive responses (i.e., relaxation, assertive behaviour). The development of BT in Great Britain was spearheaded by Eysenck, with similar approaches to that of the United States and South Africa, which

were developed independently. As BT focused directly on problematic behaviour, vague concepts and unobservable phenomena generally were disregarded.

Even if the behavioural approach was grounded scientifically, it lacked consideration of both cognition and feelings. By the late 1960s, behaviour therapists increasingly recognized that thoughts and feelings needed to be addressed for an adequate analysis of a successful intervention for human problems. However, associationism and behaviour analysis were unable to provide an adequate account of human language and cognition. As a paradigm shift legitimized cognition as a viable target for clinical intervention, early cognitive mediational accounts of behavioural change (e.g., Bandura, 1969) grew into the cognitive therapy movements. Three major influences to the second wave of BT have been identified: 1) the application of basic cognitive psychology constructs to the development of clinical intervention, 2) the development of behavioural self-control procedures as cognitive interventions (e.g., Thoresen & Mahoney, 1974), and 3) the emergence of cognitive therapies by Ellis (1962) and Beck (1964, 1970), which were developed within a clinical setting rather than within basic psychology (Craighead & Craighead, 2003). Cognition was addressed from a clinically relevant point of view, as patients of different diagnostic populations were observed to engage in particular styles of cognitive processing. Thus, the new cognitive therapies focused on the detection, correction, testing, and styles. Behavioural principles were combined with cognitive therapy to form cognitive behaviour therapy (CBT), aimed at treating problems related to overt cognition, behaviour, and emotion.

These treatment techniques and behavioural therapy have made an enormous contribution to the modern CBT approach. According to Kring et al. (2007) behavioural therapy has made two major contributions to the development of CBT therapy. The first one is the assumption that problem behaviour continues if it is reinforced and that the treatment focuses on identifying the enforcer and changing the consequences of the problem behaviour. The

second one is the exposure component of behaviour treatment. Exposure can be used in real life or in an imagined situation which now continues to be a very important component of CBT. As previously stated, the other influential factor is the fact that behaviourists tried to include the thinking and feeling elements and this change in behavioural therapy a (Arthur Freeman et al., 1989) has influenced cognitive behavioural therapy as much as it influenced cognitive therapy. Among the techniques are social skill triaging, relaxation training and homework assignments.

1.4 Cognitive therapy

In addition to the classical and operant conditioning models, the introduction of the neo-behaviouristic meditational stimulus-response (S-R) model has brought the step closer to cognitive and cognitive behavioural therapy. Corsini and Wedding (2005) perceive one of the meditational model, social cognitive therapy, as an interacting regulatory system of external stimulus, external reinforcement and cognitive meditational process. This model is based on Bandura's behavioural therapy modelling. The above mentioned authors further stated that this model emphasizes the capacity of the individual for self-directed behavioural change. These days, the clinical practice of behavioural therapy has included a cognitive technique which is now rather termed as cognitive behavioural therapy. So we can simply infer from the above statements that the transition of behaviour therapy to cognitive therapy and CBT is not unidirectional. Rather, it is bidirectional. By this statement, cognitive therapy is meant as an independent therapeutic technique which has contributed to behavioural therapy to form the cognitive behavioural therapy; and behavioural therapy contributed to cognitive therapy that resulted in the formation of cognitive behavioural therapy. But the integration of one with the other has not changed the major principles of either of the two approaches.

As stated in Beck, (1995) "*cognitive therapy bases itself on the cognitive model which hypothesizes that people's emotions and behaviour are influenced by their perception of events. It is not a situation in and of itself that determines what people feel but rather the way they construe a situation."* Before assuming this shape, cognitive therapy was more philosophical and more cognitive than clinical as described by Freeman, Simon, Beutler & Arkowitz, 1989. Since the ancient Greeks, the notion that the reality that we encounter is determined by our perception or understanding was Plato's idealism (Leahy, 1996). Also in the western world the idea of associating the reality with the cognition has a long history with one of the leading ideologies being Kant's "category of thinking" (Leahy, 1996). The same philosophy was promoted by Ellis and Beck at the second half of the nineteenth century and is carried to the present time in a more organized and elaborated form independently, as well as integrated with the behavioural approach to form the cognitive behavioural approach (Jhoseph, 2001).

1.5 Rational emotive therapy

As we can see from the above discussion, cognitive therapy has undergone many changes through time. It incorporated the cognitive, emotion and behaviour elements in therapeutic procedure. Cognitive therapy reached its maturation when Ellis introduced the rational emotive therapy (RET) which later was renamed to be the rational emotive behavioural therapy (REBT). However, Ellis himself, as written in Freeman **&** Greenwood **,** 1987, stated that RET has not been widely accepted and has also been opposed by psychoanalysts, until Aaron Beck published his cognitive therapy - depression. Beck's introduction of the cognitive therapy was the beginning of the modern cognitive behavioural therapy. In support of this fact, the same book quotes Ellis's words which shows that in the study of psychology in general, and in psychotherapy and clinical psychology in particular, Ellis has emerged as

one of the main cognitive behavioral therapists of his time. Ellis further says in this book that he is considered to be the father of RET and the grandfather of CBT.

Some authors such as Psiquiatr (2008) claim that cognitive behavioural therapy is a direct generic term of cognitive therapy. But evidence shows that any single therapeutic technique cannot be responsible for its generation. Even Aaron T. Beck the father of cognitive therapy, in (Beck. et al. 1979), stated that one of the challenges of therapists in cognitive therapy is the selection of therapeutic techniques, as both cognitive and behavioural techniques have their own advantages and applications. Zeig,(1987) also states that some therapists used intellectual therapies alone, focusing on persuasion and teaching. Some cognitive therapists focus on emotive therapies, like role playing, and other cognitive-behavioural therapists rely on behavioural techniques like vivo desensitization.

So, we can now see that cognitive therapy has even grown to include different behavioural techniques, expanding on Beck's cognitive therapy of depression. Even though Beck's cognitive therapy was a model for depression, according to Leahy, (1996), it has been demonstrated to be effective for other disorders when expanded to include behavioural techniques (i.e., cognitive-behavioural therapy). Reading the above statement, one may ask if Beck or Ellis are cognitive therapists or cognitive-behavioural therapists. Cring et al (2007), answers this question by choosing the cognitive-behavioural because the therapists regard cognition as a major determinant of emotion and focus on the observable behaviour which characterizes behavioural therapy. Also, he made it clear that a therapist identified as cognitive-behavioural performs at cognitive as well as behavioural levels and those who use cognitive ways to change beliefs, eg. verbally, also use behavioural techniques to change observable behaviours. Therefore, nowadays, it is very difficult to separate cognitive therapy from behavioural ones. This is because both techniques affect the client's thought processes

and behavioural patterns. Hence cognitive changes bring about behavioural changes and vice versa (Psiquiatr, 2008).

1.6 Cognitive Behavioural Therapy (CBT)

For many years philosophers, theoreticians and practitioners have been striving to come up with a comprehensive model for the treatment of psychopathology. As stated by Joseph (2001), being aware of the fact that no single model can explain how psychopathology is developed or treated, theoreticians have been looking for ways to integrate different models. Joseph is adamant that cognitive behavioural therapy is the best known integration of models. Practical justification of the fact, as presented in Hawton, SalkoviskisKirk, and Clark (1995), shows that behavioural therapists devised that there was a need of integrating cognitive treatment because the behavioural treatment lacks the cognitive element and after observing that some of their patients were not able to respond to behavioural therapy. Cognitive and behavioural approaches, even if they are independent and different therapeutic techniques, are not antagonistic, which made the formulation of cognitive behavioural therapy a reality (Tyler & Steinberg , 1993).

Therefore CBT, as referred by Joseph (2001), is a technique that combines cognitive approach and behavioural approaches. Thus, it is a generic term that shows the combination of behavioural and cognitive strategies for treatment of psychopathology.

Many authors who discuss the theoretical background of CBT begin writing from the introduction of Ellis's rational emotive therapy and Beck's cognitive therapy even if they end up acknowledging the contribution of the behavioural approach.

To understand cognitive behavioural therapy, however, we have to understand its major assumption and track back which treatment approaches it could evolve from. According to

Wright, Monica,& Thase (2006) The provision of cognitive behavioral therapy is that the thought patterns (cognition) and interpretations of life events highly influence how the patient behave and, ultimately, how they feel.

Looking at this definition, we can understand that CBT is concerned with three major elements of a person; cognition, emotion and behaviour. Of course, all these elements have been dealt with by many other earlier theoreticians separately. However, it is in this approach that we can clearly see the interrelationship with one another. Cognitive behavioural therapy is not just a gathering of different approaches, but rather it is the philosophy about the interrelationship of thinking, feeling and behaviour (Marshall & Turnbull, 1996). CBT was expressed in CARMHA (2007) as less like a single intervention and more like a family of treatments and practices.

Acceptance Commitment Therapy (ACT)

The next generation of psychotherapy; *Mindfulness-based treatments* (third wave of behaviour therapy) began in the early 1990s with the development of innovative treatments that emphasize present-moment awareness and acceptance. Hayes (2004) outlined the following features of this generation of clinical intervention:

> *''Grounded in an empirical, principle-focused approach, the third wave of behavioural and cognitive therapy is particularly sensitive to the context and functions of psychological phenomena, not just their form, and thus tends to emphasize contextual and experimental change strategies in addition to more direct and didactic ones. These treatments tend to seek the construction of broad, flexible, and effective repertoires over an eliminative approach to narrowly defined problems, and to emphasize the relevance of the issues they examine for clinicians as well as clients. The third wave reformulates and synthesizes previous generations of behavioural and cognitive therapy and*

carries them forward into questions, issues, and domains previously addressed primarily by other traditions, in hopes of improving both understanding and outcome''. (p. 658)

Treatments within the third wave can be categorized into two groups: interventions that are based on mindfulness training (i.e., Mindfulness-Based Stress Reduction, Mindfulness-Based Cognitive Therapy), and interventions that include mindfulness as a key component (i.e., Acceptance and Commitment Therapy, Dialectical Behaviour Therapy, Relapse Prevention).

Mindfulness-Based Stress Reduction (MBSR), formerly known as the Stress Reduction and Relaxation Program (SR-RP; Kabat-Zinn, 1982, 1990), is a group treatment developed for patients with chronic medical conditions, in which the foundation of the intervention involves intensive training in mindfulness meditation (Reibel, Greeson, Brainard, & Rosenzweig, 2001). Participants meet weekly for 2 to 2.5 hours of instruction and practice in mindfulness meditation skills, coping skills, and discussion of homework assignments. Mindfulness meditation skills include body scanning, sitting meditation with attention to the sensations of breathing, and Hatha bodily sensations, emotions, thoughts, memories, behavioural dispositions "and takes steps to alter the form or frequency of these events and the contexts that occasion them" (Hayes et al., 1999, p. 58). Mindfulness increases willingness by enhancing awareness of an observing self, which then fosters the deliteralization of thoughts and beliefs. Although ACT does not specifically promote mindfulness as a treatment component or technique, the general approach and specific methods and exercises are consistent with other mindfulness-based approaches (Baer, 2003). Research has examined the successful use of ACT for depression (Zettle & Hayes, 1986; Zettle & Raines, 1989), anxiety disorders (Block, 2002; Block & Wulfert, 2000; Hayes, 1987), workplace stress (Bond & Bruce, 2000), chronic pain (Geiser, 1992), schizophrenia

(Bach & Hayes, 2002; Gaudiano, Dalrymple, & Herbert, 2002), smoking cessation (Gifford, 2002), and substance abuse (Hayes et al., 2002). In addition, there is evidence that a reduction in the of thoughts occurs for individuals who receive ACT (Bach & Hayes, 2002; Zettle & Raines, 1989).

CHAPTER TWO

2.1 The third wave therapies

The third generation of behaviour therapies, also at times referred to as "acceptance-based behavioural therapies," and "mindfulness based therapies" encompasses a number of treatment approaches that have risen to eminence during and since the 1990s, including Mindfulness-Based Cognitive Therapy (MBCT) (Segal, Williams, Teasdale, 2002), Dialectical Behaviour Therapy (DBT) (Linehan, 1993), and Acceptance and Commitment Therapy (ACT) (Hayes et al., 1999). These approaches share a number of features that differentiate them from earlier behavioural therapies. Perhaps the most noteworthy of them is a move from the assumption that stressful symptoms, including unwanted thoughts and feelings, must be altered in content or frequency in order to boost general psychological wellbeing.

Instead, acceptance-based therapies endeavour to foster a perspective of non-judgmental acceptance of stressful private experiences in the context of promoting behaviour change. For example, traditional first-generation behaviour therapy would tend to disregard cognitions related to an individual's anxious avoidance and focus rigorously on the avoidance behaviour. Second-generation CBT would stress examining the soundness of thoughts putatively accountable for the avoidance with an eye toward nurturing more adaptive/accurate cognitions. Acceptance-based models of CBT might suggest becoming increasingly aware of, while concurrently stepping back from, these anxiety-related thoughts as a way of rising willingness to act in harmony with one's goals even while experiencing anxiety (Forman & Herbert, 2007). The other rather obvious and most important common feature of these therapies is the use of Mindfulness techniques.

2.2 MINDFULNESS

It is beyond the scope of this paper to discuss all these mindfulness techniques at this point. However, it is important to introduce their major feature: mindfulness and its application and the therapeutic process involved in mindfulness. Mindfulness has its roots in ancient religions/religious practices and has been practiced in religions such as Buddhism, Taoism, Judaism, Islam and Christianity to promote calmness. In Buddhist tradition, mindfulness practices were used to heal individuals suffering from illnesses and other life events such as bereavement and aging (Armstrong, 2001) and cessation of mental suffering (Thera, 1992). Mindfulness exercises therefore involve the simple awareness of one's health, bodily sensations, thoughts and emotions, with no religious element, even though the concept originated from spiritual tradition (Weinrib, 2011).

Many scholars have highlighted that there is a clear confusion on the definitions available and the perspectives taken in understanding the concept of mindfulness eg. Hayes & Shenk, 2004. Several reasons have been provided for the lack of a commonly agreeable definition of mindfulness, among them Hayes & Wilson, (2003), and different methods and processes are described with the same term by different scholars. According to the above authors, different writers take different points of view in understanding and describing the nature of mindfulness eg Langer (1989) and Kabat-Zinn (1994). More troublesome, mindfulness is treated sometimes as a technique, sometimes as a more general method or collection of techniques, sometimes as a psychological process that can produce outcomes, and sometimes as an outcome in and of itself. The actual principles that unite all of these levels typically remain unspecified. The other problem emanates from the fact that the concept of mindfulness has a spiritual foundation (Baer, 2003) and is a prescientific concept that originated in a prescientific Buddhism concept (Hayes and Shenk, 2004). Therefore it is

difficult to differentiate from other similar concepts, such as acceptance, which remains presently vague (Hayes and Wilson, 2003).

Mindfulness is most commonly defined as the state of being attentive to and aware of what is taking place in the present. For example, Thera (1972) defined mindfulness *"the clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception"* (p. 5). Likewise, Hanh (1976 cited in Brown and Ryan 2003**)** coined mindfulness as *"keeping one's consciousness alive to the present reality"* (p. 11**).** Mindfulness has also basically been defined as *"moment-to-moment awareness of one's experience"* (Germer, 2005b p. 6 as cited in Weinrib 2011).

From the above definitions, one can clearly derive the two common attributes of mindfulness: awareness and focus/attention. Brown & Ryan, (2003) recognise that almost everyone has the capacity to attend and to be aware, but they also claim that (a) there exist individual differences in their tendency or willingness to be aware and to remain attentive to what is taking place in the present and (b) that the capacity to be attentive and aware can be affected by various factors as a result can vary within an individual. (Wallace, 1999) has also stated that mindfulness is inherently a state of consciousness although awareness and attention to present events and experiences are natural characteristics of the human organism; these qualities can vary significantly, from sharp states of clarity and sensitivity to low levels. According to Brown & Ryan, (2003) , therefore, "*this suggests (a) that because of inherent capability, discipline, or inclination, individuals may differ in the frequency with which they deploy attention and awareness and also (b) that there are intra-individual variations in mindfulness."*(p. 824)

According to Brown and Ryan, (2003), one can be conscious of thoughts, motives, and emotions as well as sensory and perceptual stimuli, as consciousness is clearly distinguished from other modes of mental processing such as cognition, motives, and emotions (Averill, 1992; Mayer, Chabot, & Carlsmith, 1997). Awareness and attention together make up consciousness. Attention is the concentration of a patient's awareness on a specific time and place, on a specific phenomenon, excluding other stimuli. It focuses on the here and now (Westen, 1999). The authors further stated that *"an individual may be aware of stimuli without them being at the centre of attention. In actuality, awareness and attention are intertwined, such that attention continually pulls "figures" out of the "ground" of awareness, holding them focally for varying lengths of time."* (Brown and Ryan, 2003. P. 824).

Although attention and awareness are relatively constant features of normal functioning, mindfulness therefore is understood as an enhanced attention and awareness of the current experience or present reality. (Deikman, 1982; Martin, 1997 cited in Brown and Ryan, 2003), described mindfulness as *open* or *receptive* awareness and attention which may be reflected in a more regular or sustained consciousness of on-going events and experiences. This is to be distinguished from consciousness that is dulled or constrained in various factors such as rumination, absorption in the past, or fantasies and anxieties about the future , which can pull one away from what is taking place in the present (Brown and Ryan, 2003).

Similarly from the therapeutic point of view, most western psychologists maintain that the concept of mindfulness is obscure and that defining it in simple and clear terms is difficult. (Block-Lerner, Salters-Pednault,& Tull 2005; Brown & Ryan 2004). However, numerous definitions and descriptions of mindfulness as a therapy have been provided regardless. The most common operational definition for mindfulness forwarded by Kabat-

Zinn (1994) was *"paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally."* Brown and Ryan (2003) describe mindfulness as "*the state of being attentive to and aware of what is taking place in the present."* Another similar definition is; by Marlatt and Kristeller (1999) Marlatt and Kristeller (1999) offer a similar definition, with the focusing of the patient on the present moment, with an open mind and an open heart. (Segal, Williams, and Teasdale , 2002 as cited in Baer, 2011**),** elaborated that A person focuses on the instant, and was able to admit that whatever feelings they are experiencing, they must consider them with kind curiosity, without succumbing to negative thoughts or morosity.

To further clarify the clinical use of the term, it is important to consider the process definitions of mindfulness: *"the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment to moment"* (Kabat-Zinn, 2003, p. 145)., *"awareness, of present experience, with acceptance"* (Germer, Siegel, & Fulton, 2005, p. 7) and *"attentional control"* (Teasdale, Segal, & Williams, 1995, p 38.), the first two process definitions suggest attending the moment to moment experience with an accepting attitude while the other suggests a redirecting/redeployment of attention to manage emotional distress. Didonna (2008), claims that such definitions are particularly useful because they display processes of change or methods of action that may help specific patients. They further elaborate that, in therapy, both mindfulness and all the elements of mindfulness are considered to be change processes. Different patients might require more emphasis on one element or another. Depending on the personality type of an individual, one may benefit more from one element of mindfulness than the other (Didonna 2008).

As is the case with the definition, the mechanism of change involved in mindfulness is not clearly documented. However based on the definition given for mindfulness by Kabat-Zinn (1994), Shapiro et al. (2006) have developed a model of the mechanisms by which mindfulness works, to bring about wellbeing. As presented earlier in this chapter, the definition encompasses three major elements referred to as "Axioms" by Shapiro et al. (2006). The three Axioms according to them are: "On purpose" or intention, "Paying attention" or attention, "In a particular way" or attitude. In other words, a pure intention as to why one is practicing, attending one's own moment-to-moment experience as they come and go, without changing the contents or getting involved, only accepting, in a kind, compassionate, open way. These are considered to be the qualities of mindfulness from which other things arise (Carmody, et al., *2006*)**.** ***"****Intention, attention, and attitude are not separate processes or stages, they are interwoven aspects of a single cyclic process and occur simultaneously."* (Shapiro et al. 2006, p.375).

Shapiro et al. suggest that the three building blocks of mindfulness ; Intention, Attention and Acceptance (IAA) define internal behaviours of mindfulness that account directly or indirectly for a large amount of the variance in the transformations that are observed in mindfulness practice. Mindfulness can be interpreted as as the intentional behavioural change that entails that a patient's applied self-awareness, with a healthy and open mind, can lead to the patient becoming aware of the causes of their suffering. Thus, the shift in perspective is described as reperceiving. Reperceiving is described as a change in relation to perceived experience and appears to be similar to or synonymous with terms such as decentering, defusion, and distancing that refer to an ability to observe one's thoughts and feelings as temporary events in the mind not necessitating particular responses, rather than as reflections of the self that are necessarily true or important (Hayes et al., 1999 cited in Carmody, et al., 2006). The authors also spotlighted four additional mechanisms: (1) self-regulation, (2) values clarification, (3) cognitive, emotional, and behavioural flexibility, and

(4) exposure. They posit that these mechanisms can be considered as potential mechanisms for other outcomes, such as psychological symptom reduction, or as outcomes in and of themselves (Shapiro et al. 2006).

Several studies have shown the effectiveness of mindfulness in improving wellbeing and happiness. (Ryan & Deci, 2000) reported that mindfulness brings about wellbeing and happiness by disconnecting individuals from automatic thoughts, habits and unhealthy behaviour patterns which result from self-induced behavioural regulation.

Mindfulness-based stress reduction (MBSR) has been reported by a number of researchers to be effective in improving different conditions such as psychological symptoms (Kabat-Zinn et al., 1992) and physical symptoms (Kabat-Zinn, Lipworth, & Burney, 1985 cited in Brown and Ryan, 2003) in different group of samples.

Mindfulness based methods are gaining acceptance in recent years in literature. The effectiveness of Approaches such as MBSR Kabat-Zinn (1990) and mindfulness-based cognitive therapy (MBCT) (Segal, Williams, and Teasdale 2002) in improving conditions such as depression and other mental and physical conditions is acquiring a wide range of empirical evidence (Baer, 2011). Symptom decline of psychological distresses by individuals who participated in MBSR program were reported by several reviews (Salmon et al., 2004, Baer, 2003). (Carmody & Baer, 2008) also documented that duration spent strictly working on mindfulness predicted boost in the self-reported tendency to be mindful in daily life, which, in turn, mediated decreases in strain and increases in psychological well-being (Baer, 2011).

In their publication on "why is mindfulness helpful", Mental Health Foundation (2010), it is suggested that mindfulness assists wellbeing in different ways. Among them

are: greater insight, which helps in having a clarity in the mind and in life; improved problem solving: investigating our thoughts, feelings and experiences more carefully to be able to make a well thought decision on our behaviour; less selfishness; we can be more considerate, empathic, compassionate, sensitive and flexible in our relationships; less neurosis: we experience the world in an open way that is not so weighed down by unhelpful psychological patterns anymore; more acceptance: through mindfulness, we see that events, thoughts and feelings always change, and we can learn to bear experiences more lightly and let them go; less "beating ourselves up": mindfulness reduces our identification with negative thinking patterns – we stop thinking we are our thoughts, and we can be kind to ourselves when we have negative thoughts about ourselves; better mind–body integration: mindfulness makes us more aware of what is happening both in our bodies and in our minds, so that we can experience and take into account the full range of our thoughts as well as our feelings and finally; better attention, and greater enjoyment of life (Mental Health Foundation, 2010).

2.3 Acceptance and Commitment Therapy (ACT)

Acceptance and Commitment Therapy (ACT) is sometimes placed outside of, or opposed to CBT (e.g., Hofmann & Asmundson, 2008), but ACT is part of the larger family of behavioural and cognitive therapies (Forman & Herbert, 2009). ACT is the only clinical behavioural approach to psychotherapy that is consciously derived from Relational Frame Theory (RFT), (Hayes, et, al., 2013). It is philosophically based on functional contextualism (Biglan & Hayes, 1996) and contemporary behaviour analysis more generally (Hayes, 1993). ACT takes a functional rather than diagnostic approach to psychopathology and attempts to undermine experiential avoidance, cognitive fusion, reason-giving and other verbal contexts and constructions supporting order to reduce psychopathology. It relies heavily on metaphor, paradox, experiential exercises, and other non-literal forms of language (Hayes 2002). RFT points directly to the likelihood of cognitive fusion and experiential avoidance, the danger

of suppression and disputation, the importance of cognitive diffusion and experiential acceptance, the importance of certain senses of "self," and the centrality of values, among other implications. All of these have been expanded into treatment approaches within ACT (Hayes 2002).

Relational Frame Theory (RTF) is a psychological theory on human language that focuses on basic experimental analysis of human language and cognition. It is based on the theory that human language is founded by relating one concept to another. (Hayes, Barnes-Holmes, & Roche, (2001). Contrary to animals, who can connect a normal event (hearing a bell) and an important event (getting food after hearing the bell), humans are also able to relate the normal event to the important event and derive a third meaning: they still link the bell to the event of getting food even when they hear the bell after getting food. This way of relating different stimuli to one another is permitted by the amazing power of the human brain and lays the structural foundation for verbal, written and body languages. It is accomplished within the use of relational frames, which is the reinforcement of the relationships a patient forms between concepts. Relational Frame Theory (RFT) aims to provide a modern behaviour-analytic account of human language and cognition (Hayes, Barnes-Holmes, & Roche, (2001). According to the theory, the power, richness, and complexity of human verbal behaviour may be usefully interpreted as arbitrarily applicable relational responding. It accounts for stimulus equivalence by appealing to the concept of arbitrarily applicable relational responding. The theory starts with the basic fact that many species are capable of responding to non-arbitrary relations between or among stimuli (e.g., bigger than, darker than). The theory then postulates that a similar process may be at work in the context of derived stimulus relations (in which the stimuli involved are not related to each other along a consistent physical dimension). According to Fireman, Hayes and Wilson, (1998), in support of this, a large body of empirical evidence from the experimental analysis of human behaviour has been published. Of particular relevance to the analysis of emotion is the literature on derived relational responding such as stimulus equivalence and

the transformation of stimulus functions (e.g., Barnes, 1994; Hayes & Hayes, 1989, 1992; Friman, Hayes & Wilson, 1998). This rapidly growing line of investigation may fundamentally change the behaviour-analytic view of verbal events and, with it, the analysis of private events. These researches show that humans readily learn derived stimulus relations. If a language-able human, while in the presence of one stimulus, A, learns to select an arbitrarily related stimulus, B, then this trained unidirectional relation will lead to a derived, bidirectional, relation. That is, given B, A will be chosen, without additional direct training, even in children as young as 16 months (Lipkens, Hayes, & Hayes, 1993). By the age of 2 years, children learn even more remotely derived stimulus–stimulus relations. For example, if A-B and A-C relations are trained, then B-C and C-B relations are derived these relations have been termed *stimulus equivalence* (Hayes and Wilson, 1993).

Stimulus equivalence is the phenomenon created when a person clearly identifies the connection between two or more separate stimuli, with no previous specific knowledge of the stimuli, but because these stimuli are similar in nature, the learner can derive a relationship between them (Sidman, 1982). Sidman and Tailby's research brought to light three properties that define stimulus equivalence empirically, conceptually, and practically. This allows for a methodological approach as well as a practicable approach, whose components are the mathematical relations of reflexivity, symmetry, and transitivity (Sidman, 1994). A patient learns a series of related verbal actions or discriminations (these actions take the form of four stimuli, two "samples" and "two comparisons" for visual forms (e.G., Sidman, 1971), but can also take an olfactory form (e.g., Annett & Leslie, Ther. 1995), an haptic form (e.g., Tierney, De Largy, & Bracken, 1995) or a gustatory one (Hayes, Tilley, & Hayes, 1988)) which become gradually connected to each other by the learner. The patient is not trained beforehand to recognise these different stimuli but can still connect the actions to each other. All three properties are needed in order to achieve the definition of stimulus equivalence, where both stimuli are distinct but connected to each other in meaning.

It has been advanced that the relations between stimuli are not fixed but thought to be bi-directional where a stimulus can be substituted to another (a picture for a word for instance). Wulfert and Hayes (1988) give the example of a child showing the picture of a dog when hearing the word "dog", then pointing to the written word "dog" when showed the picture of a dog, then the three stimuli (picture, written word, spoken word) join in an equivalent relationship and can therefore supplant one another. Thus, once the learner was able to establish a first connection between the primary stimuli (dog, singular), s/he is more able to infer to the second set of stimuli with a picture showing several dogs, hearing the word "dogs" and reading the written word "dogs" without further training.

The interrelationship between language and equivalence may be so prominent because both are part of the same behaviour (e.g., Barnes-Holmes & Cullinan, 2000). This leads to the study of Relational Frame Theory (RFT) that has relations to both stimulus equivalence and the human language.

RFT begins with the idea that organisms can learn to respond relationally to various stimulus events. This is not an entirely odd idea inasmuch as we know that non arbitrary stimulus relations can be learned by almost any complex organism (Reese, 1968). According to RFT, stimulus equivalence is an instance of arbitrarily applicable relational responding, brought to bear by some aspect of the context in which the task occurs. For example, a young child might be shown a picture of a dog and asked to "pick the word that means this" from an array of words. Given an appropriate history of relational training, some features of the context, such as the MTS format, or the words "means this", will bring to bear that history and result in "correct" responding. The term "relational framing" is used to denote this behavioural class (Barnes-Holmes, 2000).

Nevertheless, RFT is broader in scope than the equivalence phenomenon and thus a new set of terms is required to define relational frames. The term mutual entailment, for instance, encompasses symmetrical responding but also refers to responding that cannot be considered strictly symmetrical. For example, in a frame of coordination, if A is the same as B, then B is the same as A; that is, the relation is symmetrical. In a comparative frame, however, if A is better than B, then B is worse than A. The relations are not strictly symmetrical but they are mutually entailed. Similarly, the term combinatorial entailment encompasses transitivity, but also refers to relations that cannot be described as transitive. For example, transitive responding in the context of a frame of coordination would entail that if A is the same as B, and B is the same as C, then A is the same as C. However, in the case of a frame of opposition, if A is the opposite of B, and B is the opposite of C, then the relation between A and C is one of sameness, not opposite. Therefore, the relations are not strictly transitive, but they are combinatorially entailed; that is, the relations between A and B and between B and C combine to entail the relations between A and C and between C and A. According to RFT, therefore, both transitivity and equivalence responding are instances of combinatorial entailment in which the trained relations are the same as the derived relations.

The final defining feature of RFT is a transfer or transformation of functions. When stimuli are involved in a relational frame, any psychological function attached to one of those stimuli may transfer through the relational frame to any or all of the other stimuli involved. If the relevant frame is one of coordination, then a similar function will attach to each stimulus in the frame (Dymond & Barnes, 1994). For example, if a child learns to stop talking when a teacher says “quiet” and this word participates in a relational frame of coordination with the Irish word "ciunas," then the child may stop talking when the teacher says "ciunas." For RFT, this effect is due to the function of the word “quiet” transferring to the word "ciunas" through the derived relation between the English and Irish words. If,

however, the relational frame is not one of coordination the functions will be *transformed* in accordance with the relational frame involved (Barnes-Holmes, Barnes-Holmes1 Smeets, Cullinan, and Leader, 2004). This concept of the transformation of function is important for understanding human psychopathology (Barnes-Holmes, Barnes-Holmes, McHugh & Hayes, 2004).

From an RFT perspective, psychopathology evolves in part because derived relations dominate over other sources of behavioural regulation due to an inability to detect the ongoing process of thinking as distinct from the products of thinking (i.e., thought). Thoughts are often experienced indirectly in the form of the change in the functions of the world they produce, rather than as a process occurring in the moment. This is termed ‘‘cognitive fusion’’. It has three important side effects relevant to the topic at hand. First, temporal and evaluative relations become attached to internal events, and people begin to predict, fear, and attempt to regulate and avoid their own thoughts, feelings, and bodily sensations even when that process is harmful. This is termed ‘‘experiential avoidance’’ (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Second, people become attached to their own self-descriptions and seek to maintain them and to be right about them. Third, the present moment disappears into a cacophony of human thinking and its reasons, explanations, and justifications for behaviour. The effect of these processes is ‘‘psychological inflexibility’’ which is the inability to persist or change behaviour in the service of chosen values. In broad terms, there is a growing body of evidence in support of this model of psychopathology and it leads fairly directly both to ACT as a model of treatment and to an understanding of mindfulness in RFT terms (Fletcher and Hayes, 2005).

The transformation of functions in accordance with equivalence relations has been demonstrated with discriminative, self-discriminative, respondent eliciting, extinction, sexual arousal, avoidance evoking and consequential functions in adults, children, and

developmentally disabled individuals (Whelan & Barnes-Holmes, 2004). Moreover, several researchers have drawn on the concept of derived relations, transformation of functions and RFT more generally, in attempting to explain various aspects of human psychopathology, including anxiety (Friman, Hayes & Wilson, 1998), depression (Hayes & Wilson, 1993), and self-esteem (Barnes, Lalor, Smeets & Roche, 1996; Dymond & Barnes, 1995).

The general clinical goals of ACT are to undermine the grip of the literal verbal content of cognition that occasions avoidance behaviour and to construct an alternative context where behaviour in alignment with one's value is more likely to occur.

> *"ACT assumes that dramatic, powerful change is possible and possible quickly, because it is the general context and purpose of action that is the true problem, not the historically produced and well-conditioned content of life difficulties. What the client is feeling, thinking, remembering, or otherwise experiencing is never assumed to be the core difficulty, even though human beings will initially focus on difficult content as the core of their problems. For instance, "anxiety" is not assumed to be the problem in "anxiety disorders"; "mood" is not assumed to be the problem in "mood disorders"; "thought" is not assumed to be the problem in "thought disorders," and so on. In ACT, it is the tendency to take these experiences literally and then to fight against them that is viewed as harmful"* (Hayes, 2004 pp 651).

According to Hayes (2004), acceptance is not merely tolerance; it is the active non-judgmental embracing of experience in the here and now. This means feeling feelings as feelings; thinking thoughts as thoughts, sensing sensations as sensations, and so on, here and now. ACT is about acceptance and it is about change at the same time. Applied to anxiety disorders, clients learn to end the struggle with their anxiety-related discomfort and take

charge by engaging in actions that move them closer to their chosen life goals ("values"). Instead of teaching "more, different, better" strategies to change or reduce unwanted thoughts and feelings, ACT teaches clients skills to acknowledge and observe unpleasant thoughts and feelings just as they are.

Acceptance and Commitment Therapy (ACT) focuses on enhancing psychological flexibility in the service of achieving core life values. There are six integral processes that have to be taken into account in the development of psychological flexibility: acceptance, cognitive defusion, contact with the present moment, self-as-context, values and committed action.

Acceptance (from the Latin *accipere* – to receive or take in) is described by Hayes (2002) as a moment-by-moment process based on active embracing of private events. It does not aim to unnecessarily change the frequency or form of said events as they occur in the moment, as in some situations, doing so can potentially cause psychological harm. For instance, anxious patients could be taught the ability to experience anxiety more fully in order to fully discover the way their bodies react, what thoughts they conjure up and what urges to action occur in them. However, it is important to remark that acceptance is not the goal in itself, but rather a means of achieving better life flexibility (Hayes, 2002). Apart from its Latin etymological root, the psychological concept of acceptance hints at the process of actively "taking in" an event or situation. Since both the client and the therapist must "take in" the fact that there is a problem to be addressed, it can be said that psychological acceptance is, at its lowest level, an implicit part of any psychotherapy. At a higher level, acceptance involves an abandonment of dysfunctional change agendas and an active process of feeling feelings as feelings, thinking thoughts as thoughts, remembering memories as memories, and so on (Hayes, Strosahl, Wilson, 1999).

Cognitive defusion techniques undermine negative effects of language by teaching individuals to get some distance from their thoughts. It involves techniques that are designed in order to change the functions of personal experiences regardless of their original form, frequency of situational sensitivity. This is achieved by creating contexts that reduce the functions of the stimulus as transformed by thought. To that end, a person may be asked to give their thoughts a shape, colour and weight; label the ongoing process of thinking itself ("I am having the thought that I will be anxious"); observe it from a different perspective (like watching TV); repeat the associated words dozens of times (Masuda, Hayes, Sackett, & Twohig, 2004). This way, a person's thoughts remain in unchanged logical form, but their literal believability is reduced.

Cognitive defusion itself stems from a technique inherent to cognitive therapy that is cognitive distancing. The mechanism behind cognitive distancing is based on encouraging the client to identify their thoughts and perceive them as hypotheses instead of objective facts about the world. Hollon and Beck (1979, p. 189) describe it as a *"first, critical step in cognitive therapy"* as it teaches the clients to analyse, test, discuss and transform negative thoughts through traditional cognitive techniques (Luoma & Hayes, in press).

Through cognitive defusion, clients can become more aware of thinking as an active and continuous process that is embedded in a historical and situational context. It thus enables them to "defuse" from the literal meaning of their thoughts. The framework of this technique finds its basis in a functional contextual theory of language and cognition, namely the Relational Frame Theory RFT (Hayes, Barnes-Holmes & Roche, 2001). This theory states that thoughts acquire their literal meaning and much of their focused emotive and behaviour-regulatory functions only because the social/verbal community creates a context in which symbols exist in mutual relation to other events and possess functions based on these relations (Luoma, & Hayes, in press).

The third integral process of ACT is contact with the present moment, based on shifting the clients attention towards. In other words, being able to perceive precisely what is happening in the here and now, around the patient, means being able to maintain a constant awareness of the present moment with no discerning between what the patient wants to pay attention to and what they would rather avoid. Everything is noticed, observed and accepted if it is happening in the present moment (Harris, 2009). It is achieved by enabling contact with both internal stimuli (bodily sensations, feelings and thoughts) and external ones (sounds, sight, touch and smell). Being in the 'here and now' and experiencing the present moment through the abovementioned stimuli can lead to a sense of self as an ever-changing series of psychological events in which the ongoing process of knowing oneself becomes apparent. Mindfulness is a useful tool in the process, as it allows the client to pay attention to all aspects of the present moment (regardless of their quality – good, bad or neutral) and accurately perceive the events. One vital element at this point is the lack of discrimination between welcome and unwelcome stimuli; anything that takes place in the present moment must be carefully acknowledged and accepted.

Self as context is a concept that puts the individual outside of their experience – thoughts, feelings, experienced sensations, conjured images. Multiple examples of dietic relations existing in human language (e.g., I-you; now-then; that thing over there, not this thing over here; etc.) encourage a sense of self as a locus or perspective: I/Here/Now. However, this sense of perspective cannot be fully experienced in itself – its limits cannot be contacted consciously since it is at the core of consciousness itself (Hayes, 1984). Therefore, the self as context appears to have always been present, transcending roles, emotions and experiences of the body. RFT provides a scientific account of its emergence (McHugh, Barnes-Holmes, Barnes-Holmes, 2004). ACT contrasts the self as context with the self as content, understood as the stories and thoughts that one builds about themselves,

their identity and history. Exercises and metaphors can enable connection with a transcendent sense of self that is more resembling of the context, perspective and the arena of everyday life.

Values can be defined as chosen life directions. They are different from goals in that they are not objectives in themselves, but serve as a compass that directs and integrates the patterns of purposive action. At this point, language becomes a useful tool in order to mesh present actions together into a coherent pattern of effective action. All the processes enumerated above (acceptance, defusion, contact with the present moment, etc.) serve towards the identification of the client's valued domains in life, from family to work. Choosing a meaningful life direction enables the patient to shift towards more desirable forms of behavioural regulation, disengaged from the verbal processes that encourage social compliance, avoidance or fusion.

The final process is committed action, which involves changes of behaviour that turn the client's attention towards value-consistent goals. Whereas values can only be instantiated, as opposed to fully achieved, committed actions are based on short, medium and long-term attainable goals. For example, if one's value were increasing their job satisfaction, their committed action would be to seek out new opportunities in the job market or find a new position within their present workplace. The processes described above viewed from an RFT perspective create an image of mindfulness as a defused, accepting and open contact with the here and now, experienced together with its private events by a conscious human being experientially distinct from the perceived content. From the psychological standpoint, mindfulness is important as it enables valuing and committed action, thus serving as an essential aspect of psychological flexibility.

2.4 ACT as an Intervention for Affective Disorder

A vast amount of research has been undertaken on the mechanisms and efficacy of Acceptance and Commitment therapy in a number of mental disorders since its introduction as an alternative therapeutic method. The most studied types of disorders with respect to ACT's effectiveness have been affective disorders but other disorders such as psychosis and schizophrenia have also been investigated.

ACT as an evidence based psychotherapy targets responses to symptoms of mental disorders rather than the symptom itself and tries to foster psychological flexibility in all types of mental disorders. Therefore the goal of the treatment is to reduce the unnecessary struggle with the symptoms and increase the client's commitment to meaningful life (Luoma, Hayes, & Walser, 2007). Avoidance behaviour is one of the most common symptoms of Affective disorders in general. Experiential avoidance refers to an individual's attempts and efforts to avoid, suppress, or otherwise alter the form of negatively evaluated private events such as bodily sensations, emotions, thoughts, and memories (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). For instance, a person with agoraphobia not only avoids public places but also avoids experiencing thoughts and emotions associated with panic in these places (Friman, Hayes, & Wilson, 1998). When avoidance is not or no longer possible, a person may then resort to actual escape behaviour (Forsyth & Eifert, 1996). The function of experiential avoidance is to control or minimize the impact of aversive experiences.

Experiential avoidance is said to contribute to the worsening of anxiety symptoms due to the ironic impact it usually has on clients with affective disorders Hayes, et.al, (1996). Tackling these avoidance responses is the major focus of ACT in due course of the treatment by balancing acceptance with commitment. The client is encouraged to consciously experience sensations, thoughts, emotions, memories and urges without judgment, preservation or

avoidance. One of the methods ACT uses to this end is mindfulness techniques (Neale, 2007).

One of the main goals of ACT is to increase psychological flexibility, which refers to an individual's ability to connect with the present moment fully, as a conscious human being, and to change or persist in behaviour that is in line with identified values (Hayes et al., 1999) as cited in (Ciarrochi, Bilich, & Godsel, 2010). Psychological flexibility is a construct that captures the overarching ACT model in its most current rendition (Bond et al., 2009; Hayes et al., 2006; Hayes, Strosahl et al., 2004; Hayes, et, al., 1996). Accordingly, the assessment of individual differences in psychological flexibility has been a central focus of ACT research. Several researchers reported that ACT in general is highly effective in improving psychological flexibility amongst government employees (Flaxman, 2006), university students with anxiety or depression (Forman and Herbert, 2007), and people with clinical depression (Zettle & Hayes, 1986). Psychological flexibility in turn predicts future levels of mental health and positive workplace behaviours (Ciarrochi, et.al, 2010).

Although individuals with anxiety disorders typically avoid situations and stimuli that have been associated with panic (Barlow2002), clinical researchers are now focusing on experiential avoidance, a more general type of avoidance. Clients typically consider avoidance and escape behaviour to be the solution rather than the problem. As a consequence, many clients are apprehensive about cognitive behavioural exposure-based strategies that target avoidance behaviour and encourage clients to approach feared situations and experience fearful emotions (Barlow & Craske, 1994). Client receptivity of this strategy might be enhanced by employing techniques from recently developed acceptance-based approaches in behaviour therapy (e.g., Hayes, Strosahl, & Wilson, 1999; Roemer & Orsillo, 2002; Teasdale, Segal, & Williams, 1995). These approaches attempt to alter the impact of fear emotions and cognitions by teaching clients to ‘‘let go of their struggle’’ through the

use of techniques aimed at reducing avoidance, of experiencing anxiety rather than reducing anxiety per se.

Metaphors are one of the mindfulness techniques helping patients learn to mindfully observe and accept negatively valence cognitive-affective responses. Metaphors employ figurative language to synthesize emotionally relevant experiences in a non-confrontative and nonthreatening way. They help people recognize their behavioural and emotional problems and point to possible, frequently unexpected, behavioural alternatives (Heffner, Greco, & Eifert, 2003; McCurry & Hayes, 1992; Otto, 2000). Metaphorical stories may also indirectly suggest contingencies, in which acceptance is reinforced and emotional avoidance and control is punished. For instance, the futility of fighting with one's own thoughts and feelings has been likened to being in a tug of war with oneself where ''good'' thoughts attempt to fight ''bad'' thoughts (Hayes et al., 1999; Heffner & Eifert, 2004). The harder one team pulls, the harder the other team pulls back. Such a tug of war is exhausting and can never be won because both teams belong to the client. Rather than continuing this senseless fight, the metaphor suggests an acceptance solution that clients typically do not think of, which is to end the fight in an instant by simply dropping the rope. All team members would still be there and clients could observe and stay with their thoughts and feelings simply watching them come and go (Eifert & Heffner, 2003).

Preliminary studies indicate that acceptance techniques produce an overall decrease in clinically significant affective disturbance, particularly interoceptive oriented distress, over short as well as protracted time periods (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Strosahl, Hayes, Bergan, & Romano, 1998; Teasdale et al., 1995). One treatment program, (Kabat-Zinn et al., 1992) that emphasized mindful observation of symptoms in a group of 22 patients with various anxiety disorders found positive effects after treatment completion which were maintained three years later (Miller, Fletcher, & Kabat-Zinn. 1995).

An acceptance rationale is also supported by research suggesting that clients' attempts to control anxiety may have negative paradoxical effects (Ascher, 1989). For example, Wegner (1994) found that attempts to control anxiety in the face of ongoing stress exacerbate physiological arousal. Increased tension during relaxation training was also reported in a study by Heide and Borkovec (1983). Likewise, studies suggest that adding slow diaphragmatic breathing (''BR'') might not increase the effectiveness of interoceptive exposure treatment for Panic Disorder (PD) (Craske, Rowe, Lewin, & Noriego-Dimitri, 1997) and even lead to poorer outcomes compared to treatment without BR (Schmidt et al., 2000). In a more general way, active coping efforts that attempt to minimize the experience of anxiety may (paradoxically and unintentionally) maintain pathological anxiety and increase the anxiogenic effects of interoceptive stimulation (Craske, Street, & Barlow, 1989). For instance, Spira, Zvolensky, Eifert, and Feldner (2002) found that avoidant coping strategies (e.g., denial, mental disengagement, substance abuse) predicted more frequent and intense CO2-induced physical and cognitive panic symptoms than acceptance-based coping strategies. These findings are consistent with earlier studies showing that attempts to avoid aversive private events are largely ineffective and may be counterproductive (Cioffi & Holloway, 1993; Pennebaker & Beall, 1986). The above authors hypothesized that creating an acceptance context, rather than a context emphasizing symptom control, would lead to less avoidance and subjective anxious responding. Although there is not much research suggesting specific differences between control context versus uninstructed participants. Ascher, 1989; Hayes et al., 1996, suspected that attempts to control essentially uncontrollable symptoms might have paradoxical negative effects and increase avoidance and anxiety in control context compared to no-instructions participants. Physiological measures were included as a ''manipulation check'' to ensure that all groups experienced similar and sufficient levels of physiological responding.

Acceptance and thought suppression are two naturally occurring strategies of thought management (Marcks & Woods 2005). Thought suppression (avoidance) however is said to be the most pathological processes known (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Wegner and Gold's (1995) defensive suppression hypothesis states that thought suppression is more likely to occur for emotional thoughts, both spontaneously in daily life and in the confines of an experiment. Moreover, when thoughts are associated with unpleasant emotions, people are likely to engage in chronic thought suppression (Wegner and Zanakos, 1994). Experiential avoidance in general is the attempt to escape or avoid private events, even when the attempt to do so causes psychological harm (Hayes, et, al., 1996). Experiential avoidance can produce immediate, short-term relief from negatively evaluated anxiety-related thoughts and emotions, which negatively reinforces such behaviour. It becomes problematic when it interferes with a person's everyday functioning and life goal attainment. Rigid and inflexible down-regulation of emotions and patterns of emotional and experiential avoidance is thought to function as a core psychological diathesis underlying the development and maintenance of several forms of psychopathology (Blackledge & Hayes, 2001). Several independent lines of research support the notion that rigid and inflexible (i.e., context insensitive) attempts to suppress and control unwanted private events are largely ineffective, and can result in more (not less) unwanted thoughts and emotions (Koster, Rassin, Crombez, and Näring, 2003), increase distress, restrict effective life functioning (Marx and Sloan, 2004), and reduce engagement in meaningful and valued life activities with a concomitant poorer overall quality of life (Dahl, Wilson, & Nilsson, 2004).

Emotion focused and avoidant strategies predict negative outcomes in depression (DeGenova, Patton, Jurich, and MacDermid, 1994), substance abuse (Ireland, McMahon, Malow, and Kouzekanani, 1994), the sequel of child sexual abuse (Leitenberg, Greenwald,

and Cado 1992), and many other mental problems. Deliberate attempts to suppress thoughts and feelings can increase their occurrence and behavioural impact (Cioffi & Holloway, 1993). Further strong evidence that experiential avoidance exacerbates aversive emotional responses and may constitute a risk factor in the development and maintenance of anxiety disorders, comes from an experiment by Karekla, Forsyth, & Kelly, (2004). After several trials of inhaling CO2 enriched air, individuals high in experiential avoidance endorsed more panic symptoms, more severe cognitive symptoms, and more fear, panic, and uncontrollability than their less avoidant counterparts.

Acceptance, unlike experiential avoidance, reflects an openness to all types of experience (both aversive and pleasant) and a commitment to abandon the change agenda where it does not work well and thereby has a negative impact on functioning and only serves to increase distress, namely, in the realm of private events (Marx & Sloan, 2004). Studies done on acceptance strategies and its efficacy, specifically on anxiety disorders, usually are comparative studies where participants enter in a program of acceptance strategies and are compared with thought suppression group, or other cognitive methods. For instance, Eifert and Heffner (2003) found that when highly anxious females were exposed to CO2-enriched air, participants in an acceptance context were less avoidant behaviourally, reported less intense fear and fewer catastrophic thoughts, and were less likely to drop out of the study than participants in a control context. These results were replicated in a procedurally similar study with actual clients suffering from panic disorder (Levitt, Brown, Orsillo, & Barlow.., 2004). Lower experiential avoidance and greater acceptance also enhance willingness to engage in exposure exercises (Levitt et al., 2004) and may prevent dropout (Karekla et,al. 2004) in persons with panic disorder. Collectively, this work suggests that strategies promoting acceptance of discomfort may be worthwhile as healthier alternatives and that experiential avoidance is a potentially toxic process linked with forms of distress and life impairment (Eifert, et, al., 2009).

Eifert and Heffner (2003) also confirmed that Acceptance participants reported fewer and less intense cognitive and fear symptoms, engaged in less catastrophic thinking, and reported no fear of losing control or needing help, showing that anxious individuals do best under conditions in which they make no attempt to escape from or otherwise reduce the effects of fear experienced during exposure. Overall, their result supports the need of creating an acceptance context during anxiety interventions. In contrast to control efforts, and by avoiding ‘‘false safety aids’, such as breathing control, the acceptance context is more likely to foster optimal emotional processing resulting in less fear and catastrophic thinking (Eifert and Heffner, 2003).

Marcks and Woods (2005) compared mindful acceptance based techniques with suppression and part of the results showed that those who were instructed to suppress their intrusive thoughts reported an increased level of discomfort after adhering to the suppression instruction. On the other hand, those in the acceptance condition reported a decrease in discomfort. The monitor only group experienced lower frequency of thoughts and lower discomfort than the other two groups. As a result they induced acceptance to be a more effective strategy for managing personally relevant unwanted thoughts than suppression (Marcks & Woods 2005). Najmi, Riemann, and Wegner, (2009) also compared mindfulness acceptance and thought suppression in dealing with unwanted intrusive thoughts across a group of participants diagnosed with Obsessive Compulsive Disorder (OCD) and a non-clinically diagnosed control sample. Across five separate sessions the participants in each group were exposed to one of five instructions (mindful acceptance, focused distraction, creating associates, thought suppression and a baseline condition), again the findings were identical to those used by Marcks and Woods.

In a similar line, a study compared the effects of an acceptance versus distraction rationale on coping with experimentally induced pain. Among the five groups in different conditions in the study, it was reported that only the Full-Acceptance strategy (that included experiential exercises and a metaphor) had a significant effect on task tolerance as measured by an increase in the number of shocks delivered post-intervention relative to baseline (McMullena, et, al.,(2008). Similar finding was reported prior to this by Gutie´rrez, et, al., (2004).

Considering such outcomes discussed above that generally support that acceptance-based approaches are more effective than control-based ones in improving conditions such as pain tolerance (Hayes, Bissett, et al., 1999), personally relevant unwanted thoughts (Marcks and Woods 2005) and many more anxiety problems, this study expected that participants provided with an acceptance piece in this study (experiment group) would develop tolerance to pictures and thoughts of spider throughout the four trials blocks. .

A similar study that used relational training and selection procedure by Hooper, et, al., (2012) has been conducted and involves two experiments; the purpose of the first experiment was to shows that thought suppression can interfere with personal choice but also constitutes a demonstration of the indirect effects of thought suppression.

Among several studies investigating ACT and affective disorders, is a case study on the effect of ACT on panic disorder. According to the writers of this study, focusing therapeutic efforts solely on operationally-defined response topographies, such as thoughts or hyperventilation, which are attributed a causal role, obscures factors that may be crucial in the etiology and maintenance of panic disorder, such as contextual factors (Lopes, 2000). McFadyen (1989) has warned that the emphasis on the *content* more than the *form* or function of the behaviour leads to the assertion that therapeutic efforts in panic disorder is more like training the user in the development of more complex avoidance strategies. Lopes,

(2000) described Panic disorder as a case of rigid verbal regulations controlled by the need to eliminate the symptoms of panic disorder and panic attack, the fear of the symptoms of panic attack, memories, self-attributions, uncomfortable and unsettling feelings, before indulging oneself into personally valued directions. The goal of ACT in this perspective is therefore to undermine private events as barriers for action and promote flexibility while reacting to those private events in order to promote the behaviours in personally valuable trajectories.

In an effect to illustrate the above statements, Lopes, (2000) conducted a case study on ACT and Panic disorder with some modification to the standard act procedures derived from the functional problem of the case. The finding of the study showed that ACT intervention proved effective in both intervention time and clinical effectiveness. Results were recorded in the way the case referred to his panic problems. As a result the functionality of the escape behaviour started breaking up. This in turn brought about in reduction of the frequency of the panic attacks and escape behaviour. (Johnson & Sidman, 1993) claimed that Contextual control of behaviour appears to be such a powerful factor that it may modulate the effects of the contingencies present. Contextual control exercises its influence on the functionality of people's specific everyday activities. In line with the above statement Lopes, (2000) reported clinical improvement without the need to consider the elimination of particular response topographies by modifying the socio-verbal contexts that gave function to problematic behaviour insensitive to contingencies due to strong verbal control.

The other affective disorder that has been widely studied with respect to efficacy of Acceptance and commitment therapy is generalized anxiety disorder (GAD). It is generally established that people with this disorder perceive internal experiences as aversive or negative. These internal experiences include thoughts, emotions, and physiological

sensations. For such individuals the major tool for escaping and avoiding these experiences is worry (Turk et al., 2005).

Roemer, Orsillo, and Salters-Pedneault, (2008) examined the efficacy of an acceptance-based behavioural therapy in an effort to increasing acceptance of internal experiences and fostering action in valued direction, for GAD. Participants were given treatments using psychoeducation, experiential demonstrations, and self-monitoring between-session. They were taught a variety of mindfulness practices and encouraged to get involve in both formal and informal mindfulness practices. Clients also engage in written exercises aimed at determining valued directions and treatment focuses on bringing mindful awareness to actions and trying previously avoided valued activities. The result revealed that Acceptance-based behaviour therapy brought about statistically significant reductions in clinician-rated and self-reported GAD symptoms. Significant decreases in depressive symptoms were also observed. Majority (78%) of treated participants no more met criteria for GAD and quite a large number of participants (77%) achieved high level of functioning at post-treatment assessment; these proportions stayed constant or increased over time.

Due to the very clinical features of post-traumatic stress disorder (PTSD) as delineated in the diagnostic criteria (American Psychological Association, APA, 1996), ACT is said to best fit the treatments of the disorder. According to the argument of Orsillo and Batten (2005), avoidance is the major psychological process that develops and maintains PTSD. The other major feature of PTSD, that is emotional responsiveness, usually is the result of the ineffectiveness of active avoidance (McMillen et al., 2000). Since avoidance and escape behaviours play the major role, treatment options should focus on the reduction of these behaviours. Many treatment alternatives have brought about good results depending on the amount of focus they give the avoidance and escape behaviours of PTSD (Orsillo & Batten, 2005). ACT has the ability to overcome the shortcomings that PTSD better than other

treatment alternatives. The writers conceive ACT as a treatment based on the idea that the patient ailment's sources not from feeling emotional pain but from attempts to avoid that pain. The aim of ACT is to help bring patients be both open and willing to understand their inner feelings, while focusing on attention and not on trying to escape/avoid their suffering with the objective of living a more meaningful life. *(*Orsillo & Batten, 2005). (Hayes, Strosahl, & Wilson, 1999) also suggested ACT among others as an alternative to address the limitation that is stated above.

In depression, the role of avoidance has been emphasized by authors like Ferster (1973). Evidence has been given by Hayes, et. al (1996), supporting that avoidance plays a major role in psychological problems, including depression. Ottenbreit and Dobson, (2004) also reviewed that a specific relation between avoidance and depression has received research acceptance. ACT maintains that avoidance in depression tends to host and aggravate the problem in the long run. ACT also believes that avoidance is usually successful in the short run, which adds to the problem rather than solves it, because it blocks contact with or creates insensitivity to other contingencies (Hayes & Ju, 1998).

In terms of efficacy ACT has been tested for many forms of depression and stresses. Research is still ongoing on its effectiveness on different disorders and the depressive symptoms observed in most anxiety and psychotic disorders. Among the disorders with depressive symptoms that ACT proved effective, are workplace stress management, psychotic symptoms, mathematics anxiety, substance-abusing, chronic smokers, and social anxiety (Hayes et al., 2006). Many of the studies have included measures of depression. ACT-based intervention decreased depression for self-harming clients who had been diagnosed with borderline personality disorder (Gratz & Gunderson, 2006).

2.5 Depression

2.5.1 Definition of Depression

The most widely used definition of Depression (major depressive disorder) is that of The American Psychiatric Association Diagnostic manual (DSM IV) definition. According to DSM IV, "*Major depressive disorder is defined by two or more depressive episodes characterised by depressed mood and/or loss of interest or pleasure in life activities for at least 2 weeks and at least five of symptoms such as depressed mood most of the day, diminished interest or pleasure in all or most activities, significant unintentional weight loss or gain, insomnia or sleeping too much, agitation or psychomotor retardation noticed by others, fatigue or loss of energy, feelings of worthlessness or excessive guilt, diminished ability to think or concentrate, or indecisiveness, recurrent thoughts of death that cause clinically significant impairment in social, work, or other important areas of functioning almost every day*" (APA, 2000, p. 356).

Similarly, The International Classification of Diseases (ICD 10) defines depression using categorical or the presence or absence of symptoms in a specified period of time. It categorizes the disorders as depression episodes and recurrent depression and further divides each of them as mild, moderate and severe. In typical depressive episodes, of all three varieties described as mild, moderate and severe, the individual usually suffers from depressed mood, loss of interest and enjoyment, and reduced energy leading to increased fatigability and diminished activity. Marked tiredness after only slight effort is common. Other common symptoms are: reduced concentration and attention; reduced self-esteem and self-confidence; ideas of guilt and unworthiness (even in a mild type of episode); bleak and pessimistic views of the future; ideas or acts of self-harm or suicide; disturbed sleep and diminished appetite. Differentiation between mild, moderate, and severe depressive episodes rests upon a complicated clinical judgement that involves the number, type, and severity of symptoms present (ICD- 10, World Health Organization, 1992).

Other less operational definitions of depression utilized a clinician-rated measure like the Hamilton Rating Scale (Hamilton, 1960), and a self-report measure of depressive

symptomatology like the Beck Depression Inventory (BDI, Beck, 1996). These scholars have used rating scales and symptoms scales respectively to define depression rather than using the categorical approaches used by DSM and ICD 10. The BDI comprises 21 items such as "Sadness: 0=I do not feel sad, 1=I feed sad, 2=I am sad all the time and I can't snap out of it, 3=I am so sad or unhappy that I can't stand it." Scores are derived by summing the responses to each of the 21 items. When the test is tallied, the total score is compared to a scale to determine the depression's severity, where a higher total score indicates more severe depressive symptoms. The Hamilton Rating Scale is a similar measure of severity of seventeen depressive symptoms. Although the HAM-D lists 21 items, the scoring is based on the first 17. Eight items are scored on a 5-point scale, ranging from 0 = not present to 4 = severe. Nine are scored from 0-2. After summing up the results, 0-7 = Normal, 8-13 = Mild Depression, 14-18 = Moderate Depression, 19-22 = Severe Depression (Hamilton, 1960; Ramana et al., 1995), despite the different reporting method, scores on this scale correlate quite highly with those on other depression inventories such as the BDI (Dozois, 2003).

2.5.2 Prevalence of Depression

Major depression is one of the most prevalent and costly mental problems in the modern world. According to Kessler et al., (1994) one in six men and one in four women are affected by this mental illness throughout their life time. In US adults alone, About 1 in 5 have at least 1 life time episode of major depression in the 12-month prevalence rate of a major depressive episode was 8.3%, and the lifetime prevalence rate was 19.2 % (Kessler et al., 2005). In the United Kingdom, the prevalence of depression was estimated between 24 and 42 per 1000 people. In 2007, the number of individuals with depression was estimated to be about 1.24 million and it is projected that by the year 2026 the figure will reach up to 1.45 million because of the fast demographic changes (McCrone et al., 2008).

It is difficult to find a comprehensive population based prevalence statistics and study made specifically on depression in Saudi Arabia or other Arabic countries. However there are studies made on specific groups of populations in different Arabic countries which help us roughly estimate the prevalence rate in the region. For example, M. Afifi (2006) *on his study on the depression, anxiety and stress on school adolescents in Saudi Arabia reported that* more than two-thirds of the students (59.4%) had at least one of the three disorders under his investigation (depression, anxiety and stress). 40.7% of subjects had at least two disorders. Moreover, more than one-fifth of students (22.6%) had all the three psychological disorders under study. Among the samples, about one-third of students (38.2%), had depression, while about half (48.9%) had anxiety, and about one third (35.5%) experienced stress. According to this specific study therefore, depression is the second most prevalent mental disorder among adolescents in school.

Gender and age differences have long been reported to have a significant effect on depression in different groups. Gender differences in adult depression can also be seen in adolescents: adolescent girls are at least twice as likely to develop depressive disorders as adolescent boys (Cohen P, et al., 1993). Age at onset of depression and bipolar disorder is similar in males and females (Piccinelli M, Homen FG 1997). However, adolescent girls have been found to be significantly more likely to experience low and moderate levels of depression than adolescent boys Allgood-Merten B, Lewinsohn PM, (1990). A similar result was found in Egypt, Alexandria, where adolescent boys were significantly less likely to experience depression than their female counterparts. This study also reported that girls are more likely to experience repeated depression episodes than boys. However the same study reported that data collected in Oman produced a different result: boys in Oman are more likely to experience depressive symptoms than Omani girls. The result, though not significant, shows that such outcomes may vary from country to country depending on the

situation in specific contaxts, as depression could be derived from environmental stressors such as war (Afifi, 2006*)*.

Depression, as one of the most prevalent mental problems, regardless of the variation in different cultures, economies and geographic locations, is also one of the most costly mental issues in the world currently, despite the efforts made to prevent the disorder. The problem is amplified by the fact that depression is a naturally highly recurrent mental issue, with each episode increasing the risk of subsequent ones (Kessler, 2002). Currently, the recurrence estimates suggest that 50 to 60% of individuals who experience one depressive episode go on to experience a second one, with 70 to 80% of these eventually experiencing a third episode, and 90% of individuals with three past episodes going on to experience a fourth one (American Psychiatric Association, 2000). The total financial cost of services for depression in England in 2007 was estimated to be £1.7 billion. Loss of employment increases the total cost to £7.5 billion. By 2026 these figures are estimated to be £3 billion and £12.2 billion respectively. Most of this increase is due to expected increases in the cost of services over and above inflation. In 2007, it is estimated that 65% of working-age adults are using services when needed. If this figure increases to 95 per cent, that is, if 95% of people with depression were in contact with services, then the costs of service would currently be £2.3 billion (McCrone et al., 2008).

2.5.3 Depressive symptoms

Depression presents itself as a symptom rather than a disorder in many other mental problems and medical conditions. Among the mental illnesses that depression is said to exist as a major symptom are; Posttraumatic Stress Disorder (PTSD), Panic Disorder, Agoraphobia, Social Phobia, Generalized Anxiety Disorder, Schizoaffective Disorders, Schizophrenia, and Personality Disorder. In PTSD, one of the chronic symptoms is depression as the patient re-experience emotions attached to the events. Even though the

main symptoms in anxiety disorders like panic, agoraphobia, social phobia and GAD are being anxious, the distress may result in depression. Chronic depression in among others constitute the symptoms of schizoaffective disorders and schizophrenia. Depression is also common in personality disorders and substance abuse disorders.

Depressive symptoms are also manifested in other medical conditions like diabetes and chronic illness substance abuse (Burke and Elliott, 1999). Several medical conditions can cause symptoms of depression, including hypothyroidism (Haggerty et al,. 1993), adrenal insufficiency (Board et al., 1957), post concussive syndrome (King, 1997), vitamin B12 deficiency (Murakami K,2010), and mononucleosis (Cadie1976).

2.5.4Theories of depression

2.5.4.1 Learning Theory of Depression

One of the earliest learning theories of depression that has attracted much attention was the Ferster's operant model of depression: a passive avoidance paradigm. According to this model, a passive behaviour is less likely to produce negative reinforcement. As a result, passive behaviour is reinforcing active behaviour. When this behaviour is generalized, it leads to more improvised environment (Ferster, 1973). According to Lewinsohn et al., (1979) the passive behaviours associated with depression also receive a negative social reinforcement or reduced social reward. Joiner and Coyne, (1999) also support the idea that a flat, unresponsive behaviour makes a person unattractive and avoided by others. Therefore, the higher the social reward, the better the mood. Depressed moods result in fewer activities and reduced exposure to opportunities that are rewarding. This reduction in reward, in turn, leads to less adaptive behaviours (Lewinsohn 1984; 1990).

Learned helplessness theory is another model that emerged in the mid-70s. The model was derived from an experiment conducted on animals, where the animals were exposed to

an inescapable aversive condition. The animals exhibited a passive style of behaviour in situations that were uncontrollable. The uncontrollability of the situation was a crucial element that lead to helplessness (Seligman 1975). This is very similar to clinical depression in human beings, where individuals feel they have no control over events and fail to take action to avoid negative outcomes. The loss of control for humans leads to motivational problems, emotional reactions and cognitive deficits when the symptoms of depression as are evidenced in (Hiroto, 1974).

2.5.5 Cognitive Theories of Depression

2.5.5.1 Hopelessness theory of depression

Abramson et al (1978) evaluated and reformulated the learned helplessness model in humans by asserting that helplessness model does not account for all types of depression, because a person expect more a negative response to a probable outcome than a positive response. This idea lead to the notion of causal attributions, which proposed hopelessness depression as a pacific sub-type of depression and depicted that attribution styles and other cognitive factors were more likely to cause depression if they produced a sense of hopelessness in an individual (Abrahamson et al 1989).

2.5.5.2 Attribution model of depression

Among the cognitive models of depression, Attribution model of depression poses that Depression develops from Internal, Global and stable negative attributions, which are attributed to the characteristics of oneself. They are considered to be unchanging and pervasive in nature. Depressive people believe that the occurrence, or happening of something, was caused by global and persisting qualities of themselves that are desirable and permanent or unchangeable (Abrahamson, et al., 1978).

2.5.5.3 Back's cognitive theory of depression

Beck's cognitive theory of depression is the most popular and widely studied theory of our generation, mostly because it was able to explain the epidemiologic differences as a basis for understanding the underlying development and maintenance of depression. It was widely supported by research evidences (Abrahamson et al., 2002), and it was able to become the basis for many effective treatment methods for depression (Pössel, 2011).

Beck's cognitive theory of depression gives a special emphasis to the role of automatic thoughts. The theory is composed of four interrelated components: schemata, automatic thoughts, cognitive errors and cognitive triad. Schemata: relatively enduring, organizing structures that guide situational information processing (Beck, 1976), are depressogenic in depression. A Depressogenic schemata is negative and contains an immature and inflexible attitude about the self and the world in general. Negative schemata, when exposed to stress, leads to cognitive biases which affect expectations, interpretations, perception and memories, causing unrealistic, extreme and distorted thinking. This negative cognition results in a negative thinking about the self, the world and the future, and is called cognitive triad. According to Beck, (1976), the whole process of a depressogenic style of thinking can be expressed in negative automatic thoughts. Automatic thoughts are understood as temporary, non-emotional mental events, which are subjectively plausible in a certain situation. These automatic thoughts can be interpreted as the most proximal cause for the emotional, somatic, and motivational symptoms of depression. (Beck, 1976) cited in (Pössel, 2011).

2.5.6 Types of interventions used in treating depression

Despite the bulk of anti-depressant medications that are being produced and administered to people with depression which has proven effective, psychotherapy has been the most recommended and reliable method of intervention for depression over the years. (Smith and Glass, 1977 & Steinbrueck et al., 1983) reported that psychotherapy was more effective than medication in the treatment of depression in their meta-analysis. Gaffan et al., (1995) also reported a small advantage for psychotherapy over medication in their direct comparison of efficacy between medication and psychotherapy. However, the results of more recent meta-analyses, that included studies directly comparing psychotherapy and medication, have reported no difference between the two treatments (De Maat et al., 2006).

Among the most prominent method of therapy are Cognitive Therapy, Behavioural Techniques, Cognitive Behavioural Therapy and Acceptance Commitment Therapy. Becks' model of depression is the basic for cognitive therapy for depression. Cognitive therapy, as a widely accepted and effective treatment for depression, poses a challenge to the dysfunctional assumptions and negative cognitions that underlie depression. These are tackled through teaching, tasks, assignments and activity scheduling (Moorey, 1996).

The cognitive model of depression suggests that dysfunctional attitudes and negative automatic thoughts are involved in the onset and maintenance of depression. Cognitive intervention first targets the negative automatic thoughts that mediate depressive symptoms, then focuses on replacing negative thinking styles with more adaptive ones. According to the theory, a decrease in negative automatic thoughts should bring about a decrease in depressive symptoms. The dysfunctional attitudes that are replaced by more realistic ones will then further reduce negative automatic thought and depressive symptoms (Oei et al., 2006).

Many studies support the claim that cognitive therapy is effective in treatment of depression better than depressive medications (Dobson, 1989). Other studies report that Cognitive therapy can be as effective as medications for the initial treatment of moderate to severe major depression, but this degree of effectiveness may depend on a high level of therapist experience or expertise (Robertet al., 2005).

One of the behavioural techniques that found empirical ground is Behavioural Activation. This behavioural technique believes that avoidance behaviour plays a very crucial role in maintaining a depression-inducing environment (Martell et al., 2001). Total dependence on avoidant coping strategies creates an environment where adaptive behaviours are not adequately reinforced. Adaptive behaviours reduce in frequency or are extinguished altogether and will be replaced with passive non-rewarding activities (McDowell, 1982). These avoidance tendencies could either be behavioural or cognitive (Manos et al., 2010). Behavioural Activation (BA) therefore helps people with depression become aware of the process and reduces the maladaptive avoidant behaviours. In an effort to improve the behaviour and the associated mood and cognition BA, it teaches individuals to actively engage in goal oriented behaviours that increase the frequency, intensity, and magnitude or environmental rewards (Jacobson et al., 1996).

Cognitive behavioural therapy (CBT) is one of the approaches used in treating depression. It utilizes cognitive and behavioural strategies to help individuals to think and act more realistically and adaptively (Beck et al., 1979). The cognitive technique involves an informative approach to explain to people with depression and help them identify how automatic thoughts affect their emotions and behaviours, discuss cognitive errors, identify their interpretation of events, guide them to generate alternative explanations, hypothesize the rationale for their current behaviours, and empirically examine their underlying hypotheses (Sands, 2001). The behavioural component, as an important part of CBT for

depression, involves scheduling pleasurable activities, especially with others, that usually give positive reinforcement. Other CBT techniques include assigning graded tasks and homework and acting out difficult behavioural situations. CBT employs more activity scheduling and behavioural conditioning than classic cognitive therapy (Stuart et al., 2006).

Cognitive behavioural therapy (CBT) is among the most extensively tested psychosocial treatments for depression with more than 80 controlled trials (American Psychiatric Association, 2000). CBT is found to be as effective as anti-depressants or medicinal treatment for depression and CBT is thought to be fairly better than antidepressant medications in solving individuals' depressive symptoms (Segal, et al., cited in Chen, Jordan & Thompson, 2006).

The other most prominent type of psychotherapy is Acceptance and commitment therapy (ACT). ACT based on a functional conceptualistic account of human language and cognition conceptualizes depression as psychological inflexibility. According to this model, six distinguishable processes contribute to psychological inflexibility in general and clinical depression in particular: fusion, experiential avoidance, attachment to a conceptualized self, living in the past or future, excessive rule-following, and lack of valued action (Zettel,2006). Acceptance and commitment therapy (ACT) relies on the assumption that we can change a patient's reaction to a thought or feeling, but that the internal experience itself is not changeable (Hayes, Strosahl, & Wilson, 1999). Therefore ACT desires to teach clients how to become more accepting of stressful thoughts and feelings because trying to control or block unwanted experiences and thinking is often ineffective and sometimes counterproductive (Hayes, 2004).

ACT maintains that the fundamental problem in depression is experiential avoidance: unwillingness to remain in contact with particular private experiences accompanied with attempts to escape or avoid these experiences (Hayes & Gifford, 1997; Hayes et al., 1996). Therefore, ACT 's main goal is to improve contact with direct experience and create more flexible, value-directed objectives that will continue to exist in the presence of previously avoided experiences, that have been considered as depression (Kanter, Baruch & Gaynor, 2006).

ACT has been shown to be as effective as Cognitive Therapy in improving moderate to severe levels of depression (Forman et al., 2007).

2.6 Depression from ACT Point of View

This section will look at the link between language and cognition towards depressionand how ACT reveals six core processes of pathological inflexibility.

2.6.1 Language and Depression

From the RFT and ACT perspective, as stated by Zettle (2007), "*the dark side of language*" (p.24) is responsible for transforming a normal and adaptive level of sadness that exists normally in the continuum of mood fluctuations to a pathologic depression. Continuing on the adaptive nature of a little or mild depression referred as dysphoria, the author explains Klinger's incentive-disengagement theory (1975). Klinger's theory states that organisms that come across obstacles to achievement of goals normally increase their efforts at first. As a normal reaction to the inability to overcome the barrier, dysphoria occurs and serves to cease the goal-seeking behaviour, thereby saving time and energy that would have been wasted in an effort to achieve the goal. However, if the organism cannot free itself of the behaviour, dysphonia may intensify and, in humans cases, end up in clinical depression.

Neese (2000) also suggested that low mood or dysphoria may serve supplementary adaptive function within a wider range of *"unpropitious situations in which efforts to pursue a major goal will likely result in danger, loss, bodily damage, or wasted effort" (p14).* More precisely, dysphoria is suggested to not only lead to the adaptive disconnection of futile goal seeking but also avoid the premature quest for options. Zettle, (2007), maintains that dysphoria is a normal and psychologically healthy experience which he refers as "*clean pain*". He also asserts that it is a result of both fruitful and fruitless attempts of living a successful life or achieving a goal. "*Dirty pain*", on the other hand, has been expressed as psychologically unhealthy. Dirty pain or psychological trauma, is a result of attempting to control, avoid or escape from dysphoria, anxiety or others forms of clean pains, whereby the reluctance to experience the clean pain transforms into a dirty pain of psychological trauma (Hayes et al., 1999).

Zettle and Hayes, (2002) have identified many language processes that are responsible for culminating minimal levels of depressed mood (disphoria) into clinical depression. Among the processes are: thought suppression, rumination, and elements of fusion such as evaluating, storytelling and reason giving. Evidence shows that among the above mentioned processes, rumination takes the lions' share in initiating, accelerating and maintaining depression where individuals became desperate and rigid in finding out and understanding the processes involved in their depression (Zettle, 2007). For example, Nolen-Hoeksema, (2000) reported that those with ruminative style have been susceptible to experience depression in response to different life stressors. Ruminative coping style in dealing with disaster has proven to be counterproductive, studying students who endured earthquake. The study found that several weeks later, ruminating participants were found to be more depressed than their non-ruminating counterparts (Nolen-Hoeksema, & Morrow, 1991). Nolen-Hoeksema's Responses Styles Theory (1991) suggests that people who engage in *"repetitive and passive thinking about one's symptoms of depression"* tend to elongate the very symptoms they are trying to decrease. Ruminators usually embrace optimistic (but

incorrect) beliefs that it is helpful, but unknowingly are reducing their ability to solve the problem efficiently (Watkins & Moulds, 2005). Furthermore, research reveals that cognitive processes such as depressive rumination (Jacobson, Martell & Dimidjian, 2001; Nolen-Hoeksema, 1991, 2000; Watkins & Teasdale, 2004) and high cognitive reactivity to mood shifts, where the experience of low mood more easily triggers negative thinking in previously depressed patients (Segal, Gemar, & Williams, 1999), increase vulnerability to future episodes as well as maintain depression.

In an effort to investigate their link to depression, the two components of rumination have been put to test by a study that used depressed and non-depressed subjects. Participants were encouraged to engage in either analytical or experiential self-focusing on their psychological experiences and bodily sensations, where the analytic component of the focus on the evaluating component of rumination by asking participants to think about the cause, meaning and consequences of each symptom/sensation (Rimes & Watkins, 2005). On the other hand, the experiential induction trained participants to simply concentrate their attention on the experience of each symptom/feeling. The outcome revealed that the two types of self-focused ruminations had an immaterial impact upon negative self-evaluations and dysphoric mood of non-depressed subjects. However, it exhibited that in the group of clinically depressed participants, the analytical ruminative type of self-focus was the only ruminative style of the two to raise self-judgment of worthlessness/incompetency and dysphoric mood (Rimes & Watkins, 2005). A similar result was reported that analytic thinking evaluative framing has been shown to specifically contribute to the overall recall of categorical self-related material by clinically depressed subjects (Watkins & Teasdale, 2001). Therefore, the empirical evidences support language (rumination) to be a major contributor to the pathway that leads from dysphoria to depression. As stated by, rumination appears to be as central to clinical depression as worrying is to Generalized Anxiety Disorder (Watkins, Moulds, Mackintosh, 2005).

2.6.2 Evaluating

Generally verbal-social communities teach children the appropriate use of certain negative descriptive terms, such as “ruthless, “bad,” “dreadful,” and so on, in trying to describe negative life-events like the loss of a loved one or a physical injury during language development. This could take a spoken or written form and the same can be said for positive descriptions for positive life-events (e.g. good, excellent, pleasant, generous and so on) (Zettle, 2007). According to RFT, doing so establishes a bidirectional frame of coordination or equivalence between the words used in describing the events and the actual events coupled with transfer of stimulus functions to an another adverse life-event based on relational properties (Hayes et al. 2001). For example if a child is trained that death is equivalent to bad, by mutual entailment he or she learns that bad is equivalent to death. “Moreover, through the transfer of stimulus functions, the word bad itself now assumes some of the same psychological properties of losing a loved one.

Through combined entailment, any new event, such as losing a job, that is now also evaluated as bad, may exert an emotional impact similar to the death of a family member (i.e., job loss= bad, bad = death, job loss= death). If and when this occurs, the stimulus functions derived from how the event is framed rationally (“being fired is as bad as someone dying”) dominate over those directly related to the event itself and description of it (Zettel, 2007). When it comes to the self, it involves description and evaluation of the roles we play, our relationships, our strengths and weaknesses, our attitudes, and futures and dreams, in addition to biographic data. If we fuse with evaluation and description of ourselves and we start thinking that we are the description and evaluation we made, it creates problems (Harris, 2009). This is usually referred to as the conceptualized self or self-as-content. Harris, (2009) prefers to use the term “self-as-description”: a way of describing oneself. And when people fuse with their self-description, they feel as if they are that description, that what they thought

(evaluate and describe) about themselves is what they actually are. People with depression generally fuse with a very "negative" self-description (Harris, 2009).

2.6.3Reason giving

Reason giving simply refers to verbal explanations and justifications that clients give for their actions. Such verbal behaviour apparently is established in early childhood in response to inquiries by the verbal-social community (Deitz, 1985). As a result, reasons which make reference to private events are not problems by themselves according to Zettle & Hayes, (1986). They, however, would be problematic when they are seen by the verbal-social community and reason-givers as causes for actions. Reason giving based on private events can easily be confused with causal statements because they are produced in response to questions about behavioural causes. Causal statements are easily taken literally and develop into socially established as genuine causes for a multitude of maladaptive behaviours. Therefore, relationships can be established between reason-giving and other behaviour in a society where good and adequate reasons enable a person to get away with failure, and other unacceptable behaviours (Zettle & Hayes, 1986).

A common explanation for depression than external circumstances are private events such as negative, unwanted thoughts and associated feelings of remorse, sorrow, disappointment, and so on (Bloor, 1983). Private events are usually reported as reasons for a variety of unwanted behaviours and are viewed as "good," compelling explanations (Hayes, 1987). With reason giving, clients may get involved into verbal constructions that point to reasons for the beginning and maintenance of depression that cannot be changed. Sometimes reason giving may refer to previous life events, such as divorce or job loss, as "causes" for depression that are simply inaccessible and therefore out of control at present (Zettel, 2007).

2.6.4 Storytelling

Very related to the reason giving that depressed patients buy into is storytelling, whereby clients combine various explanations for depression as well as autobiographical details to construct a logical and meaningful story of their lives and experiences with depression. Story telling can be understood as a network of relational frames that in essence constructs reasons for reason (Zettle, 2007). Story telling is not in and of itself pathogenic as long as psychological flexibility is not compromised. However, especially with clients who have suffered from chronic clinical depression, this rarely appears to be the case. Such clients may take on a "victim role" and strongly maintain that suffering with depression is an unavoidable outcome given how they were distressed and uncared for either by life itself or by others (Zettel, 2007). When a client is fused at this level, the life story is conceptualized as a set of irreversible and unquestionable reality rather than as something that can likely be rebuilt and be spoken about with an altered outcome. Within this context, depression itself may be considered and wielded as a constant cue, proof, and justification of the ill-treatment the client has endured (Zettle, 2007).

2.6.5 Psychological Inflexibility

Psychological inflexibility or *an inability to make the adjustments necessary to sustain value-directed behaviour*, Hayes et al., (2006, p. 5) is considered to be the main basis for any psychological misery from Acceptance and commitment perspective (Hayes et al., 2006). "*The concept of psychological inflexibility branches from a modern behavioural explanation of complex human behaviour and dominance of psychological reactions over chosen value contingencies in guiding actions."(*Bond et al., 2011, p.678*).* According to Latzman and Masuda (2013), psychological inflexibility is marked by experiential avoidance in addition to reduced daily functioning. A number of studies report that psychological inflexibility is linked with a wide range of psychopathologies, such as anxiety (Masuda & Tully, 2012), general psychological distress (Masuda, Price, & Latzman, 2012),

and depression (Bond et al., 2011). ACT spots six core pathological processes that are responsible for psychological inflexibility: fusion, experiential avoidance, attachment to a conceptualized self, living in past/future, excessive rule-following, and lack of valued action (Hayes et al., 2006). As discussed earlier, in all the six core elements of psychological inflexibility, language plays a vital role (Zettele, 2007).

2.6.6 Fusion

Streosahl, Hayes, Wilson, & Gifford, (2004) express fusion as how stimulus functions that are transformed and influenced by language can control the behaviour regulation that comes with direct incidents. More simply, fusion means blending in our thoughts so that they are let to govern our awareness to the extent they massively impact our behaviour (Russ Harris, 2009). Fusion affects what we think and say about our world and this affect our behaviour greater than the effect of directly experiencing or contacting the world we talk about. Fusion contributes to depression when direct experiences that would otherwise support valued living are relationally framed in certain ways (Zettel, in press). Depressed clients fuse with varieties of negative thoughts such as: *I'm bad, I don't deserve any better, I can't change, I've always been this way, etc.* They also frequently fuse with bad memories linked with events as rejection, disappointment, failure, or abuse. Flash backs are good example, where depressed patients are so highly fused with their memory, that they think it is happening here and now (Russ Harris, 2009).

Negative self-statements that foster attachment to a damaged conceptualized self as stated above provide perhaps the most common instance of fusion with depressed patients. However, a damaged conceptualized self alone is not regarded as problematic and is unlikely to contribute to psychological inflexibility unless fusion is involved. Usually, however, some degree of fusion is associated with any type of negative self-evaluation (Zettel, 2007). In clinical depression, fusion often manifests itself as worrying, ruminating, trying to figure out

"why I'm like this" or a consecutive negative commentary such as: "this place is not for me, they are all better than me, they all deserve to be here but me. I cannot derive any happiness from this." (Russ Harris, 2009).

2.6.7 Experiential avoidance

ACT maintains that the fundamental problem in depression is *experiential avoidance*: an unwillingness to remain in contact with particular private experiences coupled with attempts to escape or avoid these experiences (Hayes & Gifford, 1997; Hayes et al., 1996). As pointed out in Zettle (2005), although the term *experiential avoidance* accommodates both escape and avoidance behaviours, *experiential escape* may be more appropriate for depression in that the depressed individual may be more likely preoccupied with terminating psychological events that have already been experienced and are currently being endured, such as guilt, shame, and painful memories of loss experiences, rather than those that are anticipated and avoided.

Experiential avoidance is intellectualized as purposeful efforts to change the occurrence or form of selective private events; such as negative thoughts, guilt, sadness, regret, and other unwanted emotions, or the situations in which they happen (Hayes, et al., 2006). In general, fusion arranges the platform for experiential avoidance. Therefore the two together easily result in psychological inflexibility because negative thoughts do not all produce experiential avoidance but those with which clients fuse do (Zettel, 2007). Efforts to avoid or escape from fused, depressing thoughts and memories can take varied forms, ranging from distraction to suicidality (Zettel, 2007). Two of the most common forms of experiential avoidance appear to be thought suppression (Wenzlaff, 1993) and rumination (Nolen-Hoeksema,1990); only the first one will be discussed here, as a detailed presentation has already been made about rumination earlier in this section in relation to the effect of language on depression.

Experiential avoidance probably is the most prominent ACT explanation for most mental problems, including depression, in which running away from feeling sad would maintain and aggravate the condition as explained at the beginning of this chapter. Literature consistently shows that thought suppression results in a backfiring effect in that the thoughts bounce back with increased strength (Wegner, 1994). In the case of depression, other negative thoughts are often concentrated upon to distract attention away from a targeted thought. Paradoxically, such a tactic is not as effective as using neutral thoughts as distractors (Wenzlaff, Wegner, & Roper, 1988), as it brings back the low mood present when the original suppression occurred upon the return of the targeted thought (Wenzlaff, Wegner, & Klein,1991), and apparently contributes to rumination and even higher depression (Wenzlaff& Luxton, 2003). The ineffectiveness of experiential avoidance and how it can aggravate depression is more highlighted by the discovery that a re-emergence of a dysphoric mood can restore thought suppression (Wenzlaff et al., 1991), therefore creating a downward spiral relationship between these private events and allowing depression to lead a life of its own (Zettel, 2007).

However, depression is also understood as playing the avoidance role itself by hindering the depressed person from facing basic and threatening experiences. Depressed individuals choose to restrain themselves in depression rather than taking the risk of exposing themselves to experiences that could result in potentially higher levels of psychological damage. Therefore, even though it demands more empirical evidence, the assertion that depression maintains depression in order to avoid psychologically harmful experiences could be an explanation (Higgins & Berglas, 1990). This role of depression is also supported by verbal construction as in the statement *"... as long as I am depressed, my productivity at work remains down, so there is no point in seeking a promotion" (*Zettle, 2007 pp35*).* Furthermor*e,* ACT argues that suicide in depression can be hypothesised as "experiential

escape" (Wilson, 2006; Zettle, 2004). Suicide therefore can be understood as an escape from the conceptualized self that is arbitrated to be inadequate, inept, unattractive, and guilty (Baumeister, 1990). ACT further argues that a purposeful attempt to rehabilitate a damaged conceptualized self eventually would be likely to fail, and the option of killing it then may seem to be the only feasible alternative means to escape, especially given the cognitive rigidity and psychological inflexibility that complements suicidality (Baumeister, 1990). It is even considered that absence of a conceptualized self allows more psychological inflexibility than a damaged one (Hayes & Smith 2005).

2.6.8 Attachment to a conceptualized self

Another alternative pathway of Depression is a damaged conceptualized self. This concept has been indicated to contain one third of Beck's Cognitive Triad of depression (Zettle, 2007). Similarly low self-esteem has been included as a diagnostic criteria in diagnosis of major depressive episodes in DSM-IV (1994). From the ACT perspective, a self that is being deemed as lacking in worth is a conceptualized self. A damaged conceptualized self per se is not regarded as problematic and is unlikely to contribute to psychological inflexibility in the absence of fusion with it. Unfortunately some degree of fusion is likely to be associated with any type of negative self-evaluation (Zettle, 2007).

Evaluative self-thoughts usually take the form of "I am unwise, inept, unlikable, etc." and help form a conceptualized self together with biographic details: gender, ethnicity, age, marital status, and so on. Clients usually engage in suppression at the beginning of depression, rumination, or other forms of experiential avoidance to control undesirable thoughts about the self. As a result, they are more likely to worsen the depression than reduce it. As depression itself becomes intensified through the process of experiential control, fused self-identification with the disorder (i.e., "I am depressed" vs. "I am a 40 years old, unmarried woman who is experiencing depression") may control other ways individuals

think about themselves. In effect, through the bidirectional transformation of stimulus functions, clients become their depression (Russ Harris, 2009).

2.6.9Living in past/future

According to Zettle, (2007) although rumination, thinking about the cause, implication, and possible solutions to depression have the appearance of problem-solving, from the ACT perspective, ruminating can be viewed as a relational framing that serves an experiential avoidant function. Rumination, comparative to worrying, seems to be more focused on the past than the future (Papageorgiou & Wells, 2003; Watkins, Moulds, & Mackintosh, 2005). However, the high rates of comorbidity between depression and anxiety disorders, especially generalized anxiety disorder (Mineka, Watson, & Clark, 1998), indicates that clients with depression are also expected to be worried about the future too. As a result individuals with depression create a fusion with a verbal past and/or future that restricts their capability to respond in a psychologically flexible manner to what appears in the here-and-now (Davis & Nolen-Hoeksema, 2000). Ramel, (2007), Ramel, Goldin, Carmona, & McQuaid, (2004) reported ruminating to foster living in the past/future, in effect initiating, maintaining and reoccurring depression when compared to mindfulness (Fletcher & Hayes, 2005).

Furthermore, (Harris, 2009) depicts that depressed patients normally spend a lot of time fused with a conceptualized past: ruminating on painful past events, often having to do with rejection, loss, and failure. They also fuse with a conceptualized future: worrying about all the “bad stuff” that might lie ahead. Fusion and avoidance readily lead to a loss of contact with here-and-now experience. Individuals readily get caught up in a conceptualized past and future: dwell on painful memories and ruminate over why things happened that way; fantasize about the future, worry about things that have not yet happened, and focus on all the things to do next. And in the process, individuals miss out on life in the here and now.

2.6.10 Excessive rule-following

According to RFT, rules are viewed as frames of coordination between two relational networks that control behaviour (Barnes-Holes, O'Horal, Roche, Hayes, Bissett, & Lyddy, 2001). It can simply be understood as a language or verbal stimuli that exert a regulatory effect on behaviour. Directions, guidance, orders, and requests, whether issued by others or formulated by oneself, are common types of rules that may come to apply functional control over behaviour (Zettle, 1990). The extent to which rule-following may contribute to depression is dependent upon the extent to which it restricts valued living. Mainly, two types of rule-governed behaviours, tracking and pliancy (Zettle & Hayes, 1982), are believed to generally contribute to psychological inflexibility where rules that are not congruent with values would still be vigorously followed through Tracking and Pliancy (Zettel, 2007). Compliance is a rule-following behaviour controlled by socially mediated incidents. It is a rule governed behaviour that results from a history of several examples in which a speaker presents the listener with reinforcement conditional on the association between the rule and the listener's behaviour. A common compliance would be an individual doing what someone else tells him to do in order to gain favours, assuming that this is done under the control of the apparent speaker-mediated consequences specified in the rule or instruction. Compliance is the first type of rule-following upon which tracking will be developed. Tracking is a rule following behaviour controlled by natural consequences. It is rule governed behaviour that results from a history of multiple connections in which doing what is known in the rule is proceeded by natural behaviour rather than arbitrary consequences. Tracking is set by the verbal community after some level of compliance is present (Torneke, et al., 2008)

2.6.11 Lack of valued action

ACT recognizes that seeking aggressively but fruitlessly for value congruent goals results in depression, as does escaping from or avoiding dysphoria, which is discussed above in detail Zettle, (2007). However from ACT perspective "*value incongruent goals could lead to depression because only the pursuit and attainment of goals that are themselves congruent with key values would be expected to support a full and meaningful life free of depression"* (Zettle, 2007 pp32).

ACT understands value as "*verbally construed global life consequences*" (Hayes et al, 1999, p.206) and value congruent behaviour is viewed as naturally reinforcing. Values such as "being a good parent" are not verbally interpreted, but they can be accessed and constructed via language (Hayes et al, 1999). Depression usually brings about reductions in both enjoyable and task-oriented activities (Beck et al., 1979). ACT is most concerned about the reduction in valued living as a result of reduction in activities due to depression (Hayes et al, 1999). Depressed individuals usually fail to seek goals congruent with their core values. In some cases, through various traumatic life events, clients may have been so let down in effectively achieving valued goals that they do not try any more. They may well maintain that they have no values at all. This is another way of experiential avoidance to prevent further frustration and psychological trauma (Zettle, 2007).

The likely effect of a lack of valued action to psychological inflexibility and depression is underlined by results that those who are less successful at living their most important values report higher levels of experimental avoidance, depression and fusion with negative thoughts (Plumb, Hayes, Hildebrandt, & Martin, 2007). Additionally, consistent with the supposed rules discussed in the previous section that tracking and compliance my play in depression, individuals who, according to a values questionnaire (Blackledge & Ciarrochi, 2005), based their selection of value upon feeling "ashamed guilty or anxious if I didn't" (avoidant

tracking) or “because somebody else wants me to” (compliance), also reported higher levels of depression, experiential avoidance, and fusion with negative thoughts (Zettle, 2007).

As behaviour becomes more and more motivated by fusion with unhelpful thoughts, or tries to avoid unpleasant private experiences, values usually get lost, abandoned, or forgotten. If an individual does not have a clear understanding about his/her values or is not in touch with them, then he/she cannot use them as channels for actions. Depressed individuals frequently lose touch with their values around relating with and contributing to others, being prolific, promoting health and well-being, having fun, or taking on difficult activities such as sports, work, and hobbies (Harris, 2009).

2.7 **The impact of cultural differences on the effectiveness of Acceptance Commitment Therapy for patients with Depression**.

Acceptance and Commitment Therapy (ACT) uses a unique psychotherapeutic approach based on Rational Frame theory (RFT). The Rational Frame theory examines the interactions that people have with their social and natural surroundings or environments to provide an understanding of the power of the language and verbal behaviour. According to the theory, psychopathology is a result of human behaviour to avoid events that are negatively evaluated. The ACT outlines the ways in which language directs patients to fight against the aspects of their personal lives that support and sustain pathologies. Patients learn how to accept and re-contextualize private events, build clarity about their values and commit to change their behaviour as needed. According to Mattaini (1997), ACT therapists do not ask patients to accept every situation, but to ultimately accept some circumstances at some times.

The acceptance of a private event that has been avoided in ACT is not itself a goal. Clients are taught coping strategies so that they can change their behaviour. As such, ACT employs a detailed method of clarifying values that are verbally constructed to be globally

desired life directions. In ACT, values of the client are elaborated in major domains like work, citizenship, relationships etc. In addition, the concrete actions that would lead to these values are specified. According to Hayes (2002), the core question ACT asks is if a client is willing to experience "those things fully and without defense, as they are and not as they say they are and do not take them in a valued direction in the existing situation" If the client accepts, life opens up a bit, if they reject, they become a bit smaller.

Culture is defined generally as a person's view of the world, shaped by the experiences of life and affects the way an individual interacts with the world (Pedersen & Ivey, 1993). To help understand the relevant dimensions of a person's cultural identity, Hays (2008) provides a heuristic known by the acronym "ADDRESSING". This Brings together individuals aspects of (1) Age and influences of generation, (2) Developmental and Disabilities that are acquired, (3) Religion and spiritual inclinations, (4) Ethnicity, (5) Social-economic position, (6) Sexual inclinations, (7) Indigenous heritage (8) Nationality and (9) Gender. According to Helms & Talleyrand (1997), race, which means classifying people into groups based on physical characteristics, also affects one's identity.

Cultural identity is dynamic, in flux and depends highly on context as people interact with the ever changing world. It is therefore important to know when and where to apply general knowledge about cultural groups in understanding a client's experience, and when to personalize ACT treatments to a specific client's situation and set up (Sue, 1998). These varying world views based on cultural backgrounds reflect different experiences in larger contexts of the society and will usually have an effect on ACT. It is expected that when the culture of a therapist and that of a client differ, the values the two parties regard as acceptable may be antithetical. In this case, clients may develop greater concerns of being vulnerable with respect to a therapist who may perceive the client as others.

According to Braam et al. (2010), patients who suffer from depression may get consolation from their religion. Outside Western-Christian cultures, this does not receive much practical exploration. The authors sought to study how religious coping strategies

(positive and negative), associate with symptoms of depression in varying ethnicities in The Netherlands. They compared Christians (represented by Dutch citizens) with Muslims, (represented by migrants from Turkey, Morocco and Surinam). Their results suggested that unlike Christians (Dutch); Muslims (Moroccan and Turkish) perceived depression as a punishment by God. They also found that depressive Muslims felt more like being abandoned by God than the Christians. According to this research, depressive Dutch patients are more likely to question God's existence than their Muslim counterparts. The research also shows that the Dutch get angrier with God than Muslims. All these Cultural based perceptions may have a notable effect on how the Acceptance Based Therapy is received by the groups, which in turn, may affect the effectiveness of the treatment.

Karekla & Constantinou (2010) studied the effect of faith on individuals trying to cope with a diagnosis of cancer. The authors examined how individuals' religious values can help them accept situations that they have no control over, and then commit to and take actions based on the values. The study sought to understand the influence of religion on the way people deal with difficult situations. Their case study involved a Greek Christian lady who was diagnosed with breast cancer. The ACT process enabled the lady to explore her emotional avoidance and values in terms of the way the delaying of accepting the status quo prevented her from moving to the next steps in the treatment cycle. With the therapist, identifying the goals and actions that were consistent with those values, the client was given a value of "being a committed Christian that lives close to her God and demonstrates this belief with her actions." From this value, she formulated goals that were in line with it and identified different ways her religious beliefs could help her cope. As an example, the client chose to be active in a church group as one of her goals. This action extended her social network which then provided additional support when she was undergoing chemotherapy treatment. This is a good example of how religion, one of the aspects of culture, can influence ACT process.

Jessica, Tom and Allison (2010), studied the effect of suppressing instead of accepting emotions caused by depression. The main research objectives were (1) to replicate differences in gender in suppression and (2) to examine how gender and non-acceptance moderates association between suppression and depression. Their study involved 328 young undergraduate students of varying ethnicities backgrounds and consisted of Canadians (67%), East Asians (20%), others (7%), South Asians (5%) and First Nations Canadian (<1%). Although the effect of ethnicity was not studied, their results indicated that men suppress depression more than women do. Nevertheless, the relationship between suppression and depression was present for men but not for women. Preceding research has indicated separate associations on the full sample regardless of gender (Gross and John, 2003). From this research, gender based stereotypes may have an effect on the acceptance of ACT. This study shows that suppression is an option and a patient may seek to suppress rather than adopt an ACT process.

Sarah *C.*, et. al, (2012) conducted a systematic review on Interventions for treating depressive Muslim Patients. Their results showed that many Muslims believe that depression may result from a supernatural phenomenon, which they call *jin.* After interviewing thirteen Muslims, six of them believed depression results from religious causes and that sickness results from God's action. Even when depression arises from within, the explanation always has religious connotations such as, lack of faith or failing to pray as required (Aziz, 1999). According to Mohammed (2003), sorrow results from the person's attitude and values that come from anger. It can be avoided by controlling anger and developing an attitude of being detached from material things. Because of these beliefs among Muslims, a diagnosis of depression can negatively affect a person's social relationships (Cinnirella and Loewenthal, 1999). But, Aziz (1999), suggests that depression is not stigmatizing in Afghani Muslim and it shows an individual's depth of thinking. These beliefs will have a significant effect on ACT in these communities.

Beliappa (1991), explores issues of concern in mental health and illness in 98 Asians, who originated from the Indian sub-continent. Her research shows that historical and local experiences significantly influence the wellbeing of the mind (Fazil and Cochrane, 1998, Feryad and Ray 2004). Her findings also show that women's experiences of mental wellbeing are likely to be affected by differences in cultural beliefs, and this has a resulting feeling of isolation. Fazil and Cochrane (1998), in a research aimed at extending Brown and Harris' model (1978), included cultural factors that specifically affect Pakistani women and sought to identify culturally specific vulnerability factors of 59 Pakistani women associated with depression in presence of a provoking agent. Their research suggests eight culturally specific factors and hypothesizes why each affects their lives. The factors include extended family, infertility, single women not chosen for marriage, gender of their children, conflicts from integration of eastern and western cultures, social support, contention in marriage and experience in racism and prejudice. The research compares these factors with predictive power of factors in the original Brown and Harris model.

Fazil and Cochrane (1998) identify empirically six factors significantly associated with depression in Asian women. Of the six, two factors are derived from the Brown and Harris model (1978). These are low intimacy and loss of mother. The other four factors are culturally specific variables. They include: isolation in the society, living with large (extended) family, lack of happiness in marriage and conflicts among generations. The findings of this research also show that when there are provoking agents, the presence of culturally specific vulnerability factors will have an impact on the incidence of depression.

How psychological symptoms are presented and reported is depended on cultural beliefs (Fernando, 1990). As a result, evidence of mental sickness in western culture may not be seen as such by the Asian culture. If the host culture is dominated by one ethnic group and its views are largely adopted by the clinical services, this state goes unrecognized. Because of this, differences existing in models of health beliefs influence the kind of therapy available, and hence its effectiveness. This is because therapists attempt to impose a model

of depression or mental illness and therapy in a context where it differs with cultural or religious beliefs and norms (Feryad and Ray 2004). An Asian in a western setting may have their depression symptoms not recognized hence the desired ACT will not be meaningful hence ineffective.

Stigma, a culture more common in Asian communities than in their western counterparts, is attached to mental disorders among the community (Cartwright & Anderson, 1981; Currer, 1984, Feryad and Ray 2004). As a result, patients are reluctant to seek professional help for depression. Fazil and Cochrane (1998) consider the effect of stigma on utilization of health services and proposes that reluctance to acknowledge depression and other mental illnesses in Asian communities is caused by their community's perception that madness has no cure. According to Qureshi (1988), one reason why the stigma of mental sicknesses is highly emphasized is in Asian cultures is because marriage prospects are minimized. When exploring attitudes towards people with learning challenges in Asian communities, Fatemilihin (1989) found similar beliefs and reiterated this.

Beliappa (1991), however, does not agree with the assumption of a great stigma among Asian beliefs and cultures. She feels that it may have resulted from poor research methodology, involving culturally intensive interviews and data collection which lead to misunderstandings of the factors that influence decision making (Feryad and Ray 2004). Obviously, stigmas around depression exist, although there is a lack of evidence that it leads to a low uptake of clinical services, mostly by Asians living in the western world. However, research carried out by Qureshi (1988) and Fatemilihin (1989) shows that it is not the depression only that is problematic but its effects on other life prospects. With this being the case, it is definitely not an observable fact exclusive to Asian society and it is possibly an easy supposition used to explain the minimum-utilization of Psychopathological services by these communities. Stigmatized patients will therefore shy off from seeking help from therapists. This means that ACT will not be as effective with Asian as it is with Westerners.

Wilson and MacCarthy (1994) suggest a number of variations that are culture-specific verbal expression of mental distress. Their research screens a sample of Asian patients attending GPs' surgeries in north London for psychosomatic morbidity. GPs are asked to rate the function of the consultation. The findings show that those Asian people who score above the cut-off point are more likely to express their problems in physical terms than the White population. This matches the belief of the GP about the function of the consultation. Research like this has led to the belief that people from Asian community tend to somatise their emotional problems as opposed to those of western world who express their experiences in appropriate psychological terminology (Feryad & Ray 2004). How depression is expressed will determine the effectiveness of the treatment offered.

Betrus, Elmore, and Hamilton (1995), present a different view of depression. Their findings show that females from ethnic backgrounds that do not recognize depression as an illness are more likely to present health services with physical complaints than male patients. Research conducted by Bhatt, Tome son, and Benjamin (1988) also supports this. Their research shows no significant difference in somatic presentation between Asian and White patients. Recent research suggests that the GP's assessment of the patient plays a significant role in contributing to this belief as they are more likely to evaluate South Asian patients as having physical and somatic symptoms (Bhugra & Cochrane, 2001; Comino, Silove, Manicavasagar, Harris, & Harris, 2001; Cornwell & Hull, 1998, Feryad and Ray, 2004).

Possibly, as research by Beliappa (1991) suggests, using the concept of somatization proves unhelpful. This is because it assumes a notable difference between the minds and bodies, which disagrees with the Asian holistic model of health and illness. Messant (1992) proposes that if a model of mental disorder is very holistic, the connections between physical and psychological complaints are not only inclusive within that model, but also very credible (Messant, 1992).

A study by Fenton and Sadiq (1990) shows how cultural differences affect the expression of depression. Their research highlights issues around therapists who do not share

the same language with patients and also the challenges of translating cultural expressions while retaining their original meaning. Their study emphasizes that mental issues are defined differently by different cultures and the language barriers further complicate an accurate diagnosis being provided. This happens mostly when a therapist diagnoses a patient within a solely medical paradigm without the consideration of the cultural aspects of the patient (Feryad and Ray, 2004). According to Mumford et al. (1991) when Asian Patients are interviewed in their own language and in a culturally sensitive manner, they are able to express difficulties in psychological terms. Thus, because of the language barrier, therapists may misunderstand the client and therefore misdiagnose them. Similarly, the client may not understand the treatment offered and hence may not accept it, making it ineffective.

According to Ineichen (1987) and Webb-Johnson (1995), Asian communities are known to make great use of traditional and spiritual healers who give culture-specific approaches to psychological problems and treatment. Although the prevalence and use of these traditional and spiritual healers by Asians is not clear, recent research has pointed out that the use of traditional healers is very common, alongside medical help rather than in place of it (Cochrane & Sashidharan, 1996, Feyad and Ray, 2004). Asians, therefore, tend to seek traditional healers and not accept ACT. Westerners, on the other hand, are known to trust their medical systems and therefore more likely to accept ACT as an appropriate treatment if suggested by their doctor (Greenwood, et al., 2000; Hussain & Cochrane, 2002).

Malik (1998) suggests that individuals are more likely to consult traditional healers that are commonly accepted by their own community. As they share beliefs, Weiselberg (1992) suggests that some families do not want to talk to psychotherapists because they fear that their value system may be misunderstood as a belief based on neurotic obsession needs. Such beliefs not only serve to offer an alternative expression for the differential uptake of therapy, but also highlight beliefs about the roles of professionals in different communities (Messant, 1992). Although research traditionally associates the role of alternative healers with the identification of spiritual problems, other studies show that people in the Asian

community visit religious healers for a wide range of problems, which include both psychosocial and psychosexual problems.

A fundamental assumption in much of the cultural literature is that it is advisable to match the cultural characteristics of both the treatment and the clients (Bernal, Jimenez-Chafey, & Domenech Rodriguez, 2009; La Roche & Christopher, 2009; Sue, Ivey, & Pedersen, 2007). Future studies involving Culture and ACT require a greater understanding and attention to the primary problems and physical constraints of cross-cultural research. Researchers should recognize the effect of the pattern of the ongoing research. Although there is great specificity required about ethnicity and religion, it is important that research findings be contextualized within the suitable and applicable model of disease to prevent further category erroneous beliefs.

The literature reviewed provides a background to the research which aims to

a) Examine the effectiveness of ACT in treating clients diagnosed with depression who were referred to the psychiatric department, (Clinical Psychology Unit) at King Khalid University Hospital, KKUH.

b) Examine the usefulness of ACT in assessing and treating depression in Saudi Arabia.

c) Determine those factors that might predict the effectiveness of using ACT.

d) Recommend ways of improving the treatment of depression in Saudi Arabia.

e) Determine whether the application and outcomes of ACT in Saudi Arabia are different from other settings;

f) Identify the demographical groups who benefit most from ACT in Saudi Arabia

Third Chapter will be Methodology, will outline the way in which data was collected, the sample size, measures and procedures. Chapter 4 will present the analysis of data. Chapter 5 will present the Systematic Review followed by Discussion and Conclusions in Chapter 6.

CHAPTER THREE

Methodology

3.1 Statement of the Problem

Foundations of ACT were established in both the psychotherapy concepts and the fundamental behavioural & cognitive theories in addition to the numerous studies and researches that have been conducted in various contexts and settings. Some of the previous studies of ACT investigated the outcomes and effect of ACT while other studies tried to understand the mechanism by which ACT intervene and works. To accomplish this, the studies traced back over years how the ACT has developed, and consequently different models and theories were developed to explain ACT application in specific contexts or situations. Some examples of these studies are: Batten and Hayes (2005), who tried to describe how the patients diagnosed with post-traumatic stress disorder (PTSD) and suffering from substance abuse will be affected by the application of ACT on them. Adolescent females subjected to chronic pain were the subject of a study conducted by Wicksell, Dahl, Magnusson, and Olsson (2005) who investigated the process of rehabilitation of these women when ACT is applied. Other research that contributed to the existing ACT knowledge includes the studies conducted by Dahl, Wilson, Luciano and Hayes (2005), and the works of Hayes, Strosahl, and Wilson (1999). To date, however, no studies have investigated the effectiveness of intervention strategies and techniques in psychotherapy, such as ACT, in patients presenting with depression in Saudi Arabia. This study seeks to address this issue.

3.2 Significance of the Study

The problem this research is going to address is to fill the gap in literature in the field of the study topic as discussed above. Thus, it aspires to add some knowledge and information regarding outcomes of the application of ACT, as a strategy of psychotherapy,

on Saudi patients that are diagnosed with Depression. As the study is concerned with exploring the effects and results of applying ACT on settings influenced to a great degree by culture as explained in (Tseng, 2003; Gielen, Fish, &Draguns, 2004), the scope of the study will be limited to Depression cases in KKUH from Saudi Arabia. Consequently, some of the aspects that will be explored are the variations in results when comparing outcomes of applying ACT on Depression patients from Saudi Arabia and other parts of the world. Therefore, the significance of this study is manifested in: first; it shall contribute to the body of knowledge in this field in Saudi Arabia, second it is expected to boost the interest in studying ACT and its impacts in patients with psychological conditions in general and particularly with Depression. Furthermore, one of the researcher goals is to establish the implementation of this intervention method in the KSA by increasing the interest in this psychotherapy area.

3.3 Pilot study

The Pilot study was conducted in order to test the logistics involved in the collection of data, suitability / clarity of tools or rather instruments of data collection and the estimation of timing for data collection. The pilot study was employed in developing a clear methodology of evaluating the effectiveness of acceptance and commitment therapy with a sample of depressive patients in Saudi Arabia. It is imperative to note that the study was carried out at Psychiatry (Outpatient Department, OPD), Clinical Psychology Unit, King Khalid University Hospital KKUH, Riyadh, Saudi Arabia. The study design employed was a quantitative, experimental, mixed groups design. The sample size was composed of 34 participants recruited from the Psychiatry Department, King Khalid University Hospital, Riyadh, Saudi Arabia.

3.4 Research Aims and Objectives

Aim 1: To examine the effectiveness of ACT in treating clients diagnosed with depression who were referred to the psychiatric department (Clinical Psychology Unit) at King Khalid University Hospital, KKUH.

Aim 2: To examine the usefulness of ACT in assessing and treating depression in Saudi Arabia.

Aim 3: Determine those factors that might predict the effectiveness of using ACT.

Aim 4: Recommend ways of improving the treatment of depression in Saudi Arabia.

Aim 5: To determine whether the application and outcomes of ACT in Saudi Arabia are different from other settings; and

Aim 6: Identify the demographical groups who benefit most from ACT.

3.5 Design

3.5.1 Study design

This study used quantitative, experimental, mixed groups design. Quantitative design involves a critical focus on specific study questions that have been narrowed. The study contained quantifiable data with a total of 34 participants. The data collected underwent using SPSS tool following objective and unbiased inquiries being made. Mixed methods design was also employed which involved a number procedures namely quantitative data collection and analysis in order to better understand the effectiveness of Acceptance and Commitment Therapy (ACT) with Depressive patients in Saudi Arabia. The study utilized as well experimental design which is based on cause and effect and the measurement of correlation between the dependent and independent variable.

3.5.2 Study setting

Psychiatry OPD, Clinical Psychology Unit, King Khalid University Hospital, Riyadh, Saudi Arabia

3.5.3 Sample size

34 participants recruited from the Psychiatry Department, King Khalid University Hospital, Riyadh, Saudi Arabia.

ACT treatment group

17 patients were diagnosed with depression (7 Males (41.2%) /10 Females (58.8%)) with intervention of ACT.

Control group

17 patients were diagnosed with depression (7 Males (41.2%) /10 Females (58.8%)) without any psychological intervention.

3.5.4 Sampling technique: (inclusion / exclusion criteria of selection)

The researcher, in consultation with the KKUH Psychiatry Department, identified patients who had been diagnosed with depression within the last 5 years. The Hospital agreed to send 14 male and 20 female participants to the clinic who then will be randomly assigned to control and experiment group by (www.randomizer.org/form.htm). All patients were adults (17-59). All Patients spoke Arabic Language as first language and are of all citizens of Saudi Arabia.

The participants were invited to attend for 16 sessions to receive ACT in the OPD at the

KKUH. (2 sessions were to collect case history and apply psychological measures,

12 sessions ACT program, 2 sessions for retests). The 12 sessions are as presented in the tables

below; (Zettle, R, D. 2007).

Table 3.1

Therapeutic Sessions of Acceptance and Commitment Therapy for Depression

Session	*Session 1*
Goals of session	• To further acclimate your clients to ACT. • To identify therapeutic goals that are ACT-consistent and linked to client Values. • To begin undermining the experiential control agenda.
Outline of processes and exercises.	1. Further Introduction to ACT (5 min.) 2. Verification of Presenting Problem (5 min.) 3. Obtaining Client's Life Story (10 min.) 4. Identification of Therapeutic Goals and Relationship to Values (10 min.) 5. Initial Induction of Creative Hopelessness (20 min.) • Person in the Hole Metaphor 6. Assignment of Homework (10 min.)

Table 3.2

Session	*Session 2*
Goals of session	• To increase client awareness of the pervasiveness of emotional control as well as its normalcy. • To further emphasize the futility and associated costs of such control Efforts. • To introduce willingness and acceptance as alternatives to experiential Control.
Outline of processes and exercises.	1. Review Homework (5 min.) 2. The Pervasiveness and Normalcy of Experiential Control (10 min.) 3. The Futility and Costs of Experiential Control (20 min.) • Chocolate Cake Exercise. • Polygraph Metaphor. • Falling in Love Metaphor. 4. Willingness as an Alternative to Experiential Control (20 min.) • Two Scales Metaphor. • Carrying Your Depression Exercise. 5. Assignment of Homework (5 min.)

Table 3.3

Session	*Session 3*
Goals of session	• To identify private events to target for defusion and acceptance work. • To begin to refocus the attention of clients on the process of languaging instead of its contents. • To introduce some initial defusion and acceptance interventions.
Outline of processes and exercises.	1. Review Homework (5 min.) 2. Your Mind Is Not Your Friend Exercise (10 min.) 11 .The Mind in the Third Person Technique. 11 Thank Your Mind for That Technique. 3. Defusing Automatic Thoughts (20 min.) • Milk, Milk, Milk Exercise. • Re vocalization Exercises. • Taking Inventory Exercise. 4. Accepting Unwanted Emotions (20 min.) • Physicalizing Exercise. • Sitting with Feelings Exercise. 5. Assignment of Homework (5 min.)

	• Taking Inventory Exercise. • Reasons for Depression Exercise.

Table 3.4

Session	*Session 4*
Goals of session	• To extend defusion work to self-evaluations and reason giving. • To introduce mindfulness.
Outline of processes and exercises.	1. Review Homework (5 min.) 2. Distinguishing Self-Evaluations from Descriptions (15 min.) 3. Defusing Reason Giving (15 min.) • Why, Why, Why? Exercise. • Flat Tire Metaphor. • Get Off Your "Buts" Intervention. 4. The Raisin Exercise (15 min.) 5. Assignment of Homework (10 min.) • Mindfulness Exercise. • Writing Your Life Story Exercise.

Table 3.5

Session	*Session 5*
Goals of session	• To extend defusion work to the life story. • To expand the mindfulness exercises to the performance of daily Activities. • To begin the promotion of self as context. • To further clarify client values.
Outline of processes and exercises.	1. Review Homework (l0 min.) • Writing Your Life Story Exercise. • Mindfulness Exercise. 2. Performing Daily Activities Mindfully (15 rnin.) 3. Chessboard Metaphor (l0 min.) 4. Indirect Values Assessment (15 min.) • Follow Suffering. • Through Therapeutic Goal Setting. • Revisit Childhood Wishes. • Whose Life Do You Admire? • What Do You Want Your Life to Stand For? • Epitaph Exercise. 5. Assignment of Homework (10 min.) • Mindfulness Exercise. • Rewriting Your Life Story Exercise.

Table 3.6

Session	*Session 6*
Goals of session	• To complete defusion from the life story. • To extend the progression of mindfulness training to breathing. • To further promote a transcendent sense of self.
Outline of processes and exercises.	1. Review Homework (15 min.) • Rewriting Your Life Story Exercise. • Mindfulness Exercise. 2. Breathing Mindfully Exercise (15 min.) 3. The Observer Exercise (20 min.) 4. Assignment of Homework (10 min.) • Mindfulness Exercise. • Values Questionnaire.

Table 3.7

Session	*Session 7*
Goals of session	• To complete the progression of mindfulness training by extending it to thoughts and feelings. • To further assess and clarify client values. • To identify value-congruent goals. •To initially instigate related committed action.
Outline of processes and exercises.	1. Review Homework (5 min.) 2. Thinking and Feeling Mindfully (15 min.) 3. Direct Values Assessment (10 min.) 4. Goal Identification (10 min.) 5. Instigating Committed Action (15 min.) • Environmental Barriers. • Experiential Barriers. 6. Assignment of Homework (5 min.) • Mindfulness Exercise. • Committed Action.

Table 3.8

Session	*Session 8*
Goals of session	•To determine the status of further mindfulness training. •To clarify the nature of commitment. •To further address ways of managing barriers to committed action. •To further promote committed action through related homework.
Outline of processes and exercises.	1. Review Homework (10 min.) • Mindfulness Exercise. • Committed Action. 2. The Nature of Commitment (20 min.) • Trying vs. Doing Exercise. • Partial vs. Full Commitments. 3. Managing Barriers to Commitment (20 min.) • Passengers on the Bus Metaphor. • Choosing vs. Deciding.
	• The Swamp Metaphor. 4. Assignment of Homework (10 min.) • Mindfulness Exercise. • Committed Action.

Table 3.9

Session	*Session 9-11*
Goals of session	The primary goal of these three sessions is as follows: • To promote the continuation of value-directed activities. the secondary goals of these three sessions are as follows: • To increase willingness to experience unwanted thoughts and feelings surrounding persistent committed action. • To clarify the distinction between the process and outcomes of committed Action. • To further promote mindfulness.
Outline of processes and exercises.	1. Review Homework (10 min.) • Mindfulness Exercises. • Committed Action. 2. Managing Success (20 min.) 3. Managing Failure (20 min.) • The Gardening Metaphor. • The Magic Pill Metaphor. 4. Assignment of Homework (10 min.) • Mindfulness Exercises. • Committed Action.

Table 3.10

Session	*Session 12*
Goals of session	• To process the reactions of you and your client to treatment termination. • To review ACT-consistent strategies and techniques. • To promote the post termination maintenance of therapeutic gains.
Outline of processes and exercises.	1. Review Homework (5 min.) 2. Process Reactions to Termination (10 min.) 3. Summarize Barriers to Willingness (15 min.) • *Fusion* with Your Thoughts. • Evaluation of Experiences. • Avoidance of Your Experiences. • Reason Giving for Your Behaviour. 4. Summarize Guidelines for Valued Living (10 min.) • **A**ccept Your Reactions and Be Present. • **C**hoose a Valued Direction. • **T**ake Action. 5. Discuss Life After Therapy (20 min.)

Psychological measures were used to measure participant's psychological well-being before and after ACT. The psychological measures were reapplied after **6** months to determine the lasting effect of ACT. (Feedback)

3.6 Data analysis plan

SPSS software was used in order to analyze the data in this study. Descriptive statistics was used as a technique of analysis. There was application of (Mixed ANOVA and T- TEST).

3.7 Method/ Procedures

Once a patient had been identified within the case-load of the Psychiatry Department at King Khalid University Hospital as having been diagnosed with depression within the last 5 years, during their next hospital visit they were given the information sheet(see appendix 1) and consent form (see appendix 2) . They were asked to return the signed forms when they make their decision, and if they were happy to participate, they would be asked to give written consent by signing the consent form. Then the participant would be randomly allocated to either the ACT treatment group or the control group, and they would be informed of the group they are assigned to. If placed in the ACT treatment group, an appointment

would be made for their first ACT session the following week; where they would also complete the outcome measures. Subsequent ACT sessions over the next 12 weeks would then be arranged. During the final ACT session, they would be asked to come back for one further visit to complete the outcome measures again.

If the participant was assigned to the control group, they would be asked to complete the outcome measures, and another visit would be scheduled in 12 weeks when they could return to the clinic to complete the outcome measures again.

3.9 Ethical considerations:

a.) In any publications related to this research, numbers were used instead of the participants' names in order to protect their privacy and to avoid breaching of any data protection rules or regulations.

b.) Two measures will be taken regarding the control points: first through the study asking if they are still happy to continue participating without intervention. This will be conducted via a phone call, after approximately 50% of the study is conducted. Second, when the study is completed, a free treatment of ACT/CBT will be offered to them.

c.) Both ACT and CBT interventions are on offer to the participants, such that CBT will be used in case there is no response from the participants to ACT.

d.) Participants are granted the right to withdraw from the study at any time during the study.

3.8 Measures

Depression Scales:

3.8.1 PHQ-9, Patient Health Questionnaire-9

The PHQ-9 is a depression module of 9 items from the complete Patient Health Questionnaire. With regard to this measure, the diagnosis of depression is done if there is the presence of 5 or more of the 9 items which define the depressive symptom criteria in at least "more than half the days in the past two weeks". Furthermore, as part of the criteria, one of symptoms must be anhedonia or rather depressed mood. It is crucial to note that other depression will undergo the diagnostic process in the event that two, three or four symptoms of depression are found in at least, "more than half the days in the past two weeks". In a similar manner one of the symptoms of depression must be anhedonia or depressed mood. Among the 9 items is "thoughts that you would be better off dead or of hurting yourself in some way" which is taken into consideration if it is present, irrespective of duration. Before the ultimate process of diagnosis, are completed aspects such as normal bereavement, physical bases of depression and the past of manic episode. The PHQ-9 measure has a range of 0 to 27 as a measure of severity. PHQ-9 is a very efficient tool whose administration can be executed through self-administration, telephone or in person. It is a measure that will effectively support diagnostic processes of major depression. Furthermore, as already identified, PHQ-9 provides for the evaluation of the level of severity of depression symptoms **(**Kroenke K, Spitzer RL, 2002). **(**see appendix 3**)**

3.8.2 Beck Depression Inventory (BDI)

According to Beck et al. 1996, the BDI is an inventory with extensive application and is designed to allow for the assessment of the current state of depression severity. It was developed from a process of the clinical observation of depressed and non-depressed patients (Beck, Ward, Mendelson, Mock & Erbaugh, 1961). Symptoms and attitudes that have

consistency with depression are clearly represented and reflected in a questionnaire with 21 items. In the questionnaires, the participating patients are required to provide a rating of the severity of each aspect on an ordinal scale which has a range of 0-3. The BDI is scored by making a summation of the ratings whereby total scores can be utilized in the process of classifying patients in accordance with the severity of depression (Beck, Steer & Garbin 1988). It is imperative to note that where validity is concerned, the BDI-II is found to appropriately and effectively measure depression based on the view that the test outcomes are comparable to other tests that measure the symptoms of depression (Steer, Rissmiller & Beck, 2000). Reliability is another significant aspect which implies to the level of consistency of a test in terms of the recurrence of outcomes or results. With respect to the research, the test is expected to take about 10 minutes (Hojat, Shapurian and Mehrya, 1986). (see appendix 4)

Anxiety Scales:

3.8.3Taylor Manifest Anxiety Scale (TMAS)

The TMAS scale implies to a test or measure of anxiety from the view of it being a personal trait. The test was created in the year 1953 by Janet Taylor, as she focused on the identification of potential and most useful participants in the research of anxiety disorders (Kendall, 1954). It is imperative to note that, originally the TMAS was made up of 50 questions that required false or true responses (Taylor, 1953). An individual was required to read the questions and reflect on their personal traits with the aim of determining their level of anxiety. This scale is quite significant owing to the fact that it separates normal study participants from individuals who would be perceived to have pathological levels of anxiety (Jessor & Hammond, 1957). With regard to reliability, the TMAS has proven to have a high level of test-retest reliability. It is important to note that the TMAS directly relates anxiety to a person's performance within a given area. This measurement scale serves the purpose of measuring the levels of anxiety upon which the scores obtained are used to for the

determination of the level of performance with regard to certain tasks (Taylor, 1953). (see appendix 5)

3.8.4 GAD-7

Generalized Anxiety Disorder-7 (GAD-7) refers to a questionnaire that is meant to be self-reported and which serves the purpose of screening and measuring the severity of generalized anxiety disorder (GAD) (Swinson, 2006). This is an anxiety disorder with a number of characteristics that define and reflect an individual suffering from depressive symptoms such as irrational, uncontrollable or excessive worry. Individuals suffering from GAD tend to naturally be in anticipation of disasters and very much worried about issues such as family problems, death, money, health issues, work difficulties and problems with interpersonal relationship (Kroenke, Spitzer and Williams, et al; 2007). The GAD-7 questionnaire contains 7 items which aid in the measurement of the severity of the different symptoms of GAD in accordance with the reported categories of response with the points assigned (Spitzer, Kroenke & Williams et al. 2006). It is crucial to note that GAD-7 is a measurement scale with a high level of sensitiveness as far as the assessment of generalized anxiety disorder is concerned. As a scale it utilizes a scoring system that is normative in nature. (see appendix 6)

Acceptance and Commitment Therapy (ACT) Scales:

3.8.5 Kentucky Inventory of Mindfulness Skills (KIMS)

The Kentucky Inventory of Mindfulness Skills (KIMS) is a measure of outcomes with 39 items. This measure has four mindfulness components namely describing, observing, accepting without judgment and acing with awareness (Baer et al. 2004). With regard to scoring, the items undergo rating on a “5-point Likert scale” with ranges 1-5 that is “never or very rarely true” to “almost always or always true”. It is imperative to note that this scale of measurement has a very high level of internal consistency. This scale is significant because it provides explanations about the nature of mindfulness through a clear

presentation of the weaknesses and strengths in a person's mindfulness skills and development.

There are four skills of mindfulness that are assessed under KIMS. They include observing, describing, acting with awareness and accepting without judgment. With regard to observing, mindfulness entails attending to or rather noticing the different stimuli both as external and internal phenomenon. External applies to smells and sounds while internal applies to bodily sensations and cognitions. The KIMS items associated with external and internal phenomenon include 1, 5, 9, 13, 17, 21, 25, 29, 30, 33, 37 and 39. With regard to describing, it entails that a participant provides a description of the phenomenon observed with the use of words in a non-judgmental manner. The items in this case are 2, 6, 10, 14, 18, 22, 26 and 34. In relation to "acting with awareness" it entails one being attentive and fully focused on their current practices and activities. Additionally, it entails the DBT skills, with respect to participating as well as being 'one-mindfully'. Items in this case include 3, 7, 11, 15, 19, 23, 27, 31, 35 and 38. Accepting without judgment implies the acceptance of reality together with the avoidance of making judgments. The items involved include 4, 8, 12, 16, 20, 24, 28, 32 and 36. It also has adequate to good test-retest reliability as well as validation analysis. In this regard, a lot of support is derived from it for the relationship between mental health and mindfulness (Baer et al., 2004). (see appendix 7)

3.8.6 The Mindfulness Attention Awareness Scale (MAAS)

The MAAS refers to a single factor questionnaire that has 15 elements. It is used in the assessment and evaluation of the quality of mindfulness. With regard to MAAS, scoring is executed positively and involves a 6-point scale whereby "1=almost always to 6=almost never". The maximum and minimum scores of each person in the measurement scale ranges from 15 to 90. According to Brown & Ryan (2003) the MAAS measurement scale has a high level of internal consistency. It is imperative to note that the MAAS evaluates the core

features that define dispositional mindfulness, that is receptive or open awareness as well as attention to activities or practices being carried out in the present time (McDowell & Newell, 1996). The filling of the MAAS measurement scale will take about 10 minutes. (see appendix 8)

3.8.7 White Bear Suppression Inventory (WBSI)

The WBSI is a questionnaire measure with 15 elements that have 5 responses ranging from, "1=totally disagree to 5=completely agree". The purpose of this measure is to aid in the measurement of the general tendency of people to suppress whatever they are thinking. In this regard, WBSI measures thought suppression. It is imperative to note that chronic thoughts suppression implies a variable associated with negative effect and obsessive thinking which are linked to anxiety and depression. The WBSI measure can provide assistance in the identification of persons who are more vulnerable to develop the condition of chronic thought suppression (Wegner & Zanakos, 1994). It also includes people who express their wishes of not being in a position to suffer from depression but are actually suffering from serious depression. With respect to scoring, the measure is based on a scale of 5 points ranging from "1=strongly disagree to 5=strongly agree".

The summation of the responses obtained from the participants gives the total score. The score may fall within the range of 15 to 75. Notably, higher scores on WBSI show that there is greater tendency for thoughts to be suppressed. With respect to reliability, Rodríguez, Delgado, Rovella and Leon (2008) demonstrate that for the WBSI, internal consistency is very good whereby the alphas ranges from .87 to .89. Furthermore, the WBSI is also said to have very good stability with Martin, Orsillon and Roemer(2001) stating that, "it has a 1 week test-retest correlation of .92 and a 3 week to 3 month test-retest correlation of .69." Validity is another important aspect of the WBSI measure. The convergent validity of WBSI is excellent. It has significant relations with other scales of measures such as the Beck's Depression Inventory (BDI). It is vital noting that WBSI has a negative correlation

with repression. This proposes that this measure has the purpose of measuring the characteristic that is dissimilar to the traditional views and concepts associated with repression (Zung, 1974). (See appendix 9)

3.8.8 Automatic Thoughts Questionnaire (ATQ)

The ATQ is a scale designed for the measurement of "depressogenic thought frequency". ATQ has a common use in research studies focused on the concept of depression. Its purpose is to aid in the assessment of the implication of cognitive therapy. Nevertheless, the ATQ-B implies to a revised version of this measure done in 1986 by Zettle and Hayes (Hayes, Follette & Linehan, 2004). It is crucial to note that Zettle and Hayes aimed at evaluating the believability of thoughts of depression in the event they occur. Additionally, this measure has also been utilized as a mean to further the expansion of the ATC community (zettle et al., 2013). For the assessment of the effectiveness of Acceptance and Commitment Therapy (ACT) with Depressive patients in Saudi Arabia, there are two key subscales under recommendation namely the ATQ-F and the ATQ-B. The former measures the frequency of depressive thoughts while the latter measures the believability of the thoughts. With regard to ATQ's scoring, Hayes, Follette & Linehan (2004) states that, "it is typically a simple sum score for the F sub scale and the B sub scale." On this note, the B and F score may be utilized in the process of analysis separately.(see appendix 10).

CHAPTER FOUR

4.1 Empirical Analysis of the Statistical and Clinical Significance

(Assumptionsand Tests of Significance)

4.2 Variables

Participants fell within the same geographic setting and were interviewed on three different occasions. The same timeline (Within Factors), Time 1 (Pre-Session); Time 2 (Post Session); Time 3 (Feedback), was used for all 34 participants. The item characterisations used for this analysis were the mean score. To set up data for analysis, the variables were set into dependent and independent variables. The within actors were set at three time factors. Time 1 represented the data collected at pre Session. Six months into sessions, data was collected on Time Measure 2. After another six months after session, feedback data was collected on Time Measure 3. The Between-Subject factors on independent variables were defined under the groups within which patients were placed. As stated in the methodology, patients were placed under experimental and controlled groups.

4.2.1 Independent Variables

Table 4.1
Within-Subjects Factors

Time	Independent Variable	Code
1	Time Measure 1	T1
2	Time Measure 2	T2
3	Time Measure 3	T3

Table 4.2
Between-Subjects Factors

		Value Label	N
Condition	1.00	Experimental	17
	2.00	Control	17

The goal of this study was to evaluate the effectiveness of Acceptance and Commitment Therapy (ACT) in patients presenting with depression in Saudi Arabia. For this goal to be achieved, the survey went ahead to assess the degree of effectiveness of the ACT in treating patients diagnosed with depression and referred to the King Khalid University Hospital (KKUH). At the KKUH, 20 females and 14 males were chosen over a trimester period. The selection was random and was across age groups. Patients were placed in two groups of Experimental and Control. Below is a table showing representing the age groups

Table 4.3

Participant Detail

Experimental Group				Control Group			
Patience Number	Sample Number	Gender	Age	Patience Number	Sample Number	Gender	Age
P 1	3	F	46	P 1	8	F	54
P 2	7	F	45	P 2	5	M	22
P 3	25	M	30	P 3	4	F	45
P 4	13	F	33	P 4	20	F	36
P 5	16	F	25	P 5	10	F	50
P 6	9	F	27	P 6	22	M	52
P 7	11	M	35	P 7	12	F	35
P 8	30	F	24	P 8	6	M	27
P 9	2	M	32	P 9	21	M	36

P 10	1	M	54	P 10	23	F	35
P 11	28	F	34	P 11	26	F	42
P 12	24	F	37	P 12	19	M	48
P 13	32	M	23	P 13	18	M	42
P 14	17	M	49	P 14	15	F	37
P 15	14	F	21	P 15	33	F	18
P 16	27	M	43	P 16	34	M	27
P 17	29	F	53	P 17	31	F	47
Mean			35.9				38.4

The diagram above shows a flow of participants and their groups. The age range of the group was from 18 to 54 years. The mean age of the controlled group was 38.4 while that of the experiment al group was 35.4 years. In collection of data, there was no collection of data as all 34 participants were guided to complete all 9 measures. After every period of assessment, participants were reminded about their right to withdraw. This was to ensure the willingness and ability to participate.

The dependent variables used for the data analysis for this survey were the measures of Depression, Anxiety and some other ACT elements. All 34 participants were placed under the 9 measures of treatment level.

4.2.2 Dependent Variables

Table 4.4
Dependent Variables

Variables	Measures	Value
Depression	Beck Depression Inventory (BDI)	34
	Patient Health Questionnaire (PHQ-9)	34
Anxiety	Taylor Manifest Anxiety (TMAS)	34
	Generalized Anxiety Disorder (GAD-7)	34
Acceptance and Commitment Therapy	Kentucky Inventory of Mindfulness Skills (KIMS)	34
	Mindfulness Attention Awareness Scale (MAAS)	34
	White Bear Suppression Inventory (WBSI)	34
	Automatic Thoughts Questionnaire, Frequency (ATQ-F)	34
	Automatic Thoughts Questionnaire, Believability (ATQ-B)	34

4.3 Data Analysis Tool and Assumptions (ANOVA)

Analysis of Variance (ANOVA) was chosen to test the mean difference of the between subject factors (Experimental and Control) and the within subject factors (Time) based on the dependant variables. Mixed ANOVA was chosen because the test is comparing the mean differences between groups that have been split in two independent variables, where one factor is a "within-subjects" factor and the other factor is a "between-subjects" factor (Leech, Barrett and Morgan, 2005). The main purpose of using Mixed ANOVA is to understand if there is an interaction between the two Independent Variables on the Dependent Variables. SPSS version 23 was used in the Data Analysis.

According to Leech, Barrett and Morgan (2005), to use a Mixed ANOVA, the data has to go through checks to make sure it can be analysed through this method. The data has to pass seven assumptions for a Mixed ANOVA to give a valid result. However, real-world data is prone to violating one or more of the assumptions which may not necessarily mean the entire data is wrong (Leech, Barrett and Morgan, 2005). Below are the seven assumptions:

Table 4.5
Mixed ANOVA Statistical Assumptions

Assumption	Narration	Results
1	Dependent variable should be measured at the continuous level. This means data should be presented in either interval or ratio variables.	Dependent variable should be measured at continuous level. This means data should be presented in either interval or ratio variables. The BDI data had a 21-item inventory which was rated on a scale ranging from 0-4 where 0 was Normal and 4 was Severe. The total score was between 0 and 63. Therefore, BDI met the assumption of dependant variables being measured on a continuous level. This assumption states that PHQ-9 data has dependant variables which are measured on a continuous level. To do this, the scales were checked. In the 9-item inventory check, the scales ranged from 0 (normal) to 5 (Severe) with a total score between 0 and 27. PHQ-9 met this assumption. TMAS similarly had a Scoring of between) (None) and 5 (Very Severe), hence meeting the assumption. The GAD-7 has a 7 item questionnaire which records the severity of the various GAD symptoms. The 7 item questionnaire was set on a four scale rate. According to these stated intervals, GAD-7 met the assumption of dependant variables being measured on a continuous level. The MAAS questionnaire was set in a 15 item inventory and was rated on a scale ranging from 1-6 where 1 = "almost always" to 6 = "almost infrequently". These intervals therefore meant MAAS met assumption 1, which states that dependant variables are measured on a continuous level. The WBSI is a 15-item questionnaire with 5 responses, which range from 1- strongly disagree to 5-strongly agree, that measures the general tendency of people to suppress whatever they are thinking. According to these stated intervals, WBSI met the first assumption. The ATQ-F questionnaire was set in a 30 item inventory and was rated on a scale ranging from 1-5 where 1 = "not at all", 2 = "sometimes", 3 = "moderately often", 4 = "often", and 5 = "all the time". These intervals therefore meant ATQ-F met the assumption of dependant variables being measured on a continuous level. The ATQ-B questionnaire was set in a 30 item inventory and was rated on a scale ranging from 1-5 where 1 = "not at all", 2 = "somewhat", 3 = "moderately", 4 = "very much", and 5 = "totally". These intervals therefore meant ATQ-B met the assumption of dependant variables being measured on a continuous level. The KIMS uses 39 items to measure the outcomes on the mindfulness and awareness of participants' feeling. A 5 point likert scale was used with scoring ranging from "never or very rarely

		true" to "very often or always true". Based on this, KIMS met the assumption of that the dependant variables used were measured on a continuous level. Below is a table showing the how the 9 measures passed the test. See Table 6 below
2	The within-subjects factor of independent variable should have at least two categorical related groups.	The within-subjects factor of independent variable should have at least two categorical related groups. The within subject factor of the independent variables (Time) has three categorical related time designs (T1, T2 and T3). All nine measures were administered during the three type periods, thereby meeting this assumption.
3	The between-subjects factor of independent variable should each have at least two categorical independent groups.	The between-subjects factor of independent variable should each have at least two categorical independent groups. The between subjects factor of independent variables (Intervention or Not) have two categorical independent groups (Experimental and Control), thus, the data collected met the assumption.
4	The data should have no significant outliers. That is, data points within the data should follow the usual pattern.	The data should have no significant outliers. That is, data points within the data should follow the usual pattern. The fourth assumption tests for outliers. To do this, a Percentile table (Table 7 below) showed the minimum and maximum ranges in quartiles for the time measures. All three time scales showed no significant outliers for BDI, PHQ, GAD-7, MAAS, WBSI, ATQ-F, ATQ-B and KIMS. However, the TMAS shows that Patients 5 (22) and 7 (24) had high outliers of 47 and 48 respectively at T1 (see plot 1 below).
5	The dependent variable should be approximately normally distributed for each combination of the groups of the two independent variables.	In testing for normality, BDI showed normality with 0.199, 0.089 and 0.200 respectively. The results showed the PHQ-9 1 and 3 were normally distributed (0.200 and 0.072 respectively). However, the results for PHQ-9 2 was not normally distributed < 0.05 (0.000). The data set also showed that though TMAS 2 and 3 were not normally distributed, TMAS 1 had data which was normally distributed for each combination of the two variables. The test of normality was not met with scores of 0.011 and 0.43 respectively for MAAS 1 and 3. GAD-7 also showed normality 0.188, 0.200 and 0.151 respectively. All times of KIMS showed normality with significance of 0.200. Similarly, WBSI shows normality of 0.049 (rounds up to 0.05), 0.200 and 0.200. With normality of 0.200, 0.143 and 0.200, ATQ-F showed normality. Finally, ATQ-B showed normality of 0.200, 0.142 and 0.200. See Table 8 below
6	The data should show homogeneity of variances for each combination of the groups of the two independent variables.	To meet the Null Hypothesis that the population variance are equal in the repeated measure time, $p > 0.05$. In homogeneous sampling, all the items in the sample are chosen because they have similar or identical traits. For this study, the data chosen, though random, had a similar trait, which was that they were all under clinical observation during Pre-Session. Running the BDI data through this test case, however, showed that BDI 1 (0.83) was the only time measure that met this assumption. BDI 2 (0.01) and BDI 3 (0.02)

		did not meet that assumption. A similar result was observed running PHQ-9 through this test. While PHQ-9 1 showed that the variances were homogenous in population (0.131), PHQ-9 2 (0.002) and 3 (0.003) variances didn't show homogeneity in population. In this test, TMAS 1 (0.004), TMAS 2 (0.000) and TMAS 3 (0.001) didn't meet the Null Hypothesis. On the other hand, the Levene's for Equality showed that all results were more than 0.05 with GAD-7 1, 2, 3 recording 0.086, 0.427, and 0.161 respectively. Similarly, MAAS and WBSI had all time measures 1, 2 and 3 showing homogeneity of variances for each combination. KIMS 1 (0.159), KIMS 2 (0.994) and KIMS 3 (0.496) met the assumption. The test showed that all ATQ time measures showed homogeneity of variances for each combination. See Table 9 below.
7	The variances of the differences between the related groups of the within-subject factor for all groups of the between-subjects factor must be equal (Sphericity).	Maulchy's Test of Sphericity was used with an alpha of 0.05. This basically validates the repeated measure analysis of variance. A violation of specificity occurs when data shows that the variances of the differences between all combinations of the group are not equal. If this is violated, the variances are distorted, which would mean that the F-ratio is inflated. For sphericity not to be violated, the significance figure should be greater than 0.05 (Leech, Barrett and Morgan, 2005). However, all 9 measures run through Mauchly's Test of Sphericity indicated that the assumption of sphericity had been violated. See table 10 below for all violations.
7a	Correcting the Violations	There is the need, therefore, for corrections to be applied to the degrees of freedom (df), to obtain a valid critical F-value. Generally, Greenhouse-Geisser correction is used if the estimated epsilon (ε) is less than 0.75 and the Huynd-Feldt, if estimated epsilon (ε) is greater than 0.75 (Katz, 2011). The Greenhouse-Geisser was used to correct all measures because they were less than 0.75 (see Table 10 below). The table shows how the violations were corrected when the "sphericity assumed" row cannot be used. Therefore, using the Greenhouse-Geisser correction, the F-test result is corrected from: BDI = F (2, 64) = 76.351, p = .000 to F (1.310,41.906) = 76.351, p = .000 PHQ-9 = F (2, 64) = 47.972, p = .000 to F (1.179,37.723) = 47.972, p = .000 TMAS = F (2, 64) = 36.270, p = .000 to F (1.163, 37.225) = 36.270, p = .000 GAD- 7 = F (2, 64) = 38.174, p = .000 to F(1.487, 38.147) = 47.581, p = .000 KIMS = F (2, 64) = 102.541, p = .000 to F(1.177, 37.661) = 102.541, p = .000 MAAS = F (2, 64) = 62.991, p = .000 to F(1.227, 39.272) = 62.991, p = .000 WBSI = F (2, 64) = 25.416, p = .000 to F(1.144, 36.607) = 25.416, p = .000 ATQ-F = F (2, 64) = 82.462, p = .000 to F(1.082, 34.621) = 82.462, p = .000 ATQ- B = F (2, 64) = 50.991, p = .000 to F(1.049, 33.576) = 50.991, p = .000

Table 4.6
Scoring of Dependent Variable Scales

Scale	BDI	PHQ-9	TMAS	GAD-7	KIMS	MAAS	ATQ-F	ATQ-B	WBSI
1	None 0-9	None 0-4	None 0-16	Normal 0-4	Never or Very Rarely True 1-39	Almost Always 1-15	Not At All 1-30	Not At All 1-30	Strongly Disagree 1-15
2	Mild 10-18	Mild 5-9	Mild 17-20	Mild 5-9	Rarely True 40-78	Very Frequently 16-30	Sometimes 31-60	Somewhat 31-60	Disagree 16-30
3	Moderate 19-29	Moderate 10-14	Moderate 21-26	Moderate 10-14	Sometimes True 79-117	Somewhat Frequently 31-45	Moderately Often 61-90	Moderately 61-90	Neutral Or Do Not Know 31-45
4	Severe 30-63	Moderately Severe 15-19	Severe 27-29	Severe 15-21	Often True 118-156	Somewhat Infrequently 46-60	Often 91-120	Very Much 91-120	Agree 46-60
5		Severe 20-27	Very Severe 30-50		Very Often or Always True 157-195	Very Infrequently 61-75	All The Time 121-150	Totally 121-150	Strongly Agree 61-75
6						Almost Infrequently 76-90			

Figure 4.1

Outlier Box Plot for TMA 1

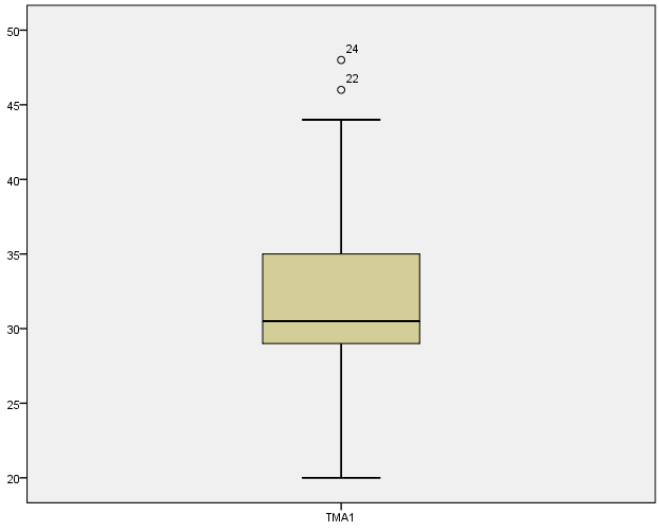


Table 4.7

Percentiles

Measures	Time	Lowest Percentile (5th)	Highest Percentile (95th)
Beck Depression Inventory (BDI)	BDI 1	20.75	54.00
	BDI 2	14.00	53.00
	BDI 3	12.25	55.75
Patient Health Questionnaire (PHQ-9)	PHQ 1	10.00	25.00
	PHQ 2	5.75	25.00
	PHQ 3	4.75	25.00
Taylor Manifest Anxiety Scale (TMAS)	TMAS 1	20.00	46.50
	TMAS 2	17.00	47.25
	TMAS 3	16.25	47.25
Generalized Anxiety Disorder (GAD-7)	GAD-7 1	8.00	21.00
	GAD-7 2	3.75	21.00
	GAD-7 3	3.50	21.00
Kentucky Inventory of Mindfulness Skills (KIMS)	KIMS 1	73.75	118.25
	KIMS 2	70.00	167.50
	KIMS 3	68.50	170.50
	MAAS 1	25.50	56.25

Mindfulness Attention Awareness Scale (MAAS)	MAAS 2	25.50	82.25
	MAAS 3	24.00	82.75
White Bear Suppression Inventory (WBSI)	WBSI 1	45.75	72.25
	WBSI 2	32.50	73.00
	WBSI 3	29.50	73.00
Automatic Thoughts Questionnaire, Frequency (ATQ-F)	ATQ-F 1	76.25	136.25
	ATQ-F 2	45.00	135.25
	ATQ-F 3	43.00	138.25
Automatic Thoughts Questionnaire, Believability (ATQ-B)	ATQ-B 1	75.25	139.75
	ATQ-B 2	43.75	135.00
	ATQ-B 3	43.25	136.00

Table 4.8

Test for Normality – Kolmogorov Smirnov[a]

Measures	Time	Statistic	df	Sig.	Normality
Beck Depression Inventory (BDI)	BDI 1	.125	34	.199	Normally Distributed
	BDI 2	.140	34	.089	Normally Distributed
	BDI 3	.115	34	.200*	Normally Distributed
Patient Health Questionnaire (PHQ-9)	PHQ 1	.112	34	.200*	Normally Distributed
	PHQ 2	.221	34	.000	Not Normally Distributed
	PHQ 3	.144	34	.072	Normally Distributed
Taylor Manifest Anxiety Scale (TMAS)**	TMAS 1	.152	34	.046	Normally Distributed
	TMAS 2	.193	34	.003	Not Normally Distributed
	TMAS 3	.185	34	.005	Not Normally Distributed
Generalized Anxiety Disorder (GAD-7)	GAD-7 1	.126	34	.188	Normally Distributed
	GAD-7 2	.111	34	.200*	Normally Distributed
	GAD-7 3	.131	34	.151	Normally Distributed

Kentucky Inventory of Mindfulness Skills (KIMS)	KIMS 1	.108	34	.200*	Normally Distributed
	KIMS 2	.097	34	.200*	Normally Distributed
	KIMS 3	.089	34	.200*	Normally Distributed
Mindfulness Attention Awareness Scale (MAAS)	MAAS 1	.173	34	.011	Not Normally Distributed
	MAAS 2	.144	34	.070	Normally Distributed
	MAAS 3	.153	34	.043	Not Normally Distributed
White Bear Suppression Inventory (WBSI)	WBSI 1	.150	34	.049	Normally Distributed
	WBSI 2	.098	34	.200*	Normally Distributed
	WBSI 3	.086	34	.200*	Normally Distributed
Automatic Thoughts Questionnaire, Frequency (ATQ-F)	ATQ-F 1	.104	34	.200*	Normally Distributed
	ATQ-F 2	.132	34	.143	Normally Distributed
	ATQ-F 3	.115	34	.200*	Normally Distributed
Automatic Thoughts Questionnaire, Believability (ATQ-B)	ATQ-B 1	.109	34	.200*	Normally Distributed
	ATQ-B 2	.132	34	.142	Normally Distributed
	ATQ-B 3	.122	34	.200*	Normally Distributed

*. This is a lower bound of the true significance.
** This data was extracted from Shapiro-Wilk test
a. Lilliefors Significance Correction

Table 4.9

Levene's Test of Equality of Error Variances[a]

Measures	Time	F	df1	df2	Sig.	State
Beck Depression Inventory (BDI)	BDI 1	.048	1	32	.828	Homogenous
	BDI 2	7.439	1	32	.010	Not Homogenous
	BDI 3	5.990	1	32	.020	Not Homogenous
Patient Health Questionnaire (PHQ-9)	PHQ 1	2.399	1	32	.131	Homogenous
	PHQ 2	11.545	1	32	.002	Not Homogenous
	PHQ 3	11.812	1	32	.003	Not Homogenous
	TMAS 1	9.626	1	32	.004	Not Homogenous
	TMAS 2	15.342	1	32	.000	Not Homogenous

Taylor Manifest Anxiety Scale (TMAS)	TMAS 3	13.715	1	32	.001	Not Homogenous
Generalized Anxiety Disorder (GAD-7)	GAD-7 1	3.137	1	32	.086	Homogenous
	GAD-7 2	.648	1	32	.427	Homogenous
	GAD-7 3	2.061	1	32	.161	Homogenous
Kentucky Inventory of Mindfulness Skills (KIMS)	KIMS 1	2.076	1	32	.159	Homogenous
	KIMS 2	.005	1	32	.944	Homogenous
	KIMS 3	.473	1	32	.496	Homogenous
Mindfulness Attention Awareness Scale (MAAS)	MAAS 1	1.918	1	32	.176	Homogenous
	MAAS 2	2.859	1	32	.101	Homogenous
	MAAS 3	3.899	1	32	.057	Homogenous
White Bear Suppression Inventory (WBSI)	WBSI 1	.898	1	32	.350	Homogenous
	WBSI 2	.692	1	32	.412	Homogenous
	WBSI 3	.002	1	32	.969	Homogenous
Automatic Thoughts Questionnaire, Frequency (ATQ-F)	ATQ-F 1	1.128	1	32	.296	Homogenous
	ATQ-F 2	4.353	1	32	.045	Homogenous
	ATQ-F 3	3.381	1	32	.075	Homogenous
Automatic Thoughts Questionnaire, Believability (ATQ-B)	ATQ-B 1	.041	1	32	.841	Homogenous
	ATQ-B 2	2.107	1	32	.156	Homogenous
	ATQ-B 3	.764	1	32	.389	Homogenous

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Condition
Within Subjects Design: Time

Table 4.10
Mauchly's Test of Sphericity[a]

Measures	Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
						Greenhouse Geisser	Huynh-Feldt	Lower-Bound
BDI	Time	.473	23.223	2	.000	.655	.693	.500
PHQ-9	Time	.303	36.972	2	.000	.589	.618	.500
TMAS	Time	.281	39.382	2	.000	.582	.609	.500
GAD-7	Time	.655	13.121	2	.001	.743	.796	.500

KIMS	Time	.301	37.256	2	.000	.588	.617	.500
MAAS	time	.370	30.794	2	.000	.614	.645	.500
WBSI	Time	.252	42.766	2	.000	.572	.598	.500
ATQ-F	Time	.151	58.524	2	.000	.541	.563	.500
ATQ-B	Time	.094	73.332	2	.000	.525	.544	.500

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept + Condition
Within Subjects Design: Time

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Table 4.11.1

Tests of Within-Subjects Effects: BDI

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	1430.373	2	715.186	76.351	.000
	Greenhouse-Geisser	1430.373	1.310	1092.249	76.351	.000
	Huynh-Feldt	1430.373	1.386	1032.298	76.351	.000
	Lower-bound	1430.373	1.000	1430.373	76.351	.000
Time * Condition	Sphericity Assumed	1656.137	2	828.069	88.402	.000
	Greenhouse-Geisser	1656.137	1.310	1264.646	88.402	.000
	Huynh-Feldt	1656.137	1.386	1195.233	88.402	.000
	Lower-bound	1656.137	1.000	1656.137	88.402	.000
Error(Time)	Sphericity Assumed	599.490	64	9.367		
	Greenhouse-Geisser	599.490	41.906	14.306		
	Huynh-Feldt	599.490	44.340	13.520		
	Lower-bound	599.490	32.000	18.734		

Table 4.11.2

Tests of Within-Subjects Effects: PHQ-9

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	366.490	2	183.245	47.972	.000
	Greenhouse-Geisser	366.490	1.179	310.890	47.972	.000
	Huynh-Feldt	366.490	1.236	296.624	47.972	.000
	Lower-bound	366.490	1.000	366.490	47.972	.000
Time * Condition	Sphericity Assumed	392.373	2	196.186	51.360	.000
	Greenhouse-Geisser	392.373	1.179	332.846	51.360	.000
	Huynh-Feldt	392.373	1.236	317.573	51.360	.000
	Lower-bound	392.373	1.000	392.373	51.360	.000
Error(Time)	Sphericity Assumed	244.471	64	3.820		
	Greenhouse-Geisser	244.471	37.723	6.481		
	Huynh-Feldt	244.471	39.537	6.183		
	Lower-bound	244.471	32.000	7.640		

Table 4.11.3

Tests of Within-Subjects Effects: TMAS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	378.608	2	189.304	36.270	.000
	Greenhouse-Geisser	378.608	1.163	325.466	36.270	.000
	Huynh-Feldt	378.608	1.218	310.907	36.270	.000
	Lower-bound	378.608	1.000	378.608	36.270	.000
Time * Condition	Sphericity Assumed	580.020	2	290.010	55.564	.000
	Greenhouse-Geisser	580.020	1.163	498.607	55.564	.000
	Huynh-Feldt	580.020	1.218	476.303	55.564	.000
	Lower-bound	580.020	1.000	580.020	55.564	.000
Error(Time)	Sphericity Assumed	334.039	64	5.219		
	Greenhouse-Geisser	334.039	37.225	8.974		
	Huynh-Feldt	334.039	38.968	8.572		
	Lower-bound	334.039	32.000	10.439		

Table 4.11.4

Tests of Within-Subjects Effects: GAD-7

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	132.020	2	66.010	38.174	.000
	Greenhouse-Geisser	132.020	1.487	88.789	38.174	.000
	Huynh-Feldt	132.020	1.591	82.965	38.174	.000
	Lower-bound	132.020	1.000	132.020	38.174	.000
Time * Condition	Sphericity Assumed	250.647	2	125.324	72.476	.000
	Greenhouse-Geisser	250.647	1.487	168.571	72.476	.000
	Huynh-Feldt	250.647	1.591	157.515	72.476	.000
	Lower-bound	250.647	1.000	250.647	72.476	.000
Error	Sphericity Assumed	110.667	64	1.729		
	Greenhouse-Geisser	110.667	47.581	2.326		
	Huynh-Feldt	110.667	50.920	2.173		
	Lower-bound	110.667	32.000	3.458		

Table 4.11.5

Tests of Within-Subjects Effects: KIMS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	9799.471	2	4899.735	102.541	.000
	Greenhouse-Geisser	9799.471	1.177	8326.373	102.541	.000
	Huynh-Feldt	9799.471	1.233	7945.489	102.541	.000
	Lower-bound	9799.471	1.000	9799.471	102.541	.000
Time * Condition	Sphericity Assumed	13200.412	2	6600.206	138.128	.000
	Greenhouse-Geisser	13200.412	1.177	11216.070	138.128	.000
	Huynh-Feldt	13200.412	1.233	10703.000	138.128	.000
	Lower-bound	13200.412	1.000	13200.412	138.128	.000
Error	Sphericity Assumed	3058.118	64	47.783		
	Greenhouse-Geisser	3058.118	37.661	81.200		

	Huynh-Feldt	3058.118	39.467	77.486		
	Lower-bound	3058.118	32.000	95.566		

Table 4.11.6

Tests of Within-Subjects Effects: MAAS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
time	Sphericity Assumed	2434.255	2	1217.127	62.991	.000
	Greenhouse-Geisser	2434.255	1.227	1983.514	62.991	.000
	Huynh-Feldt	2434.255	1.291	1885.622	62.991	.000
	Lower-bound	2434.255	1.000	2434.255	62.991	.000
time * Condition	Sphericity Assumed	2899.784	2	1449.892	75.037	.000
	Greenhouse-Geisser	2899.784	1.227	2362.844	75.037	.000
	Huynh-Feldt	2899.784	1.291	2246.230	75.037	.000
	Lower-bound	2899.784	1.000	2899.784	75.037	.000
Error (time)	Sphericity Assumed	1236.627	64	19.322		
	Greenhouse-Geisser	1236.627	39.272	31.489		
	Huynh-Feldt	1236.627	41.311	29.935		
	Lower-bound	1236.627	32.000	38.645		

Table 4.11.7

Tests of Within-Subjects Effects: WBSI

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	966.882	2	483.441	25.416	.000
	Greenhouse-Geisser	966.882	1.144	845.203	25.416	.000
	Huynh-Feldt	966.882	1.196	808.628	25.416	.000
	Lower-bound	966.882	1.000	966.882	25.416	.000
Time * Condition	Sphericity Assumed	1459.078	2	729.539	38.354	.000

	Greenhouse-Geisser	1459.078	1.144	1275.458	38.354	.000
	Huynh-Feldt	1459.078	1.196	1220.264	38.354	.000
	Lower-bound	1459.078	1.000	1459.078	38.354	.000
Error (Time)	Sphericity Assumed	1217.373	64	19.021		
	Greenhouse-Geisser	1217.373	36.607	33.255		
Time	Sphericity Assumed	966.882	2	483.441	25.416	.000
	Greenhouse-Geisser	966.882	1.144	845.203	25.416	.000

Table 4.11.8

Tests of Within-Subjects Effects: ATQ-F

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	7920.608	2	3960.304	82.462	.000
	Greenhouse-Geisser	7920.608	1.082	7321.042	82.462	.000
	Huynh-Feldt	7920.608	1.125	7040.215	82.462	.000
	Lower-bound	7920.608	1.000	7920.608	82.462	.000
Time * Condition	Sphericity Assumed	9767.078	2	4883.539	101.686	.000
	Greenhouse-Geisser	9767.078	1.082	9027.740	101.686	.000
	Huynh-Feldt	9767.078	1.125	8681.446	101.686	.000
	Lower-bound	9767.078	1.000	9767.078	101.686	.000
Error (Time)	Sphericity Assumed	3073.647	64	48.026		
	Greenhouse-Geisser	3073.647	34.621	88.781		
	Huynh-Feldt	3073.647	36.002	85.375		
	Lower-bound	3073.647	32.000	96.051		

Table 4.11.9

Tests of Within-Subjects Effects: ATQ-B

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	7094.294	2	3547.147	50.991	.000
	Greenhouse-Geisser	7094.294	1.049	6761.223	50.991	.000
	Huynh-Feldt	7094.294	1.088	6520.393	50.991	.000
	Lower-bound	7094.294	1.000	7094.294	50.991	.000

Time * Condition	Sphericity Assumed	9328.255	2	4664.127	67.048	.000
	Greenhouse-Geisser	9328.255	1.049	8890.301	67.048	.000
	Huynh-Feldt	9328.255	1.088	8573.635	67.048	.000
	Lower-bound	9328.255	1.000	9328.255	67.048	.000
Error	Sphericity Assumed	4452.118	64	69.564		
	Greenhouse-Geisser	4452.118	33.576	132.597		
	Huynh-Feldt	4452.118	34.817	127.874		
	Lower-bound	4452.118	32.000	139.129		

4.4 Other Statistical Significance

3.1 Attrition Rate

The attrition rate of the survey shows the number of individuals who moved out of the collective groups (Experimental and Control) over the measured time period (T1, T2, T3) (Leech, Barrett and Morgan, 2005). 34 participants entered the study and completed the inventory questions for all 9 scales:

- 17 Experimental: 10 females and 7 males; 17 Control: 10 females and 7 males

All participants attended all three sessions. Therefore, the attrition rate was 0%.

Table 4.12

Case Processing Summary: Attrition Rate

		Valid		Cases Missing		Total	
Measures	Sessions	N	Percent	N	Percent	N	Percent
Beck Depression Inventory (BDI)	BDI 1	34	100.0%	0	0.0%	34	100.0%
	BDI 2	34	100.0%	0	0.0%	34	100.0%
	BDI 3	34	100.0%	0	0.0%	34	100.0%
Patient Health Questionnaire (PHQ)	PHQ 1	34	100.0%	0	0.0%	34	100.0%
	PHQ 2	34	100.0%	0	0.0%	34	100.0%
	PHQ 3	34	100.0%	0	0.0%	34	100.0%
	TMAS 1	34	100.0%	0	0.0%	34	100.0%
	TMAS 2	34	100.0%	0	0.0%	34	100.0%

Taylor Manifest Anxiety Scale (TMAS)	TMAS 3	34	100.0%	0	0.0%	34	100.0%
Generalized Anxiety Disorder (GAD-7)	GAD-7 1	34	100.0%	0	0.0%	34	100.0%
	GAD-7 2	34	100.0%	0	0.0%	34	100.0%
	GAD-7 3	34	100.0%	0	0.0%	34	100.0%
Kentucky Inventory of Mindfulness Skills (KIMS)	KIMS 1	34	100.0%	0	0.0%	34	100.0%
	KIMS 2	34	100.0%	0	0.0%	34	100.0%
	KIMS 3	34	100.0%	0	0.0%	34	100.0%
Mindfulness Attention Awareness Scale (MAAS)	MAAS 1	34	100.0%	0	0.0%	34	100.0%
	MAAS 2	34	100.0%	0	0.0%	34	100.0%
	MAAS 3	34	100.0%	0	0.0%	34	100.0%
White Bear Suppression Inventory (WBSI)	WBSI 1	34	100.0%	0	0.0%	34	100.0%
	WBSI 2	34	100.0%	0	0.0%	34	100.0%
	WBSI 3	34	100.0%	0	0.0%	34	100.0%
Automatic Thoughts Questionnaire, Frequency (ATQ-F)	ATQ-F 1	34	100.0%	0	0.0%	34	100.0%
	ATQ-F 2	34	100.0%	0	0.0%	34	100.0%
	ATQ-F 3	34	100.0%	0	0.0%	34	100.0%
Automatic Thoughts Questionnaire, Believability (ATQ-B)	ATQ-B 1	34	100.0%	0	0.0%	34	100.0%
	ATQ-B 2	34	100.0%	0	0.0%	34	100.0%
	ATQ-B 3	34	100.0%	0	0.0%	34	100.0%

3.2 Wilk's Lambda

To test the effect of the measured time over the conditions (Experimental and Control), Wilk's Lambda of Multivariates was used (Leech, Barrett and Morgan, 2005). Wilks' lambda is a direct measure of the proportion of variance in the combination of dependent variables that is unaccounted for by the independent variable (the grouping variable or factor). If a

large proportion of the variance is accounted for by the independent variable then it suggests that there is an effect from the grouping variable and that the groups (control and experimental) have different mean values. The significant effect of time over the conditions was $0.000 < 0.05$. The table below shows that over time T1, T2, and T3, there was a level of significance of time effect over the patients' condition when tested using Wilk's Lambda.

Table 4.13

Multivariate Tests[a]: Wilk's Lambda

	Time					Time*Condition				
Measures	Value	F	Hypothesis df	Error df	Sig.	Value	F	Hypothesis df	Error df	Sig.
BDI	.253	45.792[b]	2.000	31.000	.000	.231	51.727[b]	2.000	31.000	.000
PHQ-9	.363	27.148[b]	2.000	31.000	.000	.353	28.368[b]	2.000	31.000	.000
TMAS	.443	19.474[b]	2.000	31.000	.000	.343	29.677[b]	2.000	31.000	.000
GAD-7	.375	25.802[b]	2.000	31.000	.000	.243	48.220[b]	2.000	31.000	.000
KIMS	.222	54.309[b]	2.000	31.000	.000	.171	75.047[b]	2.000	31.000	.000
MAAS	.311	34.408[b]	2.000	31.000	.000	.266	42.738[b]	2.000	31.000	.000
WBSI	.535	13.476[b]	2.000	31.000	.000	.430	20.581[b]	2.000	31.000	.000
ATQ-F	.252	46.027[b]	2.000	31.000	.000	.230	51.882[b]	2.000	31.000	.000
ATQ-B	.352	28.569[b]	2.000	31.000	.000	.312	34.195[b]	2.000	31.000	.000

a. Design: Intercept + Condition
Within Subjects Design: Time
b. Exact statistic

3.3 Test of Between Subject Effects

To measure the effect of the conditions (Experimental vs Control), a test of the between subject effects was made (Leech, Barrett and Morgan, 2005).

Table 4.14

Tests of Between-Subjects Effects

Measures	Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[a]
BDI	Intercept	97402.98	1	97402.980	393.096	.000	.925	393.096	1.000
	Condition	3435.92	1	3435.922	13.867	.001	.302	13.867	.951
	Error	7929.10	32	247.784					
PHQ-9	Intercept	23010.04	1	23010.039	451.177	.000	.934	451.177	1.000
	Condition	966.63	1	966.627	18.953	.000	.372	18.953	.988
	Error	1632.00	32	51.000					
TMAS	Intercept	88176.480	1	88176.480	702.279	.000	.956	702.279	1.000
	Condition	1640.010	1	1640.010	13.062	.001	.290	13.062	.939
	Error	4017.843	32	125.558					
GAD-7	Intercept	16594.13	1	16594.127	450.624	.000	.934	450.624	1.000
	Condition	523.15	1	523.147	14.206	.001	.307	14.206	.955
	Error	1178.39	32	36.825					
KIMS	Intercept	1330384.32	1	1330384.324	2052.911	.000	.985	2052.911	1.000
	Condition	23767.15	1	23767.147	36.675	.000	.534	36.675	1.000
	Error	20737.53	32	648.048					
MAAS	Intercept	268576.04	1	268576.039	1140.652	.000	.973	1140.652	1.000
	Condition	8118.63	1	8118.627	34.480	.000	.519	34.480	1.000
	Error	7534.67	32	235.458					
WBSI	Intercept	318194.21	1	318194.206	1358.133	.000	.977	1358.133	1.000
	Condition	948.25	1	948.245	4.047	.053	.112	4.047	.497
	Error	7497.22	32	234.288					
ATQ-F	Intercept	963407.54	1	963407.539	1396.116	.000	.978	1396.116	1.000
	Condition	31518.13	1	31518.127	45.674	.000	.588	45.674	1.000
	Error	22082.00	32	690.063					
ATQ-B	Intercept	911452.59	1	911452.588	1440.103	.000	.978	1440.103	1.000
	Condition	28133.69	1	28133.686	44.451	.000	.581	44.451	1.000
	Error	20253.06	32	632.908					

a. Computed using alpha = .05

The data extracted showed that the between effects were statistically significant. All measures recorded Partia Eta Squared results of between .11 (WBSI) and .59 (ATQ-F). These figures showed that between 11% and 59% of the variance in the dependent variables can be explored by both the Control and Experimental group.

3.4 Pair-Wise Comparison

The pair-wise comparison is used to measure the significance of change through time (Choo and Wedley, 2004). The mean difference should be significant at 0.05% when comparing the times against each other. The data showed a statistical significance between Time 1 (Pre-Session) and Time 2 (Post-Session) and between Time 1 (Pre-Session) and Time 3 (Feedback).

When analysing BDI, TMAS, GAD-7, KIMS, MAAS, WBSI, ATQ-F and ATQ-B, the data showed no statistical significance between Time 2 (Post-Session) and Time 3 (Feedback). This was because a figure of 0.126, 0.264, 0.382, 0.674, 0.848, 1.000, 1.000 and 1.000 respectively are greater than the significance of 0.05. However, with a significant level of between 0 and 0.01, all comparisons in PHQ should significantly change in time. See Table 14 below.

Table 4.15
Pairwise Comparisons

Measures	(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
						Lower Bound	Upper Bound
BDI	1	2	7.500*	.876	.000	5.287	9.713
		3	8.324*	.857	.000	6.159	10.488
	2	1	-7.500*	.876	.000	-9.713	-5.287
		3	.824	.389	.126	-.159	1.807
	3	1	-8.324*	.857	.000	-10.488	-6.159
		2	-.824	.389	.126	-1.807	.159
PHQ-9	1	2	3.676*	.550	.000	2.288	5.065
		3	4.294*	.578	.000	2.834	5.754

	2	1	-3.676*	.550	.000	-5.065	-2.288
		3	.618*	.195	.010	.125	1.111
	3	1	-4.294*	.578	.000	-5.754	-2.834
		2	-.618*	.195	.010	-1.111	-.125
TMAS	1	2	3.882*	.649	.000	2.242	5.522
		3	4.265*	.673	.000	2.565	5.964
	2	1	-3.882*	.649	.000	-5.522	-2.242
		3	.382	.217	.264	-.167	.932
	3	1	-4.265*	.673	.000	-5.964	-2.565
		2	-.382	.217	.264	-.932	.167
GAD-7	1	2	2.235*	.373	.000	1.292	3.179
		3	2.559*	.351	.000	1.673	3.445
	2	1	-2.235*	.373	.000	-3.179	-1.292
		3	.324	.207	.382	-.199	.846
	3	1	-2.559*	.351	.000	-3.445	-1.673
		2	-.324	.207	.382	-.846	.199
KIMS	1	2	-20.353*	1.938	.000	-25.249	-15.457
		3	-21.206*	2.050	.000	-26.385	-16.026
	2	1	20.353*	1.938	.000	15.457	25.249
		3	-.853	.689	.674	-2.593	.887
	3	1	21.206*	2.050	.000	16.026	26.385
		2	.853	.689	.674	-.887	2.593
MAAS	1	2	-10.088*	1.256	.000	-13.262	-6.914
		3	-10.618*	1.264	.000	-13.810	-7.425
	2	1	10.088*	1.256	.000	6.914	13.262
		3	-.529	.485	.848	-1.753	.695
	3	1	10.618*	1.264	.000	7.425	13.810
		2	.529	.485	.848	-.695	1.753
WBSI	1	2	6.441*	1.222	.000	3.355	9.528
		3	6.618*	1.306	.000	3.318	9.917
	2	1	-6.441*	1.222	.000	-9.528	-3.355
		3	.176	.399	1.000	-.830	1.183
	3	1	-6.618*	1.306	.000	-9.917	-3.318
		2	.176	.399	1.000	-1.183	.830
ATQ-F	1	2	18.529*	1.933	.000	13.645	23.414
		3	18.853*	2.116	.000	13.506	24.200
	2	1	-18.529*	1.933	.000	-23.414	-13.645
		3	.324	.508	1.000	-.960	1.607
	3	1	-18.853*	2.116	.000	-24.200	-13.506
		2	-.324	.508	1.000	-1.607	.960
ATQ-B	1	2	17.735*	2.382	.000	11.718	23.753
		3	17.647*	2.527	.000	11.264	24.031

2	1	-17.735*	2.382	.000	-23.753	-11.718
	3	-.088	.467	1.000	-1.269	1.093
3	1	-17.647*	2.527	.000	-24.031	-11.264
	2	.088	.467	1.000	-1.093	1.269

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

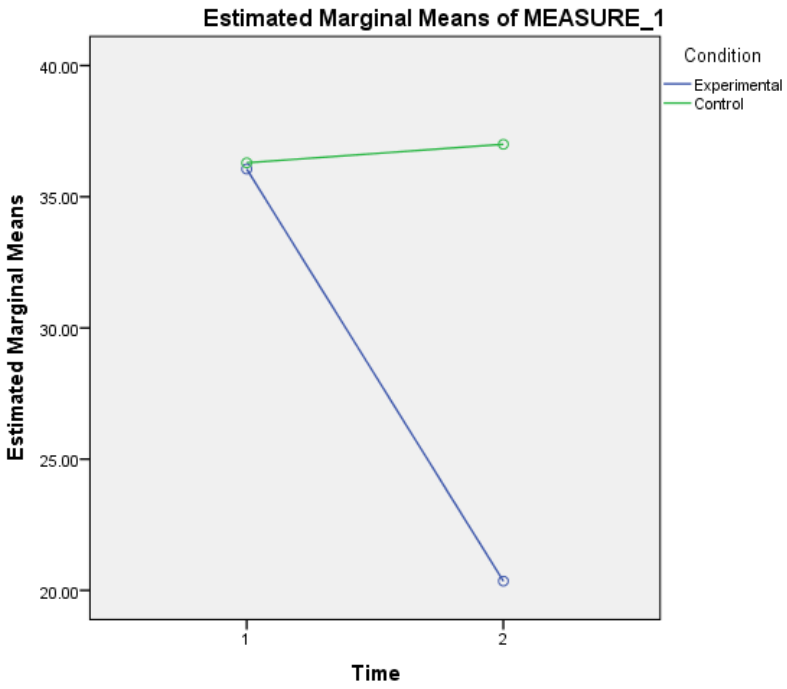
3.5 Profile Plots

The profile plots are useful in understanding what is happening to data across the time measure (Leech, Barrett and Morgan, 2005).

The data shows that though the Experimental and Control levels for patients at T1 are close (usually attributed to random selection of sample participants), the figures change over T2. The individual plots below give a much clearer picture.

Figure 4.1

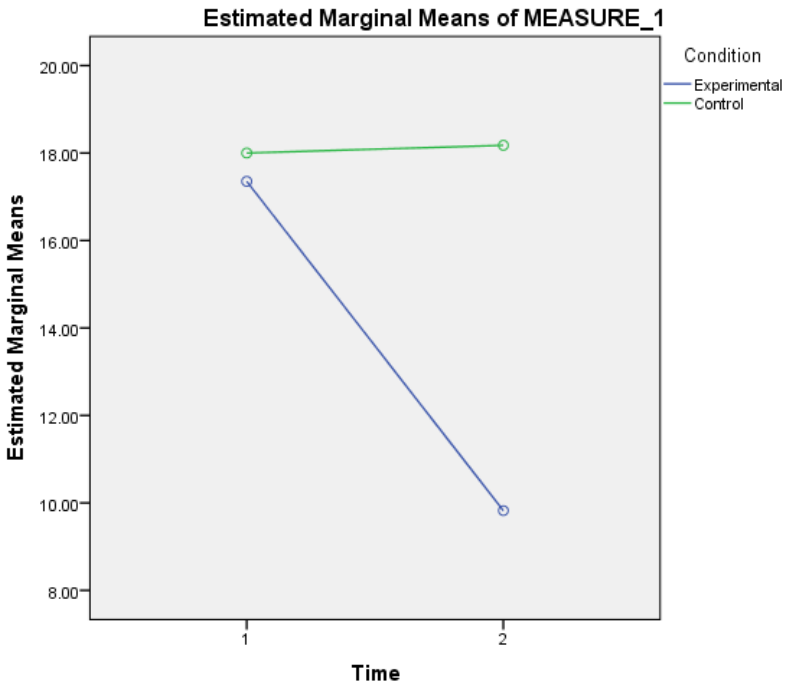
Profile Plots of BDI 1 and BDI 2



The Profile plot above helped identify whether Experimental or Control groups show up as a significantly distinct profile. The table above shows that at baseline (T1) the mean scores were close, however, over 6 months of treatment period, there was a much greater decrease in depression level in Experimental (35 to 20) and an increase in the depression levels for Control (35 to 37) in T2.

Figure 4.2

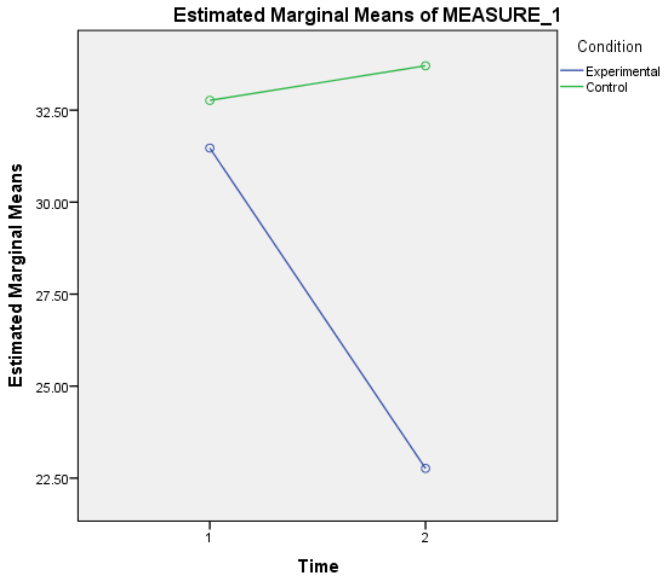
Profile Plots of PHQ 1 and PHQ 2



The profile graph above showed the mean score of the Experimental Group with the Control Group along with all the questions in the inventory. This helped identify how much progress the patients were making. While the experimental group showed progress (17.6 to 9.8), it was not the same situation for the control group (18 to 18.5).

Figure 4.3

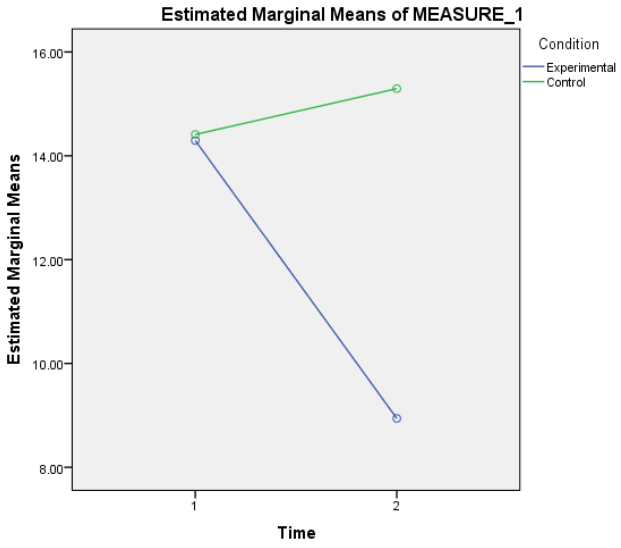
Profile Plots of TMAS 1 and TMAS 2



In the plot above there was evidence of improvement in the mental wellbeing of the patient in the Experimental group. For instance, the mean score of the Experimental group moved from a baseline of about 30 to 23 after 6 months.

Figure 4,4

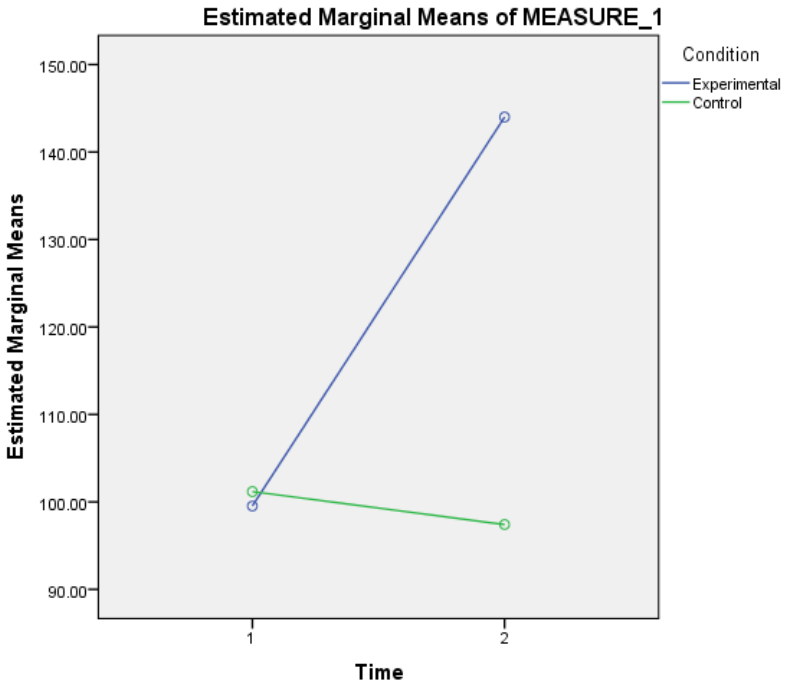
Profile Plots of GAD-7 1 and GAD-7 2



Similar to the analysis stated above, patients in the Experimental Group continued to show improvement in their mental states. Using the GAD, there was significant improvement in the Experimental group over 6 months (14 to 8.5).

Figure 4.5

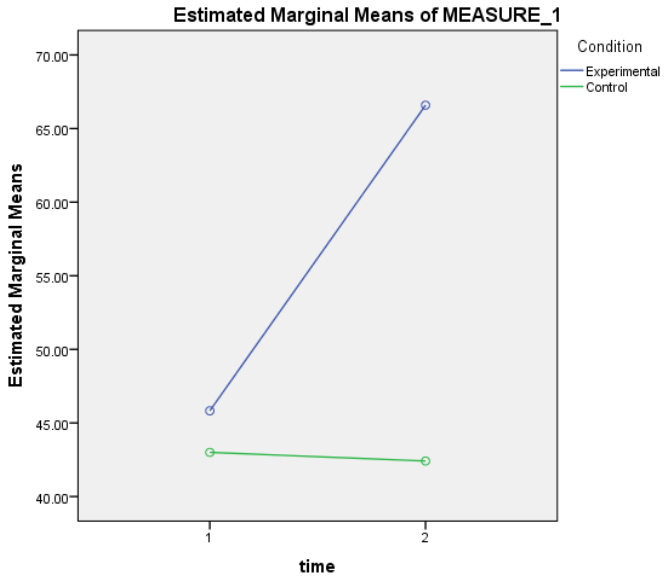
Profile Plots of KIMS 1 and KIMS 2



KIMS shows the mindfulness of patients, and unlike the other measures, which will show an improvement with a decrease in mean data, the KIMS plot will show an upward adjustment for improvement. In the plot above, base mean for the Experimental group was about 100. The plot shot up to about142 over 6 months. The score of about 42 shows a significant improvement in the mindfulness of patients

Figure 4.6

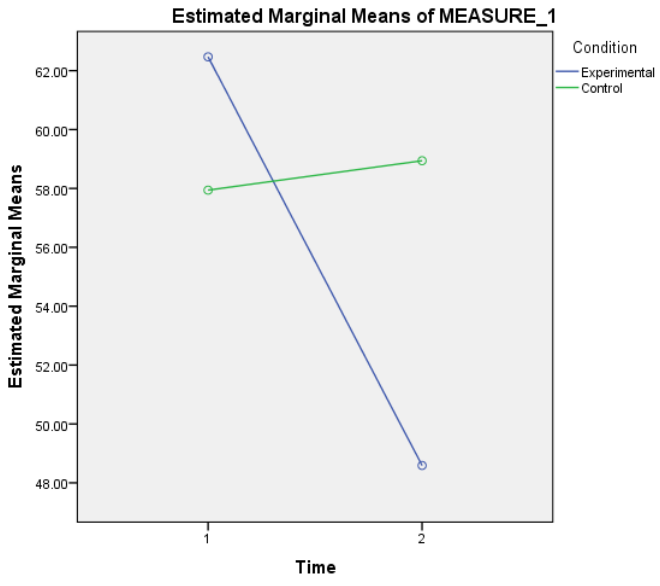
Profile Plots of MAAS 1 and MAAS 2



Just like KIMS, MAAS assesses the awareness level of patients. Thus, an upward plot will mean improvement. Although the control group showed a near stable mental state, the awareness level of the Experimental group rose from about 45 to about 66.

Figure 4.7

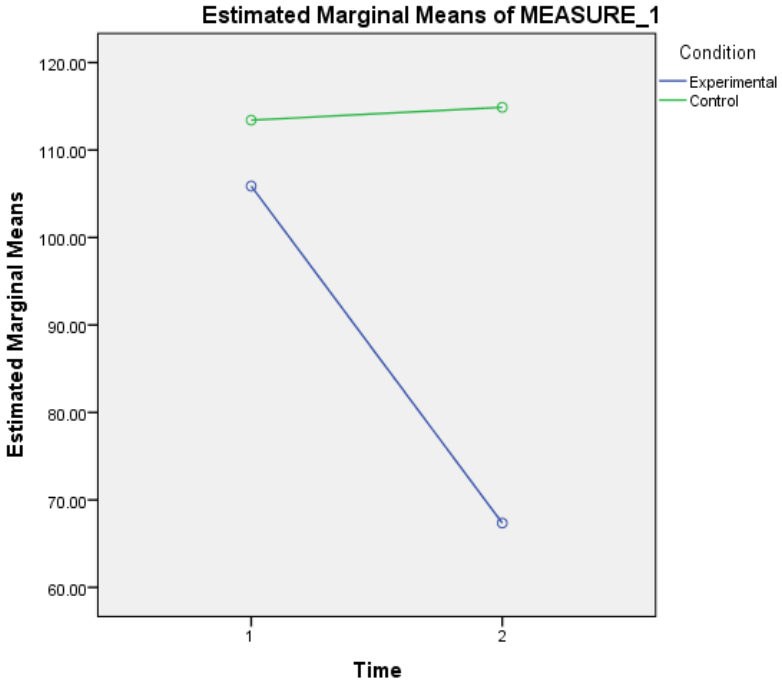
Profile Plots of WBSI 1 and WBSI 2



Patients in the Experimental Group continued to show improvement in their mental states. Using the WBSI, there was significant improvement in the Experimental group over 6 months (62 to 48).

Figure 4.8

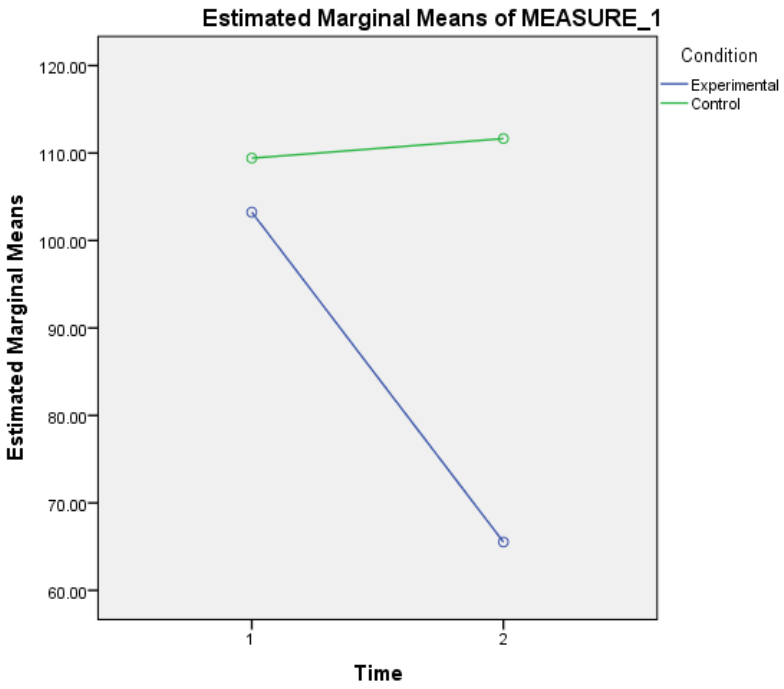
Profile Plots of ATQ-F1 and ATQ-F 2



The ATQ-F plot shows a significant drop in the mean data for the experimental group while the control group was near stagnant. The experimental group dropped significantly from about 108 to about 68.

Figure 4.9

Profile Plots of ATQ-B1 and ATQ-B 2



The ATQ-B plot also showed a significant drop in the mean data for the experimental group when over the same 6 month period the control group showed almost no change. The experimental group dropped significantly from about 104 to about 64.

4.5 Clinical Significance

The statistical significance is used to summarise the means of conditions and how they differ. However, the limitation is its insensitivity to individual change as stated above. Therefore, two statistical criteria have been developed to quantify the magnitude of change of each individual. This magnitude of change is expected to be large enough to be rated as clinically meaningful and reliable. The two criteria used are the Cut-Off Score and Reliability Change Index (Thomas and Truax, 2008).

4.5.1Cut-Off Score

This criterion is used to measure the closeness of the feedback level (FL) of functioning to the non-clinical population level (NCL). According to Thomas and Truax (2008), the FL should be closer to the NCL than the clinical population level (CPL). This is done by identifying a cut-off score. Below is a table that summarises the clinical cut-off points for the various measures.

Table 4.16
Cut-Off Scores

	Values of Measures								
Clinical Cut-Off Score	BDI	PHQ-9	TMAS	GAD-7	KIMS	MAAS	WBSI	AT Q-F	AT Q-B
Standard Deviation of Normal Population	20.36	3.52	6.96	3.41	24.10	0.70	13.36	18.18	18.18
Standard Deviation of Clinical Population	13.05	6.43	8.86	5.01	29.19	16.70	11.73	30.10	28.33
Mean of Normal Population	17.33	2.91	15.40	2.95	154.22	4.20	48.16	52.91	52.91
Mean of Clinical Population	27.85	13.38	27.85	11.79	121.56	55.03	53.59	90.79	88.68
Clinical Cut-Off[a]	23.74	6.62	20.88	6.53	139.45	6.24	57.05	67.17	66.89

[a]Cut-off Score = $\frac{[(SD\ Normal * Mean\ Clinical) + (SD\ Clinical * Mean\ Normal)]}{(SD\ Normal + SD\ Clinical)}$

4.5.1.1BDI

The normative data was taken from the study by Alansari (2005). The study was taken from 9,700 students from 19 Islamic countries. The data was taken from this literature because it used similar scoring in the 21 item inventory. Normative sample mean derived from Alansari (2005) was 17.33 (SD = 20.36). The data collected from the field work and normative research showed that a cut-off score of 23.74 will be needed for analysing whether a participant's change in depression level at the end of the Experimental intervention was clinically meaningful.

4.5.1.2PHQ-9

For the basis of this survey, a normative data was taken from the study conducted by Kocalevent, Hinz and Brähler (2013) which measured the level of depression of Germans aged 14 years and over, living in private households. The study which was conducted over two waves had a sample size of 2,500 and 2,518 for 2003 and 2008 respectively with a normative sample mean of 2.91 (SD = 3.52). The data collected from the field work and normative research showed that a cut-off score of 6.62 will be needed for analysing whether a participant's change in depression level at the end of the Experimental intervention was clinically meaningful.

4.5.1.3TMAS

The normative data for the NCL was identified in Kausler, Trapp and Brewer's (1959) study of 86 students from the University of Arkansas with a normative sample mean of 15.40 (SD = 6.96). Once this is identified, the formula was used to derive a cut-off score of 20.88.

4,5,1,4GAD-7

The normative data was taken from the study by Lowe et al (2008). The study was taken from 5,030 participants with a mean age of 48.4 years (SD = 18.0). The data was taken from this literature because it used similar scoring in the 7 item inventory. Normative sample mean derived from Lowe et al (2008) was 2.95 (SD = 3.41).

The data collected from the field work and normative research showed that a cut-off score of 6.53 will be needed for analysing whether a participant's change in anxiety level at the end of the Experimental intervention was clinically meaningful.

4.5.1.5KIMS

First, a normative data was collected from Baer et al' (2004) study with for similarities the 39 questions. Results showed normative mean of 154.22 with a standard deviation of 24.10. The mean of the clinical population at Time Measure 3 was 121.56 with a standard deviation of 29.19. The Cut-Off score derived was 139.45.

4.5.1.6MAAS

Initially, a normative data was sourced from Brown and Ryan's (2003) state version of MAAS which also had the 15-itemscale designed to assess the core characteristic of mindfulness. The normative information on the trait MAAS showed a normative mean of 4.20 with a standard deviation of 0.70. The mean of the clinical population was 55.03 with a standard deviation of 16.70. The Cut-Off score derived was 6.24.

4.5.1.7WBSI

The normative data was taken from the study by Rosenthal et al (2005). The sample included 127 recruited through advertisement and across races (73.2% Caucasians and 15.7% African American) with a mean age of 34.65 years (SD = 11.64; range: 18 to 55 years). The data was taken from this literature because it used similar scoring in the 15 item inventory. Normative sample mean derived from Rosenthal et al (2005) was 48.16 (SD = 13.36).

The data collected from the field work and normative research showed that a cut-off score of 57.65 will be needed for analysing whether a participant's tendency to suppress thought at the end of the Experimental intervention was clinically meaningful.

4.5.1.8ATQ-F/B

Initially, a normative data was sourced from a study by Dozois et al (2003) which had a similar score for a similar 30 inventory questionnaire. Results showed a normative mean of 52.91 with a standard deviation of 18.18. The mean of the clinical population was 90.79 for ATQ-F and 88.68 for ATQ-B with standard deviations of 30.10 and 28.33 respectively. The Cut-Off scores derived were 67.17 (ATQ-F) and 66.89 (ATQ-B).

4.5.2Reliability Change Index

The Reliability Change Index (RCI) determines whether the degree of change feedback is greater than what is expected from the random error. To find the RCI, the difference between the feedback and pre-session levels is divided by the standard error of the difference. The t-test reliability data was used for the outcome measure due to its ability to take into account the measure's reliability (Thomas and Truax, 2008).

For BDI, the reliability estimate was 0.901, generating a standard error of 3.12. The RCI generated was 8.65. This means that participants with change scores of 8.65 or more will be considered as individuals showing reliable change.

According to the PHQ-9 calculation, the reliability estimate for the survey was 0.901 with a standard error of 1.47. A RCI of 4.07 means participants with change scores of 4.07 or more will be considered as individuals showing reliable change.

The t-test reliability data was used for the outcome measure of the TMAS RCI due to its ability to take into account the measure's reliability (Thomas and Truax, 2008). The RCI was 6.11.

The result from the GAD-7, KIMS, WSBI, MAAS, ATQ-F and ATQ-B data showed a reliability estimate of 0.901, a standard error of 1.20, 4.16, 2.74, 2.87, 5.45 and 5.62 respectively. The RCI generated was 3.33 11.53, 7.59, 7.95, 15.10 and 15.57 respectively.

Table 4.17
Reliability Change Index (RCI)

	Values of Measures								
	BDI	PHQ-9	TMAS	GAD-7	KIMS	MAAS	WBSI	ATQ-F	ATQ-B
Mean Pre-Session	36.18	17.68	32.12	14.35	100.35	44.41	60.21	109.65	106.32
Mean Feedback	27.85	13.38	27.85	11.79	121.56	55.03	53.59	90.79	88.68

Standard deviation at Pre-Session	9.92	4.67	7.01	3.82	13.22	9.11	8.70	17.31	17.85
Reliability	0.901	0.901	0.901	0.901	0.901	0.901	0.901	0.901	0.901
Standard Error of Measure	3.12	1.47	2.21	1.20	4.16	2.87	2.74	5.45	5.62
Sdiff	4.41	2.08	3.12	1.70	5.88	4.05	3.87	7.70	7.94
RCI[a]	8.65	4.07	6.11	3.33	11.53	7.95	7.59	15.10	15.57
Pre-Feedback change	8.32	4.29	4.26	2.56	-21.21	-10.62	6.62	18.86	17.65
Effect Size	0.84	0.92	0.61	0.67	-1.60	-1.17	0.76	1.09	0.99

4.6 Test For Change

After the Cut-Off Scores and RCI have been determined, Thomas and Truax (2008) state that participants are grouped into four categories to determine the degree of individual changes. Below are the grouped participants:

- **Recovered:** When participants meet both RCI and Cut-Off Score
- **Improved:** Participants' level of depression or anxiety or ACT elements can be said to have improved if they show a significant RCI without entering the non-clinical range.
- **Same:** If he does not meet both RCI and Cut-Off Score
- **Deteriorated:** However, levels of depression or anxiety or ACT Elements can be said to have worsened if the participant shows a reliable worsening levels.

4.7 Results

4.6.1 Participants Change Scores

The essence for testing the participants' change in scores using RCI is the ability to provide a clearer approach for determining if an individual's change over time on psychological tests shows reliable improvement or otherwise. Patients with mental disorders who usually visit hospitals are taken through repeated assessments. This is because repeated measures are the most reliable methods in the determination of whether there was improvement in an individual's mental state through the change in test results over time. In this study, 34 patients presenting with mental disorders were assessed at baseline (T1) and then 6 months later (T2). Finally, a follow up assessment (T3) was made. This was done using all nine measures (BDI, PHQ-9, TMAS, GAD-7, KIMS, MAAS, WBSI, ATQ-F and ATQ-B). As stated in the Clinical Significance chapter, the Reliable Change Index (RCI) was determined by finding the difference between the feedback and pre-session levels and then dividing the result by the standard error of the difference. The results from the RCI identified a few individuals who showed no reliable change with the experimental group between baseline and follow-up. Using standard deviation (SD) as a method of calculation resulted in a larger number of individuals showing improvements reliably.

Table 4.18
RCI Results

		Baseline (T1)		Feedback (T3)		Difference		Results
Measures	Groups	Mean	SD	Mean	SD	Mean	SD	

BDI (RCI = 8.65)	Experimental	36.06	9.95	18.88	13.05	17.18	11.50	Reliable change
	Control	36.29		36.82		-0.53		No reliable change
PHQ-9 (RCI = 4.07)	Experimental	17.35	4.67	8.59	6.43	8.76	5.55	Reliable change
	Control	18.00		18.12		-0.12		No reliable change
TMAS (RCI = 6.11)	Experimental	31.47	7.01	21.94	8.86	9.53	7.94	Reliable change
	Control	32.76		33.76		-1.00		No reliable change
GAD-7 (RCI = 3.33)	Experimental	14.29	3.82	8.24	5.01	6.06	4.42	Reliable change
	Control	14.41		15.35		-0.94		No reliable change
KIMS (RCI = 11.53)	Experimental	99.53	13.22	144.88	29.19	45.35	21.21	Reliable change
	Control	101.18		98.24		2.94		No reliable change
MAAS (RCI = 7.95)	Experimental	45.82	9.11	68.29	16.70	22.47	12.91	Reliable change
	Control	43.00		41.76		1.24		No reliable change
WBSI (RCI = 7.59)	Experimental	62.47	8.70	47.35	11.73	15.12	10.22	Reliable change
	Control	57.94		59.82		-1.88		No reliable change
ATQ-F (RCI = 15.10)	Experimental	105.88	17.31	65.59	30.01	40.29	23.66	Reliable change
	Control	113.41		116.00		-2.59		No reliable change
ATQ-B (RCI = 15.57)	Experimental	103.24	17.85	65.00	28.33	38.24	23.09	Reliable change
	Control	109.41		111.88		-2.47		No reliable change

The summary analysis showed that there was a reliable change with the experimental groups as compared to the control groups. Although some individual patients showed a good change score (which will be discussed in the next tables), the table above showed that there was no reliable change in the control groups. With an RCI of 8.65, BDI recorded a mean score of 17.18 and -0.53 respectively for the experimental and control groups. This means that there was a score of

about 9 both ways for the group. A similar trend goes into PHQ-9 where the mean difference in T1 and T3 were 8.79 and -0.12 respectively for experimental and control group (4 points both ways). There was, however, a huge fall in the control group of TMAS as compared to the experimental group. GAD-7 recorded a mean difference of 6.06, three points higher than the RCI of 3.33. With a SD of 21.21, the difference in mindfulness by the 17 patients assessed in the experimental group over the two time periods for KIMS was 45.35 and this shows a significant improvement. MAAS and WBSI also showed significant improvement of about 15 and 8 respectively using ACT on the experimental group. At RCIs of 15.10 and 15.57, ATQ-B and ATQ-F showed significant improvements (40.29; 38.24) over time. This is in sharp contrast to the control group which shows little or no improvement in the mental state of the patients assessed. This contributes to the hypothesis that ACT is effective in the treatment of clients diagnosed with depression. Below is the individual analysis of patients' change scores for both experimental and control groups.

4.6.1.1BDI

The patients assessed at BDI level had a sample range from 0 (none) to 4 (severe). The mean score at baseline was 36.06 for experimental and 36.29 for control with a SD of 9.95. Likewise, the mean BDI score after feedback assessment had significantly improved for Experimental (18.88; SD = 13.05) but deteriorated for the controlled group. Below are the results for the test of change for the individual patients.

Table 4.19.1
Experimental Group Reliable Change (BDI)

Patient Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 8.65
P 1	3	31	18	13	Reliable Change
P 2	7	50	28	22	Reliable Change
P 3	25	27	14	13	Reliable Change
P 4	13	42	26	16	Reliable Change
P 5	16	36	22	14	Reliable Change
P 6	9	48	24	24	Reliable Change
P 7	11	22	7	15	Reliable Change
P 8	30	54	28	26	Reliable Change
P 9	2	39	17	22	Reliable Change
P 10	1	36	20	16	Reliable Change
P 11	28	48	14	34	Reliable Change
P 12	24	31	16	15	Reliable Change
P 13	32	27	14	13	Reliable Change
P 14	17	28	14	14	Reliable Change
P 15	14	28	14	14	Reliable Change
P 16	27	28	17	11	Reliable Change
P 17	29	38	28	10	Reliable Change

Table 4.19.2
Control Group Reliable Change (BDI)

Patient Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 8.65
P 1	8	20	20	0	No Reliable Change
P 2	5	33	33	0	No Reliable Change
P 3	4	51	50	1	No Reliable Change
P 4	20	33	32	1	No Reliable Change
P 5	10	54	58	-4	No Reliable Change
P 6	22	36	36	0	No Reliable Change
P 7	12	52	54	-2	No Reliable Change
P 8	6	44	44	0	No Reliable Change
P 9	21	21	21	0	No Reliable Change
P 10	23	36	40	-4	No Reliable Change
P 11	26	49	55	-6	No Reliable Change
P 12	19	27	30	-3	No Reliable Change
P 13	18	35	35	0	No Reliable Change
P 14	15	30	31	-1	No Reliable Change
P 15	33	33	24	9	Reliable Change
P 16	34	38	38	0	No Reliable Change
P 17	31	25	25	0	No Reliable Change

4.6.1.2PHQ-9

All 34 patients were assessed using a PHQ-9 scoring of 1 (none) to 5 (severe). A total accumulated point of 0 to 4 in the inventory will give a scoring of 1 (None), 5 to 9 gives a scoring of 2 (Mild), 10 to 14 is 3 (Moderate), 15 to 19 is 4 (Moderately Severe) and 20 to 27 is 5 (Severe). The Experimental group recorded a mean score at T1 of 17.35 while the control group recorded 18.00. However, at T3 while the Experimental group showed a development at 8.59, that was not the case with the control group 18.12. Below are the results for the test of change for the individual patients.

Table 4.19.3
Experimental Group Reliable Change (PHQ-9)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 4.07
P 1	3	13	5	8	Reliable Change
P 2	7	14	9	5	Reliable Change
P 3	25	17	9	8	Reliable Change
P 4	13	18	10	8	Reliable Change
P 5	16	20	13	7	Reliable Change
P 6	9	23	15	8	Reliable Change
P 7	11	10	4	6	Reliable Change
P 8	30	17	8	9	Reliable Change
P 9	2	22	7	15	Reliable Change
P 10	1	19	10	9	Reliable Change
P 11	28	23	5	18	Reliable Change
P 12	24	20	9	11	Reliable Change
P 13	32	21	5	16	Reliable Change
P 14	17	10	9	1	No Reliable Change
P 15	14	17	7	10	Reliable Change
P 16	27	19	10	9	Reliable Change
P 17	29	12	11	1	No Reliable Change

Table 4.19.4
Control Group Reliable Change (PHQ-9)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 4.07
P 1	8	11	11	0	No Reliable Change
P 2	5	10	10	0	No Reliable Change
P 3	4	24	25	-1	No Reliable Change
P 4	20	19	17	2	No Reliable Change
P 5	10	22	22	0	No Reliable Change
P 6	22	15	15	0	No Reliable Change
P 7	12	23	22	1	No Reliable Change
P 8	6	25	25	0	No Reliable Change
P 9	21	14	13	1	No Reliable Change
P 10	23	21	23	-2	No Reliable Change
P 11	26	25	25	0	No Reliable Change
P 12	19	15	16	-1	No Reliable Change
P 13	18	20	20	0	No Reliable Change
P 14	15	16	17	-1	No Reliable Change
P 15	33	13	12	1	No Reliable Change
P 16	34	22	23	-1	No Reliable Change
P 17	31	11	12	-1	No Reliable Change

4.6.1.3TMAS

The change scores of individual-level change were analysed for each patient using the TMAS. The means and SDs used in this analysis were extracted from the statistical analysis of the field data (n=34). The test difference scores generated are not normally distributed (see assumptions in the previous chapter). After using Pearson's correlation to calculate the reliable change, the test scores were considered "reliable change" or "no reliable change". There is a "reliable change" or "no reliable change" if the formula resulted in a value greater than or equal to 6.11, or less than or equal to 6.11, respectively. See the tables below for the results for the test of change for the individual patients.

Table 4.19.5
Experimental Group Reliable Change (TMAS)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 6.11
P 1	3	29	20	9	Reliable Change
P 2	7	31	26	5	No Reliable Change
P 3	25	32	19	13	Reliable Change
P 4	13	27	22	5	No Reliable Change
P 5	16	33	27	6	No Reliable Change
P 6	9	29	21	8	Reliable Change
P 7	11	25	14	11	Reliable Change
P 8	30	31	26	5	No Reliable Change
P 9	2	30	20	10	Reliable Change
P 10	1	44	27	17	Reliable Change
P 11	28	41	17	24	Reliable Change
P 12	24	30	20	10	Reliable Change
P 13	32	29	20	9	Reliable Change
P 14	17	35	21	14	Reliable Change
P 15	14	29	20	9	Reliable Change
P 16	27	31	26	5	No Reliable Change
P 17	29	29	27	2	No Reliable Change

Table 4.19.6
Control Group Reliable Change (TMAS)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 6.11
P 1	8	20	24	-4	No Reliable Change
P 2	5	22	22	0	No Reliable Change
P 3	4	40	40	0	No Reliable Change
P 4	20	34	33	1	No Reliable Change
P 5	10	46	47	-1	No Reliable Change
P 6	22	41	42	-1	No Reliable Change
P 7	12	48	48	0	No Reliable Change
P 8	6	41	42	-1	No Reliable Change
P 9	21	25	26	-1	No Reliable Change
P 10	23	35	38	-3	No Reliable Change
P 11	26	34	35	-1	No Reliable Change
P 12	19	28	29	-1	No Reliable Change
P 13	18	29	30	-1	No Reliable Change
P 14	15	30	31	-1	No Reliable Change
P 15	33	25	23	2	No Reliable Change

P 16	34	39	40	-1	No Reliable Change
P 17	31	20	24	-4	No Reliable Change

4.6.1.4GAD-7

When doing the individual-level analyses of normal change with GAD-7, these analyses were conducted using data from people who were defined as clinical at baseline and follow-up. As shown in Table 1, there were distinct differences between the Control and Experimental in accurately classifying normal change. At the baseline, the Experimental group recorded a mean score of 14.29 and the Control group recorded 14.41. However, at feedback the Experimental group showed a development at 8.24 while the Control group recorded 15.35. Below are the results for the test of change for the individual patients.

Table 4.19.7

Experimental Group Reliable Change (GAD-7)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 3.3
P 1	3	11	9	2	No Reliable Change
P 2	7	14	10	4	Reliable Change
P 3	25	15	4	11	Reliable Change
P 4	13	16	10	6	Reliable Change
P 5	16	18	12	6	Reliable Change
P 6	9	15	11	4	Reliable Change
P 7	11	5	2	3	No Reliable Change
P 8	30	17	11	6	Reliable Change
P 9	2	16	7	9	Reliable Change
P 10	1	18	10	8	Reliable Change
P 11	28	14	4	10	Reliable Change
P 12	24	17	8	9	Reliable Change
P 13	32	16	8	8	Reliable Change
P 14	17	11	7	4	Reliable Change
P 15	14	10	5	5	Reliable Change

P 16	27	15	10	5	Reliable Change
P 17	29	15	12	3	No Reliable Change

Table 4.19.8
Control Group Reliable Change (GAD-7)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 3.3
P 1	8	10	12	-2	No Reliable Change
P 2	5	10	9	1	No Reliable Change
P 3	4	16	18	-2	No Reliable Change
P 4	20	17	18	-1	No Reliable Change
P 5	10	21	21	0	No Reliable Change
P 6	22	11	13	-2	No Reliable Change
P 7	12	21	21	0	No Reliable Change
P 8	6	21	21	0	No Reliable Change
P 9	21	12	14	-2	No Reliable Change
P 10	23	16	16	0	No Reliable Change
P 11	26	20	21	-1	No Reliable Change
P 12	19	13	14	-1	No Reliable Change
P 13	18	10	12	-2	No Reliable Change
P 14	15	15	15	0	No Reliable Change
P 15	33	10	10	0	No Reliable Change
P 16	34	13	14	-1	No Reliable Change
P 17	31	9	12	-3	No Reliable Change

4.6.1.5KIMS

To calculate the change score for KIMs, the Feedback (T3) observed scores of the individuals were subtracted from their pre-session observed scores. The resulting value was the difference in scale points needed to show a significant change in pre-to-post-test scores. With help formula recommended by Jacobson and Traux, the RCI was 11, 53. Below are the individual test results.

Table 4.19.9
Experimental Group Reliable Change (KIMS)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 11.53
P 1	3	118	175	57	Reliable Change

P 2	7	85	152	67	Reliable Change
P 3	25	97	156	59	Reliable Change
P 4	13	96	125	29	Reliable Change
P 5	16	90	140	50	Reliable Change
P 6	9	118	161	43	Reliable Change
P 7	11	95	140	45	Reliable Change
P 8	30	95	125	30	Reliable Change
P 9	2	100	140	40	Reliable Change
P 10	1	100	150	50	Reliable Change
P 11	28	80	169	89	Reliable Change
P 12	24	119	160	41	Reliable Change
P 13	32	99	133	34	Reliable Change
P 14	17	110	150	40	Reliable Change
P 15	14	95	122	27	Reliable Change
P 16	27	90	125	35	Reliable Change
P 17	29	105	140	35	Reliable Change

Table 4.19.10

Control Group Reliable Change (kims)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 11.53
P 1	8	115	105	-10	No Reliable Change
P 2	5	115	115	0	No Reliable Change
P 3	4	117	115	-2	No Reliable Change
P 4	20	105	103	-2	No Reliable Change
P 5	10	70	64	-6	No Reliable Change
P 6	22	117	115	-2	No Reliable Change
P 7	12	75	70	-5	No Reliable Change
P 8	6	113	113	0	No Reliable Change
P 9	21	95	90	-5	No Reliable Change
P 10	23	90	85	-5	No Reliable Change
P 11	26	80	70	-10	No Reliable Change
P 12	19	99	97	-2	No Reliable Change
P 13	18	100	100	0	No Reliable Change
P 14	15	112	110	-2	No Reliable Change
P 15	33	107	119	12	Reliable Change
P 16	34	115	119	4	No Reliable Change
P 17	31	95	80	-15	No Reliable Change

4.6.1.6MAAS

As stated early, change in scores used the difference between Feedback (T3) observed scores of the individuals and their pre-sessions (T1) observed scores. The RCI used was applicable to all age categories within both experimental and control groups. Below is a table detailing each individual's change score.

Table 4.19.11
Experimental Group Reliable Change (MAAS)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 7.95
P 1	3	57	85	28	Reliable Change
P 2	7	33	64	31	Reliable Change
P 3	25	43	72	29	Reliable Change
P 4	13	50	66	16	Reliable Change
P 5	16	47	66	19	Reliable Change
P 6	9	45	68	23	Reliable Change
P 7	11	50	75	25	Reliable Change
P 8	30	45	61	16	Reliable Change
P 9	2	47	68	21	Reliable Change
P 10	1	46	69	23	Reliable Change
P 11	28	29	82	53	Reliable Change
P 12	24	56	75	19	Reliable Change
P 13	32	35	59	24	Reliable Change
P 14	17	50	64	14	Reliable Change
P 15	14	49	66	17	Reliable Change
P 16	27	45	60	15	Reliable Change
P 17	29	52	61	9	Reliable Change

Table 4.19.12
Control Group Reliable Change (MAAS)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 7.95

P 1	8	39	37	-2	No Reliable Change
P 2	5	35	35	0	No Reliable Change
P 3	4	45	41	-4	No Reliable Change
P 4	20	42	39	-3	No Reliable Change
P 5	10	35	29	-6	No Reliable Change
P 6	22	44	44	0	No Reliable Change
P 7	12	30	27	-3	No Reliable Change
P 8	6	55	50	-5	No Reliable Change
P 9	21	50	49	-1	No Reliable Change
P 10	23	36	29	-7	No Reliable Change
P 11	26	15	15	0	No Reliable Change
P 12	19	50	50	0	No Reliable Change
P 13	18	46	46	0	No Reliable Change
P 14	15	50	50	0	No Reliable Change
P 15	33	55	60	5	No Reliable Change
P 16	34	54	61	7	No Reliable Change
P 17	31	50	48	-2	No Reliable Change

4.6.1.7WBSI

When calculating the change in scores for the WBSI, like all the other measures, once the change score exceeded the RCI (calculated based on the reliability of WBSI), the patient is said to have "significantly improved". Contrarily, the patient is said to have not improved if the change is slower than the RCI. In the context of WBSI, the observed change would be expected by chance alone at a probability of less than 5% and above an RCI of 7.59. Two participants (16, 29) in the Experimental group had an observed change of 5 which was less than the RCI of 7.59. Thereby, showing there was no significant improvement. Below are the individual scores.

Table 4.19.13

Experimental Group Reliable Change (WBSI)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 7.59
P 1	3	70	45	25	Reliable Change
P 2	7	65	52	13	Reliable Change

P 3	25	49	31	18	Reliable Change
P 4	13	55	42	13	Reliable Change
P 5	16	62	55	7	No Reliable Change
P 6	9	69	60	9	Reliable Change
P 7	11	67	45	22	Reliable Change
P 8	30	53	45	8	Reliable Change
P 9	2	71	60	11	Reliable Change
P 10	1	65	55	10	Reliable Change
P 11	28	73	25	48	Reliable Change
P 12	24	67	44	23	Reliable Change
P 13	32	67	55	12	Reliable Change
P 14	17	63	53	10	Reliable Change
P 15	14	48	36	12	Reliable Change
P 16	27	53	42	11	Reliable Change
P 17	29	65	60	5	No Reliable Change

Table 4.19.14

Control Group Reliable Change (WBSI)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 7.59
P 1	8	46	46	0	No Reliable Change
P 2	5	61	65	-4	No Reliable Change
P 3	4	63	69	-6	No Reliable Change
P 4	20	50	49	1	No Reliable Change
P 5	10	69	73	-4	No Reliable Change
P 6	22	72	72	0	No Reliable Change
P 7	12	70	73	-3	No Reliable Change
P 8	6	65	65	0	No Reliable Change
P 9	21	45	55	-10	No Reliable Change
P 10	23	59	60	-1	No Reliable Change
P 11	26	68	72	-4	No Reliable Change
P 12	19	50	50	0	No Reliable Change
P 13	18	56	56	0	No Reliable Change
P 14	15	46	52	-6	No Reliable Change
P 15	33	49	45	4	No Reliable Change
P 16	34	61	60	1	No Reliable Change
P 17	31	55	55	0	No Reliable Change

4.6.1.8ATQ-F

The observed change of ATQ-F would also be expected by chance alone at a probability of less than 5% and above an RCI of 15.10.All patients in the Experimental group showed significant improvements while the control group showed no significant improvement. Below are the individual scores.

Table 4.19.15
Experimental Group Reliable Change (ATQ-F)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 15.10
P 1	3	88	52	36	Reliable Change
P 2	7	112	66	46	Reliable Change
P 3	25	98	66	32	Reliable Change
P 4	13	105	65	40	Reliable Change
P 5	16	107	89	18	Reliable Change
P 6	9	110	67	43	Reliable Change
P 7	11	65	43	22	Reliable Change
P 8	30	136	85	51	Reliable Change
P 9	2	113	89	24	Reliable Change
P 10	1	89	55	34	Reliable Change
P 11	28	133	43	90	Reliable Change
P 12	24	99	60	39	Reliable Change
P 13	32	100	55	45	Reliable Change
P 14	17	103	75	28	Reliable Change
P 15	14	119	59	60	Reliable Change
P 16	27	114	74	40	Reliable Change
P 17	29	109	72	37	Reliable Change

Table 4.1916
Control Group Reliable Change (ATQ-F)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 15.10

P 1	8	110	105	5	No Reliable Change
P 2	5	80	85	-5	No Reliable Change
P 3	4	130	133	-3	No Reliable Change
P 4	20	94	99	-5	No Reliable Change
P 5	10	137	139	-2	No Reliable Change
P 6	22	129	131	-2	No Reliable Change
P 7	12	125	133	-8	No Reliable Change
P 8	6	133	135	-2	No Reliable Change
P 9	21	96	100	-4	No Reliable Change
P 10	23	114	118	-4	No Reliable Change
P 11	26	129	138	-9	No Reliable Change
P 12	19	100	110	-10	No Reliable Change
P 13	18	99	100	-1	No Reliable Change
P 14	15	119	121	-2	No Reliable Change
P 15	33	103	92	11	No Reliable Change
P 16	34	135	131	4	No Reliable Change
P 17	31	95	102	-7	No Reliable Change

4.6.1.9ATQ-B

The observed change of ATQ-B would also be expected by chance alone at a probability of less than 5% and above an RCI of 15.57. All patients in the Experimental group showed significant improvements while the control group showed no significant improvement. Below are the individual scores

Table 4.19.17

Experimental Group Reliable Change (ATQ-B)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 15.57
P 1	3	85	51	34	Reliable Change
P 2	7	106	63	43	Reliable Change
P 3	25	100	62	38	Reliable Change
P 4	13	95	65	30	Reliable Change
P 5	16	100	85	15	Reliable Change
P 6	9	107	64	43	Reliable Change
P 7	11	61	44	17	Reliable Change
P 8	30	136	89	47	Reliable Change

P 9	2	109	89	20	Reliable Change
P 10	1	89	55	34	Reliable Change
P 11	28	142	41	101	Reliable Change
P 12	24	91	60	31	Reliable Change
P 13	32	117	54	63	Reliable Change
P 14	17	94	72	22	Reliable Change
P 15	14	98	61	37	Reliable Change
P 16	27	113	75	38	Reliable Change
P 17	29	112	75	37	Reliable Change

Table 4.19.18

Control Group Reliable Change (ATQ-B)

Patience Number	Sample Number	Total Score (Time 1)	Total Score (Time 3)	Change	Reliable change based on RCI of 15.57
P 1	8	99	105	-6	No Reliable Change
P 2	5	80	85	-5	No Reliable Change
P 3	4	126	128	-2	No Reliable Change
P 4	20	93	96	-3	No Reliable Change
P 5	10	130	139	-9	No Reliable Change
P 6	22	119	120	-1	No Reliable Change
P 7	12	122	125	-3	No Reliable Change
P 8	6	116	118	-2	No Reliable Change
P 9	21	95	100	-5	No Reliable Change
P 10	23	114	114	0	No Reliable Change
P 11	26	131	135	-4	No Reliable Change
P 12	19	95	107	-12	No Reliable Change
P 13	18	95	100	-5	No Reliable Change
P 14	15	110	117	-7	No Reliable Change
P 15	33	103	91	12	No Reliable Change
P 16	34	139	131	8	No Reliable Change
P 17	31	93	91	2	No Reliable Change

4.6.2Assessing Treatment Effect for the Measures using *Cohen's D*

In addition to these analyses, *Effect Sizes* were calculated as part of the ANOVA (partial η^2) to examine the magnitude of any change for each measure. Also known as the Standardised Mean Difference, *Cohen's D* was used because of the need to test the continuous measurement (T1, T2 and T3) on their score rating. There are other critical elements of assessing effect size. These are *Relative Risk* (RR) ratios, *Odds Ratios* (ORs), *Number Needed to Treat* (NNT), and *Area Under the Curve* (AUC) (McGough and Faraone, 2009). Out of these critical elements in the interpretation of treatment effects, McGough and Faraone (2009) assert that *Cohen's D* is most useful for assessing magnitude of effects.

To calculate *Cohen's D*, the two mean values and their standard deviation (SD) of the endpoint (Feedback) scores in response to Experimental and Control groups were chosen. The formula used was:

$$\frac{M_E - M_C}{P_{SD}}$$

Where M_E is the Mean of the Experimental Group

M_C is the Mean of the Control Group and

P_{SD} is the pool of Standard Deviation (SD) of the entire Sample Size

For the purpose of this survey a second formula was used, the formula above was used for KIMS and MAAS. This is because an increase in the mean figures meant an improvement in the mental state (mindfulness and awareness). However, an increase in the mean figures of the others (BDI, PHQ, TMAS, GAD, WBSI, ATQ-F and ATQ-B) meant an increase in

anxiety, depression and mental dysfunction. Therefore, the formula below was used for the latter:

$$\frac{M_C - M_E}{P_{SD}}$$

The results of the interpretation are as follows:

- A score of zero means that the treatment and comparison agent have no differences in effect.
- A score greater than zero means the ACT Elements and the depression and anxiety measurements is useful in assessing and treating depression patients. Thus:
    - Any score between 0.01 and 0.2 is considered small
    - Any score between 0.21 and 0.5 is considered medium
    - Any score at between 0.51 0.8 is considered large

A *Cohen's D* score is frequently accompanied by a confidence interval (CI) so that the reliability of the comparison can be assessed. The Confidence interval used is 0.5. Below is a table showing the effect sizes examining the usefulness of ACT in assessing and treating depression:

Table 4.20
Effect Size

Measures	Group	Mean (T3)	Standard Deviation (SD)				Effect Size	Results
			T1	T2	T3	P_{SD}		

BDI	Experimental Control	18.88 36.82	9.91	12.01	13.05	34.97	0.51	Large
PHQ-9	Experimental Control	8.59 18.12	4.67	5.91	6.44	17.02	0.56	Large
TMAS	Experimental Control	21.94 33.76	7.01	8.45	8.86	24.32	0.49	Medium
GAD-7	Experimental Control	8.24 15.35	3.82	4.77	5.02	13.61	0.52	Large
KIMS	Experimental Control	144.88 98.24	13.23	28.53	29.19	70.95	0.66	Large
MAAS	Experimental Control	68.29 41.76	9.11	15.40	16.72	41.23	0.64	Large
WBSI	Experimental Control	47.35 59.82	8.70	11.13	11.73	31.56	0.40	Medium
ATQ-F	Experimental Control	65.59 116.00	17.31	28.42	30.10	75.83	0.66	Large
ATQ-B	Experimental Control	65.00 111.88	17.85	27.62	28.33	73.80	0.64	Large

The table above shows that all Assessments showed a high effect size.

4.6.3 Examining the Usefulness of ACT and other Measures

After the *Cohen's D* was derived for the measures, there was the need to run the effect size through other tests to examine their usefulness. The tests were Cohen's U_3 Overlaping Coefficient (OVL), Probability of Superiority and Number to be treated (Magnusson, 2017). This was because using *Cohen's D* alone to assess usefulness is "an operation fraught with many dangers" (Muller and Cohen, 1989) and such "canned effect sizes" (Baguley, 2009,) can distort examination and assessments.

- **Cohen's U_3:** This is a measure of non-overlap taking a percentage of the Experimental Group upper half of the cases of the Control Group exceeds. The fomula used was **$U_3 = x(y) U_3 = x(y)$** where x is the cumulative distribution function of the standard normal distribution, and y the population *Cohen's D* (Cohen, 1977)

- **Overlaping Coefficient (OVL):** The formula used was:

  $OVL=2x(-|y|/2) OVL=2x(-|y|/2)$ where x is the cumulative distribution function of the standard normal distribution, and y the population *Cohen's D* (Reiser and Faraggi, 1999).

- **Probability of Superiority:** The study further went ahead to assess the probability of superiority. In this assessment, an examination was made into the chances that a person picked randomly from the treatment group has improved in mental state as compared to a random pick of a person in the control group. The formula used was **$CL=\Phi(\delta 2 - \sqrt{}) CL=\Phi(\delta 2)$** where x is the cumulative distribution function of the standard normal distribution, and y the population *Cohen's D* (Ruscio, 2008).

- **Number Needed to Treat (NNT):** To sum up the usefulness of the ACT and its elements, and examination was made to find the number of patients needed to be treated with the ACT intervention to achieve one more favourable outcome as compared to the control group. The formula used was **$NNT=1x(y + z(d)) - d$** where x is the cumulative distribution function of the standard normal distribution, y the population *Cohen's D* and z its inverse, d (20%) is the control group's event rate Furukawa and Leucht (2011).

Below is a table showing the results

Table 4.21

Interpretation of Cohen's d

	Cohen's D	Cohen's U3 (%)	Overlap (%)	Probability of Superiority (%)	NNT
BDI	0.51	69.5	79.87	64.08	5.88
PHQ-9	0.56	71.23	77.95	65.39	5.29
TMAS	0.49	68.79	80.65	63.55	6.15
GAD	0.52	69.55	79.49	64.34	5.75
KIMS	0.66	74.54	74.14	67.96	4.39
MAAS	0.64	73.89	74.9	67.46	4.54
WBSI	0.40	65.54	84.15	61.14	7.73
ATQ-F	0.66	74.54	74.14	67.96	4.39
ATQ-B	0.64	73.89	74.9	67.46	4.54

4.6.3.1 BDI

The *Cohen's D* derived from BDI was 0.51, this means that 69 % of the experimental group was above the mean of the control group. It also shows an 80% overlap of Experimental-Control groups. Examining the Probability of Superiority, there is a 64 % chance that a patient randomly picked from the Experimental Group has a higher score than the Control Group. To have one more favourable outcome in the Experimental group compared to the control group 5.9 people needed to be treated.

4.6.3.2 PHQ-9

Similarly, at 0.56, PHQ will have 71 % of the Experimental group above the mean of the Control group and 78 % of the overlap. There is a 65 % chance that a patient randomly picked from the Experimental Group has a higher score than the Control Group. Moreover, in order to have one

more favourable outcome in the Experimental group compared to the control group we need to treat 5.3 people

4.6.3.3 TMAS

With a Cohen's d of 0.49, 69 % of the Experimental group will be above the mean of the control group, 81 % of the two groups will overlap, and there is a 64 % chance that a patient randomly picked from the Experimental Group has a a higher score than the Control Group. To have one more favourable outcome in the Experimental group compared to the control group 6.2 people needed to be treated.

4.6.3.4 GAD-7

The Cohen's d derived from GAD-7 was 0.52, this means that 70 % of the experimental group was above the mean of the control group. It also shows an 80 % overlap of Experimental-Control groups will overlap. Examining the Probability of Superiority, there is a 64 % chance that a patient randomly picked from the Experimental Group has a higher score than the Control Group. To have one more favourable outcome in the Experimental group compared to the control group, 5.8 people needed to be treated.

4.6.3.5 KIMS

KIMS had a Cohen's d of 0.66 interpreting that about 75 % of the Experimental group will be above the mean of the control group with a 74% overlap, and 68% chance of a patient randomly picked from the Experimental Group getting a higher score than the Control Group. 4.4 patients

will be needed to be treated have one more favourable outcome in the Experimental group compared to the control group.

4.6.3.6 MAAS

The Cohen's d for MAAS was 0.64. This interprets as 74% of the Experimental group having means above the mean of the control group. It also interprets that 75% of the two groups will overlap, and there is a 68% chance that a patient randomly picked from the Experimental Group gets a higher score than the Control Group. To have one more favourable outcome in the Experimental group compared to the control group, 4.5 people needed to be treated.

4.6.3.7 WBSI

The Cohen's d derived from WBSI was 0.40, this means that 66 % of the experimental group was above the mean of the control group. It also shows an 84 % overlap of Experimental-Control groups will overlap. Examining the Probability of Superiority, there is a 61 % chance that a patient randomly picked from the Experimental Group gets a higher score than the Control Group. To have one more favourable outcome in the Experimental group compared to the control group, 7.73 people needed to be treated.

4.6.3.8 ATQ-F

The Cohen's d for ATQ-F was 0.66. This interprets as 74% of the Experimental group having means above the mean of the control group. It also interprets that 74% of the two groups will overlap, and there is a 68% chance that a patient randomly picked from the Experimental Group

gets a higher score than the Control Group. To have one more favourable outcome in the Experimental group compared to the control group, 4.4 people needed to be treated.

4.6.3.9 ATQ-B

Finally, at 0.64, ATQ-B will have 74 % of the Experimental group above the mean of the Control group and 75 % of them overlap. There is a 68% chance that a patient randomly picked from the Experimental Group gets a higher score than the Control Group. Moreover, in order to have one more favourable outcome in the Experimental group compared to the control group, we need to treat 4.54 people.

CHAPTER FIVE

The Effectiveness of Acceptance and Commitment Therapy (ACT) in Patients Presenting with Depression: A Systematic Review and Meta-Analysis.

5.1Abstract

Background: Depression is one of today's most prevalent mental health issues. With each episode, there is an increasing risk of subsequent episodes (Kessler, 2002) and according to the American Psychiatric Association (2002) approximately 60% of patients diagnosed with depression will have further episodes There have been a number of randomised control trials (RCTs) testing the efficacy of ACT for people diagnosed with depression. It is, therefore, important to conduct a systematic review of these trials especially in evidence-based practices. Another important aim of the current review is to add to the existing literature and reduce the cost in time, effort, and other resources for researchers conducting new studies in the area.

Methods: Fourteen Randomised Controlled Trials are discussed in this Systematic Review. These are carefully designed controlled trials and to analyse the quality of the data reported an assessment of the levels of evidence, effectiveness, interventions, and recommendations was carried out

Results: The systematic review conducted a meta-analysis of 14 Randomized Control Trials from the 100 initial research articles gathered. Out of these 14 RCTs, not even one nullified the hypotheses that ACT is much more effective than other therapies in the treatment of anxiety and depression.

Conclusions: It can be concluded from this study that ACT is an effect means of treating patients presenting with depression and anxiety.

The studies under this review and preliminary evidence of the data collected on effectiveness, evaluation and attrition collected from the show the acceptability of these treatments.

Keywords: Acceptance and Commitment Therapy, Depression, Anxiety, Systematic Review, Meta-Analysis.

One of the most important treatments that is used to treat clients with depression is Acceptance and Commitment Therapy (ACT).

Acceptance and Commitment Therapy (ACT) is a form of cognitive behaviour therapy. ACT focuses on reducing experiential avoidance in the service of achieving core life values. ACT has been shown to be effective in a number of areas such as workplace stress management stress, mathematics anxiety, psychotic symptoms social anxiety, issues related to tobacco and substance abuse and, of particular relevance to the current study, depression (Hayes et al., 2006).

Depression is the most prevalent mental health issue in the modern world (World Health Organization, (2017). Depression is a recurring disorder and there is an increasing risk of episodes (Kessler, 2002). More than 60% of patients were diagnosed with depression and further episodes (American Psychiatric Association, 2002). The most widely used definition of depression is that used by the American Psychiatric Association Diagnostic manual (DSM IV) definition: "*Major depressive disorder is defined by two or more depressive episodes characterised by depressed mood and/or loss of interest or pleasure in life activities for at least 2 weeks and at least five of symptoms such as depressed mood most of the day, diminished interest or pleasure in all or most activities, significant unintentional weight loss or gain, insomnia or sleeping too much, agitation or psychomotor retardation noticed by others, fatigue or loss of energy, feelings of worthlessness or excessive guilt, diminished ability to think or concentrate, or indecisiveness, recurrent thoughts of death that cause clinically significant impairment in social, work, or other important areas of functioning almost every day*"(APA, 2000, p. 356).

In 1994, Kessler et al. found that 1 in 6 men and 1 in 4 women are affected by depression as a mental health illness throughout their lifetime. In the United States, it has been found that 1 in 5 adults have at least 1 lifetime episode of depression in 1 year prevalence rate of depressive episode, which was about 8.3%, with lifetime prevalence rate being 19.2% (Kessler et al.,

2005). In the United Kingdom, the prevalence of depression was found to be between 24-42/1000 people. In 2007, the number of people with depression was found to be 1.24 million and expected to increase to 1.45 million cases by 2026 due to the fast demographic changes (McCrone et al., 2008).

Comparatively, this systematic review draws similar trends with other systematic reviews that have studied ACT's effectiveness. The systematic reviews which used were that of Fergusson et al (2005), Hayes et al (2006), Ost et al (2008), Powers et al (2009), and Eyding et al (2010).

The sample size used in this review is also similar on average to these systematic reviews.

The systematic review CONDUCTED BY Fergusson et al (2005) identified a total of 3717 citations. After initial review by at least two authors, 999 trials were deemed potentially eligible. Of these, 375 were excluded for the following reasons: duplicate publication (n = 125), not a randomised controlled trial (n = 118), SSRI (Selective Serotonin Reuptake Inhibitors) control only (n = 62), no SSRI arm (n = 13), subgroup analysis (n = 20), reported in a foreign language other than French or English (n = 13), short trial duration (n = 12), incomplete or inaccessible data (n = 10), and a population of suicidal patients (n = 2). They also identified some additional 78 trials meeting eligibility criteria by the electronic search of the Cochrane Collaboration register of controlled trials (Cochrane depression, anxiety, and neurosis group) and the manual review of the bibliographies of three published systematic reviews and of all eligible trials. The 702 trials comprised 411 comparisons between SSRIs and placebo, 220 comparisons between SSRIs and tricyclic antidepressants, and 159 comparisons between SSRIs and active therapies other than placebos or tricyclic antidepressants. As some trials had more than one comparison arm, the total number of comparisons exceeds the number of published

trials. Of the 159 comparisons, the most common comparative treatments were moclobemide (21 trials), psychotherapy (20), maprotiline (18), and mianserin (16).

Within the condition and between condition effect sizes for the ACT outcome, literature (including studies with a direct applied purpose and excluding analogue studies) was used in Hayes et al (2006) systematic review. In most of the trials used, ACT was compared to an active treatment condition that was expected, or had previously been shown, to affect the targeted problem. In a few cases, wait list or placebo controls were used or used in addition. In summary, their study showed that ACT has produced within condition effect sizes (using Cohen's d) of 1.11 at post (N=253) and 1.26 at follow-up (N = 210). Between condition effect sizes for comparisons between ACT and manualized active treatments were .49 at post (N = 322) and .69 at follow-up (N = 218); for comparisons with wait list, educational, treatment as usual, or placebo treatments the effect sizes were .97 at post (N = 280) and 1.58 at follow-up (N = 286: the increase in N at follow-up being due to some studies that only collected follow-up data). Across their dataset, follow-ups ranged from 8 to 52 weeks with a weighted average of 27.2 weeks.

The Eyding et al (2010) systematic review analysed 13 acute treatment trials that were placebo controlled, SSRI controlled, or both, which included 4098 patients. Data on 74% (3033/4098) of these patients were unpublished. In the reboxetine versus placebo comparison, no significant differences in remission rates were shown (odds ratio 1.17, 95% confidence interval 0.91 to 1.51; P=0.216). Substantial heterogeneity (I2=67.3%) was shown in the meta-analysis of the eight trials that investigated response rates for reboxetine versus placebo. A sensitivity analysis that excluded a small inpatient trial showed no significant difference in the response rates of patients receiving reboxetine and those receiving placebo (OR 1.24, 95% CI 0.98 to 1.56; P=0.071; I2=42.1%). Reboxetine was inferior to SSRIs (fluoxetine, paroxetine, and citalopram) for remission rates (OR 0.80, 95% CI 0.67 to 0.96; P=0.015) and response rates

(OR 0.80, 95% CI 0.67 to 0.95; P=0.01). Reboxetine was inferior to placebo for both harm outcomes (P<0.001 for both), and to fluoxetine for withdrawals owing to adverse events (OR 1.79, 95% CI 1.06 to 3.05; P=0.031). Published data overestimated the benefit of reboxetine versus placebo by up to 115% and reboxetine versus SSRIs by up to 23%, and also underestimated harm.

The Gaudiano (2009) systemic review analysed and compared the Öst (2008) methods of acceptance and commitment therapy (ACT) and cognitive behaviour therapy (CBT). Different studies showed that ACT always has minor variations compared with traditional CBT. Öst (2008) method displayed the analysis of ACT and third wave behaviour therapies from clinical trials using qualitative and quantitative research critiques. Öst (2008) method used 30 of third wave randomized controlled trials (RCTs), 13 were ACT. The quality assessment of this study is based on posttraumatic stress disorder trials (PTSD) using a methodology rating scale. In order to assess the similarities or differences from CBT, a comparison sample was obtained, which is named twin CBT study. Öst found that there was mismatch between twin CBT and all 30 cases. Öst showed that ACT studies had significantly less scores than CBT studies on the rating scale, reliability and validity of measures, reliability of diagnosis, control of treatment, number of therapists, therapists experience, and the samples.

Öst performed a meta-analysis study which involved 13 clinical trials and found that ACT had significantly more effect size improvements compared with studies without treatment (ES=.96), usual treatment (ES=.79), and active treatment (ES=53), which is similar to previous meta-analysis. Öst concluded that ACT did not match the main criteria as supported treatment. Therefore, ACT studies had more methodological deficiencies and ACT was not found to be good supportive treatment. Many limitations were observed when assessing early research of ACT because samples were mismatched within the treated populations resulting in variations of the study designs and methods. The same study did reanalysis with clear variations in grant

support when CBT was compared studies. The differences between samples makes the data from Öst methods difficult to interpret and to identify ACT studies limitations. These limitations are found in the early randomized controlled trials of any psychotherapeutic research studies.

In 2009, Powers et al performed meta-analysis to assess the efficiency of acceptance and commitment therapy.

This can aid in clarification of the impact of the ACT to psychological placebos, waiting lists, and usual and established therapies. They analysed 18 randomised controlled trials (n = 917). The effect size was computed using Hedges's g to interpret effects by Cohen's convention (0.2 = small, 0.5 = medium, and 0.8 = large). Powers et al, (2009), found that the advantages of ACT compared to randomised controlled conditions when the effect size was 0.24. There was more improvement in participants treated by ACT compared to the participants in the control conditions (≥ 66%). ACT was superior to psychological placebos and the waiting lists with effect size = 0.68 and usual treatment with effect size = 0.42. ACT did not significantly effective more than establishment treatment with effect size = 0.18 (p. =13). They found that ACT was not superior to control conditions with effect size = 0.03 (p = 84). From these findings, the authors described that ACT is more effective than control conditions in many cases and conditions. Clearly, ACT studies are required and its effects are promising.

There have been several randomised control trials testing the efficacy of ACT for people diagnosed with depression. It is, therefore, important to conduct a systematic review of randomized controlled trials especially in evidence-based practices. Another important aim of the current systematic review is to add to the existing literature and reduce the cost in time, effort, and other resources for researchers conducting new studies in the area.

5.2Method

Cochrane Protocol was used to develop a review plan. However, PRISMA provided a mechanism to check determine whether the selected topic and title had already been submitted. PRISMA was also used to log details updating this Systematic Review as it developed. Thus, it conforms to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

- **5.2.1 Eligibility Criteria**

Study Types*:* The Randomised Controlled Trials that were discussed in this Systematic Review summarizes compiled results over the 24-month study period. These are carefully designed controlled trials. The study types were taken from randomised controlled trials that were published in english language peer-reviewed journals. These journals concentrated on the three waves of therapy and with particular consideration for the use of ACT in improving anxiety, depression, stress or quality of life of patients presenting with health problems. Most of these studies were designed under active control conditions while others were placed under comparing interventions.

Participants*:* Participants in most of the trials were randomly selected with little or no regard to age, sex/gender, ethnicity or morbidity. However, participants had to be willing and able to go through the trial of the three waves of therapies and had to present with either depression, anxiety and or a psychology issue.

Interventions Reviewed: The interventions studied under this review fell under all the three waves of therapies. The interventions included but were limited to Treatment As Usual (TAU), Cognitive Behaviour Therapy (TAU-CBT), Expressive Writing (EW), Maintenance (MM), Intensive 12 Step Facilitation Therapy Plus Methadone Maintenance (ITSF), Acceptance and Commitment Therapy (ACT), Supportive Therapy (ST) and GAD.

Outcome Measures Used: The outcome measures used were centred on the results extracted after the final phase of treatment and or feedback. Measures extracted were from valid

and reliable outcomes on the level and rate of anxiety, depression and quality of life of participants. In instances where there was multiple therapies used, the outcome measures used a measure that was psychometrically sound.

5.2.2 Information Sources

The information sources used were picked from online search engines, the Swansea University Library and the library of University of Wales Trinity Saint David (UWTSD). The academic search engines used are; PsychArticales, PsychINFO, Medline, Science Direct, Search gate, Electronic Thesis Online Service (EThOS), Open access Theses and Dissertation (https://oatd.org/), Sega research methods, Pubmed, Cochrane databases and Proquest Dissertations and Theses. Publication date restrictions were ignored. The searches were conducted between May 2017 and September, 2017. All selected articles were screened for eligible studies as were relevant review articles identified in the searches.

5.2.3 Search Strategy

To locate articles within the above mentioned search engines, the following key words were used; Acceptance and Commitment Therapy, Depression, Anxiety, Systematic review, Meta-Analysis. The following titles were also used; The effectiveness of Acceptance and Commitment Therapy (ACT) in patients presenting with Depression; The effectiveness of Acceptance and Commitment Therapy (ACT) in patients presenting with Depression; Systematic review and Meta-analysis; Effectiveness of ACT and Depression; Effectiveness of ACT and Depression: randomized controlled trials; Effectiveness of ACT and/ or Depression: Systematic review and Meta-analysis; Acceptance and Commitment Therapy (and/ or) Depression; and Acceptance and Commitment Therapy (and/ or) Depression: systemic review and meta-analysis.

5.2.4Study Selection

This review used the two concepts generally used in selection of study materials – Sensitivity and Specificity. For sensitivity, a record of all study materials that met the inclusion criteria of the search strategy was made. Some were, however, discarded owing to a lack of relevancy. For specificity, non-relevant studies were excluded in the next phase. To reduce the effect of time limitation, the relevance of some studies was determined using article title while others were done using the abstract. In most cases, a definite decision was made after the full text of full text article was reviewed. A complete inventory of all articles reviewed was made from general randomized search through inclusion and exclusion criteria up until the final articles to be reviewed was made.

A substantial number of controlled trials were populated. These controlled trials mainly looked at efficiency of Acceptance and Commitment Therapy (ACT) in addressing anxiety and depression of patients. Under this scope, two themes were identified; psychological placebos and treatment.

To extract a sample size of controlled trials, three relevant systematic reviews out of the 5 selected were used. The three were grouped as relevant because they were in direct review of ACT and or psychological analysis of control trials. These are Hayes et al (2006), Ost (2008) and Powers et al (2009). Whilst Hayes et al (2006) reviewed 12 controlled trials, Ost (2008) and Powers et al (2009) reviewed 13 and 18 respectively.

Table 5.1

Extracting a Sample Size for the Systematic Review

Article*	Year	Number of RCT
Hayes et al	2006	12
Ost	2008	13
Powers et al	2009	18
This Systematic Review	2017	14**

* The articles used here were three instead of the five mentioned because they were the most relevant

** The number is the average of the three previous studies (a+b+c)/3

5.2.5Data Collection Process

To maintain a quality standard for the data extracted, an assessment of the risk of bias was conducted at each step of the process The details of the trials were extracted and entered into standardized tables Information was taken, as stated above, from academic and professional search engines and supplemented by clinical study reports found in libraries and reference articles. The aim of the data extraction was to focus on the population and the changes, over time, with regards to treatments used. The primary articles used were that of clinical studies for ACT and depression. The key criterion was Randomized Control Trials. These were important to reduce instances of conflict in publication.

5.2.6Data Items

The data items listed for the study were the title of the journal which published the article, the author (s), year of publication, participants (type, number and gender), interventions (type and duration), outcome results, recommendations, attrition rate, statistical analysis, comparators and follow-ups.

5.2.7Risk of Bias in Individual Studies

To assess the risk of bias for this review and focusing on the controlled trials used, the risk of bias were grouped into two:

Study Level: The following variables were considered at study level: randomisation; allocation concealment; blinding of patients and investigators; and complete and non-selective results reporting.

Outcome Level: The following variables were considered at outcome level: adequacy of the application of the intention to treat principle; the blinding of the outcome assessor; statistical evaluation of the trials and findings; and complete and non-selective results reporting.

5.2.8Planned Methods of Analysis

The clinical trials that were chosen had to be liable to meta-analysis. The systematic review examined published articles which reported results from several trials. Though these trials were heterogeneous in medical condition and treatment, they were homogenous in scope. The literature chosen had to have a means of statistical analysis of the findings.

For the basis of this systematic review, a random-effects approach was chosen to integrate the findings from the selected clinical trials. The aim was to provide a strengthened evidence base for the treatment of the medical conditions both in the chosen literature and the systematic review. To conduct a meta-analysis using the random-effects approach, the "DerSimonian and Laird method" was used. This method was appropriate because of the heterogeneity of literature that was chosen. Also the approach uses simple and readily available data summaries from the articles chosen. Also, this method was non-iterative, which meant that it was easy to implement, simple and intuitively appealing.

To make a systematic review of relevant literature, a protocol was used. This protocol was a step-by-step approach. The approach was extracted from the Cochrane Protocol. The Cochrane was used because it is evidence based and also has minimum and comprehensive set items for

reporting in systematic reviews and meta-analyses. The Cochrane Protocol was used because it has been tried and tested. Additionally, Cochrane, as a global independent network of professionals and stakeholders in health, has about 37,000 contributors from over 100 countries. Cochrane was used for two purposes during writing this systematic review. First, it was used to report, evaluate and reviews of the controlled trials. Additionally, Cochrane was used to report the reviews of about five other systematic reviews. These reviews are Fergusson et al (2005), Hayes et al (2006), Ost et al (2008), Powers et al (2009) and Eyding et al (2010).

5.2.9Risk of Bias across Studies

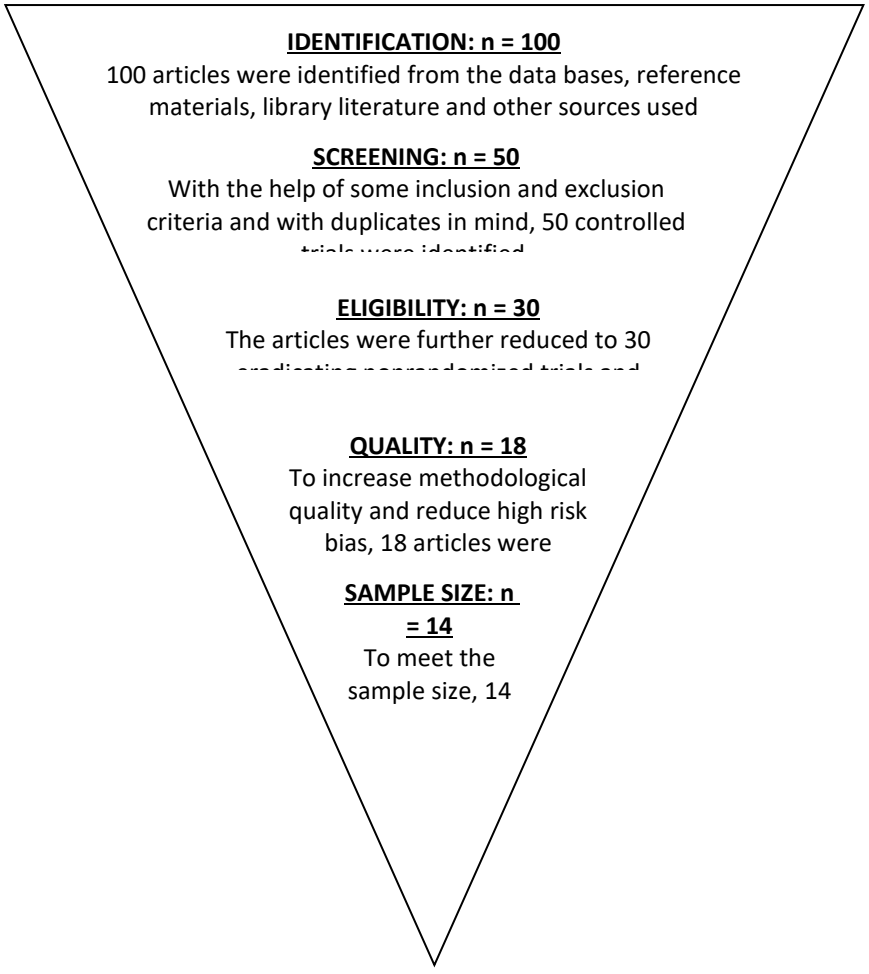
To detect the presence of publication bias across 14 different studies and assess its impact on the analyses, the studies were more investigated, analysed, summarized, and conducted below.

5.3Results

5.3.1Study Selection

100 citations were identified through the data base searches, lists of references of reviews previously and relevant articles.

About 30 manuscripts were randomly selected out of a pool of 50 controlled trials. After which an inclusion and exclusion criteria was used to narrow it down to 14. To scientifically develop criteria, literature was accessed spanning back into 20 years of studies that supported the use of ACT and especially for disorders that included depression and anxiety. The analysis took into consideration Comprehensive Distancing as the earliest therapies and the newest (ACT) psychological intervention. Below is diagram showing the steps used in arriving at the sample size of 14 Randomised Controlled Trials:



5.3.2Study Characteristics

The characteristics of the 14 included studies are summarised in Table 2.

Participants: Studies included a total of 762 participants. Sample sizes ranged from 3 to 149. The mean age of participants in the studies was not available and the number of females was 377 and the number of males was 172 there was 6 articles did not mention the sex of participants.

Interventions: eleven studies investigated the efficacy of ACT on marijuana dependence in adults (Twohig et al., 2007), depression (Zettle et al., 2011), anxiety and depression (Saedy et al., 2015), generalised anxiety disorder (Roemer et al., 2008), epilepsy (Lundgren et al., 2006), chronic pain (McCracken et al., 2013), abusing methadone (Hayes et al., 2004), depression and psychosis (Gaudiano et al., 2015), suicidal patients (Ducasse et al., 2014), social phobia (Craske et al., 2014), and rehospitalization of psychotic patients (Bach and Hayes, 2002). One study investigated the Clinical effectiveness of manual therapy for the management of musculoskeletal and non-musculoskeletal conditions (Clar et al., 2014). One study investigated the effectiveness of online mindfulness in improving mental health. One study investigated the effects and impacts of ACT and CBT models by psychology trainee therapists (Lappalainen et al., 2007). One study investigated the effectiveness of online mindfulness and interventions in improving and developing mental health care (Spijkerman et al., 2016). The duration of all these studies were ranged from 3 months to 12 months. The section below table (2) critically reviewed all these studies regarding their results, discussion, and limitations.

Comparators: Generally, small sizes were used in these studies and extension of treatment duration can develop and improve the outcomes. Active control conditions featured in some studies. The use of ACT was more effective that CBT and CT. The comparison interventions included face-to-face ACT, treatment-as-usual, CBT, online-delivered cognitive behaviour therapy, pain management psychoeducation, stress management, mindfulness, and behavioural

strategies, senior and trainee therapists, suicidal management, management of musculoskeletal and non-musculoskeletal conditions, social speech, and medication and manual therapy.

Outcome measures: All studies used various measures for investigation; Twohig et al., in 2007, used self-monitoring of marijuana intake and psychological measures were used to further explore the effects of treatment. Marijuana use was monitored using the Intercept Oral Fluid Drug Test, which is known as oral swab test. Zettle et al., in 2011, the measure used to evaluate therapy was the Automatic Thoughts Questionnaire (ATQ) and the Dysfunctional Attitude Scale (DAS) in order to evaluate the negative thoughts that are associated with depression. In 2015, Saedy et al., used different methods for collecting data. These methods were as follows: a) Beck Depression Inventory-II (BDI-II), which a self-report questionnaire. b) Beck Anxiety Inventory (BAI): This test evaluates the condition of anxiety during the final week of therapy and the responses scored as mild, medium, and severe. Roemer et al., in 2008, used primary measures of anxiety and worry associated with secondary measures of depression and quality of life. This also includes the changes mechanisms of mindfulness and experiential avoidance. The Anxiety Disorders Interview Schedule for DSM-IV Lifetime Version to assess current and lifetime DSM-IV diagnostic condition. In 2006, Lundgren et al. dependent on independent variables such as ACT protocol and ST using reflective listening protocol, whereas dependent variables included seizure frequency, seizure index, WHOQOL-BREF, and SWLS as well as the World Health Organization Quality of Life, which is based on physiological health, psychological health, environmental health, and social relationships. In 2013, McCracken et al. studied measures of data that are collected form participants who were contacted by mail and telephone. Their primary outcome measures included the disability using the Roland and Morris Disability Questionnaire and depression using the Patient Health. Their secondary outcome measures included the emotional functioning score. The outcome measures also included a measure of pain acceptance using Chronic Pain Acceptance Questionnaire and Acceptance Action

Questionnaire II. Hayes et al., in 2004, used two different outcome measures, which was the primary outcome measure was drug use using the Addiction Severity Index and the secondary outcome measure included psychopathology without drug using the Social Adjustment Scale Self Report, Beck Depression Inventory (BDI), Symptom Checklist-90-R (SCL-90-R), and a portion of the ASI (for the medical, employment, legal, family and social, and psychiatric components). Lappalainen et al., (2007), used self-report checklist of psychopathological symptoms as a primary outcome measurement. The Beck Depression Inventory (BDI) and Social Adaptation Self-Evaluation Scale for social functioning as a secondary outcome measurement. Descriptive Visual Rating scales to measure life satisfaction and mood and Finnish Descriptive Visual scales to measure reliability. Measures for ACT were acceptance and measure for CBT were self-confidence. Acceptance was measured by the Acceptance and Action Questionnaire and Self-confidence was measured by Descriptive Visual scale (0 to 100). In 2015, Gaudiano et al., their study assessed participants who filled The Quick Inventory of Depressive Symptomatology-Clinician (QIDSC) to assess severity of depression. the World Health Organization Disability Assessment Schedule to assess psychosocial and physical disability. Other measures include; the Acceptance and Action Questionnaire-II (AAQ-II) to measure experiential avoidance and psychological inflexibility. The Behavioural Activation for Depression Scale (BADS) to assess activation and withdrawal related to depression. The Credibility and Expectancy Scale (CES) to assess improvement from treatment. The Client Satisfaction Questionnaire-8 (CSQ-8) to assess satisfaction with services. All these measurements are self-reported measurements. Ducasse et al., (2014), used various suicidal ideation measures as well as clinical and functional measures associated with ACT acceptability. The authors followed the psychotherapeutic protocol that performed using 7 sessions. Therapists measured: suicidal ideation using the Columbia-Suicide Severity Rating Scale (C-SSRS) and the Scale for Suicidal Ideation (SSI score), psychiatric disorders using the French version of the

Mini International Neuropsychiatric Interview, borderline personality disorder using the Screening Interview for Axis II Disorder, depressive symptomatology using the Inventory of Depressive Symptomatology (IDS-C30), global functioning using the Functioning Assessment Short Test, and pharmacological treatment and number of visits for psychiatric emergencies in the previous 3 months. Self-measurements included: suicidal ideation on a visual analogue scale from 0 to 10, depressive intensity using Beck Depression Inventory-II (BDI), psychological pain on a visual analogue scale from 0 to 10, anxiety state using the State-Trait Anxiety Inventory (STAI, hopelessness during the last month using the Beck Hopelessness Scale, quality of life using the World Health Organization Quality of Life measure, and acceptance using the Acceptance and Action Questionnaire (AAQ). In 2014, Craske et al. investigated two sets of primary outcomes, which included 1) social anxiety symptoms reduction using Clinical Severity Rating (CSR), Fear and avoidance ratings, Self-report scales, and Composite scale 2) quality of life using the Quality of Life Inventory (QOLI). In addition, they investigated 3) outcomes during a public speaking approach using Subjective Units of Distress (SUDS). In 2002, Bach and Hayes measured the frequency of participants symptoms, the distress and symptoms, and the believability of symptoms. Medication compliance was measured by participant self-report. Distress and believability were measured using a rating from 0–100. Believability measured the scale from 0 to 100 such as the question referred to what degree do you believe that X is true? In 2016, Spijkerman et al. found that depression in 12 comparisons, anxiety in 11 comparisons, stress in 11 comparisons, well-being in 9 comparisons, and mindfulness in 12 comparisons. All instruments had good psychometric properties. Eight studies had reported follow-up data within a period between 3-12 months. Clar et al., in 2014, found the outcome measures included pain intensity, pain associated with disability, function, analgesic use, daily activities, mobility, characteristic symptoms, quality of life, patient satisfaction, views from qualitative data, strokes, fractures, and mortality.

Table 2 below summarises the documents used

Table 5.2

Articles Included in the Systematic Review

Article #	Study	Where Published	Participants			Intervention		Main Outcome of Results
			No.	Type	Gender (%)	Type	Duration	
1	Bach and Hayes (2002)	Journal of Consulting and Clinical Psychology	80	Inpatients experiencing auditory hallucinations or delusions at time of admission and receiving outpatient treatment following discharge from inpatient unit	Male: 51; Female: 29	Treatment As Usual (TAU) or the ACT intervention plus TAU	4 months	The main outcome measure was rehospitalization. 4 participants in each condition moved out of the area, and 1 in each condition died. Of the remaining 35 participants in each condition, 7 of the ACT participants (20%) and 14 of the TAU participants (40%) were rehospitalized during the 4 months following release.
2	Clar et al (2014)	Elsevier	45	Participants were recruited from referrals to a Community Mental Health Team and a specialist out patient service for people with a personality disorder	N/A	ACT and Treatment as Usual based on Cognitive Behaviour Therapy (TAU-CBT)	4 months	Primary outcomes were measures of psychological symptoms. All participants showed reduced symptoms immediately after intervention but improvements were more completely sustained in the ACT group at 6-month follow-up
3	Ducasse et al (2014)	Karger	35	Outpatients suffering from a current SBD accordingto DSM-5 (history of suicidal attempt in the past year)	N/A	ACT Programs	3 Months	ACT seemed acceptable with low dropout and highsatisfaction rates. Relative to Dialectical Behavioural Therapy, ACT was more easily feasible while sharing common skills

4	Spijkerman et al (2016)	The British Journal of Psychiatry	149	Adults with depressive symptoms from the general population	Male: 33; Female: 116	ACT and Expressive Writing	12 months	Significant reductions in depressive symptoms were found following the ACT intervention, compared with the control group (Cohen's d = 0.56) and the expressive writing intervention (d = 0.36). The effects were sustained at 6-month and 12-month follow-up
5	Hayes et al (2004)	Association for Advancement of Behaviour Therapy	138	Participants who had received methadone for at least the last 60days and had used opiates during that time were recruited from one ofthe three community-based methadone clinics in the Reno, Nevada, area	Male: 64; Female: 74	Participants were randomly assigned in sequential waves of 3 to Methadone Maintenance (MM), to Acceptance and Commitment TherapyPlus Methadone Maintenance (ACT), or to Intensive 12 Step Facilitation Therapy Plus Methadone Maintenance (ITSF)	4 months	Results showed that the addition of ACT was associated with lower objectively assessed opiate and total drug use during follow-up than methadonemaintenance alone, and lower subjective measures of total drug use at follow up.
6	Lappalainen et al (2007)	Sage Publications	28	Outpatients were randomly approach	Male: 3; Female: 25	Traditional Cognitive Behaviour Therapy (CBT) andAcceptance and Commitment Therapy (ACT) model	8 months	Clients treated within an ACT model showedbetter symptom improvement than the CBT clients, despite the fact that studentsfelt initially less knowledgeable about ACT and were more fearful throughoutwhen it was used. CBT improved client self-confidence more rapidly than ACT,and ACT improved acceptance more than CBT. Both processes predicted betteroutcomes; acceptance remained predictive when controlling for self-confidencebut not vice versa
7	Craske et al (2014)	J Consult Clin Psychol	87	Participants with a DSM-IV diagnosis of social phobia	N/A	CBT and Acceptance and Commitment therapy (ACT)	12 months	Lower self-reported psychological flexibility at baseline was associated with greater improvement by the 12-mo follow-up in CBT compared to ACT. Self-reported fear of negative evaluation significantly moderated outcomes as well, with trends for both extremes to be associated with superior outcomes from CBT and inferior outcomes from ACT

8	Lundgren et al (2006)	Blackwell Publishing, Inc	27	All participants had an EEG verified epilepsy diagnosis with drug refractory seizures	Male: 13; Female: 14	Participants were randomized into one of two conditions, ACT or Supportive Therapy (ST	1 year	The results showed significant effects over all of the dependent variables for the ACT group as compared to the ST group at six- and twelve-month follow-ups
9	McCracken et al (2013)	The Journal of Pain, American Pain Soceity	73	Participants were diagnosedwith fibromyalgia and depression and had longstanding pain (median=10 years)	Male: 23; Female: 50	ACT or Treatment As Usual (TAU)	4 months	At a 3-month follow-up, again relativeto TAU, those in ACT demonstrated lower disability, less depression, and significantly higher pain acceptance;d = .58, .59, and .64, respectively
10	Roemer et al (2008)	Journal of Consulting and Clinical Psychology	31	Clients seeking treatment at CARD at several periods between 2003–2005 (when study therapists had openings) who met inclusion/ exclusion criteria were referred for this study	Male: 9; Female: 22	GAD	9 months	Treatment was associated with decreases in experiential avoidance and increases in mindfulness
11	Saedy et al (2015)	Iran J Psychiatry Behav Sci	28	Patients with opioid dependency who were on MMT were selected using purposive sampling and were divided equally between case and control groups	Male: 9; Female: 22	The level of depression and anxiety of these patients were measured using the Beck Depression Inventory-II and Beck Anxiety Inventory before the initiation of ACT as a pretest, 2 weeks after the	3 months	The pretest-posttest-follow up of anxiety showed no significant differences between the two groups (case and control groups); however, the case group had lower depression scores in the posttest and follow-up than the control group

					termination of ACT as the posttest, and 3-months after the termination as a follow-up			
12	Gaudiano et al (2015)	J Psychiatr Pract	13	Patients with comorbid depression and psychosis		Medication treatment as usual plus enhanced assessment and monitoring (EAM) versus Acceptance-based depression and psychosis therapy (ADAPT)	4 months	Differences in between-subjects effect sizes favored ADAPT post-treatment and were in the medium to large range for depression, psychosocial functioning, and experiential avoidance (ie, the target mechanism). ADAPT showed promise for improving outcomes as compared to medications alone.
13	Twohig et al (2007)	Journal of Applied Behaviour Analysis	3	Adults who met criteria for marijuana dependence	N/A	Acceptance and Commitment Therapy (ACT).	3 months	Depression, anxiety, withdrawal symptoms, and general levels of experiential avoidance generally improved. This preliminary test suggests that additional development and testing of ACT for marijuana use are warranted
14	Zettle et al (2011)	Sage Publications	25	To be included in the study, participants were required to be experiencing moderate to severe depression	Females 25	Acceptance and Commitment Therapy (ACT) and traditional Cognitive Therapy (CT).	3 months	ACT changed the occurrence of depressogenic thoughts and their believability assuming they had occurred, but the defusion effect accounted for more of the differences in follow-up outcomes between ACT and CT. CT did not change the DAS more so than did ACT, and the DAS did not mediate outcomes

5.3.3Risk of Bias within Studies

The results of the risk of bias assessment of included studies are presented in Table 3. Fourteen studies reported adequate generation of a randomised sequence. All studies provided direct and indirect information to judge risk bias in these articles. In collection bias, random sequence generation was reported in 8 studies. Six studies provided insufficient detail to permit judgement of 'low risk'. High risk of selection bias due to inadequate concealment of the allocation sequence was found in 8 studies. Blinding of study participants and personnel to treatment allocation is possible in ACT approach featuring active control conditions or comparison interventions. Only three studies were unclear (Clar et al., 2014; Clarke et al., 2014; Spijkerman et al., 2016). In accordance, one study was judged to be at low risk of performance bias, while a high risk of bias was present in the remaining 10 studies due to participants' knowledge of treatment allocation. Consequently, there was a low risk that the self-report outcome measures in the aforementioned one study was influenced by lack of blinding. fourteen of the included studies featured intention-to-treat analyses, 13of which had unclear rates of missing outcome data and were judged to be at low to unclear risk of attrition bias. Registered protocols that pre-specified the reported study outcomes were found for all studies; protocols could not be found to assess risk of reporting bias in the remaining 14 studies. All of the included studies were deemed to be free of other sources of bias, such as baseline imbalances in variables strongly related to outcome measures.

Table 5.3
Risk of Bias within Studies

	Selection bias		Performance bias	Detection bias	Attrition bias	Reporting bias	
Study	**Random sequence generation**	**Allocation concealment**	**Blinding of participants & personnel**	**Blinding of outcome assessment**	**Incomplete outcome data**	**Selective reporting**	**Other bias**
Twohig et al., 2007	High	High	High	Unclear	Low	High	Unclear
Zettle et al., 2011	High	High	High	Unclear	Unclear	High	Unclear
Saedy et al., 2015	High	High	High	High	Unclear	High	Unclear
Roemer et al., 2008	Low	Low	High	High	Unclear	High	Unclear
Lundgren et al., 2006	Low	Low	High	High	Unclear	High	Unclear
McCracken et al., 2013	Low	Low	High	High	Unclear	High	Unclear
Hayes et al., 2004	Low	Low	Low	Low	Unclear	Unclear	Unclear
Lappalainen et al., 2007	Low	Low	High	High	Unclear	Unclear	Unclear
Gaudiano et al., 2015	High	High	High	Unclear	High	Unclear	Unclear
Ducasse et al., 2014	Low	Unclear	High	High	Unclear	Unclear	Unclear
Craske et al., 2014	High	High	Unclear	High	Low	Unclear	Unclear
Bach and Hayes, 2002	High	High	High	High	Unclear	Unclear	Unclear
Spijkerman et al., 2016	High	High	Unclear	High	Unclear	Low	Unclear
Clar et al., 2014	High	High	Unclear	High	Unclear	High	Unclear

In order to summarise these 14 articles, which are used in this systemic review, results, discussion, and limitations are showed and explained below.

(1) The use of acceptance and commitment therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial.

Results

In 2002, Bach and Hayes used Wilcoxon's rank test to compare the change in medication and they found the difference between TAU and TCA was not significant and the difference in hospitalisation was not due to medication. This difference in hospitalisation due to ACT clients had less psychiatric symptoms and those who had clear symptoms showed the non-significant difference between ACT and TAU groups. ACT group (60%) showed more symptoms than UAT group (31%). This could be due to more symptoms reported in ACT group and an indirect of acceptance measurements. Some symptoms were denied because they are less believable or less distressful. All these symptoms were reported during the follow-up period in ACT and TAU groups considering hallucinations or delusions complains. It is clear that decrease in the believability of psychotic symptoms affects the ACT group rehospitalisation. The believability rate was affected by the baseline and follow-up periods for ACT and TAU groups. However, the number of samples was too small for statistical analysis because only 2 participants were rehospitalised and 19 were not and this matched the hypothesis of believability and have an impact on doubly diagnosed conditions.

Discussion

The authors found that ACT can decrease rehospitalisation not only through medication but also through a decrease in distress and acceptance of symptoms. During follow up, many of ACT participants were admitted because of symptoms frequency when compared to TAU participants. However, many individuals have psychotic symptoms but they are out of hospitals. Different studies showed that the link between symptoms and hospitalisation reduced over time. This could be because individuals are less emotionally influenced by their symptoms. The acceptance and defusion can decrease stress or any feeling of failure, anxiety, and depression which are regulated by delusions. Different studies showed that ACT can decrease the hallucinations, which are denied symptoms until it is reduced. Researchers also tried to combine acceptance with the benefit of family therapy, social skills, and CBT in order to assess the effects of all these additives.

The limitations and weaknesses

The assessment tools of various symptoms were self-reported and as this may lead to some bias within the study and affect standardisation of diagnostic assessment. Some of these participants have of diagnoses fairly chronic substance abuse whereas dually diagnosed participants were influenced similarly to the big number of samples.

All hospitalised patients had been treated with many forms of therapies. and well controlled. It is important to compare ACT with placebo treatment of psychosis.

A large sample is required to statistically assess the effects of the ACT on specific participants and the social importance of measurements should be considered. Reduction in rehospitalisation and patient's improvement can significantly increase by psychological interventions leading to more acceptance within these population. Less acceptance has an impact on the psychotic population and requires further research.

(2) Acceptance and Commitment Therapy for Management of Suicidal Patients: A Pilot Study.

Results

IDucasse et al(2014) assessed suicidal behaviour disorder (SBD) as a major health problem, which requires psychotherapy for prevention. The ACT was useful in more than 97% of patients and they found that 95% had depression signs and tried to commit suicide because they had psychiatric disorders and were under psychiatric medications. The author's found that there was a clear and significant difference during the first visit and the end of the follow-up that continued to three months with no suicide reattempt. This resulted in a reduction in the levels of depression, anxiety, and hopelessness with an increase in the improvement of the quality of life which, in turn, wasfollowed by a significant 65% reduction i benzodiazepines prescribed for the participants.

Discussion

The authors noticed that ACT decreased the suicidal ideation in patients with SBD. This reduction by ACT can be through an increase in acceptance skills, increase in personal skills and values, increase the positive impact that affects the suicidal risk factors such as hopelessness, quality of life, and psychological pain. Therefore, ACT is an acceptable psychotherapy with high satisfaction. The good impact of this study was observed when they linked the different measurement of suicidal ideations.

Limitations

Some limitations were involved in this study. These included the control group that should be included in order to increase the efficiency of the ACT in suicidal ideations, suggests that ACT is promising in these conditions and managing suicidal risks.

(3) Effectiveness of online mindfulness-based interventions in improving mental health: A review and meta-analysis of randomised controlled trials.

ResSpijkerman et al (2016) studied the effectiveness of the online mindfulness-based intervention (MBI) and its role in improving the well-being and mental health using meta-analysis group trials. The results from this study showed that MBIs have different effects on

depression, anxiety, mindfulness, and well-being. The most affected factor is stress, which was significantly moderate effect size. Guided online MBIs showed higher significant effect size than unguided online MBIs. Therefore, the effect sizes have no significant relationship with the quality of the study. These findings showed the effectiveness of improving the mental health results with limitations in research studies.

Discussion

There were significant and clear positive effects on levels of stress, anxiety, depression, mindfulness, and well-being. The online MBIs effect on stress was observed and then was decreased because of overestimation to the stress. Some studies showed the online psychotherapeutic interventions are more effective when performed face to face intervention, which is more useful and effective in individuals with psychological symptoms than individuals with physical symptoms. The small effect sizes are more suitable for depression and anxiety and affect MBIs compared with face to face effects. In addition, adherence is more effective in mindfulness skills, which is varies due to variation in definition and measurements of adherence.

Limitation

The effectiveness of online MBIs showed some limitations because of a small number that used in meta-analysis and the effect sizes varied in the outcomes due to the differences in the study characteristics such as intervention type, population, and measures. Another limitation is that the study had some caution in the interpretation of the outcomes and all analyses without acknowledgement. In addition, the small number of study is only for two studies, which may affect the meta-analysis for the ACT. Furthermore, the intervention is not equally effective as well as meta-analysis cannot be performed for long-term of online MBIs because of the high variability in the period of the follow-up, which may continue up to one year. The future investigation can focus on (1) the effects of online MBIs on

depression, well-being, anxiety, and stress. (2) evaluation of the clinical uses of online MBIs across groups and clinical population. (3) the effect of online MBIs on spotting moderators. Interestingly, this is the first study to assess the effects of online MBIs on mental health and well-being, which is promising in reducing the psychological symptoms and mental health problems. The low cost of online MBIs may improve the mental health and well-being of many individuals, which is useful and acceptable in people cannot perform face to face forms. In addition, online MBIs can be offered to people who are on the waiting list waiting for face to face MBIs as well as can be combined with CBT.

(4) A Preliminary trial of twelve-step facilitation and acceptance and commitment therapy with polysubstance-abusing methadone-maintained opiate addicts.

Result and Discussion

In 2004, Hayes et al compared methadone maintenance (MM) alone to methadone maintenance combined with four months of intensive twelve-step facilitation (ITSF) or ACT. The sample size was 49% male. In this study, the sample size was sufficient to determine the significant outcome differences. Both ITSF and ACT can support MM with many benefits in the reduction of drug use in opiate addicts. ACT clients showed low rates of objective opiate assessment and drug use during follow-up. ITSF clients showed the same effects as an ACT for drug use. ACT also showed a low rate of self-registered drug use during follow-up but not significant. These results showed differences in processes between ITSF and ACT participants due to a non-specific characteristic of treatments. Psychological distress was improved in all conditions although there was no proof or evidence of all differential improvement within all conditions. Both ITSF and ACT require further investigation to reduce all drug abuses. There were no significant differences between ITSF, ACT, and MM drugs during follow-up because MM is a supported treatment that can help in maintaining and improving social functioning of opiate-addicted individuals. Therefore, methadone can be free for all participants. Free methadone can affect the economic barrier

positively, which can lead to fixed medication with positive outcomes. In addition, the regular assessment may help some participants in MM group to keep using methadone treatment.

Limitation

The reasons for this reduction was not assessed and monitored during the follow-up period. It is hard to predict that attrition rates can indicate any problem with ITSF or ACT, poor motivation of treatment, poor psychological adjustment, drug use, and access to clinics. Interestingly, this the first study to assess ITSF with many problems. However, it is hard to perform 12-steps programme using MM.

(5) The Impact of CBT and ACT Models Using Psychology Trainee Therapists.

Results

Lappalainen et al.(2007) studied the effects of cognitive behavioural therapy (CBT) and acceptance and commitment therapy (ACT) models used by trainee therapists. The study targeted 28 patients and treated by 14 therapists within each model. All ACT participants responded more favourably than the CBT participants. However, all trainee therapists had lower levels of confidence and knowledge when conducting ACT assessments. Therapists found that CBT scored better in improving clients' self-confidence compared to clients who had received ACT. However, ACT clients improved their acceptance and commitment more than CBT clients. Therefore, both models had advantages and disadvantages.. In addition, acceptance, controlling, and commitment that is associated with self-confidence showed better prediction but not vice-versa. Generally, trainee therapists who are less trained in ACT and CBT have got better results with ACT model processes and outcomes.

Discussion

The differences of outcome between ACT and BCT models due to the social functioning and functional analysis, which is referred to client-populations or experienced clinicians who are highly trained therapists and treatment performed without specific manuals and adherence checks for certain disorders, which was not used in this study. Well-trained therapists in clinical PRACTICE? have indicated the importance of testing the effects of treatments. ACT clients showed better outcomes than CBT clients because of using a limited set of essential procedures and the effect sizes for the ACT were large as well as clients cannot be distinguishable from the community, whereas THE NUMBER OF clients treated with CBT model was small especially in case of depression.

Limitations

Some limitations were identified in CBT model, which are the small sample sizes and 'unusual' goals as CBT involves some of the lists included in the treatment such as social skills training, exposure, relaxation, behaviour, problem-solving, and self-observation. The study included cognitive restructuring. Methods varied from case. In ACT clients, there was overlap in the treatment techniques and the therapists used metaphors, observer and mindfulness exercises as well as valuable work. It is important to note that these results were only applied to training therapists, with limited experience in two models working with another outpatient population. Supervisors have some bias as they were not formally assessed or controlled. However, this study showed varied effectiveness as it focused on specific complaints without any formal diagnosis. That means the study focused on problems, not on diagnoses. The type of training therapists receive is important in order to perform significant psychological effects with both ACT and CBT models. All these studies showed differences at different levels and processes as well as to their outcomes. The comparisons between processes and outcomes can help and support further development of CBT.

(6) Randomized controlled trial of cognitive behavioural therapy and acceptance and commitment therapy for social phobia: Outcomes and moderators.

Results

Craske et al.(2014) used CBT as an empirically supported treatment in order to treat social phobia. This study showed that not all individuals are able to respond to CBT treatment although many of them showed good improvement long term. . Therefore, alternative treatment is required to maintain their goals. These findings showed that there were no significant differences between CBT, ACT, and waitlist (WL) on outcomes at pre-treatment with no differences in clinical characteristics or socio-demographics. The authors found that there was no significant difference in attrition between ACT and BCT on self-report, public outcomes, or independent clinicians. Less psychological flexibility is associated with more improvement during follow-up when compared to ACT. This was found in both groups with higher control and higher outcomes, which are also associated with more and greater improvement. However, the treatment ofepression is associated with poor outcomes.

Discussion

The aim of this study is to compare the efficacy of CBT and ACT for social phobia and to evaluate the variables as indicators of clients who are involved in both treatment models. CBT model showed better improvement than ACT model in clients with more avoidance leading to the greater outcome from CBT and fewer outcomes from the ACT at the fear of negative evaluation. The authors measure the treatment outcomes using self-report measures of quality of life, symptoms, clinical severity, and anxiety. Both models showed consistent outcomes in measurement modality and timing assessment. The Lack of differences between ACT and CBT is due to improvement in the quality of life, which made a significant improvement over the period of participants treatment (12 months) and follow up. Significant improvement in anxiety during the public speech was sufficient due to the repetition of the public speaking tasks. CBT participants with higher avoidance who are

fared better than ACT participants with 12 months follow-up assessment due to flexibility had no response to ACT as they respond better to treatment that can reduce avoidance by increasing psychological flexibility (ACT). Higher levels of perceived control showed better outcomes. Others studies found lower perceived control is associated with better improvement in CBT for panic disorder. Therefore, all predictors in exposure-based therapy, either ACT or CBT, requires further investigations.

Limitations

There are some limitations, which include; the sample size was small leading to insufficient power to indicate differences and the failure to investigate all outcomes. Treatment was provided by inexperienced therapists or may be graduate students. Treatment attrition may reduce the power and affect the observation of any changes during the follow-up period. Finally, many ACT clients received many treatments during the follow-up period and therapists cannot evaluate which type of treatment they received. Therefore, there were no reliable changes within 12 months follow-up period, suggesting that the outcomes were not influenced by additional treatment.

(7) Evaluation of Acceptance and Commitment Therapy for Drug Refractory Epilepsy: A Randomized Controlled Trial in South Africa-A Pilot Study.

Results

In 2006, Lundgren et al. studied the psychological interventions in the treatment of epilepsy and assessed the psychological treatment programme using both ACT and behavioural seizures control which was successful. The results showed significant effects on the variables for ACT group when compared to supportive therapy group at 6 and 12 months follow-ups period. The difference between ACT and supportive therapy increases over time because there was the higher rate in the ACT group between post and 6 months follow-up. There was a significant interaction between both groups over time.

Discussion

ACT therapy showed significant effects on seizures frequency, quality of life, and duration of therapy. These findings suggested that short-term treatment programme associated with anticonvulsant treatments can help to prevent and avoid the long-term disability or paralysis that occurs from seizures treatments. The acceptance of both actual seizures and fear of seizures showed the reduced effect on seizure frequency. The effect of acceptance of seizures is noticed when clients hooked up to the EEG video. Working in groups may affect social activities and social skills that can lead to improvement of the quality of life of participants. Thus, this study showed ACT client free from seizures and got better life quality.

Limitations

The study must look at the ACT, seizure control techniques, attention placebo and a waiting list.

(8) A Trial of a Brief Group-Based Form of Acceptance and Commitment Therapy (ACT) for Chronic Pain in General Practice: Pilot Outcome and Process Results.

Results

In 2013, McCracken et al. studied a randomised controlled trial of the ACT for chronic pain in a primary care centre in the UK. 73 participants over 65 years old were randomised to ACT model. Most of them diagnosed with fibromyalgia, depression, and longstanding pain. They measured emotional functioning, disability, physical functioning, depression, and rated improvement. All ACT participants showed lower levels of depression and higher improvement in . After 3 months follow-up, ACT showed lower disability, lower depression, and higher significant acceptance of pain. These results were very encouraging results in order to improve and develop the outcomes with ACT participants. Interestingly, the outcomes and measurements of the ACT were similar to treatment as usual (TAU) for chronic pain with no differences when both compared.

Discussion

These results may provide the basis of improvement in later trials. Some TAU participants showed increases in disability, depression, and accepting pain. Some participants showed higher pain, fatigue, and found the treatment periods very long. The authors tried to wide participation of clients by performing the treatment period in 4 session treatment for 4 hours session length, which will not suit some clients and against their circumstances. These are real challenges for better treatment development.

Limitations

The study was trial and no active treatment, which cannot allow getting about ACT efficacy. The sample was selected as it was performed in specific primary care centres, which will affect the results from other centres and regions. The outcome of disability and depression were not associated with physical and emotional functioning. Generally, the treatment was failed in some way or some are not sensitive. The language was a problem for many participants. Some samples were not registered for trial, which makes some bias of uncontrolled samples.

(9) Efficacy of an acceptance-based behaviour therapy for generalized anxiety disorder: Evaluation in a randomized controlled trial.

Results

In 2008, Roemer et al. studied the treatment of participants with a generalized anxiety disorder, (GAD) is a chronic anxiety disorder, which they used CBT. Some of the participants failed to meet the criteria and therefore, new treatment approach and development was needed. The study involved 31 participants, of which 15 participants were in randomised treatment and 16 participants were on the waiting list.

Discussion

These findings are promised for GAD although the analyses were performed in a small sample, treatment was significantly efficient on GAD and depressive symptoms. There was

a significant effect on different symptoms, clinician diagnosis, and quality of life. Both experimental avoidance and mindfulness showed significant effects on treatment. No significant deterioration was observed during the follow-up as the samples met all criteria, which were stable. Seventy-seven per cent of the treated sample met criteria for high end-state functioning and responder status at post-assessment and these proportions were stable through 3- and 9-month follow-up.

Limitations

The use of waiting list does not influence nonspecific factor. Some participants started to take more medication during the study who were dropped during the analyses. A long period of follow-up increased the treatment period. The authors have assessed the efficacy and acceptability with clients from different backgrounds and ethics. Reliability was not assessed during follow-up GAD diagnosis. Most assessors were not involved and there was some bias in the study. The adherence assessment was performed by graduate students who could do some bias.

(10) The Effectiveness of Acceptance-Commitment Therapy on Anxiety and Depression among Patients on Methadone Treatment: A Pilot Study.

Results

In 2015, Saedy et al. studied the effectiveness of ACT model in order to reduce anxiety and depression in patients under methadone maintenance treatment (MMT). The study compared the levels of anxiety and depression of 14 clients who were on ACT and MMT with the levels of anxiety and depression of 14 clients who were on MMT alone. Participants with anxiety showed no significant differences in both treatments. The first group showed lower depression than the control group during the follow-up period. The results showed a significant reduction in depression after diagnosis with no significant reduction during the follow-up period.

Discussion

ACT showed great improvement in the levels of anxiety for participants due to changes in the habits, which was maintained during the follow-up. This suggests that ACT changes participants attitudes and behaviour positively with their thoughts and feelings. Acceptance can decrease the internal conflict in their minds and think positively about their values in their society. The change from previous mechanisms of the solution to effective problem-solving mechanisms. This reduces any worries in their mind. However, the ACT effectiveness on decreasing anxiety for participants due to the changes in anxiety levels when compared cases to control groups, which was different significantly. Always ACT goals to help clients explore their values. Therefore, participants may choose activities according to their values instead of using control strategies only. More ACT sessions may help patients to be familiar with the ACT and become mindfulness in their lives.

Limitations

A low number of sessions to each participant, which may affect the effectiveness of the ACT. The duration of the therapy was limited during the follow-up. Therefore, short-term psychotherapy has little benefits. The use of methadone has a depressant effect on the central nervous system and using this drug led individuals to the stresses and worries. The levels of anxiety and depression affect the results interpretation and become harder and confused. A number of samples are required.

(11) Acceptance-based Behaviour Therapy for Depression with Psychosis.

Results

In 2015, Gaudiano et al. investigated 13 patients with depression and psychosis using Acceptance-based depression and psychosis therapy (ADAPT) plus enhanced assessment and monitoring (EAM) for 4 months. This pilot trial tested the feasibility, efficacy of ADAPT, and acceptability for patients with both depression and psychosis. This assessment showed significant effects in the treatment of both depression and psychosis, which were

acceptable to patients. ADAPT showed significant promising in the improvement of patient outcomes when compared to medication alone.

Discussion

Some participants failed to follow through with the baseline assessment to determine their eligibility. Therefore, identifying other ways of reducing assessment might help to improve retention in all future trials. EAM was acceptable and feasible for most patients, although improvement and treatment satisfaction showed better for ADAPT. Different studies showed the better benefit of combination treatment over medication alone. Therefore, additional methods of improving engagement in EAM should be considered for future studies. These findings matched previous studies of the ACT for psychosis. Meta-analysis study showed this treatment was effective for distress. All medication treatments for depression and psychosis can reduce symptoms, but they can also produce negative effects that have a negative impact on functioning. Psychosocial treatments are very effective in reducing future relapses in depression and psychosis. Future research is required to ADAPT to be used to support long-term recovery. ADAPT also showed improvements in psychosocial functioning, which is promising.

Limitations

The limitations of psychotropic medications, including inadequate or incomplete response, relapse, and continued functional impairment, are well known. The short period of medication affects the outcomes of effects. It is difficult to compare the effect sizes with the small sample sizes as the effects are attenuated. However, the large-scale randomized controlled trial may establish the right effects of ADAPT

.

(12) A Preliminary Investigation of Acceptance and Commitment Therapy as a Treatment for Marijuana Dependence in Adults.

Results

In 2007, Twohig et al. investigated 3 adults who are marijuana dependents. Those clients were treated with the ACT for 8 weeks and 90 minutes per session. Symptoms such as depression, anxiety, and experiential avoidance were improved. More investigations and development of ACT for marijuana are needed. All participants used different amounts of marijuana, two different metrics were used. Participant 1 recorded bowls smoked per day, and Participants 2 and 3 reported inhalations of marijuana per day. All participants showed no reduction in self-reported marijuana use during treatment and follow-up periods, but all participants showed large reductions in marijuana intake during treatment.

Discussion

The controlled evidence with using ACT approach is helpful in the treatment of marijuana dependence individuals. High attrition is a common problem in marijuana abuse treatment. Marijuana dependence has many problems and effective treatment models are required. Treatment is varying from relapse prevention, motivational enhancement procedures, CBT, and coping skills training. All these models have limited effectiveness in both the short and long-term as well as other limitations including high attrition. The ACT helps to create a verbal context in which urges to use and thoughts about using can be experienced. Still, the effectiveness of ACT provides preliminary evidence that needs further research and investigation.

Limitations

There are some complications of marijuana dependence treatment, which include the use of baseline designs with a clinical intervention produce specific challenges. In addition, it is not clear what is the best dependent variable for self-monitoring of marijuana use. It is also that 2 of the 3 participants began using again at follow-up period, which is an issue in all other marijuana abuse treatment investigations and requires further attention. It is important to answer that why 1 participant was no longer using at follow-up and why the other 2 were using at varying levels. Further research is needed to determine the variables for long-term improvements in the ACT for marijuana dependence. Another limitation is that the data are

not consistent with assessments of the depression, anxiety, and withdrawal symptoms. It is also the formal assessment methods were not used for diagnosis of marijuana dependence because of the nature of the study and it is only focused on the reduction of use other than changes in diagnostic criteria. This study suggests that well-controlled group of ACT model is required in the next step for more investigation.

(13) Processes of Change in Acceptance and Commitment Therapy and Cognitive Therapy for Depression: A Mediation Reanalysis of Zettle and Rains

Results

In 2011, Zettle et al. investigated the efficacy of ACT and cognitive therapy (CT) models in depression therapy for 12 weeks period. They compared both models of therapy and found that modified CT is better than full CT models, which was a new form of CBT and affected the comparison between ACT and CT models. All data were analysed and ACT showed much-reduced levels of self-reported depression using an intent-to-treat analysis. After treatment levels of cognitive defusion mediated this effect during the follow-up period. Depression thoughts and dysfunctional attitudes did not act as mediators. This study added more proof that ACT acts through distinct and theoretically specified processes that are different CT.

Discussion

The use of mediation is very important to provide good information about the treatment models. These treatment models should affect the mediators and the mediators should affect the outcome and control of treatment. ALL successful ACT mediators include; general or specific measures of acceptance and psychological flexibility, defusion, and values. The differences between ACT and CT or CBT were significant in depression outcomes during psychotherapy.

Limitations

It was clear that the mediation did not meet all the criteria that are required in mediation analysis. This is a notable limitation of this study. Furthermore, some ACT studies have shown successful mediation of outcomes by ACT processes before and after outcomes changed.

Outcome differences were noticed early in this data set because there was the clear and significant difference between conditions. Thus, mediation is associated with very high-frequency outcome and process measurement. Cognitive defusion acts as mediator when ACT and CT are compared as the believability of cognition is targeted in CT. CT changes the believability through logical analysis and believability is targeted differently than ACT. However, ACT produces cognitive and emotional changes and the processes include; acceptance, mindfulness, defusion, and values. By the time, CBT and CT clients will go on ACT processes. This study provided more proof that ACT and CT models are distinct approaches although both models are part of the big family of CBT.

(14) Clinical effectiveness of manual therapy for the management of musculoskeletal and non-musculoskeletal conditions: systematic review and update of UK evidence report.

Results

In 2014, Clar et al. studied the clinical effectiveness for the management of musculoskeletal and non-musculoskeletal conditions treated with manual therapy. The authors compared both conditions and reported the clinical outcomes. This study was a collection of systematic reviews, primary comparative studies, and qualitative studies of patients with both conditions in the UK. All changes went in a positive direction from inconclusive to moderate rates for rotator cuff disorder, spinal mobilisation, and headache. There were non-randomised comparative and qualitative studies met the criteria.

Discussion

All evidence was identified in non-musculoskeletal conditions and most of this evidence was inconclusive. However, moderate (positive) evidence was identified for myofascial is this the correct work release, strain, counter-strain for cancer care. Interestingly, this review used the evidence for treating a large number of non-musculoskeletal conditions. The authors were unable to change the inconclusive evidence ratings some conditions; include asthma, paediatric nocturnal enuresis, infant colic, premenstrual syndrome, stage 1 hypertension, otitis media, and pneumonia in elderly adults. The differences in therapists' experience, training, and approaches may contribute to the results. There was a big gap between evidence, reporting on techniques, and interventions used, which was associated with a lack of description of techniques. Therefore, many studies failed to link between findings and settings in which manual therapy is practised in the UK.

Limitations

The clinical effectiveness review was limited because of limited research on non-musculoskeletal conditions. The small sample sizes made the methods that e used were unequal. The lack of description of randomisation methods, treatment allocation concealment, and blinding in the studies affected the review outcomes. In addition, there was clinical and methodological diversity between the studies that may affect the outcomes. The manual therapy makes differences in the control treatment. However, the clinical effectiveness in this review due to reviewed interventions, populations, conditions, and outcome measures.

5.3.4Summary Measures

Effect sizes for continuous measures of anxiety and depression were calculated using pre-post treatment differences (within-group) for uncontrolled studies and also for controlled studies using Hedges'g and its 95% confidence interval 0.2 The magnitude of Hedges' g may be interpreted using Cohen's (1988) convention as small (0.2), medium (0.5), and large (0.8).

The correlation between pre-and post-treatment measures is needed in order to calculate the pre-post effect sizes. This correlation could not be determined from the study reports. Therefore, the study followed the recommendation by Rosenthal (1993) and assumed a conservative estimation of r = 0.7. We calculated an average Hedges' g effect size for studies that included measures of severity of anxiety symptoms and a separate Hedges' g effect size for measures of depressive symptom severity.

Effect size estimates were pooled across studies in order to obtain a summary statistic. The effect size estimates were calculated using the random-effects model rather than the fixed-effects model because the studies included were not functionally identical (Hedges & Vevea, 1998; Moses, Mosteller, & Buehler, 2002). Effect size estimates for ACT and other interventions and follow-up data were also calculated in the manner described above.

Table 5.4

Forest plot of ACT studies versus control on primary outcome measures

Article #	Study	Comparison	Effect Size	Interpretation
1	Bach and Hayes (2002)	ACT + TAU vs TAU	0.52	Favours ACT
2	Clarke et al (2014)	ACT vs TAU + CBT	0.71	Favours ACT
3	Ducasse et al (2014)	ACT vs Control (TAU)	0.37	Favours ACT
4	Spijkerman et al (2016)	ACT vs ET	0.46	Favours ACT
5	Hayes et al (2004)	ACT + MM vs ITSF	0.6	Favours ACT
6	Lappalainen et al (2007)	ACT vs CBT	1.04	Favours ACT
7	Craske et al (2014)	ACT vs CBT	0.85	Favours ACT
8	Lundgren et al (2006)	ACT vs ST	1.05	Favours ACT
9	McCracken et al (2013)	ACT vs TAU	0.6	Favours ACT
10	Roemer et al (2008)	ACT vs Control (TAU)	1.45	Favours ACT
11	Saedy et al (2015)	ACT vs Control (TAU)	0.34	Favours ACT
12	Gaudiano et al (2015)	ADAPT vs TAU + EAM	1.47	Favours ACT
13	Twohig et al (2007)	ACT vs Control (TAU)	0.71	Favours ACT
14	Zettle et al (2011)	ACT vs CT	1.08	Favours ACT
Combined effect Size			**0.80**	**Favours ACT**

ACT = Acceptance and Commitment therapy; TAU = Treatment As Usual; CBT = Cognitive Behavioural Therapy; CT = Cognitive Therapy; ADAPT = Acceptance-based depression and psychosis therapy; EAM = Enhanced Assessment and Monitoring

The common active control condition used in most of the articles reviewed was Treatment as Usual (TAU). According to the table above (Table 3) about 8 out of 14 studies accounted for TAU. About 4 of the studies also had a waiting list group. None of the studies used a psychological placebo control intervention in their research. There were also established interventions such as Enhanced Assessment and Monitoring and Supportive Therapy used. Measuring heterogeneity, there was no significant heterogeneity across the surveys.

The results from the systematic reviews led to two separate hypotheses:

- ***Hypothesis 1:*** *ACT Studies are effective as compared to control conditions and other psychological placebo control interventions*

The table above shows that this hypothesis was met. With a combined control effect size of about 0.80, the systematic review showed that there was a general agreement that ACT had a significant effect on the changes of in the health of patients. At 0.8, although the study showed a medium to high effect size that favoured the use of ACT. This systematic review did not delve into separately analysing the control interventions neither did it analyse the individual ACT interventions. This was because the overall aim of the survey is to compare the effectiveness of ACT against the control interventions. The analysis showed ACT supremacy from treatment to even after-months follow ups.

- ***Hypotheses 2:*** *The size of effectiveness of ACT will not change over time*

To test the effectiveness of ACT over years of survey, the Effect size was measured over the years of publications. While the oldest publication used was Bach and Hayes' article in 2002 and the most current was Spijkerman et al, article in 2016, there was no evidence that there was a significant relationship between the 14 years of publication and effect size. It can therefore be concluded that the size of effectiveness of ACT will not change over time.

5.3.5Syntheses of Results

(1) Marijuana Dependence in Adults with Anxiety: One study by Twohig et al., in 2007, that used the ACT to treat 3 adults who met the criteria. The study was performed in 8 weeks and 90 minutes for each session. In order to perform all outcomes measures, the authors performed treatment into pre-treatment, post-treatment, and 3-month follow-up. Participants scaled into 0 = none, 1 = mild, 2 = moderate, and 3 = severe. BAI had Cronbach's alpha 0.90 showed retest reliability (r = .60) with moderate to high and validity. The BDI-II showed good retest reliability (r = .93) with a strong link to the original BDI (r = .93). The means for the AAQ in clinical samples are 36.4 and for nonclinical samples are 33.3. The means for all sessions are as follows: hopelessness is 2.6 (SD = 1.3), willingness and acceptance is 2.6 (SD = 1.4), defusion is 3.3 (SD = 1.8), values are 4.1 (SD = 1.0), committed action is 3.8 (SD = 1.1), and general assessment of participant's functioning is 3.4 (SD = 0.7). All participants revealed a high decrease in marijuana intake during the treatment period.

(2) Depression: Zettle et al., in 201 studied depression from many articles and reanalysed their previous findings data in order to compare 12 weeks of traditional cognitive therapy (CT) clients with ACT clients. A total of 80 women were participants. A total of 45 women met the criteria and 8 women excluded before completing the baseline assessments. These findings revealed no significant effect for treatment (p = .81) but there was a significant effect for time (p = .000). The interaction and time was p = .018 with effect size = 1.08. The analysis of nonparametric led to the display of the values for the a, b, c, and c' paths when analysed by normal theory and without bootstrapping. The post treatment scores are mediated by BDI follow-up outcomes (p <= .05). Normal theory tests revealed a significant a path, t = 1.74, p < .1, and a significant b path, t = 2.37, p < .03. A significant c path, t = 2.24, p < .038, was transferred to the nonsignificant when the mediator was; t = 1.42, p > .17). The Other covariate Mediators of ab coefficients are Cognitive defusion, Depressogenic thoughts, and Dysfunctional attitudes. The bias-corrected and enhanced the confidence. Automatic Thoughts Questionnaire–Believability (ATQ-B), Automatic

Thoughts Questionnaire (ATQ), DAS = Dysfunctional Attitude Scale (DAS), and Beck Depression Inventory (BDI) was used for analyses of results. Moreover, bootstrapped analyses revealed that p = .1 but did reach significance at p = .15. In addition to that analyses, the analysis was assessed using the follow-up DAS scores as a mediator, which was the analytically more liberal approach.

(3) Anxiety and Depression: In 2015, Saedy et al. studied the level of anxiety and depression in 14 patients with opioid dependence disorder. They compared the changes in depression and anxiety between pretest, posttest and Posttest-Follow up Stages in Case and Control Groups patients with opioid dependence disorder. In case group with anxiety, the changes were between 20.0 ± 16.0, 14.9 ± 13.9, and 14.4 ± 13.1, respectively. In control group with anxiety, the changes were between 13.4 ± 10.1, 14.4 ± 9.9, and 14.1 ± 10.4, respectively. On the other hand, in case group with depression; the changes were 26.1 ± 16.4, 16.6 ± 11.6, and 17.2 ± 13.1, respectively. In control group with depression, the changes were between 16.8 ± 13.2, 15.9 ± 13.1, and 10.8 ± 9.7, respectively. Therefore, there were no significant differences in the variables between both groups and they are homogeneous. Thus, following 8 weeks ACT revealed a non-significant reduction in anxiety level in the case group when compared to the control group. However, the pretest-posttest-follow up of depression showed significant differences between both groups. They found that acceptance decreases all internal conflict in patients' minds and also this made the patients able to think about their values in their lives and societies. This led to effective problem solving and no anymore worries.

(4) Generalized Anxiety Disorder (GAD): In 2008, Roemer et al. tested the efficacy of an acceptance that is based on behavioural therapy, which was associated with increased acceptance and encouraged values. Various analyses methods were conducted using Hierarchical Linear and Nonlinear Modeling (HLM) software programme. Means and standard errors generated by HLM are reported and calculated based on the differences between groups using t-test values ($d = 2t / \sqrt{(df)}$). They found that all variables at Pre-

treatment, Post-treatment, and 3 months and 9-month Follow-up period associated with effect sizes (Tables 2 & 4 published by Roemer et al. in 2008). This included all participants who began treatment (n = 26). The synthesis of results to analyse treatment effects in the controlled trial data that involved pre-treatment to post-treatment as well as to the waiting list on an intention to treat (ITT). That means the study selected all randomized participants, which was; n = 31), and a completer (25 of 31 participants) sample. In the ITT sample, power = .80 to detect effects of $d \geq 1.04$ at alpha = .05. For the completer sample, power = .80 to detect effects of $d \geq 1.17$ at alpha = .05. The completer and ITT analyses results were highly consistent. The uncontrolled effects and maintenance of treatment were analysed after treatment. That included treatment and waiting list control conditions, which were n = 26. Means and standard deviations of all results variables at pre-treatment and post-treatment are reported in Tables 2 published by Roemer et al. in 2008. There were no significant pre-treatment differences between conditions with no change variables (ts < 1.03, ps >.10). The waiting list participants had significantly higher PSWQ scores at pre-treatment (t = 2.70, p <.05). At post-treatment and waiting list, 76.92% of treated patients compared with 16.67 % who were on the waiting list no longer met the criteria for GAD (χ 2 = 9.08, p >.01). The authors adapted methods by Borkovec and colleagues, in 2002, to assess the significant changes among those treated. Responder showed a reduction of > 20% on the four anxiety measures (GAD Severity, PSWQ, DASS-Anxiety, and DASS-Stress). Regarding responder status, post-treatment and waiting list participants, 75% of participants in the treatment status and 8.3 % of the waiting list status met criteria (χ 2 = 10.97, p <.01).

(5) Mental Health Improvement: In 2016, Spijkerman et al. estimated the effects of online mindfulness (MBI) on mental health individuals. 15 randomised controlled trials were used in this study. The random effects model was used to analyse pre-treatment and post-treatment that was associated with the effect sizes. All studies in this meta-analysis met the criteria of blinding and intention during analysis. The pre- and post- effects were assessed by assessing the outcome measures of depression, anxiety, stress, well-being, and

mindfulness as displayed in Tables 3 published by Spijkerman et al. in 2016. There was also subgroup analysis that displayed in Tables 4 published by Spijkerman et al. in 2016. They found that stress (Q = 20.12, df = 1, p b .001) and mindfulness (Q = 5.50, df = 1, p = .019) were significantly had high effect sizes for online MBIs with therapist guidance than for online MBIs without therapist guidance. They also found that depression, anxiety, and well-being had no significant differences between subgroups. The authors also used meta-regression analysis to increase the significance on the effect sizes. This was applied when the outlier (slope: 0.10, Z = 2.22, p = 0.026). However, the excluded the outlier (slope: 0.04, Z = 0.78, p = 0.43).

(6) Chronic Pain: In 2013, McCracken et al. analysed the data from 73 participants who randomized to ACT and TAU for any differences or changes on their background, treatment outcome, and treatment process variables at post-treatment and follow-up periods as the dependent variables and the baseline values as covariates. 14 post-treatment and follow-up analyses associated with the group location effect analyses showed 2 significant interactions of both treatment condition and location effects. Post-treatment disability was one of these analyses F (2, 50) = 3.57, P = .036 and depression at follow-up F (2, 48) = 3.31, P = .045. The means, SDs, analysis of covariance results, and effect sizes from post-treatment and follow-up were displayed on Tables 1 published by McCracken et al. in 2013. The effect sizes for depression was small, d = .46. In terms of secondary outcomes, there was a significant post-treatment effect on PGIC with 53.3% of ACT clients, whereas TAU clients showed 25.0% with high improvement. The effects sizes at follow-up for disability was d = .59 and depression was d = .58. However, this effect marginally had no statistical significance, P = .064 but generally there was good improvement in emotional functioning score from the SF-36 or in pain medication changes. Intention to treatment (IIT) analyses showed significant effect post-treatment for disability, which was F (1, 70) = 4.43, P < .05, d = .36, whereas depression was F (1, 70) = 5.91, P < .05, d = .46; acceptance of pain was F (1, 70) = 3.91, P = .05, d = .23; and emotional functioning was F (1, 70) = 3.93, P = .05, d =

.69. During follow-up period, there was a marginal effect for disability, which was F (1, 70) = 3.38. P = .07, d = .37. In completer analyses, post-treatment for disability was F (1, 49) = 8.39, P < .01, d = .45; depression was F (1, 49) = 8.72, P < .01, d = .53; acceptance of pain was F (1, 49) = 4.59, P < .05, d = .51; and emotional functioning was F (1, 49) = 4.07, P < .05, d = .71. During follow-up period, there were significant effects for disability, which was F (1, 51) = 5.43, P < .05, d = .55; depression was F (1, 50) = 5.82, P < .05, d = .59; and acceptance of pain was F (1, 48) = 4.87, P < .05, d = .59. The global rates of improvement after treatment was significantly favoured the ACT, which was c2 (1, n = 48) = 4.87, P < .05, whereas the global rates of improvement during follow-up did not show a significant difference, P = .067.

(7) Epilepsy: In 2006, Lundgren et al. showed that a short-term psychotherapy programme associated with anticonvulsant drugs may help to prevent the long-term disability that occurs from drug refractory seizures. These drugs involved ACT and supportive therapy (ST) and their effects based on the quality of life and seizure index (the index equation is: frequency X duration). Figure 1, published by Lundgren et al. in 2006, showed the significant reduction in seizure index in ACT clients when compared to ST clients. The authors results based on the participants' gender, interpreter requests, living condition, age, types of seizure, levels of educational, marital status, and use of anticonvulsant drug (AED) in both type of treatment, ACT and ST (Data displayed on Table 1 published by Lundgren et al. in 2006). Table 2, published by Lundgren et al. in 2006, displayed the data of participants who had side effects of AED. The dependent variables were based on seizure index, seizure frequency, World Health Organization Quality Of Life (WHOQOL-BREF), and satisfaction with life scale (SWLS) which were more reliable stable changes. The ANOVA showed a significant effect between clients and time, which was F (19,475) = 6.45, p < 0.001 Tukey post-hoc tests showed a significant effect in ACT clients post-treatment (p < 0.048 and p < 0.011) with no pre-treatment differences. Table 3, published by Lundgren et al. in 2006, displayed the seizure frequency and index data at pre-treatment, post-treatment, 6 months

and 12 months follow-up period. The same table displayed the significant effect between clients and time for both variables frequency and index. Tukey post-hoc showed that the significant changes between pre-treatment and post-treatment ($p < 0.001$) in the ACT clients with no significant differences in pre-treatment was found.

(8) Abusing Drug (Methadone Addiction): In 2004, Hayes et al. studied the abuse treatment of methadone. The treatment includes ACT, methadone maintenance (MM), and intensive twelve-step facilitation (ITSF). 42 participant's exposure to ACT, 44 to ITSF, and 38 to MM. The process was random. After treatment, the data collected from some participants who followed specific group of treatment and the Pearson x2 (2, N = 124) = 2.76, which was non-significant. During follow-up period, some participants who were assigned for follow-up which was also non-significant and the Pearson x2(2, N = 124) = 5.49, $p < .07$. The authors assessed ACT Versus MM as shown in Figure 2, published by Hayes et al. in 2004, participants after treatment showed UAs negative for opiates, which was non-significant difference. During the 6-month follow-up period, participants showed UAs negative for opiates, which was statistically significant difference; Pearson x2(1, N = 43) = 4.71, $p = .03$. Generally, the results for total drug use were similar (Figure 2 published by Hayes et al. in 2004). After treatment, half of ACT clients were negative with a non-significant, whereas during the 6-month follow-up period, half of ACT participants were negative for any drug with a significant difference, Pearson x2(1, N = 43) = 7.51, $p = .006$. Self-reported opiate use showed non-significance difference (Table 2 published by Hayes et al. in 2004). At post-treatment, participants showed non-significance difference but during the 6- month follow-up period, participants showed reported no drug use with a significant difference, Pearson x2(1, N = 45) = 4.0, $p = .045$. ITSF Versus MM Alone: At post-treatment, participants were negative for any drug and showed non-significant difference. During 6-month follow-up, participants were negative for MM only with a significant difference, Pearson x2(1, N = 51) 4.70, $p = .03$. ACT Versus ITSF: participants reported no drug use, Pearson x2(1, N = 45) = 2.80, $p < .10$. The effects were assessed using Dunnett's

test to compare ACT and ITSF status to MM alone. The multivariate analysis revealed a significant effect for phase (Pillai's trace: F [16, 228] = 2.71, p = .001; partial eta squared 5 .16, observed power assuming p = .05, .995). All distress and adjustment variables revealed significant improvement of the change comparisons. Table 2, published by Hayes et al. in 2004, presented the contrast analyses comparing post-treatment and follow-up period scores to baseline in the univariate tests.

(9) Depression with Psychosis: In 2015, Gaudiano et al. studied the acceptance-based depression and psychosis therapy (ADAPT) associated with acceptance-based behavioural therapy and this showed significant effects in depression with psychosis therapy. The article published by Gaudiano et al. (2015), Table 2 displayed the non-significant differences between demographic characteristics and severity of symptoms when both treatments were used. Results showed that the enhanced assessment and monitoring (EAM) group had a mean of 34.0 (SD = 11.1) and the ADAPT group had a mean of 44.0 (SD = 4.4) with effect size difference (d = 1.18), z = −1.81, P = 0.069. The score on the Client Satisfaction Questionnaire-8 (CSQ-8) after assessment was 25.5 (SD = 3) for the EAM clients versus 29.5 (SD = 2.4) for the ADAPT clients with effect (d = 1.47), z = −1.75, P =0.080. These results showed that treatment was satisfied and the outcomes were high in both client groups. In the Quick Inventory of Depressive Symptomatology-Clinician (QIDS-C), both ADAPT and EAM participants met the criteria after treatment with an odds ratio (OR) = 2.5, which were reliable changes. For the Brief Psychiatric Rating Scale (BPRS)-Psychosis subscale, post-treatment ADAPT was 67% (n = 4/6) versus EAM = 43% (n = 3/7) with OR = 2.7 (95% CI = 0.3–25.6). For the Acceptance and Action Questionnaire-II (AAQ-II), half of participants (n = 3/6) met criteria for reliable change in the ADAPT status versus 14% (n = 1/7) in the EAM status after treatment with OR = 6.0 (95% CI = 0.4–85.3). 33% of participants (n = 2/6) met the criteria for reliable change on the World Health Organization Disability Assessment Schedule (WHODAS-II) in the ADAPT status versus 14% (n = 1/7) in the EAM status after treatment with OR = 3.0 (95% CI = 0.2–45.2). Again, 33% (n = 2/6)

met the criteria for reliable change on the Behavioural Activation for Depression Scale (BADS) in the ADAPT status versus 14% (n = 1/7) in the EAM status after treatment with OR = 3.0 (95% CI = 0.2–45.2). Generally, the results showed relatively no clinically significant worsening of symptoms by time in all samples.

(10) Suicidal Patients: In 2014, Ducasse et al. studied the suicidal behaviour disorder (SBD) and they targeted the suicidal process using specific strategies in order to prevent this disorder including psychotherapy. ACT is the 'third-wave' behavioural therapy that is used to treat SBD, avoid unwanted thoughts or emotions. Therapists assessed suicidal by (1) suicidal ideation assessed by the Columbia-Suicide Severity Rating Scale (C-SSRS) (2) psychiatric disorders assessed by the French version of the Mini International Neuropsychiatric Interview (3) borderline personality disorder assessed by the Screening Interview for Axis II Disorder (4) depressive symptomatology assessed by the Inventory of Depressive Symptomatology (IDS-C30) (5) global functioning assessed by the Functioning Assessment Short Test (6) pharmacological treatment and number of visits for psychiatric departments. The authors found that self-assessment included: (1) suicidal ideation (2) depressive intensity using Beck Depression Inventory-II (BDI) (3) psychological pain (4) anxiety condition using the State-Trait Anxiety Inventory (STAI) (5) hopelessness assessed by the Beck Hopelessness Scale (6) quality of life assessed by the World Health Organization Quality of Life measure (7) acceptance assessed by the Acceptance and Action Questionnaire (AAQ). Psychotherapeutic protocol included seven sessions, which were in order presentation, cognitive defusion, acceptance and self as context, values and valued actions, and contact with the present moment.

The authors found significant reduction of depression according to "BDI [13 (2–28) vs. 4.5 (0–24); $p < 0.001$] and IDS-C30 scores [28 (12–61) vs. 8 (0–31); $p < 0.001$], anxiety state [53 (23–77) vs. 37 (20–58); $p < 0.001$], hopelessness [11 (2–20) vs. 4.5 (1–13); $p < 0.001$], and psychological pain [4 (0–10) vs. 1 (0–7); $p < 0.001$]. There was also a significant improvement in global functioning [37 (8–60) vs. 17 (0–47); $p < 0.001$] and quality of life

[77 (43–107) vs. 93 (60–129); p < 0.001]". During the follow-up period, the use of benzodiazepines was notably reduced by 65% of the patients. The three visits showed significant differences (p < 0.001). They found a significant reduction of the suicidal ideation, which was associated with the AAQ score (p = 0.04, r = –0.37) but not linked to BDI and STAI scores. Thus, no suicide re-attempts during the follow-up period, which was showed significant outcomes.

(11) Social Phobia (SP): In 2015, Craske et al. compared ACT, CBT, and WL participants with a DSM-IV diagnosis of SP. All participants covered the baseline assessment, after treatment, and follow-up periods. This assessment involved a public speaking task, self-report measures, and clinician ratings. The authors found that the differences within pre-treatment clients, there was no significant differences between ACT, CBT, and WL of psychotherapy [CBT=52%, 17/33, ACT=55%, 16/29, WL=72%, 18/25, χ 2 (df=2) =2.67, p=. 263] or psychotropic medication [CBT=27%, 9/33, ACT=28%, 8/29, WL=44%, 11/25, χ 2 (df=2) =2.24, p=.302] with no differences on socio-demographic or clinical characteristics at Pre-treatment as shown in table 1. The study showed that treatment credibility was not significantly different between ACT (M=4.83, SD=2.5) and CBT (M=4.2, SD=2.4), t (60) =−1.02, p=.311. The authors assessed the therapist competence and found that therapist had good therapist skills as indicated no significant difference CBT (M=3.06, SD=.67) and ACT (M=3.21, SD=.57), t (42) =−.76, p=.449. Therapy adherence in both ACT and CBT groups were higher in the ACT (M=.87, SD=.17) than CBT (M=.55, SD=.29), t (42) =−4.56, p<.001. In treatment attrition, 46/62 of participants were assessed. The authors found that attrition was not significantly different between CBT and ACT, χ 2 (df=1) =2.09, p=.149 with one participant dropped from WL. In symptoms outcomes, the authors found that CBT had a higher decrease in symptoms than WL (b=.80; CI=.40 to 1.2; p<.001), which was similar to ACT (b=.88; CI=.1.3; .49 to 1.3; p<.001). CBT and ACT slopes were not different from each other (b=−.09; CI=−.49 to .32; p=.675). In the clinical severity, CBT had a higher decrease in clinical severity than WL (b=2.13; CI=−1.29 to 2.98;

p<.001), which was similar to ACT (b=1.52; CI=.68 to 2.37; p<.001). In fear and avoidance, CBT showed a higher decrease in fear and avoidance than WL (b=28.85; CI=12.3 to 45.4; p=.001), which was similar to ACT (b=18.00; CI=1.4 to 34.6; p=.033). The quality of life was not significant for S1 (p=.539) or S2 (p=.427). However, S1 slopes were not significant for CBT (p=.096), ACT (p=. 788) or WL (p=.774). S2 slopes were not significant for CBT (p=.783) or ACT (p=. 146) with the main effect of Time (b=.16; CI=.03 to .28; p=.015), which could indicate the quality of life improvement in all treatment groups. No significant difference for subjective distress during public speaking for S1 (p=.469) or for S2 (p=.051). S1 slopes showed a significant decrease in subjective distress in all therapy groups. S2 slopes were not significant in the ACT (p=.096) or in CBT (p=.265). Participants showed clinically significant improvement when their clinical severity rating for social phobia was ≤ 3 and they showed statistically reliable change on either of the companion scales of performance (SPS) or interactional (SIAS) anxiety. The significant changes were 47.8%, 37.5%, and 4.3% for CBT, ACT, and WL, respectively. After treatment, the significant changes were 56.5% and 41.7% for CBT and ACT, respectively. At 6-Month Follow-Up, 47.8% and 33.3% for CBT and ACT, respectively. Comorbid depression is considered as a predictor of fear and avoidance ratings (z=2.28, p=.023). Patients with comorbid depression and fearful and avoidant were b=23.8; CI=3.33 to 44.33. Therefore, CBT and ACT acted similarly and significantly for the treatment of social phobia with WL controls.

(12) Musculoskeletal and Non-musculoskeletal Conditions: In 2014, Clar et al. studied the effectiveness of manual therapy in the treatment of both musculoskeletal and non-musculoskeletal conditions. This study goal to find out the synthesise evidence and the randomised controlled trials (RCTs) linked to other systematic reviews such as controlled cohort studies, non-randomised controlled clinical trials (CCTs), and qualitative studies. They focused on evidence such as ‘inconclusive’ or ‘negative’; or other evidence not included in the report. Then, they also compared conclusions from more summarised studies, which includes new RCTs and systematic reviews and additional studies, to those of

previous studies where more evidence was inconclusive or manual therapy was not effective. They studied a systemic review as shown in Figure 1 (Clar et al., 2014) displayed how the data collected and removed unwanted records. Tables 1 and 2, published by Clar et al. in 2014, summarised all studies that were ‘inconclusive’ or ‘negative’ compared to the new and additional studies that found in this review for musculoskeletal conditions, headache and other disorders (Table 1 published by Clar et al. in 2014) as well as non-musculoskeletal conditions and adverse events (Table 2 published by Clar et al. in 2014). Tables 3, 4 and 5 (published by Clar et al. in 2014) provided a comparison between all evidence included the UK evidence, new, and additional studies in this review for musculoskeletal conditions. Table 7, published by Clar et al. in 2014, provided a comparison between all evidence included the UK evidence, new, and additional studies in this review for non-musculoskeletal conditions. Musculoskeletal conditions include sciatica and back-related leg pain, neck pain, non-specific mid-back pain, ankle and foot conditions, carpal tunnel syndrome, lateral epicondylitis, shoulder conditions, temporomandibular disorders, and various types of a headache. Non-musculoskeletal conditions include asthma, cerebral palsy in children, cervicogenic dizziness and balance, chronic fatigue syndrome and myalgic encephalomyelitis, chronic pelvic pain, cystic fibrosis, paediatric dysfunctional voiding, gastrointestinal disorders, hypertension, infantile colic, myofascial pain syndrome, insomnia, myofascial pain syndrome, otitis media, peripheral arterial disease, Parkinson's disease, pneumonia and chronic obstruction pulmonary disease (COPD), Pregnancy, obstetric care, neonatal care, rehabilitation, systemic sclerosis, and adverse events such as worsening symptoms, increased pain, soreness, headache, dizziness, tiredness, nausea, vomiting worsening symptoms, increased pain, soreness, headache, dizziness, tiredness, nausea, and vomiting. The authors concluded that this study had limited high quality of evidence for the effectiveness of manual therapy because all evidence was limited between low to moderate quality and also evidence was varied due to various methods and diversity of clinics.

(13) Psychology Trainee Therapists: In 2007, Lappalainen et al. compared 2 types of treatments, ACT and BCT, that provided by psychological trainee therapists. All therapists in controlled trials were more competent because they highly experienced and trained. Table 1, published by Lappalainen et al. in 2007, displayed all participant characteristics and why they looking for treatment. The master's level students in psychology were involved in this psychotherapy training. The authors analysed their data using non-parametric statistical tests because parametric statistics may have some errors in small sample size studies. Although non-parametric statistics are less commonly used in treatment studies, it was very useful to supplement these analyses with a more conventional approach. Table 3, published by Lappalainen et al. in 2007, and displayed both CBT and ACT methods that were used during the Treatment period. They also conducted repeated measures analysis of covariance (RMANCOVA). Both groups were differed during analyses and at post-treatment and follow-up periods. Although the difference between two groups, they were strong between post-treatment or follow-up periods because if they were not marginally significant, they will not be reported. Differences below p = .1 were reported using the conventional language of significance ($p \leq .05$) and marginal significance ($p \leq .10$). Interestingly, there were no dropouts, there was no imputation and exclusion of data. The authors used small, medium, and large terms and applied to effect sizes of .2, .5, or .8 or another variance accounted for (.01, .059, or .138, respectively).

The primary outcome presented on Table 4 (published by Lappalainen et al. in 2007) with GSI of the SCL-90 effect sizes larger in the ACT group (pre-post: d = 1.11: pre-follow-up, d = 1.04), and smaller in the CBT group (pre-post: d = 0.36: pre-follow-up, d = 0.28). the SCL-90 changes were significantly greater in ACT than in CBT at post (z = 1.68, p = .048), and marginally so at follow-up (z = 1.63, p = .053). The RMANCOVA also showed a significant and large effect for group, F (1, 25) = 4.26, p = .05, partial eta sq. = .15; adjusted means—ACT: 83.7, CBT: 56.8, SE = 9.2. Figure 1 (published by Lappalainenet al. in 2007) displayed all results that were obtained from primary and secondary outcome measures,

which showed group differences in non-parametric or parametric analyses or both analyses. Table 4 (published by Lappalainen et al. in 2007) displayed the significant changes from pre-treatment to post-treatment and from pre-treatment to follow-up periods in the ACT clients in depression (pre-post d = 0.83: pre-follow-up d = 0.94), social functioning (pre-post d = 0.47: pre-follow-up d = 0.48), mood (pre-post d = 0.86: pre-follow-up d = 1.17), and life satisfaction (pre-post d = 0.71: pre-follow-up d = 0.96). The effect sizes for CBT altered from 0.02 to 0.45 and depression significantly reduced from pre-treatment to post-treatment periods.

All therapists involved in these studies showed significantly less knowledge in ACT compared with CBT approaches ($z = –2.13$, $p = .03$). Their self-evaluated skills increased significantly in CBT ($z = 2.29$, $p = .02$) and in ACT ($z = –3.04$, $p = .001$) during treatment period. However, the therapist's fear and tension decreased significantly only in CBT ($z = –2.23$, $p = .025$; $z = –2.61$, $p = .007$, respectively) during treatment period but not in ACT. All therapists' life satisfaction was ($z = –3.05$, $p = .001$) and social functioning was ($z = –2.24$, $p = .024$), which were increased significantly during treatment period but not depression, SCL-90, mood, self-confidence, and acceptance as shown in Table 5 (published by Lappalainen et al. in 2007). Therefore, there were no differences between the CBT and ACT approaches in confidence, help, and satisfaction of psychology trainee therapists.

(14) Rehospitalization of Psychotic Patients: In 2002, Hayes et al. studied the primary outcome of rehospitalization of psychotic patients using ACT and TAU approaches. Figure 1 (published by Hayes et al. in 2002) showed rehospitalization curve using ACT and TAU clients. The analysis showed ACT clients were hospitalized with a lower rate than TAU participants using Wilcoxon's statistic (1, N = 70) 4.26 p .05. ACT clients became out of the hospital for 22 days longer than control clients during the 3-month follow-up period. All participants stayed out of the hospital for 78.5 days in the ACT group and 75.3 in the TAU group with a non-significant difference, F (1, 61) 0.07, ns. The difference between the two groups based on the number of days to hospitalization during the follow-up period was

statistically significant, F (1, 60) 4.74, p .03. The difference in hospitalization rates due to less psychiatric symptoms within ACT participants. The reported symptoms were not significantly different between the ACT and TAU participants, either at the baseline F (1, 69) 2.12, ns, or at follow-up, F (2, 29) 0.36, ns. 21 ACT participants (60%) and 11 TAU participants (31%) reported symptoms at follow-up with a significant difference, X2 (1, N 70) 5.76, p .016. In addition, 18 participants complained delusions at baseline and 17 complained hallucinations. Figure 2 (published by Hayes et al. in 2002) showed that ACT participants reported more symptoms, but significantly fewer were hospitalized. Distress reduced from the mean of 87.7 to 49.0 from baseline to follow-up period among ACT participants and from the mean of 80.4 to 49.1 among control participants, F (2, 29) 1.84, ns. Believability is the degree to which participants believed that the details of delusional beliefs or auditory hallucinations that occurred corresponded to reality. Believability decreased from a mean of 78.7 at baseline to 40.7 at follow-up period within ACT participants and from a mean of 75.4 to 63.6 within TAU participants as shown in figure 4 (published by Hayes et al. in 2002). The difference in believability rates was statistically significant between ACT and TAU groups, F (1, 29) 4.36, p .05. The difference between this two groups suggested that the decreased believability of psychotic symptoms played a vital role in the impact of the ACT on rehospitalization.

In order to conclude the synthesis of results, all studies used ACT alone or combined with other therapeutic approaches to improve various disorders involved in psychopathology. Other therapy included CBT and WL approaches. It was very interesting meta-analysis because involved a wide range of disorders and issues without any repetition. Two studies used the ACT to treat anxiety only using ACT and acceptance based on behavioural therapy. One study investigated depression in order to compare 12 weeks of traditional cognitive therapy (CT) clients with ACT clients. One study looked at both anxiety and depression by comparing the changes in depression and anxiety that were reported between pre-test, post-test and Post-Test-Follow up periods in Case and Control Groups patients with opioid

dependence disorder. Then, all other studies were a single study for each. They included mental health improvement using the effects of online mindfulness (MBI). Chronic pain using ACT and TAU approaches. One study about epilepsy showed that the results with short-term psychotherapy programme associated with anticonvulsant drugs can prevent the long-term disability that occurs from drug refractory seizures. Treatment involved ACT and supportive therapy (ST). One study investigated the abuse treatment of methadone. The treatment includes ACT, methadone maintenance (MM), and intensive twelve-step facilitation (ITSF) in individuals who were abusing drug such as methadone additions. One study assessed the link between depression and psychosis using the acceptance-based depression and psychosis therapy (ADAPT) alongside acceptance-based behavioural therapy. One study assessed the suicidal behaviour disorder (SBD) targeting the suicidal process using specific approaches to prevent this disorder (including psychotherapy, the ACT is the 'third-wave' behavioural therapy and avoid unwanted thoughts or emotions). One study about the social phobia compared ACT, BCT, and WL participants with a DSM-IV diagnosis of SP. One study looked at musculoskeletal and non-musculoskeletal conditions by investigating the effectiveness of manual therapy in the treatment of both conditions. One study compared the competency of psychology trainee therapists by comparing two types of treatment (ACT and BCT) that provided by them. One study evaluated the primary outcome of rehospitalization of psychotic patients using ACT and TAU approaches.

5.3.6Participant Attrition

Romer et al. (2008) found, post-treatment and waiting list, 75% of participants under treatment and 8.3 % of participants under the wait-list condition. Both participants groups met criteria for responder status, (χ 2 = 10.97, p. <.01). In order to evaluate the impact and effect of attrition on clinical significance, the authors counted and calculated the last value from post-treatment through follow-up periods.

Hayes et al. (2004) excluded some participants because of current DSM-IV diagnosis of schizophrenia, psychosis NOS, schizoaffective disorder, or bipolar affective disorder. This exclusion was also because of imminent criminal justice proceedings during treatment. Ten Participants excluded because they did not complete the intake and assessment of treatment. And one refused to assign to the treatment. Another one participant was also excluded because of close friendship with the treatment staff.

In 2015, Guadiano et al. followed the participant's exclusion criteria for bipolar disorder or pregnancy. Four patients excluded prior to the post-treatment assessment started. The one patient who excluded from ADAPT started treatment, but then withdrew for unknown reasons after a few sessions. One patient excluded of EAM because the assessments made him feel worse. Two participants were excluded for unknown reasons. Two patients failed to complete the follow-up period for unknown reasons.

In 2014, Craske et al. used different exclusion criteria, which included active suicidal ideation, severe depression, history of bipolar disorder or psychosis, drug abuse or dependence within the last 6 months, and respiratory, cardiovascular,3 pulmonary, neurological, musculoskeletal diseases or pregnancy. In addition to exclusion criteria, left-handedness, metal implants, and claustrophobia. There was clear treatment attrition, which was 46 of 62 participants (74%) completed all 12-treatment sessions and divided between CBT=67% (22/33) and ACT=83% (24/29). Participants attrition did not differ between CBT and ACT, χ 2 (df=1) =2.09, p=.149. One participant excluded from WL.

In 2014, Clar et al. investigated factors such as the therapy providers' experience, training, and approaches and these factors may affect the results. Limited or lack of research regarding non-musculoskeletal conditions has been published. The gaps in the evidence, inconsistent reporting on techniques and interventions used, and lack of description of techniques. Zettle et al. (2011) had 8 participants refused to participate or excluded before they had completed the baseline assessments. 12 participants, randomly assigned to a modified CT protocol, were not considered in this reanalysis. Spijkerman et al. (2016) used the exclusion criteria,

which included psychoeducational programme and did not involve exercises for enhancing mindfulness or acceptance. In addition, a combination of MBI and other forms of therapy such as CBT. This may make differentiation of the effects of the MBI difficult from the other included therapies. Furthermore, the authors were not able to provide all necessary data of participants and they did not also provide sufficient data to calculate pre-treatment and post-treatment effect sizes per each condition. Saedy et al. (2015) studied each participant who refused to continue MMT and also preferred not to continue ACT sessions. Different criteria such as psychiatric disorders or any other medical condition (hepatic diseases and cardiovascular diseases) need different psychiatric or medical treatment strategies during the Act sessions, which were excluded from the study. The study performed by Lappalainen et al. (2007) had no inclusion or exclusion criteria beyond a desire for outpatient psychotherapy. One participant excluded before the first session and was replaced by the next client on the same list.

5.3.7Risk of Bias across Studies

All types of bias were explained in table 1 and explored all summary effect measures. These biases included selection bias, performance bias, detection bias, attrition bias, and reporting bias. The fourteen studies that compared ACT with active control conditions on psychological disorders outcomes showed some asymmetry. No evidence of publication bias was detected among studies that compared ACT and other therapy approaches with inactive control conditions or comparison interventions on depression outcomes. The only one publication bias that was reported by Spijkerman et al in 2016. The risk of bias across these fourteen studies ranged from unclear to low to high risk as shown in table 3.

5.4Discussion

5.4.1Summary of Overall Study

The systematic review conducted a meta-analysis of 14 Randomized Control Trials (RCTs) out of the 100 initial research articles gathered. Out of these 14 RCTs, not even one nullified the hypotheses that ACT is much more effective than most of the control either during or after treatment. ACT's superiority lies greatly in the treatment of psychological problems such as anxiety/depression. Additionally, effective sizes no relationship with years of publications.

Comparatively, this systematic review draws similar trends with other systematic reviews that have studied ACT's effectiveness. The systematic reviews used in this review were that of Fergusson et al (2005), Hayes et al (2006), Ost et al (2008), Powers et al (2009) and Eyding et al (2010). The sample size used in this review is also similar on average to these systematic reviews. There were other significant similarities too. For instance, while Hayes et al showed an Effect Size of about 0.62, Ost also showed an Effect size of 0.51.

5,4,2Results vs Existing Literature

A growing number of literatures that explored the effectiveness of ACT and other psychological therapies for depression patients was identified. Although there is an increased use of randomized, controlled trial designs currently, methodological quality of some existing literature was less than optimal. Many of them were not able to provide sufficient information on many of the methodological indicators. This raised questions about their higher methodological quality reviews.

This review concluded with much enthusiasm about the likely benefits of ACT as a psychological therapy when compared to the results of other recent reviews. Many of these reviews had recommended the combination or otherwise of other waves of psychotherapy. Although there is a possibility that the small sample sizes in many of the reviewed trials may likely increase the probability the true effectiveness of other psychological therapies were underestimated, the recommendations cautiously considered the methodological shortcomings of the other systematic reviews. Generally, two features were identified to

have the likelihood of finding fewer statistically significant effects than previous reviews. Initially, it was identified that some of RCTs were not able to report the data that was collected for all outcomes. A workaround was the thought through assumption that it was a normal practice in the research field for authors to omit some statistically nonsignificant results to make the statistically significant results in their reports much more comprehensive. With this thought in mind, it was identified that most previous reviews failed to use this strategy which likely helped reduce the potential bias of relying only on presented results. Another feature was that most of the reviewed trials used the strategy of adopting multiple measures of the same outcome. The conclusion of that strategy was that an overall statistically significant result could be achieved in that case that about half of those measures were statistically significant. To counterbalance this approach, the P values of the statistical results were adjusted to compensate instances of multiple comparisons. This helped increased the likelihood of arriving at results which were statistically significant.

5.4.3Review Questions vs Review Findings

The systematic review started with a group of review questions which shaped the entire method for the review process. These questions are *Which population benefits from therapies and interventions such as ACT?, Which ACT interventions and therapies are usefully for the treatment of anxiety, depression and other psychological problems?; How effective is a particular intervention over the other?; How have the interventions used in the controlled trials impacted the overall survival, free survival, quality of life and or its adverseness on the identified population?; How are the controlled trials performed to extract a scientifically acceptable result?; and What was the binding timelines used during the selected controlled trials?*

The findings used were not homogenous to a particular population with regards to the tool used. However, the psychological health statuses of the patients were population sensitive in some survey. The random nature of the surveys meant that no specific demographic group

was given a particular group. A limitation to most of the surveys used was that they did not specifically analyse which of the demography benefitted from either ACT or the other treatments. Another limitation was that the studies did not look to into whether ACT interventions and therapies were useful for the treatment of anxiety, depression and other psychological problems. The studies showed overwhelming that ACT showed a superior effectiveness over the other interventions used in the control group. Over the period, the studies showed a common approach of going back to the research setting to find out an evaluative result of the treatment process. The ACT interventions at feedback showed that there was were a positive impact on the overall survival, free survival, quality of life and or its adverseness on the identified population.

5.4.4Limitations

Although this systematic review was one of the largest and most systematic explorations of this literature, there were recorded potential limitations. The first limitation was the monotony of authorship. The review of the literature was conducted by one author and all research was limited to articles published in English. Another limitation was the fact that there was no in-depth assessment of the publication bias of the reviewed trials. Even though the lack of depth is unlikely to influence the publication of risk factor studies, such depth may have had added to quality and credibility. A third limitation was that the data were abstracted by one author and had an incomplete follow-up of the enrolled cohort of RCTs. This notwithstanding, the results of studies were similar with and without complete follow-up. The examination of depression status was complicated by differences in the length of follow-up. However, there were no consistent differences in reported psychological issues by length of follow-up. In most cases, some confidence five factors that increase the risk of depression and with about four factors appearing not to increase the risk of depression. In this meta-analysis, it was difficult to determine if the simultaneous presence of multiple risk factors resulted in a cumulative increase in the risk of depression.

Despite the methodological limitations of the systematic review and meta-analysis, the findings evidently support growing efforts to use ACT as a psychotherapy for detection and treatment of people suffering depression.

5.4.5Future Research Suggestions

The above stated methodological limitations notwithstanding, the findings extracted will greatly guide efforts to develop programs to prevent and treat depression using ACT as a psychotherapy. Despite the wide variation in estimates and results, the study shows evidently that ACT is a relatively good therapy.

The major finding of the effectiveness review stage of this review was that, despite a body of literature that spans more than decades of hundreds of RCTs and other Systematic Reviews, the was little scientific recommendation for ACT and relatively few tentative recommendations about the effectiveness of it as psychological So intervention strategy for treating depression. By exploring the relative effectiveness of the different intervention strategies for each outcome and follow-up period, however, suggestions can be made on the most effective psychotherapy and roadmap for future investigation in relation to each type of outcome and psychotherapy. Additionally, suggestions have also been made in Table 4 below how future trials of psychological intervention strategies can maximize their internal validity, as well as some minimal reporting standards that authors should observe, and journal editors should enforce, when publishing work in this area.

Table 4
Summary of recommendations to maximize the internal validity and to improve the reporting of future randomized, controlled trials of psychological therapies

Quality indicator	How the indicator can be achieved	Minimal information to be reported
Ensure adequate	Assess patients' eligibility independent of and before allocation to experimental groups.	State the process of determining eligibility and randomly allocating patients to groups.

concealment of allocation		
Ensure patients are randomly selected	Randomly select patients from a defined population or recruit all consecutive, eligible patients in a given time period.	State the target population, the eligibility criteria, and how sample was selected from all eligible patients.
Ensure patients are blinded to their experimental group	Use a placebo intervention, where possible. Otherwise, conceal the true nature of the study by presenting the intervention as part of routine care to intervention group only.	State if patients were aware of their experimental group. If unaware, state how this was achieved. If aware, discuss any implications.
Ensure care providers are blinded to patients' experimental group	Not possible for therapist-delivered interventions but can minimize impact by ensuring that indicators 5 and 10 are met.	State if providers were aware of patients' experimental groups. If unaware, state how this was achieved. If aware, discuss any implications.
Ensure all other treatments, except the trial intervention, are equivalent	Maintain usual-care practices for control groups. Ensure that there are no changes to usual-care practices during the study period.	Provide clear descriptions of the procedures for all experimental groups. State if there were any other differences or not. If there were other differences, discuss any implications.
Ensure care providers' adherence to the study protocol	Maximize adherence by thoroughly training and testing care providers. Monitor adherence by: taping (video or audio) randomly selected sessions; asking randomly selected patients about sessions.	Provide details of training given to care providers. Describe any steps taken to monitor their adherence.
Provide detailed loss to follow-up information AND Minimize the % of patients excluded from analyses	Before starting study, consider factors that could increase dropouts and try to minimize their impact. Keep detailed study log sheets, including reasons for any dropouts. Choose follow-up periods appropriate to the patient group and outcome measures.	State number of patients eligible. State number of patients analysed at baseline and each follow-up period, by experimental groups. State reasons for any dropouts at each follow-up period, by experimental groups. Discuss implications of number of dropouts.
Conduct intention-to-treat analyses	Have 0% loss to follow-up. If not, conduct the following analyses to compare with the unadjusted data: For continuous data, assume no change or the average increase or loss shown by that experimental group. For categorical data, assume no change or the adverse outcome.	Having clearly stated numbers lost to follow-up and analysed at each point (see indicators 7 and 8), describe any substitute data used in any intention-to-treat analyses. Discuss any differences between unadjusted and intention-to-treat analyses.
Ensure study outcomes are measured in a	Use objective measures where possible. If only subjective measures are feasible, ensure raters	Describe the measures used. If subjective, ensure it is clear whether the ratter was aware of

manner blinded to patients' experimental groups	(i.e., patient, family, and provider) are blinded to the patients' experimental groups.	care	the patients' experimental groups.

Source: Newell et al, 2002

CHAPTER SIX

6.1Discussion

The main aims of this research study were to an examine the effectiveness of ACT in the treatment of clients who were diagnosed with depression and referred to the psychiatric department, (Clinical Psychology Unit) at King Khalid University Hospital in Saudi Arabia; b) determine the factors that might predict the effectiveness of using the ACT approach; c)determine whether the application and outcomes of the ACT in Saudi Arabia are different from other settings using the same therapy and d) identify the demographical groups who benefit most from ACT. Finally, the study aimed to find and recommend ways of improving the treatment of depression in Saudi Arabia alongside the ACT approach. The use of any statistical analysis to assess any changes may become less effective in all analytical results especially in the assessment of effective treatment. The use of the Reliable Change Index (RCI) may provide clear outcomes over time on any clinical and psychological evaluation in order to provide more reliable and desirable improvement.

This study performed a reliable assessment of 34 patients with depression who were presented to the clinical psychology department and they were assessed at baseline (T1, pre-ACT sessions) to 4 months later (T2, post-treatment) followed by follow up assessment (T3, feedback period and after 6 months of T2). Their depression symptoms decreased over time. This study used nine different measurements, which include BDI, PHQ-9, TMAS, GAD-7, KIMS, MAAS, WBSI, ATQ-F and ATQ-B. The RCI was used in this study to evaluate the differences in health improvement. The outcomes from the RCI SHOWED THAT THERE WERE a few individuals IN THE EXPERIMENTAL GROUP WHO had no reliable change between baseline and follow-up. Using standard deviation (SD) as a statistical method for THE calculation of results, it showed that a larger number of individuals had improvements reliably.

The differences between the results obtained from the control group and the experimental group are shown in table 1 and table 2 in the result section. All the nine different measurements (BDI, PHQ-9, TMAS, GAD-7, KIMS, MAAS, WBSI, ATQ-F and ATQ-B) showed reliable and significant improvement at the mean difference in T1 and T3 when compared with the control group.However, the use of all scales in the control group showed a non-reliable change in the level of depression of the patients who participated and were assessed in this study as shown in Table 9b. However, there were 2 individuals out of 17 who showed a reliable change in the control group when assessed with KIMS scale. That means the ACT is interesting, effective, and promising in the treatment of patients diagnosed with depression.

The outpatients, who participated in this study, were presented with various measurements for depression and anxiety as well as to ACT elements such as awareness, mindfulness and acceptance.. In this study, all participants showed clear and significant improvement in all measurement outcomes over time, where the effect sizes were large. It is more important to monitor all factors that may differentiate into various outcomes. RCI results show that ACT

was very effective as it showed significant improvement and reliable change with this approach of treatment. Investigation of this treatment model is fundamental for understanding the effects and their contribution to successful outcomes.

Moreover, this study has investigated the differences and changes in improving outcomes. We found that BDI, PHQ-9, TMAS, GAD-7, KIMS, MAAS, WBSI, ATQ-F and ATQ-B scales were strongly linked with improved treatment outcomes for ACT approach within the experimental group. However, it was the female participantsthe females who showed the higher level of improvement. The study found that patients with higher level of depression were females. ACT approach focuses mainly on modifying patient's thinking via more experiential processes and the results suggest that females respond better to this therapy than males.

At T1 and T3, (table 4.19.1) shows the significant changes in the improvement of patients' health who were assessed at BDI. The control group, however, did not improve as shown in table 4.19.2. The use of ACT approach affects not only the symptoms of depression during measurements but also affects the psychological and physiological symptoms as well. All of the findings showed participants in the experimental group Explain.The clinical significant improvement and recovery appeared at BDI post-measurement. In 2014, Lappalainen et al. showed similar results to this study providing the evidence the effect and the use of ACT as a model therapy for depressive symptoms were more efficient than other therapies even after cessation of this treatment model.

It was interesting to report that females were the most affected by depression and they showed respond to therapy by increasing and improving their health condition. In 1990, Allgood-Merten and Lewinsohn, revealed that females revealed similar results had more significant depression symptoms than males. The reasons for that, females were more aware

of their internal conditions, self-reflective, self-conscious, self-esteem, more stressful, had a negative body image, and had huge social anxiety compared to males. As previously reported, Allgood-Merten and Lewinsohn (1990) showed that Females had more significant stressful symptoms compared to males. They also report that older Females benefit more from treatment . However, over time , the level of benefit gained by gender and ages decrease. The interaction effect between gender and age can make fewer differences by time.

The assessment of 34 patients using PHQ-9 showed reliable changes within the experimental group and not reliable change within the control group as these results shown in tables 4.19.3 and 4.19.4. The change scores of patients were using TMAS, more than 50% showed reliable changes in the experimental group when compared with a control group that showed all not reliable changes as shown in table 4.19.5 and 4.19.6, respectively. The individual analyses of changes using GAD-7 at baseline and follow-up periods showed distinct differences between both Control and Experimental groups in accurately classifying normal change. At the baseline, the Experimental and control groups recorded a similar mean score. The feedback from the experimental group showed clear development and improvement when compared to the control group as shown in table 4.19.7 and 4.19.8. The assessment of the mean change score using KIMs was observed during the feedback analyses (T3) of individual patients. All results from this assessment showed significant differences in scale points with significant changes in pre-score to post-score evaluations. The table 4.19.9 and 4.19.10 displayed these changes in individual test results. The change in scores used the difference between Feedback (T3) of the individuals and their pre-session (T1) that was observed in their difference scores. These analyses were performed using MAAS measurement when RCI applied to all ages within both experimental and control groups. Tables 4.19.11and 4.19.12 showed an individual's change score within both experimental and control groups. The use of WBSI in the assessment of the change in scores reliable and

significant change scores with significant improvement when the RCI was higher. No improvement when the RCI was less than 7.59 as observed change in two participants within the experimental group. Tables 4.19.13 and 4.19.14 displayed the individuals change scores when compared to the RCI. The use of ATQ-F in detection all changes. All individual patients within the experimental group showed significant improvements and when RCI above 15.10. However, all individuals in the control group showed no significant improvement as shown in tables 4.19.15and 4.19.16 for all scores within both experimental and control groups. Another measurement to observe all changes was performed using the ATQ-B. All individual patients in the Experimental group showed significant improvements, whereas the control group showed no significant improvements in individuals scores (tables 4.19.17 and 4.19.18).

All these measures used the Cohen's D and the results were interpreted from experimental and control groups. This test was used to determine if any overlap when patients picked randomly. This will help to provide more favourable outcomes in the experimental group when it compared to the control group by determining the people who were needed to be treated. The ANOVA was used to determine all effect sizes after these analyses in order to assess the ACT treatment effect and any change for all measures. Interpretation of this treatment effects was assessed using Cohen's D in order to assess effect sizes, which was a very useful approach to examine all continuous measurement (T1, T2, and T3) on all score rates. KIMS and MAAS showed an increase in the mean figures with an improvement in the mental condition such as mindfulness and awareness. In order to assess the reliability of this comparison of measurements, Cohen's D score was used alongside a confidence interval (CI) so that the reliability of the comparison can be assessed. All measurements were significant to the effect sizes when CI was 0.5 (Table 11). This can confirm the usefulness and effectiveness of ACT in patients who were diagnosed with depression. Application of ACT approach in all the above measurements was extremely useful especially when we applied

the effect sizes to all other tests in order to assess their usefulness (Table 12). These tests include the Cohen's U_3 to measure non-overlap, Overlapping Coefficient (OVL), Probability of Superiority that is used to assess it and to assess the probability of superiority in order to test the chances that a person picked randomly from the treatment group has improved in mental condition when compared to a random pick of a person in the control group, and Number to be treated using ACT, that can help with sum up usefulness of ACT and its elements because this test was to estimate the number of patients who were in need for treatment (Magnusson, 2017). Therefore, *Cohen's* D can provide much interest useful assessment with these tests as the use of *Cohen's* D alone to assess this usefulness may affect examinations and assessments (Baguley, 2009).

In the systemic review, five factors of confidence that may affect the success of the ACT model were identified?. Table 4 shows the increased risk of depression as one of the important factor associated with the other factors leading to not to increase the risk of depression. Our meta-analysis showed hardly the simultaneous presence of multiple risk factors leading to the increase of depression risk. Table 4 recommended 5 factors that were used for comparisons of ACT studies versus control on primary outcome measures. All the findings of systemic review support growing efforts to use ACT as a psychotherapy for detection and treatment of people suffering from depression.

The education levels of participants in this study are a very important factor in depression knowledge and awareness. There were clear differences within studies performed in developed countries and Middle East countries regarding their depression literacy or mental health disorders. Therefore, the educational status of individual patients affects the score for depression such as answering the questions related to mental health problems. The huge efforts for the education of women were increased in the last few years as well as employment status is also another factor that can contribute to the scores of differences in

ACT approach within participants. It is important to consider that the results and the sample size were only generated from the referred outpatients of the University Hospital. In addition to education, marital status, and age the personal and cultural believes may also affect the score changes within patients with various mental health disorders and this may affect the interpretation of findings and outcomes. To our knowledge, significant low scores for depression literacy in divorced females than married females, widowed, and unemployed females. These are considered vulnerable groups who can face more psychological distress.

The effect of older participants in this study could reflect the educational condition. The need for education could help patients to respond to the treatment of psychopathology conditions using the ACT approach.

In order to explain that why depression and any other mental health problems are more common in female, was due to hormonal effectiveness through direct effects such as oestradiol and progesterone. These hormones act as neurotransmitter and neuroendocrine systems proteins, which are responsible for transition in females lives from childhood to puberty to adulthood. These stages are characterized and controlled by hormones, which are linked with all mood disturbances. Females are also more disappointed and upsetting in their life as well as facing more problems compared to men (Betty et al., 1990).

Early hardships and misfortunes may be more serious candidates for explaining high female rates of depression. The physical abuse can increase the female depression especially during childhood, low self-esteem, and hopelessness abuse in childhood leads to adult depression. The sexual abuse is worse than physical abuse, which is common in females. The abuse in childhood to depression status in female patients because this abuse enhances the cognitive changes to mediate the link with adult depression. This could explain the sex differences in the depression status.

Females always care about other events especially for those who are affecting by emotional issues. Females care about others more than themselves. In comparison to males, females are vulnerable to self-events than males. That is why females the most vulnerable group than males group, which they are in particular at risk for developing depression and psychological disorders (Betty et al., 1990). Other reason that why females are more at high risk of depression as they have less access to social support and more vulnerable. However, depressed females are more likely to use different plans to cope with the social support compared to males.

The systemic review that included in this study has investigated the effectiveness of ACT approach in the treatment of patients with depression symptoms, which was a meta-analysis of 14 different studies with a wide range of psychological disorders. As depression is one of the main mental health disorders with high risk increasing, patients and therapists should have to work together to find different ways to overcome all the obstacles associated with it. Therapists in this meta-analysis were used ACT model to treat various mental health issues including depression and anxiety. This systemic review of randomized controlled trials (RCTs) aimed to add a new model of treatment to the existing literature and save time and efforts, which may reduce the cost of treatment and provide a range of resources and articles that may help other researchers and investigators to conduct new studies and research in the similar area. This systemic review showed an assessment at the levels of effectiveness, evidence, interventions, and recommendations in order to maximize the quality of data in these trials. All findings from this systemic review, which conducted a meta-analysis of 14 RCTs, showed that ACT is much more effective than most of the control either during or after treatment until the follow-up period. The ACT is a promising treatment model suggesting that ACT effectiveness can cross cultures around the world, which is the most acceptable treatment. Therefore, the ACT model is a superior therapy model that placed in

front of the other treatment models of psychological issues such as anxiety and depression when compared to all standard approaches. The systemic review of this meta-analysis concluded that ACT model is more effective than any other standard treatments of patients who diagnosed with depression and anxiety. All the 14 articles provided evidence of the effectiveness of treatment, evaluation of results and interpretation, attrition of collected data from all participants who showed acceptability of this type of treatment.

In order to achieve our very important goals and assess the effectiveness and usefulness of ACT approach as well as to determine the factors that might predict the effectiveness of using ACT model, treatment of patients who were diagnosed with depression and referred to the psychiatric department, (Clinical Psychology Unit) at King Khalid University Hospital, KKUH in Saudi Arabia showed ACT model is significantly reduced depression in the short term as the session applied within 12 months starts from pre-session to feedback session.

The effectiveness of ACT approach was investigated on patients with depression symptoms and we found that there were reduction and improvement in depression symptoms as well as positive results and effects in reduction of anxiety within all participants who involved some students. The ACT reduces the job stress and emotional distress in individuals with emotional issues. This improvement after therapy of all participants across all measurements, which showed clear satisfaction with ACT treatment at high levels. ACT model was used in order to go through various steps that make participants accepting their issues and problems and this is why participants received less depression, anxiety, and stress symptoms, which made more improvement in their health. This method of treatment made a range of mental flexibility by making the ability of practical choices and avoiding any thoughts, feelings, and disturbing memories. The research suggests that the increase of psychological acceptance of thoughts and feelings is required and in urgent need to increase the effectiveness of all

practical efforts. The treatment of patients involved all action that controls unwanted experiences. These experiences should be accepted without any reactions in patients, which include emotional ambivalence, sadness, frustration, loss of hope, loneliness, embarrassment, guilt, shame, and anger. Therefore, all participants in the first step of treatment should learn to accept the all feelings without any judgement. The second step, the psychological knowledge of the experiences should be pointed. That means, all individuals are aware of and care of all the mental health conditions such as thoughts and behaviour at the time of treatment. The third step, all the individuals are taught to isolate themselves from any experience in order to act independently of the experience. The fourth step, all efforts should be used to reduce all focuses on personal stories about themselves. The fifth step is to help all participants to understand their essential personal values and identify these values in order to react with all responsibilities towards their goals and values including all subjective mental experiences. Thoughts are one of the subjective experiences that can participate in trauma, anxiety, depression, and any other type of concerns. Therefore, the last step is important for participants that accept their experiences and they react seriously with these experiences. The first step of accepting the feelings and emotions can reduce any negative thoughts and the patients become more responsible about their behaviour leading to more effective action instead of any negative reaction.

The role of the ACT model in the treatment of depression is more important and effective treatment for avoiding psychological trauma and increasing depression. That means all negative assessment of all experiences such as feelings, emotions, and thoughts and the shortage of willingness to experiences lead to control them and reduce all negative experiences within individual experiences.

However, the reason of using ACT treatment model is to reduce the increasing psychological symptoms via accepting the distress, unpleasant feelings, and mindfulness to neutralise the

involvement and recognise and identify the personal values that are related to behavioural aims. All participants are encouraged to communicate with their experiences and without avoidance towards their aims and accept their experiences either true or false when it is needed.

Our study has been looked at the effect of cultural differences on the success of ACT for patients who were diagnosed with depression. The ACT is based on Rational Frame Theory (RFT) to test the interactions of people with their social and natural surroundings or environments to provide an understanding of the language and verbal behaviour. Language is important in fighting against the aspects of their personal lives that support disorders because all patients can learn how to accept, build their values and commit to change their behaviour when required. ACT experts do not ask patients to accept every situation but accept some circumstances at some times (Mattaini, 1997). The ACT uses values that are verbally constructed to be globally desired life directions. In ACT, the values of the client are elaborated in major domains like work, citizenship, relationships etc. In addition, ACT asks is if a patient is willing to experience (Hayes, 2002). From our study, culture affects the way an individual interaction with the world**.** To help understand the cultural aspects include age, developmental and disabilities, religion and spiritual inclinations, ethnicity, social-economic position, sexual inclinations, indigenous heritage, nationality and (gender Hayes, 2002). Culture is dynamic and depends on context because of people interaction and changing the world. Therefore, it is to know when and where to apply general knowledge about cultural groups in understanding patients experience and ACT treatments (Sue, 1998). These different views based on their cultural backgrounds and have an effect on the ACT. Therefore, patients may develop greater and wide concerns of being vulnerable with respect to a therapist who may perceive the patients as others. Patients who suffer from depression may get consolation from their religion (Arjan et al., 2010). Muslims (Moroccan and Turkish) thought depression as a punishment by God. They also found that depressive

Muslims felt more of being abandoned by God than the Christians. Depressive Dutch patients are more likely to question God's presence than their Muslim counterparts. The research also shows that the Dutch get angrier with God than Muslims. Therefore, all these cultures may have a notable effect on how the Acceptance-Based Therapy is received by the groups, which may affect the effectiveness and success of the treatment. For example, the patient chose to be active in a church group as one of the patient's aims. This action extended the social network which then provided additional support when she was undergoing chemotherapy treatment. This is a good example of how religion as one of the cultural aspects can influence the ACT process application (Karekla & Constantinnou, 2010).

Researchers have conducted a systematic review on Interventions in order to explain the treatment of depressive Muslim Patients. Their results showed that many Muslims believe that depression may result from a supernatural phenomenon, which they call *jin.* Thirteen Muslims were registered after interviewing, six of them believed depression results from religious causes and that sickness results from God's action (Sarah et al., 2012). Because of these beliefs among Muslims, a diagnosis of depression can negatively affect a person's social relationships (Cinnirella and Loewenthal, 1999). Culture factors were included for more investigation and research. These factors are extended family, infertility, single women not chosen for marriage, the gender of their children, conflicts from the integration of eastern and western cultures, social support, contention in marriage and experience in racism and prejudice. However, Asian in the western area may have their depression symptoms that were not detected or diagnosed hence the ACT model will not be meaningful or useful since the ACT is not effective (Feryad and Ray 2004). In addition, how depression is expressed will determine the effectiveness of the treatment offered as compared with the Western world and Asian world. It is important to match the cultural characteristics of both the treatment and the patients (La Roche and Christopher, 2009).

All future studies involving culture and ACT need more understanding and attention to the basic problems and physical constraints of cross-cultural research. Ethnicity and religion are required and considered an important point that area within the suitable and applicable model of disease to prevent further category beliefs.

In order to increase motivation to a positive change although many obstacles and encourage individuals to achieve their aims in life. This encouragement will result in depression improvement in the field of psychology. Psychological flexibility and acceptance could improve and develop the health condition of participants in different fields and assist them to induce the meaning and value of life. This will also increase values to assist patients to improve the depression and any mental health disorders. Acceptance of experience as experience or acceptance of thoughts as thoughts, feelings as feelings, and emotions as emotions with no increase and decrease and as they are results in weakening the cognitive fusions. The acceptance of the internal feelings of individuals with depression and internal disturbance, allow them to help and develop their positive behavioural activities. This will give them more time to achieve and target their valuable activities. Therefore, depression symptoms will improve using ACT approach as an effective treatment model. Then, we can conclude that the ACT model is promising in the reduction of anxiety, depression, and any symptoms of mental health disorders.

Further to the above discussion regarding the aims of this study, we investigated the level of depression of 34 patients who were received ACT treatment model and assessed the effectiveness of this treatment in patients with depression symptoms. Again, the study showed significant change and improvement following ACT approach. The most affected were females and the most responded were female too. The ACT is associated with changes in the habits for more improvement, which is continued during the follow-up period. These ACT changes include changes into more positive attitudes towards the thoughts and feelings

of patients. That is why females were the most affected and the most responded as they flexible and accept changes. Acceptance and flexibility reduce all the internal conflict in their brain and they start to think about their values in lives. Patients who improved their mental health can move to effective problem-solving individuals and then all the worries could be broken. All worries improvement revealed a significant increase in individuals resulting in positive habit and attitudes. In addition, reduction in depression symptoms is associated with a reduction in anxiety levels until gradually disappears. ACT with good knowledge focuses on the acceptance of the symptoms of mental health disorders, which patients may stop trying to control the symptoms by their efforts. Thus, the concept of controlling symptoms is essential to patients' health improvement.

Addiction for patients who are addicted to some medications or alcohol showed difficulty in changing their attitude. Different studies showed a significant correlation between mental health disorders and substance abuse especially alcohol and some medications abuse. Always abusers focus on reducing physical and psychological symptoms by using different medications in order to control their symptoms because they are rarely referring to ACT approach for their treatment. From patients experiences in the treatment of mental health disorders, more patients focus on medications or pharmacotherapy or any other type of psychotherapy in order to treat signs and symptoms in Iran. Therefore, patients need more time to make the ACT more effective as a psychotherapy in Iran. Thus, still ACT approach lacks the effectiveness on reducing anxiety and depression and any interpretation of patients results need more cautions, which can affect the effectiveness of the ACT. However, the commitment that does not deal with feelings, thoughts, and memories is linked to acceptance of the symptoms and reported in most Iranian patients especially adductors (Saedy et al., 2013).

It is interesting that various studies have shown the effectiveness of ACT as an intervention based on the mindfulness in depression treatment, suicidal behaviour, or self-injury. The use of the ACT model can help depressant patients for quick treatment because the patients can reflect their internal unpleasant experiences and they cannot able to control them. This can result in a positive effect of these experiences on patients' life. Depressant patients believe in their depression reasons and respond to their depressed moods, which associated with their effort to find all the causes of their depression leading them to negative thoughts and negative unknown future. The goal of using ACT is to put depressant patients in positive thoughts with positive life activities by using mindfulness skills. The most important depression symptom is the low self-esteem that makes them verbal labels to their thoughts, feelings, and somatic senses leading to sense as stressful and uncomfortable experiences. Patients underwent an ACT approach assessed and educated themselves. Depressant patients focus on their problems and their inabilities and they do not look at their future. Therefore, these patients treated using the ACT to help them explore and clarify their values and activities instead of using control strategies. After completing the ACT treatment sessions, patients can not repeat their learned skills, talking about new issues and problems, practising their mindfulness experiences, or asking for any help to solve their problems. Therefore, patients are stronger and rely on their own mind and apply what they have learned in ACT therapy period. However, ACT short-term follow-up may reduce the efficacy of ACT and may not make any changes in patients with mental health disorders. It is important to maintain the therapy period longer as patients need to benefit from ACT treatment and increase the effectiveness of this type of therapy. Therefore, treatment sessions affect the stability in the commitments therapy. Thus, short sessions of patient treatment are unacceptable to accept commitment approach and make changes in patients' social communication. This may lead to a lack of social support keeping the patient away from focusing on themselves and their own values. Long-term session treatment usually observes

in patients with drug dependence disorders and make them very familiar with the ACT and with full use of mindfulness in many different sites of their lives (Saedy et al., 2015).

In order to achieve the 5th aim in this study, we have to determine whether the application and outcomes of the ACT in Saudi Arabia are different from other settings. In this study, we found that the role of avoidance in depression plays an important role in many psychological disorders. ACT supports patients with stress and depression symptoms such as avoidance. A similar study performed by Ottenbreit and Dobson in 2004 linked between avoidance and depression and they found great acceptance from patients. They also found that the ACT was more useful and successful. Avoidance adds to the problem more than solving because of avoiding people with no sensitivity to others (Hayes & Ju, 1998). Other researchers found that the ACT effectiveness on mental disorders and ACT proved that stress management, psychotic symptoms mathematics anxiety, substance-abusing, chronic smokers, and social anxiety were much improved (Hayes et al., 2006). Various studies used all measures of depression and found that ACT-based intervention reduced severe depression and borderline personality disorder (Gratz & Gunderson, 2006). The use of ACT model is based on human language and cognition conceptualizes depression like a psychological inflexibility. There are six steps that are used to contribute to psychological inflexibility and clinical depression, which are fusion, experiential avoidance, attachment to a conceptualized self, living in the past or future, excessive rule-following, and lack of valued action (Zettel,2006). ACT depends on the assumption that we can change a patient's reflection to a thought or feel as it shown by Hayes et al., 1999). Therefore, one of the roles of ACT model that is used to teach patients how to become more accepting of stressful thinking and feelings as controlling unwanted experiences and thoughts is often not effective (Hayes, 2004). ACT plays an important role and supports all essentials problems in depression by using experiential avoidance. Therefore, ACT always aims to improve communication with experience and create more flexibility associated with valued objectives because they should be considered

in depression (Kanter, Baruch & Gaynor, 2006). Thus, ACT is an effective therapy as a cognitive therapy that used to improve and reduce moderate to severe levels of depression symptoms (Forman et al., 2007).

Gender and age differences are major factors to have a significant effect on depression within various groups. Gender differences in adult depression can be seen in adolescents. For example; girls are less to develop depression symptoms than adolescent boys (Cohen P, et al., 1993). However, adolescent girls have been found to be significantly more likely to experience low and moderate levels of depression than adolescent boys Allgood-Merten B, Lewinsohn PM, (1990). A similar result was found in Egypt Alexandria that adolescent boys were significantly less likely to experience depression than their female counterparts. This study also reported that girls are more likely to get depression symptoms than the boys. However, there were non-significant results in Oman showed that boys in Oman are more likely to experience depressive symptom than the Omani girls. These results showed age and gender differences may vary from country to country, which was depending on the conditions in a specific situation as depression could be derived from environmental stressors such as war (Afifi, 2006*)*.

ACT is a behavioural and cognitive intervention able to acceptance and mindfulness processes, commitment, and behaviour change processes in order to make psychological flexibility (Hayes et al., 2013). Acceptance is an essential aspect in ACT core processes of commitment therapy. These processes include experiential exercise and metaphor in order to assist patients to talk verbally about the meaning of their lives and their values (values) and commitment in behaviour changes (committed action). Acceptance of thoughts, feelings, and sensations is used to enable the process of values and committed actions. Therefore, ACT therapists encourage patients to identify and reduce unhelpful psychological issues and problems and develop more acceptance that makes positive values (Bloy et al.,

2011). When ACT applied to anxiety disorders, it is hard with anxiety and avoidance to restrict and control unwanted personal issues such as thoughts, images of things, and internal sensation. The decrease in anxiety can help patients to achieve their aims with more flexibility as ACT showed significant effects on anxiety disorders with positive effects on mental health improvements. The ACT is effective for many disorders. These include anxiety disorders, depression, pain, trichotillomania, psychotic disorders, cancer, drug abuse and the management of epilepsy and diabetes.

Therefore, the results show that ACT is an effective recent model that able to provide patients in coping with mental health disorders and can decrease all psychological effects such as depression and anxiety.

6.2 Strengths and Limitations

This study has a wide number of strengths. The design of this study included all factors that affect the effectiveness of therapy and generalized to 34 outpatient psychiatry department who were referred the King Khalid University Hospital in Saudi Arabia. 17 patients (7 males and 10 females) were diagnosed with depression and intervention of ACT and 17 were used as controls without any intervention of ACT. All patients seeking treatment at the outpatient department were referred to the clinic where this study was conducted and invited all patients to participate. Interestingly, this study was performed without any type of bias during assessment and investigation. The period of this study was fairly short, which was 10-12 months period and performed on patients who were diagnosed with depression for at least 5 years and the sample selection was randomly assigned. The study involved a wide range of adult age between 17 to 59 years old and all participants speak the same language, which is the Arabic language. All patients who were participated in this study were a citizen of Saudi Arabia. The setting of this study was highly applied to various samples. The use of ACT approach in psychiatric patients was consistent and last for 12 sessions with one session

weekly and it was also not manual treatment such as using medication. Thus, ACT sessions are more effective than medications used in many clinical trials centres Twohig et al., 2007; Saedy et al., 2015). ACT sessions were applied as a normal interview with patients who were received Cognitive Behavioral Therapy (CBT) sessions in our psychiatric department. This will allow all therapists to individualize the treatment for each patient. Although the main goal of this study was to assess the effectiveness of ACT approach in the treatment of patients with depression in Saudi Arabia, the study went with great confidence across all findings and outcomes because all participants were randomly assigned to a short period study and my adherence as an expert and trained therapist was assessed and monitored. Therefore, expert and trained therapists may also affect the therapy outcomes and participate in the integrity of results.

However, this study had some limitations although the effectiveness of ACT approach. These limitations included the number of sample size, which was 34 participants, which is quite a small sample size and may affect the generalizability of the results. Because these results must be replicated to recruit a large number in the future study. The follow up was given for a limited period of time to study these participants. Therefore, it is unknown that the treatment effect will be similar when maintained for a long-term period, which may affect the symptoms improve.

The study did not use the online mindfulness-based intervention (MBI), which is very useful in decreasing the psychological symptoms and all mental health problems. This type of intervention is cost-effective and no need to investigate individuals by using face-to-face forms.

Education and ages of participants may affect depression knowledge and young educated individuals may attitude better than the older and less educated individuals' patients. Of

course, this is going to change by time and attitudes, which is linked to changes in education levels and decrease in general attitude as well as being away from those vulnerable to and suffering from mental health disorders such as depression and anxiety. Generally, there is publication bias and lack of published articles that provide and conduct studies about depression assessment or depression literate within Saudi Arabia or Internationally. Most of the articles available in the literature are linked to depressive disorders, mental health, anxiety, and other psychiatric disorders. The mental health literacy is required because poor health is associated with poor health literacy and all stress and psychological disorders. They found that also all women suffer more from all types of psychological illness symptoms and this may increase the rates of depression in females in all eastern Mediterranean regions and North African countries. We can add that all educated participants can receive information about depression symptoms from the internet, TV, Radio, newspaper, magazines, books. However, participants with low levels of education cannot receive any information about depression symptoms and they cannot aware of this mental health disorder and any other mental health disorders. The treatment period should continue longer and replicate the results. Although all these limitations followed this approach of treatment application, still ACT model is an effective treatment that can be applied to patients with depression and anxiety.

6.3Future Work

Different designs that can be used to evaluate different mechanisms of therapy in a wide range of research studies are required. In addition to more evaluation of various methods that performed by the ACT may address all symptoms, quality of life, values, and cognition as well as to other mediators are in real need. The need for more investigation of training and supervision is urgently needed in order to train therapists in ACT effectively. However, experienced therapists may add better results than junior therapists or student therapists. More research is required to get out that ACT approach is the best suitable for individuals

who delivered face-to-face treatment and may benefit from this model of treatment much more than manual medications and without any efforts. This study requires further studies with larger sample sizes in order to clarify the results of this study and then analyse all aspects of the ACT on anxiety, depression, and mental health disorders, which is quietly recommended to achieve all our goals.

References

Abrahamson, L.Y., Seligman, M.E.P., Teasdale, J.D., 1978. Learned helplessness in humans: critique and reformulation. *Journal of Abnormal Psychology 87*, 49–74.

Abramson, L. Y., Alloy, L. B., Hankin, B. L., Haeffel, G. J., MacCoon, D., & Gibb, B. E. (2002). Cognitive vulnerability-stress models of depression in a self-regulatory and psychological context. In I. H. Gotlib & C. L. Hammen (Eds.), Handbook of depression and its treatment (pp. 268 – 294). New York, NY: The Guilford Press.

Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness depression: a theorybased subtype of depression. *Psychological Bulletin, 96*, 358 – 372.

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology, 87*, 49-74.

Afifi, M. (2006). Depression in adolescents: gender differences in Oman and Egypt. *Eastern Mediterranean Health Journal, 12*, 61-71

al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment

al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment

Alansari, B. (2005). Beck Depression Inventory (Bdi-Ii) Items Characteristics Among Undergraduate Students Of Nineteen Islamic Countries. *Social Behavior and Personality: an international journal*, *33*(7), pp.675-684

Allgood-Merton, B., Lewinsohn, E M., & Hops, H. (1990). Sex differences and adolescent depression. *Journal of Abnormal Psychology, 99*, 55-63.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

American Psychological Association. (1996). Violence and the family (Report of the APA Presidential Task Force on Violence in the Family). Washington, DC: The American Psychological Association.

An experiential approach to behavior change. New York: Guilford.

An experiential approach to behavior change. New York: Guilford.

and cognition (pp. 103-117). New York: Plenum.

and commitment therapy: Model, processes and outcomes. *Behaviour Research and*

and commitment therapy: Model, processes and outcomes. *Behaviour Research and*

and cornorbidity of 12-month *DSM-IV* disorders in the National Cornorbidity

and instructional control (pp. 153-190). New York: Plenum.

and nonruminators. *Cognitive Therapy and Research, 24,* 699-711.

and Preventive Psychology: Current Scientific Perspectives, 5, 47-57.

and Psychiatry, 23, 56-6l.

and the psychology of mental control. New York: Guilford.

and worry in a non-clinical population. *Behaviour Research and Therapy, 43,*

Annett, J.M. & Leslie, J.C. (1995). Stimulus equivalence classes involving olfactory stimuli. The Psychological Record, 45, 439-450.

Antony, Martin; Orsillo, Susan; Roemer, Lizabeth (2001). *Practitioner's guide to empirically based measures of anxiety*. Kluwer Academic/Plenum Publishers.

anxiety/depressive symptoms. *JournaL of AbnormaL Psychology, 109*, 504-511

Armstrong, K. (2001). *Buddha*. New York: Penguin.

Arthur freeman, Karen M. Simon, Larry E. Beutler and Hal Arkowitz, (1989) Comprehensive Handbook of Cognitive Therapy. Plenum Press, New York, U.S.A.

Ascher, L. M. (1989). Paradoxical intention and recursive anxiety. In L. M. Ascher (Ed.), Therapeutic paradox (pp. 93–136). New York: Guilford.

Averill, J. R. (1992). The structural bases of emotional behavior: A metatheoretical analysis. *Review of Personality and Social Psychology, 13*, 1–24.

Aziz, N., 1999. Cultural sensitization and clinical guidelines for mental health professionals working with Afghan immigrant/refugee women in the US. Unpublished Thesis. United States International University, Nairobi, Kenya.

B. Roche (Eds.), *Relational frame theory: A post-Skinnerian account of human language*

Bach, P. and Hayes, S. (2002). The use of acceptance and commitment therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*, 70(5), pp.1129-1139

Bach, P., & Hayes, S. C. (2002). The use of Acceptance and Commitment therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 70,* 1129-1139.

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice, 10,* 125-143.

Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and

Baer, R. A., Smith, G. T. & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky Inventory of Mindfulness Skills. *Assessment, 11*(3), 191-206.

Baer, R., Smith, G. and Allen, K. (2004). Assessment of Mindfulness by Self-Report: The Kentucky Inventory of Mindfulness Skills. *Assessment*, *11*(3), pp.191-206.

Baguley, T. (2009). Standardized or simple effect size: What should be reported? *British Journal of Psychology, 100*, 603-617.

Bandura, A. (1969). Principles of Behaviour Modification. New York: Holt, Rinehart & Winston.

Barlow, D. H. (2002). Anxiety and its disorders (2nd ed.). New York: Guilford.

Barlow, D. H., & Craske, M. G. (1994). Mastery of your anxiety and panic II. Albany, NY: Graywind Publications Incorporated.

Barnes, D. (1994). Stimulus equivalence and relational frame theory. *The Psychological Record, 44*, 91–124.

Barnes, D., Lawlor, H., Smeets, P. M., & Roche, B. (1996). Stimulus equivalence and academic self-concept among mildly mentally handicapped and nonhandicapped children. *The Psychological Record, 46*, 87-107.

Barnes-Holmes, D. (2000). Behavioral pragmatism: No place for reality and truth. *The Behavior Analyst, 23*, 191-202.

Barnes-Holmes, D., Barnes-Holmes, Y., & Cullinan, V. (2000). Relational frame theory and Skinner's Verbal Behavior: A possible synthesis. The Behavior Analyst, 23, 69-84.

Barnes-Holmes, D., O'Hora, D., Roche, B., Hayes, S. C; Bissett, R. T., & Lyddy, F.

Barnes-Holmes, Yvonne Barnes-Holmes,Paul M. Smeets,Veronica Cullinan, and Geraldine (2004) Rational Frame Theory and Stimulus Equivalence: Conceptual and Procedural Issues Dermot Leader National University of Ireland, Maynooth, Ireland; Leiden University, The Neetherlands, *National Ireland International Journal of psychology and Psychological Therapy*, Vol. 4, No 2, pp. 181-214

Batten, S. V. & Hayes, S. C. (2005). Acceptance and commitment therapy in the treatment of comorbid substance abuse and post-traumatic stress disorder. *Clinical Case Studies, 4*(3), pp. 246-262.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review*, 97, 90-113.

Bebbington, P. et al. (1981).Epidemiology of mental disorders in Camberwell. *Psychological Medicine, 11*, 561–579

Beck, A. T (1976). Cognitive therapy and the emotional disorders. New York: International

Beck, A. T, Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.*

Beck, A. T., Rush, A. J., Shaw, B. F. & Emery, G. (1979). *Cognitive therapy of depression*. Guilford Press: New York

Beck, A. T., Rush, A. J., Shaw, B. F. & Emery, G. (1979). *Cognitive Therapy of Depression.* Guilford Press: New York.

Beck, A. T., Steer, R.A., & Garbin, M.G. (1988) Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*(1), 77-100.

Beck, A.T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961) An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.

Beck, AT (1996). *Beck Depression Inventory - II*. San Antonio, TX: The Psychological Corporation.

Beck,J. S. (1995). *Cognitive therapy: Basics and beyond.* New York: Guilford.
Behavioural Science, London.

Behavioural Science, London.

Beliappa, J. (1991). *Illness or distress? Alternative models of mental health.* London: Confederation of Indian Organisations

Bernal, G., Jimenez-Chafey, M., & Domenech Rodriguez, M. (2009). Cultural adaptations of evidence based treatments for ethno cultural youth. *Professional Psychology: Research and Practice, 40*, 361–368

Betrus, P. A., Elmore, S. K., & Hamilton, R. A. (1995). Women and somatisation: Unrecognised depression. *Health Care for Women International, 16*(4), 287–297.

Bhatt, A., Tomenson, B., & Benjamin, S. (1988). Transcultural patterns of somatisation in primary care: A preliminary report. *Journal of Psychosomatic Research, 33*, 671–681.

Bhugra, D., & Cochrane, R. (2001). *Psychiatry in multi cultural Britain*. London: Gaskell.

Bieling, P. J., & Kuyken, W. (2003). Is cognitive case formulation science or science fiction? *Clinical Psychology: Science and Practice, 10,* 52-69.

Biglan, A., & Hayes, S. C. (1996). Should the behavioral sciences become more pragmatic?

Blackledge,]. T, & Ciarrochi,]. (2005**).** *Initial validation of the Personal Values*

Blackledge, J. T., & Hayes, S. C. (2001). Emotion regulation in acceptance and commitment therapy. *Journal of Clinical Psychology, 57*, 243–255.

Bland, J. and Altman, D. (1999). Measuring agreement in method comparison studies. *Statistical Methods in Medical Research*, 8(2), pp.135-160

Block, J. A. (2002). *Acceptance or change of private experiences: A comparative analysis in*

Block, J. A., & Wulfert, E. (2000). *Acceptance and change: Treating socially anxious college*

Block-Lerner, J., Salters-Pedneault, K., & Tull, M. (2005). Assessing mindfulness and experiential acceptance. Attempts to capture inherently elusive phenomena. In S. Orsillo & L. Roemer (Eds.), Acceptance and mindfulness-based approaches to anxiety. Conceptualization and treatment (pp. 71–99). New York: Springer

Bloor R. (1983) "What do your mean by depression?'-A study of the relationship between antidepressive activity and personal concepts of depression. Behav. Res. Ther. 21, 43-50.

Board, F., Wadeson, R., Persky, H., (1957). Depressive affect and endocrine function: blood levels of adrenal cortex and thyroid hormones in patients suffering from depressive reactions. Arch. Neurol. *Psychiatry 78*, 612–620.

Bond, F. W., & Bruce, D. (2000). Mediators of change in emotion-focused and problem-focused worksite stress management interventions. *Journal of Occupational Health Psychology, 5,* 156-163.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Orcutt, H. K., Waltz, T., et al. (2009). Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological flexibility and acceptance. Unpublished manuscript.

Bond, F. W., Hayes, S. C., Baer, R., Carpenter, K., Guenole, N., Orcutt, H., Waltz, T., & Zettle, R. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire II: a revised measure of psychological flexibility and experiential avoidance. *Behavior Therapy, 42*, 676–688

Braam, A. W., Schrier, A. C., Tuinebreijer, W. C., Beekman, A. T. F., Dekker, J. J. M., & de Wit, M. A. S.(2010). Religious coping and depression in multicultural Amsterdam: A comparison between native Dutch citizens and Turkish, Moroccan and Surinamese/Antillean migrants. *Journal of Affective Disorders*, *125*(1), 269–278. doi: 10.1016/j.jad.2010.02.116.

Brown, G. and Harris, T. (1978). *Social origins of depression: A study of* p*sychiatric disorders in women.* London: Simon & Schuster

Brown, K. W. and Ryan R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology. 84,* 822-848

Brown, K. W., & Ryan, R. M (2003). The Benefits of Being Present: Mindfulness and Its Role in Psychological Well-Being. *Journal of Personality and Social Psychology, Vol. 84, No. 4*, 822–848

Brown, K. W., & Ryan, R. M. (2004). Perils and promise in defining and measuring mindfulness: Observations from experience.Clinical Psychology: Science and Practice, 11, 242-248

Brown, K.W. & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848.

Burke P, Elliott M (1999) . Depression in pediatric chronic illness: a diasthesis-stress model. *Psychosomatics*, *40*, 243-249

Cadie, M., Nye, F. J., & Storey, P. (1976). Anxiety and depression after infectious mononucleosis. *The British Journal of Psychiatry, 128,* 559-561

Carmody, J. & Baer, R. (2008). Relationships between mindfulness practice and levels of mindfulness, medical and psychological symptoms and well-being in a mindfulness-based stress reduction program, *Journal of Behavioral Medicine, 31,* 23 – 33

Carmody, J., Crawford, S., & Churchill, L. (2006). A pilot study of mindfulness-based stress reduction for hot flashes. *Menopause, 13***,** 760–769

Cartwright, A., & Anderson, R. (1981). *General practice revisited*. London: Tavistock

Center for Applide Research in Mental Health and Addiction(CARMHA). (2007).

Cognitive Behavioral Therapy: Core Information Document. Vancouver: Harbour Center,

Faculty of Health Sciences. http://www.carmha.ca/publications/cognitive-behavioural-

therapy-cbt-core-information,22/10/2010

Chen, S. Y., Jordan, C., & Thompson, S. (2006). The effect of Cognitive Behavioral Therapy (CBT) on depression: the role of problem-solving appraisal. *Research on Social Work Practice, 16,* 500–510.

Chew-Graham, C. et al. (2002). South Asian women, psychological distress and self harm:

Lessons for primary caretrusts. *Health and Social Care in the Community, 10*(5), 339–347

Chichester, England: Wiley.

Choo, E. and Wedley, W. (2004). A common framework for deriving preference values from pairwise comparison matrices. *Computers & Operations Research, 31*(6), pp.893-908.

Ciarrochi, J. Bilich, L., & Godsel, C. (2010). Psychological flexibility as a mechanism of change in Acceptance and Commitment Therapy. In Ruth Baer's (Ed), Assessing Mindfulness and Acceptance: Illuminating the Processes of Change.(pp. 51-76). New Harbinger Publications, Inc.: Oakland, CA.

Cinnirella, M., Loewenthal, K.M., 1999. Religious and ethnic group influences on beliefs about mental illness: a qualitative interview study. *Psychology and Psychotherapy*: *Theory, Research and Practice 72* (4), 505–524.

Cioffi, D., & Holloway, J. (1993). Delayed costs of suppressed pain. *Journal of Personality and Social Psychology, 64,* 274–282.

Clarke, A., Tsertsvadze, A., Court, R., Hundt, G., Clar, C. and Sutcliffe, P. (2014). Clinical effectiveness of manual therapy for the management of musculoskeletal and non-musculoskeletal conditions: systematic review and update of UK evidence report. *Chiropractic & Manual Therapies*, 22(1), p.12

Clinical Psychology: Science and Practice, 10(2). 144-156.

Cochrane, R., & Sashidharan, S. P. (1996). Mental health and ethnic minorities: A review of literature and implications for services. In W. Ahmed, T. Sheldon, & O. Stuart (Eds.), Ethnicity and health (pp. 105–126). York: NHS Centre for Reviews and Dissemination (Report 5).

cognitive-behavioral research and therapy (pp. 73-118). New York: Academic Press.

Cohen P, Cohen J, Kasen S, et al (1993). An epidemiological study of disorders in late childhood and adolescence--I. Age- and gender-specific prevalence. J Child Psychol Psychiatry, Sep; 34(6):851–867.

Cohen, M. (1977). Action theory. *Philosophical Books, 18*, 115-117.

college students with public speaking anxiety. Doctoral dissertation, University at Albany,

Comino, E. S., Silove, D., Manicavasagar, V., Harris, E., & Harris, M. F. (2001). Agreement in symptoms of anxiety and depression between patients and GPs: Influence of ethnicity. *Family Practitioner, 18*(1), 71–77.

Core therapy processes, intervention strategies, and therapist competencies. In S. C.

Cornwell, J., & Hull, S. (1998). Do GPs prescribe anti-depressants differently for South Asian patients? *Family Practitioner, 1*, 16–18.

Craighead, W. E., & Craighead, L. W. (2003). Behavioral and cognitive-behavioral psychotherapy. In: I. B. Weiner (series Ed.); G. Stricker & T. A. Widiger (vol. Eds.), Handbook of Psychology: vol. 8. Clinical Psychology (pp. 279–299). New York: Wiley

Craske, M. G., Rowe, M., Lewin, M., & Noriego-Dimitri, R. (1997). Interoceptive exposure versus breathing retraining within cognitive-behavioural therapy for panic disorder with agoraphobia. *British Journal of Clinical Psychology, 36*, 85–99.

Craske, M. G., Street, L., & Barlow, D. H. (1989). Instructions to focus upon or distract from internal cues during exposure treatment of agoraphobic avoidance. *Behaviour Research and Therapy, 27*, 663–672.

Craske, M., Niles, A., Burklund, L., Wolitzky-Taylor, K., Vilardaga, J., Arch, J., Saxbe, D. and Lieberman, M. (2014). Randomized controlled trial of cognitive behavioral therapy and acceptance and commitment therapy for social phobia: Outcomes and moderators. *Journal of Consulting and Clinical Psychology*, 82(6), pp.1034-1048

Currer, C. (1984). Pathan women in Bradford – Factors affecting mental health with particular reference to the effects of racism. *International Journal of Social Psychology, 30*, 72–76.

Dahl, J., Wilson, K. G., & Nilsson, A. (2004). Acceptance and Commitment Therapy and the treatment of persons at risk for long-term disability resulting from stress and pain symptoms: A preliminary randomized trial. *Behavior Therapy, 35*, 785-801.

Dahl, J., Wilson, K. G., Luciano, C., & Hayes, S. C. (2005). *Acceptance and Commitment Therapy for Chronic Pain.* Reno, NV: Context Press

Davis, R. N., & Nolen-Hoekserna, S. (2000**).** Cognitive inflexibility among ruminators

De Maat, S., Dekker, J., Schoevers, R., & de Jonghe, F. (2006). Relative efficacy of psychotherapy and pharmacotherapy in the treatment of depression: A metaanalysis. *Psychotherapy Research, 16*, 566–578.

DeGenova, M. K., Patton, D. M.. Jurich, J. A., & MacDermid, S. M. (1994). Ways of coping among HIV infected individuals. *Journal of Social Psychology, 134*, 655-663.

Deikman, A. J. (1982). *The observing self*. Boston: Beacon Press

Deitz, S. M. (1985, May). Understanding the mental idioms in children's language. Paper presented at the annual convention of the Association for Behavior Analysis, Columbus, OH

DeRubeis, R. J., Hollon, S. D., Amsterdam, J. D., Shelton, R. C., Young, P. R., Salomon, R. M., et al. (2005). Cognitive therapy vs. medications in the treatment of moderate to severe depression. *Archives of General Psychiatry, 62*, 409 – 416

Didonna, F. (Ed.) (2008). *Clinical Handbook of Mindfulness.* New York: Springer

Dobson, K. S. (1989). A meta-analysis of the efficacy of cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 57*, 414-419.

Dozois, D. J. A. (2003). The psychometric characteristics of the Hamilton Depression Inventory. Journal of Personality Assessment, 80, 31– 40

Dozois, D. J. A., CCovin, R., and Brinker, J. K. (2003). Normative data on cognitive measures of depression. *Journal of Consulting & Clinical Psychology. 71*, 71-80

Ducasse, D., René, E., Béziat, S., Guillaume, S., Courtet, P. and Olié, E. (2014). Acceptance and Commitment Therapy for Management of Suicidal Patients: A Pilot Study. *Psychotherapy and Psychosomatics*, 83(6), pp.374-376

Dymond, S., & Barnes, D. (1994). A transfer of self-discrimination response functions through equivalence relations. *Journal of the Experimental Analysis of Behavior, 62*, 251-267.

Dymond, S., & Barnes, D. (1995). A transformation of self-discrimination response functions in accordance with the arbitrarily applicable relations of sameness, more than, and less than. *Journal of the Experimental Analysis of Behavior, 64*(2), 163-184.

Dymond, S., & Barnes, D. (1996). A transformation of self discrimination response functions in accordance with the arbitrarily applicable relations of sameness, more than, and less than: Erratum. *Journal of the Experimental Analysis of Behavior, 66*(3), 348-360.

Eifert, G. H., & Heffner, M. (2003). The effects of acceptance versus control contexts on avoidance of panic-related symptoms. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 293-312.

Eifert, GH., Forsyth JP, Arch J, Espejo E. & Langer D. (2009). Acceptance and Commitment Therapy for anxiety disorders: Three case studies exemplifying a unified treatment protocol. *Cognitive and Behavioral Practice, 16*, 368-385.

Ellenberger F Henri (1970) Discovery of the Unconscious: the History and Evolution of Dynamic Psychiatry. Library of Congress; USA

empirical review. *Clinical Psychology: Science and Practice, 10, 125-143.*

et al. (1996). A component analysis of cognitive-behavioral treatment of depression.

Experiential avoidance and behavioral disorders: A functional dimensional approach

Experiential avoidance and behavioral disorders: A functional dimensional approach

Eyding, D., Lelgemann, M., Grouven, U., Harter, M., Kromp, M., Kaiser, T., Kerekes, M., Gerken, M. and Wieseler, B. (2010). Reboxetine for acute treatment of major depression: systematic review and meta-analysis of published and unpublished placebo and selective serotonin reuptake inhibitor controlled trials. *BMJ*, 341(oct12 1), pp.c4737-c4737

Fatemilihin, I. (1989). *A cross-cultural study of parents attitudes and beliefs about mental handicap.* MSc Dissertation in Clinical Psychology

Fazil, Q. and Cochrane, R. (1998, August).*The cultural dimension in a causal model of depression.* Fourteenth International Congress of Cross Cultural Psychology, Bellingham, WA

Fenton, S. and Sadiq, A. (1990).*The sorrows in my heart – South Asian women in the U.K. and depression.* Paper presented at the British Sociological Association conference, Edinburgh, UK

Fergusson, D., Doucette, S., Glass, K., Shapiro, S., Healy, D., Hebert, P. and Hutton, B. (2006). Association Between Suicide Attempts and Selective Serotonin Reuptake Inhibitors: Systematic Review of Randomised Controlled Trials. *The Journal of Urology*, 175(4), p.1433

Fernando, S. (1991) *Health, Race and Culture* (London: Macmillan – now Palgrave).

Ferster, C. B. (1973). A functional analysis of depression. *American Psychologist, 28,*

Ferster, C. B. (1973). A functional analysis of depression. *American Psychologist, 28,*

Fitzpatrick, R., Davey, C., Buxton, M. and Jones, D. (2017). Evaluating patient-based outcome measures for use in clinical trials. *US National Library of Medicine National Institutes of Health*, 2(14), pp.1-74

Flaxman, P. E. (2006). Acceptance-based and traditional cognitive-behavioural stress management in the workplace: Investigating the mediators and moderators of change. Unpublished Doctor of Philosophy thesis, Goldsmiths College, University of London, London.

Fletcher, L., & Hayes, S. C. (2005). Relational Frame Theory, Acceptance and Commitment Therapy, and a functional analytic definition of mindfulness. *Journal of Rational-Emotive and Cognitive-Behavioral Therapy, 23*(4), 315-336.

Fletcher, L., & Hayes, S. C. (2005). Relational Frame Theory, Acceptance and Commitment Therapy, and a functional analytic definition of mindfulness. *Journal of Rational-Emotive and Cognitive-Behavioral Therapy, 23*(4), 315-336

Forman E. & Herbert J., (2006) Acceptance and Commitment Therapy: Similarities and Differences with Cognitive Therapy (Part 1) Scientist-Practitioner.com.

Forman, E. M., & Herbert, J. D. (2009). New directions in cognitive behavior therapy: Acceptance-based therapies. In W. O'Donohue & J. E. Fisher (Eds.), Cognitive behavior therapy: Applying empirically supported treatment in your practice (2nd ed., pp. 4-16). Hoboken, NJ: Wiley.

Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial of acceptance and commitment therapy and cognitive therapy for anxiety and depression. Behavior Mod

Forman, E. M., Herbert, J. D., Moitra, F., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial and acceptance and commitment therapy and cognitive therapy for anxiety and depression. *Behavior Modification, 31*, 772−799.

Forman, E., & Herbert, J. D. (2007**).** Comparing and contrasting cognitive behavior therapy and acceptance and commitment therapy: Theory, technology, effectiveness, and mechanisms. Manuscript submitted for publication

Forman, E., & Herbert, J. D. (2007). Comparing and contrasting cognitive behavior therapy, acceptance, and commitment therapy: Theory, technology, effectiveness, and mechanisms. Manuscript submitted for publication

Forsyth, J. P., & Eifert, G. H. (1996). Systemic alarms in fear conditioning I: A reappraisal of what is being conditioned. *Behavior Therapy, 27*, 441-462

Frackiewicz, E., Sramek, J. J., & Cutler, N. R. (2000).Gender differences in depression and antidepressant pharmacokinetics and adverse affects. *Annals of Pharmacotherapy, 34*, 80–88

framework for cognitive-behavioral therapy. In P. C. Kendall (Ed.), *Advances in*

Francisco: W. H. Freeman.

Freeman, A., & Greenwood, V. B. (1987). *Cognitive therapy: Applications in psychiatric and medical settings*. New York: Human Sciences Press.

Friman, P. C., Hayes, S. C., & Wilson, K. G. (1998). Why behavior analysts should study emotion: The example of anxiety. *Journal of Applied Behavior Analysis, 31*, 137-156.

Friman, P. C., Hayes, S. C., & Wilson, K. G. (1998). Why behavior analysts should study emotion: The example of anxiety. *Journal of Applied Behavior Analysis, 31*, 137-156.

Friman, P. C., Hayes, S. C., & Wilson, K. G. (1998). Why behavior analysts should study emotion: The example of anxiety. *Journal of Applied Behavior Analysis, 31*, 137–156.

Furukawa, T., & Leucht, S. (2011). How to obtain NNT from Cohen's d: Comparison of two methods. *PLoS One,* 6(4), e19070

Gaffan, E. A., Tsaousis, I., & Kemp-Wheeler, S. M. (1995). Research allegiance and meta-analysis: The case of cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 63,* 966 – 980.

Gaudiano, B. (2009). Öst's (2008) methodological comparison of clinical trials of acceptance and commitment therapy versus cognitive behavior therapy: Matching Apples with Oranges?. *Behaviour Research and Therapy*, 47(12), pp.1066-1070

Gaudiano, B. A., Dalrymple, K. L., & Herbert, J. D. (November, 2002). *Future directions in cognitive behaviour therapy for psychotic disorders: Incorporating acceptance and mindfulness*. Paper presented at the meeting of the Association for Advancement of Behaviour Therapy, Reno, NV.

GAUDIANO, B., BUSCH, A., WENZE, S., NOWLAN, K., EPSTEIN-LUBOW, G. and MILLER, I. (2015). Acceptance-based Behavior Therapy for Depression With Psychosis. *Journal of Psychiatric Practice*, 21(5), pp.320-333

Geiser, D. S. (1992). *A comparison of acceptance-focused and control-focused psychological treatments in a chronic pain treatment center*. Doctoral dissertation. University of Nevada, Reno.

Germer, C., Siegel, R., & Fulton, P. (Eds.) (2005). *Mindfulness and psychotherapy*. New York: Guilford Press.

Gielen, U. P., Fish, J. M., & Draguns, J. G. (2004). Culture, therapy & healing. Mahwah, NJ: Laurence Erlbaum Associates, Inc.

Gifford, E. (2002). *Acceptance and Commitment Therapy versus Nicotine Replacement Therapy as methods of smoking cessation.* Doctoral dissertation. University of Nevada, Reno NV.

González Rodríguez, M., Avero Delgado, P., Rovella, A.T. and Cubas Leon, R. (2008). "Structural Validity and Reliability of the Spanish Version of the White Bear Suppression Inventory (WBSI) in a Sample of the General Spanish Population" *The Spanish Journal of Psychology*, *11*(2):650-659.

Gratz, K. L., & Gunderson, J. G. (2006). Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with Borderline Personality Disorder. *Behavior Therapy, 37,* 25-35.

Greco, L. A., & Hayes, S. C. (2008).*Acceptance & mindfulness treatments for children & adolescents: A practitioner's guide*. Reno, NV: Context Press

Greenwood, P., Hussain, F., & Burns, T. (2000). Asian inpatient and carer views of mental health – Asian views of mental health care. *Journal of Mental Health, 9*(4), 397–408.

Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348–362.

Groth-Marnat G. (1990). *The handbook of psychological assessment* (2nd ed.). New York: John Wiley & Sons.

Gutierrez, O., Luciano, C., Rodriguez, M. & Fink, B. C. (2004). Comparison between an acceptance-based and a cognitive-control-based protocol for coping with pain. *Behavior Therapy, 35,* 767-784.

Haggerty Jr JJ, Stern RA, Mason GA, Beckwith J, Morey CE, Prange Jr AJ (1993). Subclinical hypothyroidism: a modifiable risk factor for depression? *Am J Psychiatry, 150*: 508–510.

Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery,*

Hanh, T. N. (1976). *Miracle of mindfulness*. Boston: Beacon

Harris, R. (2009). *ACT Made Simple: An Easy-To-Read Primer on Acceptance and Commitment Therapy.* Oakland, CA: New Harbinger.

Harris, R. (2009). *ACT Made Simple: An Easy-To-Read Primer on Acceptance and Commitment Therapy.* Oakland, CA: New Harbinger.

Hayes & K. D. Strosahl (Eds.), *A practical guide to acceptance and commitment therapy*

Hayes S. C. and Chad Shenk, C. (2004) Operationalizing Mindfulness without Unnecessary Attachments. *Clinical Psychology: Science and Practic,11,*249-254

Hayes S. C., Levin M., Plumb J., Boulanger J., Pistorello J., (2013). Acceptance and commitment therapy and contextual behavioral science: Examining the progress of a distinctive model of behavioral and cognitive therapy. *Behavior Therapy,44*(2),180–98

Hayes, L.J., Tilley, K.L., & Hayes, S.C. (1988). Extending equivalence class membership to gustatory stimuli. The Psychological Record, 38, 473-482.

Hayes, S. C. (1984). Making sense of spirituality. *Behaviorism. 12,* 99-110.

Hayes, S. C. (1987**).** A contextual approach to therapeutic change. **In** N. S. Jacobson

Hayes, S. C. (1987). A contextual approach to therapeutic change. **In** N. S. Jacobson

Hayes, S. C. (1993). Analytic goals and the varieties of scientific contextualism. In S. C. Hayes, L. J. Hayes, H. W. Reese, & T. R. Sarbin (Eds.), *Varieties of scientific contextualism* (pp. 11-27). Reno, NV: Context Press.

Hayes, S. C. (2002). Acceptance, mindfulness, and science. *Clinical Psychology: Science and Practice, 9*(1), 101-106.

Hayes, S. C. (2002). Acceptance, mindfulness, and science.*Clinical Psychology: Science and Practice, 9*(1), 101-106.

Hayes, S. C. (2004) Acceptance & Commitment Therapy, Relational Frame Theory, and the Third Wave of Behavioural and Cognitive Therapies. *Behaviour Therapy, 35,* 639-665.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. Behavior Therapy Volume 35, Issue 4, Autumn 2004, Pages 639-665.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the

Hayes, S. C., & Brownstein, A. J. (1986). Mentalism, behavior-behavior relations, and a behavior-analytic view of the purposes of science. *The Behavior Analyst, 9*(2), 175-190

Hayes, S. C., & Gifford, E. V. (1997). The trouble with language: experiential avoidance, rules, and the nature of verbal events. *American Psychological Society, 8*, 170-173

Hayes, S. c., & Hayes, L. J. (1989). The verbal action of the listener as a basis for rulegovernance. **In** S. C. Hayes (Ed.), *Rule-governed behavior: Cognition, contingencies,*

Hayes, S. c., & Hayes, L. J. (1992). Some clinical implications of contextualistic behaviorism: The example of cognition. *Behavior Therapy, 23*, 225-249.

Hayes, S. C., & Ju, W. (1998). The applied implications of rule-governed behavior. In W. T. O'Donohue (Ed.), *Learning and behavior therapy* (pp. 374-391). Needham Heights, MA, US: Allyn & Bacon.

Hayes, S. c., & Smith, S. (2005). *Get out of your mind and into your life.* Oakland, CA:

Hayes, S. C., & Wilson, K. G. (1993). Some applied implications of a contemporary behavior-analytic account of verbal events. *The Behavior Analyst, 16*, 283- 301.

Hayes, S. C., & Wilson, K. G. (2003). Mindfulness: Method and process. *Clinical Psychology: Science and Practice, 10*, 161–165

Hayes, S. C., & Wilson, K. G• (1993). Some applied implications of a contemporary behavior analytic account of verbal events. *The Behavior Analyst, 16*, 238-301.

Hayes, S. c., Barnes-Holmes, D., & Roche, B. (Eds.). (2001). *Relational frame theory: A post Skinnerian account of human language and cognition.* New York: Plenum.

Hayes, S. C., Bissett, R. T., Korn, Z., Zettle, R. D., Rosenfarb, I. S., Cooper, L. D., et al. (1999**).** The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record, 49,* 33-47.

Hayes, S. C., Bissett, R. T., Korn, Z., Zettle, R. D., Rosenfarb, I. S., Cooper, L. D., et al. (1999). The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record, 49,* 33-47.

Hayes, S. C., Bissett, R., Korn, Z., Zettle, R. D., Rosenfarb, I., Cooper, L., & Grundt, A. (1999). The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record, 49*(1), 33-47.

Hayes, S. C., Follette, V. M., & Linehan, M. (2004). *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition*. New York: Guilford Press.

Hayes, S. C., Levin, M., Plumb, J., Boulanger, J., & Pistorello, J. (in press). Acceptance and Commitment Therapy and contextual behavioral science: Examining the progress of a distinctive model of behavioral and cognitive therapy. *Behavior Therapy*.

Hayes, S. c., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006**).** Acceptance

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour Research and Therapy, 44*, 1-25.

Hayes, S. c., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance

Hayes, S. C., Strosahl, K. & Wilson, K. G. (1999). *Acceptance and Commitment Therapy: An experiential approach to behavior change.* New York: Guilford Press.

Hayes, S. c., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy:*

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford.

Hayes, S. c., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change.* New York: Guilford.

Hayes, S. c., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy:*

Hayes, S. C., Strosahl, K. D., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., Polusny, M., A., Dykstra, T. A., Batten, S. V., Bergan, J., Stewart, S. H., Zvolensky, M. J., Eifert, G. H., Bond, F. W., Forsyth J. P., Karekla, M., & McCurry, S. M. (2004). Measuring experiential avoidance: A preliminary test of a working model.*The Psychological Record, 54*, 553-578.

Hayes, S. c., Strosahl. K. D., Bunting, K., Twohig, M., & Wilson, K. G. (2004). What is acceptance and commitment therapy? **In** S. C. Hayes & K. D. Strosahl (Eds.), *A practical guide to acceptance and commitment therapy* (pp. 3-29). New York: Springer.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Bissett, R., Batten, S., Piasecki, M., et al. (2002). *The use of Acceptance and Commitment Therapy and 12-Step Facilitation in the treatment of polysubstance abusing heroin addicts on methadone maintenance: A randomized controlled trial.* Paper presented at the meeting of the Association for Behaviour Analysis, Toronto.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*, 1152-1168.

Hayes, S. C., Wilson, K. W., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology*, *64*(6), 1152-1168.

Hayes, S. C., Wilson, K. W., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152-1168.

Hayes, S. c., Zettle, R. D., & Rosenfarb, I. (1989). Rule following. In S. C. Hayes

Hayes, S., Luoma, J., Bond, F., Masuda, A. and Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes and outcomes. *Behaviour Research and Therapy*, 44(1), pp.1-25

Hayes, S., Wilson, K., Gifford, E., Bissett, R., Piasecki, M., Batten, S., Byrd, M. and Gregg, J. (2004). A Preliminary trial of twelve-step facilitation and acceptance and commitment therapy with polysubstance-abusing methadone-maintained opiate addicts. *Behavior Therapy*, 35(4), pp.667-688

Hayes, S.C., & Gifford, E.V. (1997). The trouble with language: Experiential avoidance, rules, and the nature of verbal events. *Psychological Science, 8*, 170–173

Hayes, S.C., Strosahl, K.D., & Wilson, K.G. (1999). Acceptance and commitment therapy: *An experiential approach to behaviour change*. New York: Guilford Press

Hayes, S.C.; Barnes-Holmes, D. & Roche, B. (Eds.). (2001). *Relational Frame Theory: A Post-Skinnerian account of human language and cognition*. New York: Plenum Press.

Hayes. S. c., Wilson, K. G., Gifford, E. v., Follette, V. M., & Strosahl, K. (1996).

Hayes. S. c., Wilson, K. G., Gifford, E. v., Follette, V. M., & Strosahl, K. (1996).

Hays, P. A. (2008). *Addressing cultural complexities in practice: Assessment, diagnosis, and therapy* (2nd ed.). Washington, DC: American Psychological Association.

Heffner, M., & Eifert, G. H. (2004). The act-on-anorexia workbook. Oakland, CA: New Harbinger

Heffner, M., Greco, L. A., & Eifert, G. H. (2003). Pretend you are a turtle: Children's responses to metaphorical and literal relaxation instructions. *Child Family and Behavior Therapy, 25*, 19–33.

Heide, F. J., & Borkovec, T. D. (1983). Relaxation-induced anxiety: Paradoxical anxiety enhancement due to relaxation training. *Journal of Consulting and Clinical Psychology, 51*, 171–182.

Helms, J. E., & Talleyrand, R. M. (1997). Race is not ethnicity. *American Psychologist, 52*(11), 1246-1247.

Higgins, R. L., & Berglas, S. (1990). The maintenance and treatment of self-handicapping: From risk-taking to face-saving-and back. In R. L. Higgins, C. R. Snyder, & S. Berglas (Eds.), *Self-handicapping: The paradox that isn't* (pp. 187-238). New York: Plenum.

Hiroto, D. S. (1974). Locus of control and learned helplessness. *Journal of Experimental Psychology, 102*(2), 187-193

Hofmann, S. &Reinecke, M. (2010). *Cognitive-behavioral therapy with adults: A guide to empirically-informed assessment and intervention*. Cambridge, UK: Cambridge University Press.

Hofmann, S. G., & Asmundson, G. J. (2008). Acceptance and mindfulness-based therapy: new wave or old hat? *Clinical Psychology Review, 28*, 1-16.

Hojat, M., Shapurian, R., and Mehrya, A.H., (1986). Psychometric properties of a Persian version of the short form of the Beck Depression Inventory for Iranian college students, *Psychological Reports*, 59(1), 331-338.

Hollon, S. D., & Beck, A. T. (1979). Cognitive therapy of depression. In P. C. Kendall

Hooper N, Stewart I, Duffy C, Freegard G, McHugh L (2012). Modelling the direct and indirect effects of thought suppression on personal choice. *Journal of Contextual Behavioral Science, 1*, 73–82.

Hussain, F. and Cochrane, R. (2002). Depression in South Asian women: Asian women's beliefs on causes and cures. *Mental Health, Religion and Culture, 6* (1), 287–311

Hussain, F. and Cochrane, R. (2003). Living with depression: Coping strategies used by South Asian women suffering from depression. *Mental Health, Religion and Culture, 5*(3), 21–44

Hussain, F.A., & Cochrane, R. (2004). Depression in South Asian women living in the UK: A review of the literature with implications for service provision. *Transcultural Psychiatry, 41*(2), 253–270.

implications of a mindfulness meditation-based stress reduction intervention in the

Ineichen, B. (1987). The mental health of Asians in Britain: A research note. *New*

Community, 14, 136–141

Interdisciplinary Journal, 12 (01), 241-261

Ireland, S. J., McMahon, R. C., Malow, R. M., & Kouzekanani, K. (1994). Coping style as a predictor of relapse to cocaine abuse. In L. S. Harris (Ed.), Problems of drug dependence. 1993: Proceedings of the 55th Annual Scientific Meeting (National Institute of Drug Abuse Monograph Series No. 141, p. 158). Washington, DC: U. S. Government Printing Office.

Jacobson, N. S., Dobson, K. S., Truax, P. A., Addis, M. E., Koerner, K., Gollan, J. K.,

Jacobson, N. S., Martell, C. R., & Dimidjian, S. (2001). Behavioral activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and*

Jenkinson, J., Roberts, S., Dennehy, S. and Tellegen, P. (1996). Validation of the Snijders-Oomen Nonverbal Intelligence Test - Revised 2½-7 for Australian Children with Disabilities. *Journal of Psychoeducational Assessment*, 14(3), pp.276-286

Jesse H. Wright., Monica. R. Basco., &, Michael E. Thase (2006). *Learning Cognitive-Behaviour Therapy: An Illustrated Guide.* Arlington, American Psychiatric Association Publishing

Jessica, F., Tom H., Allison M., (2010); The effect of suppressing and not accepting emotions on depressive symptoms: Is suppression different for men and women

Jessor, R., & Hammond, K. R. (1957). Construct validity and the Taylor Anxiety Scale. *Psychological Bulletin, 54*(3), 161-170.

Johanson G J (2006) A Survey of the Use of Mindfulness in Psychotherapy. *Annals of the American Psychotherapy Association, 9(2),* 15-24.

Johnson, C. and Sidman, M. (1993). Conditional discrimination and equivalence relations: Control by negative stimuli. *Journal of the Experimental Analysis of Behavior, vol. 59 (2),* 333-347.

Joiner, T., & Coyne, J. C. (1999). *The interactional nature of depression: Advances in interpersonal approaches*. Washington, DC: American Psychological Association.

Joiner, T., & Coyne,J. (1999). The interactional nature of depression: Advances in interpersonal approach. Washington,DC: American Psychological Association

Joseph, S. (2001). *Psychopatology and Therapeutic Approaches: An Introduction.*

Malaysia: PALGRAVE.

Journal of Consulting and Clinical Psychology, 64, 295-304.

Juni, P., Altman, D. and Egger, M. (2001). Systematic reviews in health care: Assessing the quality of controlled clinical trials. *BMJ*, 323(7303), pp.42-46

Kabar-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness

Kabat-Zinn,]. (1994). *Wherever you go, there you are: Mindfub1es~ meditation in everyday*

Kabat-Zinn, J. (1982). An outpatient program in behavioural medicine for chronic pain patients based on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *General Hospital Psychiatry, 4*, 33-47.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York: Dell.

Kabat-Zinn, J. (1990). *Full Catastrophe Living: Using the Wisdom of your Mind to Face Stress, Pain and Illness.* New York: Dell Publishing

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future.

Kabat-Zinn, J., Massion, A. 0., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., et

Kabat-Zinn, J., Massion, A. 0., Kristeller, J., Peterson, L. G., Fletcher, K. E., Pbert, L., et

Kanter, J. W., Baruch, D. E., & Gaynor, S. T. (2006). Acceptance and commitment therapy and behavioral activation for the treatment of depression: Description and comparison. *Behavior Analyst, 29*, 161−185.

Kanter, J. W., Baruch, D. E., & Gaynor, S. T. (2006). Acceptance and commitment therapy and behavioral activation for the treatment of depression: Description and comparison. *Behavior Analyst, 29* (2), 161-185

Karanicolas, P., Farrokhyar, F. and Bhandari, M. (2010). Blinding: Who, what, when, why, how?. *US National Library of Medicine National Institutes of Health*, 5(53), pp.345–348

Karekla, M., & Constantinou, M. (2010). Religious coping and cancer: Proposing an Acceptance and Commitment Therapy approach. *Cognitive and Behavioral Practice, 17*(4), 371-381.

Karekla, M., Forsyth, J. P., & Kelly, M. M. (2004). Emotional avoidance and panciogenic responding to a biological challenge procedure. *Behavior Therapy, 35*, 725-746.

Katz, M. (2011). *Multivariable analysis*. Cambridge: Cambridge University Press

Kausler, D., Trapp, E. and Brewer, C. (1959). Time score as a criterion measure on the taylor manifest anxiety scale. *Journal of Clinical Psychology, 15*(1), pp.51-54.

Kazantzis, N.; L'Abate, L.(2007). Introduction and historical overview. *In: Kazantzis, N.; L'Abate, L., editors. Handbook of Homework Assignments in Psychotherapy: Research, Practice, and Prevention* (p. 1-15). New York: Springer Science+Business Media.

Keith Hawton, Paul. M. Salkovskis, Joan Kirk, and David M. Clark (1995), Cognitive Behaviour Therapy for Psychiatric Problems: A Practical Guide.

Kendall, E. (1954). The validity of Taylor's Manifest Anxiety Scale. J Consult Psychol, 18, 429–432.

Kessler, R. C. (2002). Epidemiology of depression. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (pp. 23-42). New York, NY, US: Guilford Press.

Kessler, R. c., Chiu, W. T, Demler, 0., & Waiters, E. E. (2805). Prevalence, severity,

Kessler, R. C., McGonagle, K. A., Zhoa, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H. U., & Kendler, K. S. (1994). *Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States*. Results from the National Comorbidity Survey. Archives of General Psychiatry, 51, 8 – 19.

King, ann M, Gerald C. Davison, Jhon M. Neale, Sheri, L. Johnson (2007) abnormal psychology, jhon wiley & sons, Inc.

King, N. S. (1997) Mild head injury: neuropathology, sequelae, measurement and recovery: a literature sequelae, measurement and recovery: a literature review. review. *British Journal of Clinical Psychology British Journal of Clinical Psychology, 36*, 161-184

Klinger, E. (1975). Consequences of commitment to disengagement from incentives.

Kocalevent, R., Hinz, A. and Brähler, E. (2013). Standardization of the depression screener Patient Health Questionnaire (PHQ-9) in the general population. *General Hospital Psychiatry, 35*(5), pp.551-555.

Kohlenberg, R., and Tsai, M. (1991). *Functional analytic psychotherapy: Creating intense and curative therapeutic relationships*. New York: Plenum Press

Koster, E. H. W., Rassin, E., Crombez, G., & Naring, G. W. B. (2003). The paradoxical effects of suppressing anxious thoughts during imminent threat. *Behaviour Research and Therapy, 41*, 1113-1120.

Kroenke K, and Spitzer RL, (2002). "PHQ-9" *Psychiatric Annals, 32*, 509-521

Kroenke, K., Spitzer, R.L., Williams, J.B. et al., (2007). Anxiety disorders in primary care: Prevalence, impairment, comorbidity, and detection. *Ann Intern Med*., 146(5):317-25

La Roche, M. and Lustig, K. (2013). Being Mindful About the Assessment of Culture: A Cultural Analysis of Culturally Adapted Acceptance-Based Behavior Therapy Approaches. *Cognitive and Behavioral Practice, 20*(1), 60-63

La Roche, M., & Christopher, M. (2009). Changing paradigms from empirically supported treatment to evidence-based practice: A cultural perspective. *Professional Psychology: Research and Practice, 40*, 396–402

Langer, E. J. (1989). *Mindfulness*. Reading, MA, US: Addison-Wesley/Addison Wesley Longman

Lappalainen, R., Lehtonen, T., Skarp, E., Taubert, E., Ojanen, M. and Hayes, S. (2007). The Impact of CBT and ACT Models Using Psychology Trainee Therapists. *Behavior Modification*, 31(4), pp.488-511

Latzman RD, Masuda A (2013) Examining mindfulness and psychological inflexibility within the framework of big five personality. *Personal Individ Differ, 55*,129–134

Leahy, R. L. (1996). *Cognitive therapy: Basic principles and applications*. Northvale, NJ: Jason Aronson.

Learning Cognitive-Behaviour Therapy: An Illustrated Guide by Jesse H. Wright (Author), Monica Ramirez Basco (Author), Michael E. Thase (Author) 2006.

Leech, N., Barrett, K. and Morgan, G. (2005). *SPSS for intermediate statistics*. Mahwah, N.J.: Lawrence Erlbaum.

Leitenberg, H., Greenwald, E., & Cado, S. (1992). A retrospective study of long-term methods of coping with having been sexually abused during childhood. *Child Abuse and Neglect, 16*, 399–407.

Lepine J.P., (2002) The epidemiology of anxiety disorders: prevalence and societal costs. *J Clin Psychiatry, 63*(Suppl 14):4–8.

Levitt, J. T., Brown, T. A., Orsillo, S. M., & Barlow, D. H. (2004). The effects of acceptance versus suppression of emotion on subjective and psychophysiological response to carbon dioxide challenge in patients with panic disorder. *Behavior Therapy, 35*, 747-766.

Lewinsohn, P. M., Antonuccio, D. O., Steinmetz, J., & Teri, L. (1984). The Coping With Depression course: A psychoeducational intervention for unipolar depression. Eugene, OR: Castalia Press.

Lewinsohn, P. M., Clarke, G. N., Hops, H., & Andrews, J. (1990). Cognitive-behavioral treatment for depressed adolescents. *Behavior Therapy, 21*, 385-401.

Lewinsohn, P. M., Youngren, M. A., & Grosscup, S. J. (1979). Reinforcement and depression. In R. A. Depue (Ed.), The psychobiology of the depressive disorders: Implications for the effects of stress (pp. 291-315). New York: Academic Press.

life. New York: Hyperion.

Linehan, M. M. (1993). *Cognitive-behavioral therapy of borderline personality disorder*. New York: Guilford.

Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry, 48,* 1060–1064

Lipkens, R., Hayes, S. C., & Hayes, L. J. (1993). Longitudinal Study of the Development of Derived Relations in an Infant. *Journal of Experimental Child Psychology, 56,* 201-239.

López, F.J.C. (2000). Acceptance and commitment therapy (ACT) in panic disorder with agoraphobia: A case study. *Psychology in Spain, Vol. 4. No 1, 120-128.*

Löwe, B., Decker, O., Müller, S., Brähler, E., Schellberg, D., Herzog, W. and Herzberg, P. (2008). Validation and Standardization of the Generalized Anxiety Disorder Screener (GAD-7) in the General Population. *Medical Care, 46*(3), pp.266-274

Lundgren T, Dahl J, Melin L, Kies B.(2006) Evaluation of acceptance and commitment therapy for drug refractory epilepsy: a randomized controlled trial in South Africa--a pilot study.

Lundgren, T., Dahl, J., Melin, L. and Kies, B. (2006). Evaluation of Acceptance and Commitment Therapy for Drug Refractory Epilepsy: A Randomized Controlled Trial in South Africa-A Pilot Study. Epilepsia, 47(12), pp.2173-2179

Luoma, J. & Hayes, S. C. (in press). Cognitive defusion. In W. T. O'Donohue, J. E. Fisher, & S. C. Hayes(Eds.), Empirically supported techniques of cognitive behavior therapy: A step by step guide for clinicians. New York: Wiley

Luoma, J. B., Hayes, S. C., & Walser, R. D. (2007). Learning ACT: An acceptance and commitment therapy skills training manual for therapists. Oakland, CA: New Harbinger.

M. Zachary Rosenthal, Jennifer S. Cheavens, Carl W. Lejuez and Thomas R. Lynch (2005). Thoughts suppression mediates the relationship between negative effects and borderline personality disorder symptoms. *Behaviour Research and Therapy, 43,* pp.1173-1185.

Magnusson, K. (2017). *Interpreting Cohen's d effect size*. Retrieved July 21, 2017, from http://rpsychologist.com/d3/cohend/

Malik, R. (1998). Counseling and ancient belief systems. *Race and cultural education in counseling*. British Association of Counseling

Manos, R. C., Kanter, J. W., & Busch, A. M. (2010). A critical review of assessment strategies to measure the behavioral activation model of depression. *Clinical Psychology Review, 30*, 547–561. doi:10.1016/j.cpr.2010.03.008.

Marcks, B. A., & Woods, D. W. (2005). A comparison of thought suppression to an acceptance-based technique in the management of personal intrusive thoughts: A controlled evaluation. *Behaviour Research and Therapy, 43*, 433-445.

Marlatt, G. A., & Kristeller, J. L. (1999). Mindfulness and meditation. In W. R. Miller (Ed.), Integrating spirituality into treatment (pp. 67–84). Washington, DC:American Psychological Association

Marshall, S., & Turnbull, J. (1996). *Cognitive behaviour therapy*. London: Bailliere Tindall.

Martell, C. R., Addis, M. E., & Jacobson, N. S. (2001). *Depression in context: Strategies for guided action.* New York: Norton

Martin, J. R. (1997). Mindfulness: A proposed common factor. *Journal of Psychotherapy Integration, 7*, 291–312

Marx, B. P., & Sloan, D. M. (2004). Peritraumatic dissociation and experiential avoidance as predictors of posttraumatic stress symptomatology. *Behaviour Research and Therapy, 43*, 569–583.

Masuda, A., & Tully, E. C. (2012). The role of mindfulness and psychological flexibility in somatization, depression, anxiety, and general psychological distress in a nonclinical college sample. Journal of Evidence-Based Complementary & Alternative Medicine, 17(1), 66–71

Masuda, A., & Tully, E. C. (2012). The role of mindfulness and psychological flexibility in somatization, depression, anxiety, and general psychological distress in a nonclinical college sample. *Journal of Evidence-Based Complementary Alternative Medicine, 17*(1), 66-71

Masuda, A., Price, M., & Latzman, R. D. (2012). Mindfulness moderates the relationship between disordered eating cognitions and disordered eating behaviors in a non-clinical college sample. *Journal of Psychopathology and Behavioral Assessment, 34*, 107–115

Masuda, Akihiko; Hayes, S. C.; Sackett, C. F.; and Twohig, M. P., (2004). Cognitive defusion and self-relevant negative thoughts: *Examining the impact of a ninety year old technique*. Psychology Faculty Publications. Paper 81.

Mattaini, M. A. (1997). Clinical Practice with Individuals. Washington, DC: National Association of Social Workers Press. 195 pp.

Mayer, J. D., Chabot, H. F., & Carlsmith, K. (1997). Conation, affect, and cognition in personality. In G. Matthews (Ed.), Cognitive science perspectives on personality and emotion (pp. 31–63). Amsterdam: Elsevier

McCracken, L., Sato, A. and Taylor, G. (2013). A Trial of a Brief Group-Based Form of Acceptance and Commitment Therapy (ACT) for Chronic Pain in General Practice: Pilot Outcome and Process Results. The Journal of Pain, 14(11), pp.1398-1406

McCrone P, Dhanasiri S, Patel A, Knapp M, Lawton-Smith S. 2008. *Paying the Price: The Cost of Mental Health Care in England to 2026. London: King's Fund.* http://www.kingsfund.org.uk/ publications/the kings fund publications/paying the price.html

McCurry, S. M., & Hayes, S. C. (1992). Clinical and experimental perspectives on metaphorical talk. *Clinical Psychology Review, 12,* 763–785.

McDowell, I. & Newell, C. (1996). Measuring Health: A Guide to Rating Scales and Questionnaires. (2nd ed.). New York: Oxford University Press.

McDowell, J. J. (1982). The importance of Hernstein's mathematical statement of the law of effect for behavior therapy. *American Psychologist, 37,* 771 – 779

McFadyen, M. (1989). The cognitive invalidation approach to panic. In R. Baker (Ed.). Panic disorder: Theory, research and therapy (pp. 281-300). Chichester: John Wiley and Sons.

McGough, J., & Faraone, S. (2009). Estimating the size of treatment effects: Moving beyond P values. *Psychiatry (Edgmont), 6*(10), 21–29.

McHugh, L., Barnes-Holmes, Y., & Barnes-Holmes, D. (2004). Perspective-taking as relational responding: A developmental profile. *The Psychological Record, 54,* 115-144.

McMillen, J. C., North, C. S., & Smith, E. M. (2000). What parts of PTSD are normal: Intrusion, avoidance, or arousal? Data from the Northridge, California, earthquake. *Journal of Traumatic Stress, 13,* 57–75.

McMullen J, Barnes-Holmes D, Barnes-Holmes Y, Stewart I, Luciano C, & Cochrane A (2008). Acceptance versus distraction: brief instructions, metaphors and exercises in increasing tolerance for self-delivered electric shocks. *Behavior Research and Therapy, 46,* 122-129.

meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8,*

Melnyk, B. and Fineout-Overholt, E. (2015). *Evidence-based practice in nursing and healthcare*. Philadelphia: Wolters Kluwer/Lippincott Williams et Wilkins

Mental Health Foundation (2010). Mindfulness Report. London: Mental Health Foundation.

Messant, P. (1992). Working with Bengali families in the east end of London. *Journal of Family Therapy, 14*, 287–304

Michael, D. Spiegler., & David, C. Guevremont. (2009). *Contemporary Behaviour Therapy*, 5th Edition Wadsworth, cengage Learning, USA.

Miller, J. J., Fletcher, K., & Kabat-Zinn, J. (1995). Three-year follow-up and clinical

Mineka, S., Watson, D., & Clark, L. A. (1998). Comorbidity of anxiety and unipolar

Mitchell, S.A., & Black, M.J. (1995). *Freud and Beyond: a history of modern psychoanalytic thought*. Basic Books, New York.

Mohammed, Y., 2003. Islamic psychotherapy: Isfahani's treatment of anger, fear and sorrow. *Journal of AkAdah and Islamic Thought 4*, 87–102.

mood disorders. *Annual Review of Psychology, 49*, 377-412 .

Moorey, S. (1996). Cognitive behaviour therapy for whom? *Advances in Psychological Treatment, 2*, 17–23.

Muller, K., & Cohen, J. (1989). Statistical power analysis for the behavioral sciences.

Technometrics, 31(4), 499.

Mumford, D. et al. (1996). Stress and psychiatric disorder in the Hindu Khush: A community survey of mountain villages in Chitral, Pakistan. *British Journal of Psychiatry, 168*, 299–307

Murakami K, Miyake Y, Sasaki S, Tanaka K, Arakawa M. (2010). Dietary folate, riboflavin, vitamin B-6, and vitamin B-12 and depressive symptoms in early adolescence: the Ryukyus Child Health Study. *Psychosom Med; 72*,763–768.

Najmi S, Riemann BC, & Wegner DM (2009). Managing unwanted intrusive thoughts in obsessivecompulsive disorder: relative effectiveness of suppression, focused distraction, and acceptance. *Behaviour Research and Therapy, 47*, 494-503.

Nazroo, J. Y. (1997). *Ethnicity and mental health* (Report No. 842).London: Policy Studies Institute

Neale, M. (2007). Mindfulness meditation: An integration of perspectives from Buddhism, science and clinical psychology. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 67* (10-b), 60-70

Neese, R. M. (2000). Is depression an adaptation? *Archives of General Psychiatry, 57,*

New Harbinger.

New South Wales, Australia.

New York: Guilford.

Nolen-Hoeksema, S. (1991). Responses to Depression and Their Effects on the Duration of Depressive Episodes. *Journal of Abnormal Psychology, 100*, 569-582.

Nolen-Hoeksema, S. (2000). The role of rumination in depressive disorders and mixed

Nolen-Hoeksema, S., & Morrow, J. (1991). A prospective study of depression and posttraumatic stress symptoms after a natural disaster: The 1989 Loma Prieta earthquake. *Journal of Personality and Social Psychology, 61*, 115-121.

Nolen-Hoekserna, S. (1990). *Sex differences in depression.* Stanford, CA: Stanford University Press.

O'Connor, R. (2011). *Undoing Depression: What Therapy Doesn't Teach You and*

Medication Can't Give You. London: Souvenir Press

Oei, T. P. S., Bullbeck, K., & Campbell, J. (2006). Cognitive changes during group CBT treatment for depression. *Journal of Affective Disorders, 92*, 231–241.

of anxiety disorders. *The American Journal of Psychiatry, 149*, 936-943.

of anxiety disorders. *The American Journal of Psychiatry, 149*, 936-943.

Orsillo SM & Batten SV (2005). Acceptance and Commitment Therapy in the treatment of Posttraumatic Stress Disorder. *Behavior Modification, 29*, 95-129.

Ottenbreit, N. D., & Dobson, K. S. (2004). Avoidance and depression: The construction of the Cognitive–Behavioral Avoidance Scale. *Behaviour Research and Therapy, 42*, 293–313.

Otto, M. W. (2000). Stories and metaphors in cognitive behavior therapy. *Cognitive and Behavioral Practice, 7*, 435–447.

P¨ossel, P. (2011). Can Beck's theory of depression and the Response Style Theory be integrated? *Journal of Counseling Psychology, 58*, 618–629.

Papageorgiou, C., & Wells, A. (2003). An empirical test of a clinical metacognitive model of rumination and depression. *Cognitive Therapy and Research, 27*, 261–273

Paper presented at the Second World Conference on ACT, RFT, and Contextual

Paper presented at the Second World Conference on ACT, RFT, and Contextual

Pedersen, P. B., & Ivey, A. E. (1993). Culture-centered counseling and interviewing skills: A practical guide. Westport, CT, US: Praeger Publishers/Greenwood Publishing Group.

Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology, 95*, 274–281.

Peter Tyrer, D. S. (1993). *Models for Mental Disorder: Conceptual Models in Psychiatry(2nd ed).* Canada: John Wiley and sons Ltd.

Piccinelli, M., & Homen, F. G. (1997). *Gender differences in the epidemiology of affective disorders and schizophrenia*. Geneva, Switzerland: World Health Organization.

Plumb, J. C., Hayes, S. C., Hildebrandt, M. J., & Martin, L. M. (2007, May). Values and valued action as key processes in clinical intervention. In J. C. Plumb (Chair), Engaging in life: Values and valued action as catalysts for change. Symposium conducted at the meeting of the Association for Behavior Analysis, San Diego

Pössel, P. (2011). Testing three different sequential mediational interpretations of Beck's cognitive model of depression. Manuscript submitted for publication.

Pots, W., Spijkerman, M. and Bohlmeijer, E. (2016). Effectiveness of online mindfulness-based interventions in improving mental health: A review and meta-analysis of randomised controlled trials. *Clinical Psychology Review*, 45, pp.102-114

Powers, M., Zum Vörde Sive Vörding, M. and Emmelkamp, P. (2009). Acceptance and Commitment Therapy: A Meta-Analytic Review. *Psychotherapy and Psychosomatics*, 78(2), pp.73-80

Practice, 8, 255-270.

Psiquiate, R. B. (2008). Cognitive Therapy: Foundations, Conceptual Models, Application sand Research. *Beck Institute for Cognitive Therapy* , 56-64.

Psychological Review, 82, 1-25.

Questionnaire. Unpublished manuscript, University of Wollongong, Wollongong,

Qureshi, B. (1988). *Transcultural medicine: Dealing with patients from different cultures.* Dordrecht: Kluwer

Ramana, R., Paykel, E. S., Cooper, Z., Hayhurst, H., Saxty, M. & Surtees, P. G. (1995). *Remission and relapse in major depression: a two-year prospective follow-up study*. Psychological Medicine 25, 1161-1170.

Ramel, w. (2007). Mindfulness, depression, and cognitive processes.Paper pre- sented at the ACT summer Institute III, Hoston, Texas, July

Ramel, W., Goldin, P. R., Carmona, P. E., & McQuaid, J. R. (2004). The effects of mindfulness meditation on cognitive processes and affect in patients with past depression. *Cognitive Therapy and Research, 28*, 433–455

Raymond J. Corsini and Danny Wedding (2005). *Current Psychotherapies 8th edition*, Thomson Brooks/Cole, USA

Reese, H. W. (1968). The perception of stimulus relations: Discrimination learning and

Reibel, D. K., Greeson, J. M., Brainard, G. C., Rosenzweig, S. (2001). Mindfulness-based stress reduction and health-related quality of life in a heterogeneous patient population. *General Hospital Psychiatry, 23*, 183-192.

Reiser, B., & Faraggi, D. (1999). Confidence intervals for the overlapping coefficient: The normal equal variance case. *Journal of the Royal Statistical Society: Series D (The Statistician), 48*, 413-418.

relapse and why should attentional control (mindfulness) training help? *Behaviour*

relapse and why should attentional control (mindfulness) training help? *Behaviour Research and Therapy, 33*, 25-39.

Research and Therapy, 33, 25-39.

Rimes, K. A., & Watkins, E. (2005). The effects of self-focused rumination on global negative self-judgements in depression. *Behaviour Research and Therapy, 43*, 1673-1681.

Roemer, E., & Orsillo, S. M. (2002). Expanding our conceptualization of and treatment for generalized anxiety disorder: Integrating mindfulness/acceptance-based approaches with existing cognitivebehavioral models. *Clinical Psychology: Science and Practice, 9*, 54–68.

Roemer, L., Orsillo, S. and Salters-Pedneault, K. (2008). Efficacy of an acceptance-based behavior therapy for generalized anxiety disorder: Evaluation in a randomized controlled trial. Journal of Consulting and Clinical Psychology, 76(6), pp.1083-1089

Roemer, L., Orsillo, S. M., & Salters-Pedneault, K. (2008). Efficacy of an acceptance-based behavior therapy for generalized anxiety disorder: Evaluation in a randomized control trial. *Journal of Counseling and Clinical Psychology, 76*, 1083−1089.

Ruscio, J. (2008). A probability-based measure of effect size: Robustness to base rates and other factors. *Psychological Methods, 13*(1), 19-30.

Ruth A. Baer (2011): Measuring mindfulness, Contemporary Buddhism: An

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78

Saedy, M., Kooshki, S., Jamali Firouzabadi, M., Emamipur, S. and Rezaei Ardani, A. (2015). The Effectiveness of Acceptance-Commitment Therapy on Anxiety and Depression among Patients on Methadone Treatment: A Pilot Study. Iranian Journal of Psychiatry and Behavioral Sciences, 9(1)

Salmon, P., Sephton, S., Weissbecker, I., Hoover, K., Ulmer, C., & Studts, J. L. (2004). Mindfulness Meditation in Clinical Practice. *Cognitive and Behavioral Practice, 11*(4), 434-446

Sands, R.G. (2001). Clinical social work practice in behavioural mental health: A postmodern approach to practice with adults. Boston: Allyn & Bacon.

Sarah C. et al. (2012). *Interventions for treating depression in Muslim Patients:* A systematic review.

Schmidt, N. B., Woolaway-Bicke, K., Trakowski, J., Santiago, H., Storey, J., Koselka, M., & Cook, J. (2000). Dismantling cognitive-behavioral treatment for panic disorder: Questioning the utility of breathing retraining. *Journal of Consulting and Clinical Psychology, 68*, 417–424.

Segal, Z. V., Gemar, M., & Williams, S. (1999). Differential cognitive response to a mood challenge following successful cognitive therapy or pharmacotherapy for unipolar depression. *Journal of Abnormal Psychology, 108*, 3-10

Segal, Z. V., Whitney, D. K., Lam, R. W., & CANMAT Depression Work Group. (2001). Clinical guidelines for the treatment of depression. III. Psychotherapy. *Canadian Journal of Psychiatry, 46* ,29S-37S

Segal, Z. V., Williams, J. M. G., Teasdale, J. D. , (2002) Mindfulness-Based Cognitive Therapy for Depression: A New Approach to Preventing Relapse Vol. 3, No. 11 New York: Guilford Press

Segal, Z., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive*

Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death.* San

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of mindfulness. *Journal of Clinical Psychology, 62*, 373-386

Shea, B., Grimshaw, J., Wells, G., Boers, M., Andersson, N., Hamel, C., Porter, A., Tugwell, P., Moher, D. and Bouter, L. (2007). Development of AMSTAR: a measurement tool to assess the methodological quality of systematic reviews. *BMC Medical Research Methodology*, 7(1)

Sidman, M. (1971). Reading and auditory-visual equivalences. Journal of Speech Language and Hearing Research, 14, 5–13. doi:10.1044/jshr.1401.05

Sidman, M. (1994). Equivalence relations and behavior: A research story. Boston: Authors Cooperative.

Sidman, M., & Tailby, W. (1982). Conditional discrimination vs. matching to sample: An expansion of the testing paradigm. Journal of the Experimental Analysis of Behavior, 37, 5–22. doi:10.1901/jeab.1982.37-5

Smith M. L., & Glass, G. V. (1977). Meta-analysis of psychotherapy outcome studies. *American Psychologist, 32,* 752-760

Sobczak, L. R. and West, L. (2013). Clinical considerations in using mindfulness-and acceptance-based approaches with diverse populations: addressing challenges in service delivery in diverse community settings. *Cognitive and Behavioral Practice, 20*(1), 13-22

Spira, A. P., Zvolensky, M. J., Eifert, G. H., & Feldner, M. T. (2002). Avoidance-oriented coping as a predictor of panic-related distress: A test using biological challenge. *Journal of Anxiety Disorders, 16,* 1–15.

Spitzer, R.L, Kroenke, K. & Williams, J.B. et al. (2006). A brief measure for assessing generalised anxiety disorder: the GAD-7. *Arch. Intern. Med*. *166*,1092-7.

State University of New York.

Steer, R. A., Rissmiller, D. J. & Beck, A.T., (2000). Use of the Beck Depression Inventory with depressed geriatric patients.*Behaviour Research and Therapy, 38*(3), 311-318.

Steinbrueck, S.M., Maxwell, S.E., Howard, G.S. (1983). A meta-analysis of psychotherapy and drug therapy in the treatment of unipolar depression with adults. *Journal of Counseling and Clinical Psychology, 51,* 856–863.

Strosahl, K. D., Hayes, S. C., Bergan, J., & Romano, P. (1998). Assessing the field effectiveness of Acceptance and Commitment Therapy: An example of the manipulated training research method. *Behavior Therapy, 29*, 35–64.

Strosahl, K. D., Hayes, S. c.. Wilson, K. G., & Gifford, E. V. (2004). An ACT primer:

Stuart RJ, Blecke D, Renfrow M (2006). Cognitive Therapy for Depression. *American Family Physician. 73,*83-6, 93.

students with ACT or CBGT. Behavior Analyst Today, 1, 3-10.

Sue S. (1998). In search of cultural competence in psychotherapy and counseling. *Am. Psychol; 53*, 440– 448.

Sue, D., Ivey, A. & Pedersen, P. (2007). *Theories of Multicultural Counseling & Therapy*. Mason, OH: Cengage Learning Press.

Survey Replication. *Archives of General Psychiatry, 62*,617-627.

Swinson R.P. (2006). The GAD-7 scale was accurate for diagnosing generalised anxiety disorder. Evid Based Med. 11(6):184.

Taylor, Janet (1953). "A personality scale of manifest anxiety". *The Journal of Abnormal and Social Psychology 48* (2): 285–290. doi:10.1037/h0056264.

Teasdale, J. D. (1999). Emotional processing, three modes of mind and the prevention of relapse in depression. *Behaviour Research and Therapy, 37,* S53–S77

Teasdale, J. D., Segal, Z., & Williams, J. M. G. (1995). How does cognitive therapy prevent depressive relapse and why should attentional control (mindfulness) training help? *Behaviour Research and Therapy, 33,* 25–39.

Teasdale, J., Segal, Z., & Williams, J. (1995). How does cognitive therapy prevent depressive

Teasdale, J., Segal, Z., & Williams, J. (1995). How does cognitive therapy prevent depressive

The case for functional contextualism in research on human behavior. *Applied*

The context of reason-giving. *The Analysis of Verbal Behavior, 4,* 30-38.

The context of reason-giving. *The Analysis of Verbal Behavior,* 4, 30-38.

Thera, N. (1992). *The heart of Buddhist meditation*. Kandy, Sri Lanka: Buddhist Publication Society

Thera. N. (1972). *The power of mindfulness*. San Fransisco, CA: Unity Press

therapy for depression: A new approach to preventing relapse. New York: Guilford.

Therapy, 1, 77-89.

Therapy, 44, 1-25.

Therapy, 44, 1-25.

third wave of behavioral and cognitive therapies. *Behavior Therapy, 35,* 639-665.

Thomas, J. and Truax, P. (2008). Assessment and Analysis of Clinically Significant Change. In: D. McKay, ed., *Handbook of Methods in Abnormal and Clinical Psychology*, 1st ed. Carlifornia: Sage, pp.317-335.

Thoresen, C. E., & Mahoney, M. J. (1974). *Behavioral self-control*. New York: Holt, Rinehart, & Winston.

Tierney, K.J., De Largy, P., & Bracken, M. (1995). Formation of an equivalence class incorporating haptic stimuli. The sychological Record, 45, 431-438.

to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64,*

to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64,*

Törneke N, Luciano C, & Valdivia S (2008). Rule governed behavior and psychological problems. *International Journal of Psychology and Psychological Therapy, 8,* 141-156

transposition. New York: Academic Press.

treatment of anxiety disorders. *General Hospital Psychiatry, 17*, 192-200.

Tseng, W. (2003). *Clinician's guide to cultural psychiatry.* Academic Press.

Turk, C. L., Heimberg, R. G., Luterek, J. A., Mennin, D. S., & Fresco, D. M. (2005). Emotion dysregulation in generalized anxiety disorder: A comparison with social anxiety disorder. *Cognitive Therapy and Research, 29,* 89–106.

Twohig, M., Shoenberger, D. and Hayes, S. (2007). A Preliminary Investigation of Acceptance and Commitment Therapy as a Treatment for Marijuana Dependence in Adults. Journal of Applied Behavior Analysis, 40(4), pp.619-632

Universities Press.

Wallace, B. A. (1999). The Buddhist tradition of samantha: Methods for refining and examining consciousness. In F. J. Varela & J. Shear (Eds.), MINDFULNESS AND WELL-BEING 847 The view from within (pp. 175–187). Thorverton, England: Imprint Academics

Watkins, E. & Moulds, M. (2005a). Distinct modes of ruminative self-focus: Impact of abstract versus concrete rumination on problem solving in depression. *Emotion, 5*, 319-328.

Watkins, E. & Teasdale, J. D. (2004). Adaptive and maladaptive self-focus in depression. *Journal of Affective Disorders, 82*, 1-8.

Watkins, E., Moulds, M., & Mackintosh, B. (2005). Comparisons between rumination

Webb-Johnson, A. and Nadirshaw, Z. (1993). Good practice in transcultural counseling: An Asian perspective. *British Journal of Guidance and Counseling. 21*(1), 20–29.

Wegner, D. M. & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality, 62*, 615-640.

Wegner, D. M. (1994). *White bears and other unwanted thoughts: Suppression, obsession,*

Wegner, D. M. (1994). *White bears and other unwanted thoughts: Suppression, obsession, and the psychology of mental control*. New York: Guilford.

Wegner, D. M., & Gold, D. B. (1995). Fanning old flames: Emotional and cognitive effects of suppressing thoughts of a past relationship. *Journal of Personality and Social Psychology, 68*, 782-792.

Wegner, D. *M.*, & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personaluy,*

Weinrib, A.Z (2011) *Investigating experiential avoidance as a mechanism of action in a mindfulness intervention*. University of Iowa

Weiselberg, H. (1992). Family therapy and ultra-orthodox Jewish families: A structural approach. *Journal of Family Therapy. 14*, 305–329.

Wenzlaff, R. M. (1993). The mental control of depression. Psychological obstacles to emotional well-being. In D. M. Wegner &]. W. Pennebaker (Eds.), *Handbook of mental control* (pp. 238-257). Englewood Cliffs, NJ: Prentice-Hall.

Wenzlaff, R. M., & Luxton, D. D. (2003). The role of thought suppression in depressiverumination. *Cognitive Therapy and Research, 27*, 293-308.

Wenzlaff, R. M., Wegner, D. M., & Klein, S. B. (1991). The role of thought suppression in the bonding of thought and mood. *Journal of Personality and Social Psychology, 60*, 500-508.

Wenzlaff, R. M., Wegner, D. M., & Roper, D. W. (1988). Depression and mental control: The resurgence of unwanted thoughts. *Journal of Personality and Social Psychology, 55*, 882-892.

Westen, D. (1999). *Psychology: Mind, brain, and culture* (2nd ed). New York: Wiley

Whelan, R., & Barnes-Holmes, D. (2004). The transformation of consequential functions in accordance with the relational frames of same and opposite. *Journal of the Experimental Analysis of Behavior, 82*, 177-195.

Wicksell, R. K., Dahl, J. Magnusson, B. & Olsson, G. L. (2005). Using acceptance and commitment therapy in the rehabilitation of adolescent female with chronic pain: A case example. *Cognitive and Behavioral Practice, 12*, pp. 415-423.

Wilhelm, K. and Parker, G. (1993). Sex differences in depressogenic risk factors and coping strategies in a socially homogeneous group. *Acta Psychiatrica Scandanavia, 88*, 205–211.

Wilson, K. G. (2006, March 5). Escape avoid? Message posted to http://acceptanceandcommitmenttherapy@yahoogroups.

Wilson, K. G., Hayes, S. C., & Gifford, E. V. (1997). Cognition in behavior therapy: Agreements and differences. *Journal of Behavior Therapy and Experimental Psychiatry, 28*, 53-63.

Wilson, M., & MacCarthy, B. (1994). Consultation as a factor in the low rate of mental health service use by Asians. *Journal of Psychological Medicine, 20*, 113–119.

World Health Organization. (1992). The ICD-10 classification of mental and behavioural disorders : *clinical descriptions and diagnostic guidelines*. Geneva : World Health Organization

Wulfert, E., & Hayes, S. C. (1988). Transfer of a conditional ordering response through conditional equivalence classes. Journal of the Experimental Analysis of Behavior, 50, 125–144. doi:10.1901/jeab.1988.50-125

York: Springer.

Yvonne Barnes-Holmes, Dermot Barnes-Holmes, Louise McHugh and Steven C. Hayes(2004) Relational Frame Theory: Some Implications for Understanding and Treating Human Psychopathology National University of Ireland, Maynooth, Ireland; University of Nevada, *USA International Journal of Psychology and Psychological Therapy*, Vol. 4, Nº 2, pp. 355-375

Zeig, J. K. (1987). *Evolution of PsychotherapY.* New York: Brunner/Mazel, Inc.

Zetrle, R. D., & Hayes, S. C. (1982). Rule-governed behavior: A potential theoretical

Zettle, R, D. (2007**).** *ACT for Depression: A Clinician's Guide to Using Acceptance & Commitment Therapy in Treating Depression*. New Harbinger Publications, Inc. Oacland, Canada.

Zettle, R. (2007). *ACT for depression: A clinician's guide to using acceptance & commitment therapy in treating depression*. New Harbinger Publications.

Zettle, R. (2007). *ACT for depression: A clinician's guide to using acceptance & commitment therapy in treating depression.* New Harbinger Publications.

Zettle, R. D. (1990). Rule-governed behavior: A radical behavioral answer to the cognitive challenge. *The Psychological Record, 40*,41-49.

Zettle, R. D. (2004). ACT with affective disorders. In S. C. Hayes & K. D. Strosahl

Zettle, R. D. (2005). The evolution of a contextual approach to therapy: From comprehensive distancing to ACT. *International Journal of Behavioral and Consultation*

Zettle, R. D. (2006, July). *The history of ACTIRFT: Observations from an eyewitness.*

Zettle, R. D. (2006, July). *The history of ACTIRFT: Observations from an eyewitness.*

Zettle, R. D., & Hayes, S. C. (1986**).** Dysfunctional control by client verbal behavior:

Zettle, R. D., & Hayes, S. C. (1986). Dysfunctional control by client verbal behavior:

Zettle, R. D., & Hayes, S. C. (1986). Dysfunctional control by client verbal behaviour: The context of reason giving. *Analysis of Verbal Behaviour, 4*, 30-38.

Zettle, R. D., & Hayes, S. C. (2002). Brief ACT treatment of depression. In F. W. Bond

Zettle, R. D., & Raines, J. C. (1989). Group cognitive and contextual therapies in treatment of depression. *Journal of Clinical Psychology, 45*, 438-445.

Zettle, R. D., Webster, B. K., Gird, S. R., Wagener, A. L., & Burdsal, C. A. (2013). Factor structure of the Automatic Thoughts Questionnaire in a clinical sample. *International Journal of Cognitive Therapy*, *6*(3), 280–291

Zettle, Robert D., Webster, Blake K., Gird, Suzanne R., Wagener, Alexandra L., & Burdsal, Charles A. (2013). "Factor structure of the Automatic Thoughts Questionnaire in a clinical sample." Guilford Publications Inc. *International Journal of Cognitive Therapy, 6*(3):280-291.

Zung, W.W.K. (1974). The measurement of affects: depression and anxiety. *Mod Probl Pharmacopsychiatry, 7*, 170–188.

Antony, Martin; Orsillo, Susan; Roemer, Lizabeth (2001). *Practitioner's guide to empirically based measures of anxiety*. Kluwer Academic/Plenum Publishers.

Baer, R. A., Smith, G. T. & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky Inventory of Mindfulness Skills. *Assessment, 11*(3), 191-206.

Beck, A.T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961) An inventory for measuring depression. *Archives of General Psychiatry, 4*, 561-571.

Beck, A. T., Steer, R.A., & Garbin, M.G. (1988) Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*(1), 77-100.

Brown, K.W. & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822-848.

González Rodríguez, M., Avero Delgado, P., Rovella, A.T. and Cubas Leon, R. (2008). "Structural Validity and Reliability of the Spanish Version of the White Bear Suppression Inventory (WBSI) in a Sample of the General Spanish Population" *The Spanish Journal of Psychology*, *11*(2):650-659.

Groth-Marnat G. (1990). *The handbook of psychological assessment* (2nd ed.). New York: John Wiley & Sons.

Hayes, S. C., Follette, V. M., & Linehan, M. (2004). *Mindfulness and acceptance: Expanding the cognitive-behavioral tradition*. New York: Guilford Press.

Hojat, M., Shapurian, R., and Mehrya, A.H., (1986). Psychometric properties of a Persian version of the short form of the Beck Depression Inventory for Iranian college students, *Psychological Reports*, 59(1), 331-338.

Jessor, R., & Hammond, K. R. (1957). Construct validity and the Taylor Anxiety Scale. *Psychological Bulletin, 54*(3), 161-170.

Kendall, E. (1954). The validity of Taylor's Manifest Anxiety Scale. J Consult Psychol, 18, 429–432.

Kroenke, K., Spitzer, R.L., Williams, J.B. et al., (2007). Anxiety disorders in primary care: Prevalence, impairment, comorbidity, and detection. *Ann Intern Med*., 146(5):317-25

Kroenke K, and Spitzer RL, (2002). “PHQ-9” *Psychiatric Annals, 32*, 509-521

McDowell, I. & Newell, C. (1996). Measuring Health: A Guide to Rating Scales and Questionnaires. (2nd ed.). New York: Oxford University Press.

Spitzer, R.L, Kroenke, K. & Williams, J.B. et al. (2006). A brief measure for assessing generalised anxiety disorder: the GAD-7. *Arch. Intern. Med*. *166*,1092-7.

Steer, R. A., Rissmiller, D. J. & Beck, A.T., (2000). Use of the Beck Depression Inventory with depressed geriatric patients.*Behaviour Research and Therapy, 38*(3), 311-318.

Swinson R.P. (2006). The GAD-7 scale was accurate for diagnosing generalised anxiety disorder. Evid Based Med. 11(6):184.

Taylor, Janet (1953). "A personality scale of manifest anxiety". *The Journal of Abnormal and Social Psychology 48* (2): 285–290. doi:10.1037/h0056264.

Wegner, D. M. & Zanakos, S. (1994). Chronic thought suppression. *Journal of Personality, 62,* 615-640.

Zettle, Robert D., Webster, Blake K., Gird, Suzanne R., Wagener, Alexandra L., & Burdsal, Charles A. (2013). “Factor structure of the Automatic Thoughts Questionnaire in a clinical sample.” Guilford Publications Inc. *International Journal of Cognitive Therapy, 6*(3):280-291.

Zung, W.W.K. (1974). The measurement of affects: depression and anxiety. *Mod Probl Pharmacopsychiatry, 7*, 170–188.

Zettle, R. (2007). *ACT for depression: A clinician's guide to using acceptance & commitment therapy in treating depression*. New Harbinger Publications.

Batten, S. V. & Hayes, S. C. (2005). Acceptance and commitment therapy in the treatment of comorbid substance abuse and post-traumatic stress disorder. *Clinical Case Studies, 4*(3), pp. 246-262.

Dahl, J., Wilson, K. G., Luciano, C., & Hayes, S. C. (2005). *Acceptance and Commitment Therapy for Chronic Pain.* Reno, NV: Context Press

Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial of acceptance and commitment therapy and cognitive therapy for anxiety and depression. Behavior Mod

Hayes, S. C., Strosahl, K. & Wilson, K. G. (1999). *Acceptance and Commitment Therapy: An experiential approach to behavior change.* New York: Guilford Press.

Hayes, S. C., Wilson, K. W., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152-1168.

Hofmann, S. &Reinecke, M. (2010). *Cognitive-behavioral therapy with adults: A guide to empirically-informed assessment and intervention.* Cambridge, UK: Cambridge University Press.

Lundgren T, Dahl J, Melin L, Kies B.(2006) Evaluation of acceptance and commitment therapy for drug refractory epilepsy: a randomized controlled trial in South Africa--a pilot study.

Kanter, J. W., Baruch, D. E., & Gaynor, S. T. (2006). Acceptance and commitment therapy and behavioral activation for the treatment of depression: Description and comparison. *Behavior Analyst, 29* (2), 161-185

Tseng, W. (2003). *Clinician's guide to cultural psychiatry.* Academic Press.

Wicksell, R. K., Dahl, J. Magnusson, B. & Olsson, G. L. (2005). Using acceptance and commitment therapy in the rehabilitation of adolescent female with chronic pain: A case example. *Cognitive and Behavioral Practice, 12*, pp. 415-423.

Wilson, K. G., Hayes, S. C., & Gifford, E. V. (1997). Cognition in behavior therapy: Agreements and differences. *Journal of Behavior Therapy and Experimental Psychiatry, 28*, 53-63.

Gielen, U. P., Fish, J. M., & Draguns, J. G. (2004). Culture, therapy & healing. Mahwah, NJ: Laurence Erlbaum Associates, Inc.

Zettle, R. D., Webster, B. K., Gird, S. R., Wagener, A. L., & Burdsal, C. A. (2013). Factor structure of the Automatic Thoughts Questionnaire in a clinical sample. *International Journal of Cognitive Therapy, 6*(3), 280–291

APPENDICS

APPENDIX 1
Participant Information Sheet

You are being invited to take part in a research study. Before you decide it is important that you understand why the research is being done and what it will involve. Take the time to read the following information carefully and discuss it with others if you wish. Part 1 tells you the purpose of the study and what will happen if you take part. Part 2 gives you more detailed information about the conduct of the study. Please take time to decide whether or not you wish to take part.

Thank you for reading this.

Part One

What is the purpose of the study?

Some people who are diagnosing depression to need to psychological treatment. There is a new approach of psychological treatment which is (ACT) that may help people cope with going through depression. We do not yet know if this new psychological sessions are better than the psychological treatment currently used. So, we will apply the new approach with clients to know if there any effectiveness as a main target.

Why have I been chosen?

You have been asked to take part because of your referral into Clinical Psychology Unit at King Khalid University Hospital (KKUH).We will be contacting around 40 individuals who have been referred into KKUH.

Do I have to take part?

Taking part in the study is voluntary and it is up to you to decide whether to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign and return the consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

What will happen if I take part?

This study includes visiting the hospital to complete psychological scales measuring depression, anxiety and general mental health. You will then be randomly allocated to either a control group or ACT treatment group. If you are in the control group you will receive no ACT treatment. If you are in the ACT treatment group you will receive at least 12 ACT sessions, on a weekly basis. Finally, you will be asked to visit the hospital for one last time to complete the same psychological measures you did before the ACT treatment or in the case of the control group 12 weeks previously.

What are the possible disadvantages of taking part?

If you experience any negative effects on completion of your participation please visit the Department of Psychiatry or Emergency Unit in King Khalid University Hospital. Should

you wish to talk about any issues raised during the study, a contact name and details are provided at the end of this information.

What are the possible benefits of taking part?
There will be direct clinical benefit to you from taking part in this study. Your experiences are important to us and may enable us to develop psychological approach of helping people cope better with the depression by ACT.

What will happen if I don't want to carry on or if there is a problem?
You are free to withdraw from the study at any time without it affecting your future care. Any complaint about the way you have been dealt with during the study will be addressed. More details on this can be found in Part 2.

This completes Part 1 of the information sheet. If the information in Part 1 has interested you and you are considering taking part, please continue to read the following information in Part 2 before making any decision.

Part 2

Will my taking part in this study be kept confidential?
All information will remain strictly confidential. No names will appear on any questionnaires or sessions as a unique identifying number will be used (file number). The consent form will be removed from the first questionnaire and locked in a secure place. Only the research team will have access to the questionnaires which will be kept in a secure place.

What if there is a problem?
If you experience any negative effects on completion of your participation please visit the Department of Psychiatry or Emergency Unit in King Khalid University Hospital.

What will happen to the results of the research study?
The results of the study will be used to inform future studies and the development of an intervention to help people cope with depression. The results will be presented at a national conference and published in a relevant journal.

Contact Details

If there is anything that is not clear or you would simply like more information please contact Adel Aldaha using the following contact details:

Adel Aldaha
Researcher and clinical psychologist
King Khalid University Hospital
Clinical Psychology Unit
King Saud University, School of Medicine
Riyadh
Saudi Arabia

Email: alda-ha@hotmail.com

APPENDIX 2

CONSENT FORM

Title of Project: The effectiveness of Acceptance and Commitment Therapy (ACT) in patients presenting with Depression in Saudi Arabia.

Name of Researcher: Adel Aldaha

Please initial box

1. I CONFERM THAT I HAVE READ THE PARTICIPANT INFORMATION SHEET, WHICH IS ATTACHED TO THIS FORM. I UNDERSTAND WHAT I WILL HAVE TO DO TO PARTICIPATE IN THIS RESEARCH, AND ALL MY QUESTIONS HAVE BEEN ANSWERED TO MY SATISFACTION	☐ ☐
2. I UNDERSTAND THAT I AM FREE TO WITHDRAW FROM THE RESEARCH AT ANY TIME, FOR ANY REASON AND WITHOUT PREJUDICE, AND THE TREATMENT I RECEIVE IN FUTURE WILL NOT BE AFFECTED.	
3. I AGREE TO THE UNIVERSITY PROCESSING PERSONAL DATA THAT I HAVE SUPPLIED. I AGREE TO THE PROCESSING OF SUCH DATA FOR ANY PURPOSES CONNECTED WITH THE RESEARCH PROJECT AS OUTLINED TO ME.	☐

4. I AGREE TO TAKE PART IN THE ABOVE STUDY.	☐

Date	Signature	Name of Participant
_____	_____	_____

Date	Signature	Researcher
_____	_____	_____

When completed, 1 for patient; 1 for researcher site file; 1 (original) to be kept in medical notes

APPENDIX 3

PHQ-9 Depression

Over the last 2 weeks, how often have you been bothered by any of the following problems? *(Use "✔ to indicate your answer"*	**Not at all**	**Several days**	**More than half the days**	**Nearly every day**
1. Little interest or pleasure in doing things.....	0	1	2	3
2. Feeling down, depressed, or hopeless.....	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much.....	0	1	2	3

4. Feeling tired or having little energy.....……..……	0	1	2	3
5. Poor appetite or overeating.....……..…	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down……..	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television……..	0	1	2	3
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.....…….	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way.....……	0	1	2	3

Column totals ___ + ___ + ____ + ___

= *Total Score* _____

APPENDIX4

Beck's Depression Inventory

This depression inventory can be self-scored.

1.

0 I do not feel sad.

1 I feel sad.

2 I am sad all the time and I can't snap out of it.

3 I am so sad and unhappy that I can't stand it.

2.

0 I am not particularly discouraged about the future.

1 I feel discouraged about the future.

2 I feel I have nothing to look forward to.

3 I feel the future is hopeless and that things cannot improve.

3.

0 I do not feel like a failure.

1 I feel I have failed more than the average person.

2 As I look back on my life, all I can see is a lot of failures.

3 I feel I am a complete failure as a person.

4.

0 I get as much satisfaction out of things as I used to.

1 I don't enjoy things the way I used to.

2 I don't get real satisfaction out of anything anymore.

3 I am dissatisfied or bored with everything.

5.

0 I don't feel particularly guilty

1 I feel guilty a good part of the time.

2 I feel quite guilty most of the time.

3 I feel guilty all of the time.

6.

0 I don't feel I am being punished.

1 I feel I may be punished.

2 I expect to be punished.

3 I feel I am being punished.

7.

0 I don't feel disappointed in myself.

1 I am disappointed in myself.

2 I am disgusted with myself.

3 I hate myself.

8.

0 I don't feel I am any worse than anybody else.

1 I am critical of myself for my weaknesses or mistakes.

2 I blame myself all the time for my faults.

3 I blame myself for everything bad that happens.

9.

0 I don't have any thoughts of killing myself.

1 I have thoughts of killing myself, but I would not carry them out.

2 I would like to kill myself.

3 I would kill myself if I had the chance.

10.

0 I don't cry any more than usual.

1 I cry more now than I used to.

2 I cry all the time now.

3 I used to be able to cry, but now I can't cry even though I want to.

11.

0 I am no more irritated by things than I ever was.

1 I am slightly more irritated now than usual.

2 I am quite annoyed or irritated a good deal of the time.

3 I feel irritated all the time.

12.

0 I have not lost interest in other people.

1 I am less interested in other people than I used to be.

2 I have lost most of my interest in other people.

3 I have lost all of my interest in other people.

13.

0 I make decisions about as well as I ever could.

1 I put off making decisions more than I used to.

2 I have greater difficulty in making decisions more than I used to.

3 I can't make decisions at all anymore.

14.

0 I don't feel that I look any worse than I used to.

1 I am worried that I am looking old or unattractive.

2 I feel there are permanent changes in my appearance that make me look unattractive

3 I believe that I look ugly.

15.

0 I can work about as well as before.

1 It takes an extra effort to get started at doing something.

2 I have to push myself very hard to do anything.

3 I can't do any work at all.

16.

0 I can sleep as well as usual.

1 I don't sleep as well as I used to.

2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.

3 I wake up several hours earlier than I used to and cannot get back to sleep.

17.

0 I don't get more tired than usual.

1 I get tired more easily than I used to.

2 I get tired from doing almost anything.

3 I am too tired to do anything.

18.

0 My appetite is no worse than usual.

1 My appetite is not as good as it used to be.

2 My appetite is much worse now.

3 I have no appetite at all anymore.

19.

0 I haven't lost much weight, if any, lately.

1 I have lost more than five pounds.

2 I have lost more than ten pounds.

3 I have lost more than fifteen pounds.

20.

0 I am no more worried about my health than usual.

1 I am worried about physical problems like aches, pains, upset stomach, or constipation.

2 I am very worried about physical problems and it's hard to think of much else.

3 I am so worried about my physical problems that I cannot think of anything else.

21.

0 I have not noticed any recent change in my interest in sex.

1 I am less interested in sex than I used to be.

2 I have almost no interest in sex.

3 I have lost interest in sex completely.

APPENDIX5

Taylor Manifest Anxiety Scale

Circle the items that are true of you:
1. I do not tire quickly.
2. I am troubled by attacks of nausea.
3. I believe I am no more nervous than most others.
4. I have very few headaches.
5. I work under a great deal of tension.
6. I cannot keep my mind on one thing.
7. I worry over money and business.
8. I frequently notice my hand shakes when I try to do something.
9. I blush no more often than others.
10. I have diarrhea once a month or more.
11. I worry quite a bit over possible misfortunes.
12. I practically never blush.
13. I am often afraid that I am going to blush.
14. I have nightmares every few nights.
15. My hands and feet are usually warm.
16. I sweat very easily even on cool days.
17. Sometimes when embarrassed, I break out in a sweat.
18. I hardly ever notice my heart pounding and I am seldom short of breath.
19. I feel hungry almost all the time.
20. I am very seldom troubled by constipation.
21. I have a great deal of stomach trouble.
22. I have had periods in which I lost sleep over worry.
23. My sleep is fitful and disturbed.
24. I dream frequently about things that are best kept to myself.
25. I am easily embarrassed.
26. I am more sensitive than most other people.
27. I frequently find myself worrying about something.
28. I wish I could be as happy as others seem to be.
29. I am usually calm and not easily upset.
30. I cry easily.
31. I feel anxiety about something or someone almost all the time.
32. I am happy most of the time.
33. It makes me nervous to have to wait.
34. I have periods of such great restlessness that I cannot sit long I a chair.
35. Sometimes I become so excited that I find it hard to get to sleep.
36. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
37. I must admit that I have at times been worried beyond reason over something that really did not matter.
38. I have very few fears compared to my friends.
39. I have been afraid of things or people that I know could not hurt me.
40. I certainly feel useless at times.
41. I find it hard to keep my mind on a task or job.
42. I am usually self-conscious.
43. I am inclined to take things hard.
44. I am a high-strung person.

45. Life is a trial for me much of the time.
46. At times I think I am no good at all.
47. I am certainly lacking in self-confidence.
48. I sometimes feel that I am about to go to pieces.
49. I shrink from facing crisis of difficulty.
50. I am entirely self-confident.

APPENDIX6

GAD-7 Anxiety

Over the last 2 weeks, how often have you been bothered by the following problems? *(Use "✔ to indicate your answer"*	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

Column totals: ___ **+** ___ **+** ___ **+** ___

= *Total Score* _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	**Somewhat difficult**	**Very difficult**	**Extremely difficult**
☐	☐	☐	☐

APPENDIX7

Kentucky Inventory of Mindfulness Skills (KIMS)

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your **own opinion** of what is **generally true for you.**

Very often or always true.	Often true.	Sometimes true.	Rarely true.	Never or very rarely true.	Statement	NO
					I notice changes in my body, such as whether my breathing slows down or speeds up.	1
					I'm good at finding the words to describe my feelings.	2
					When I do things, my mind wanders off and I'm easily distracted	3
					I criticize myself for having irrational or inappropriate emotions	4
					I pay attention to whether my muscles are tense or relaxed.	5
					I can easily put my beliefs, opinions, and expectations into words.	6
					When I'm doing something, I'm only focused on what I'm doing, nothing else.	7
					I tend to evaluate whether my perceptions are right or wrong.	8

					When I'm walking, I deliberately notice the sensations of my body moving	**9**
					I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound.	**10**
					I drive on "automatic pilot" without paying attention to what I'm doing.	**11**
					I tell myself that I shouldn't be feeling the way I'm feeling.	**12**
					When I take a shower or bath, I stay alert to the sensations of water on my body.	**13**
					It's hard for me to find the words to describe what I'm thinking	**14**
					When I'm reading, I focus all my attention on what I'm reading.	**15**
					I believe some of my thoughts are abnormal or bad and I shouldn't think that way.	**16**
					I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	**17**
					I have trouble thinking of the right words to express how I feel about things.	**18**
					When I do things, I get totally wrapped up in them and don't think about anything else.	**19**

					I make judgments about whether my thoughts are good or bad.	**20**
					I pay attention to sensations, such as the wind in my hair or sun on my face.	**21**
					When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words	**22**
					I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.	**23**
					I tend to make judgments about how worthwhile or worthless my experiences are	**24**
					I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	**25**
					Even when I'm feeling terribly upset, I can find a way to put it into words.	**26**
					When I'm doing chores, such as cleaning or laundry, I tend to daydream or think of other things.	**27**
					I tell myself that I shouldn't be thinking the way I'm thinking.	**28**
					I notice the smells and aromas of things.	**29**
					I intentionally stay aware of my feelings.	**30**

					I tend to do several things at once rather than focusing on one thing at a time.	**31**
					I think some of my emotions are bad or inappropriate and I shouldn't feel them.	**32**
					I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	**33**
					My natural tendency is to put my experiences into words.	**34**
					When I'm working on something, part of my mind is occupied with other topics, such as what I'll be doing later, or things I'd rather be doing.	**35**
					I disapprove of myself when I have irrational ideas.	**36**
					I pay attention to how my emotions affect my thoughts and behavior.	**37**
					I get completely absorbed in what I'm doing, so that all my attention is focused on it.	**38**
					I notice when my moods begin to change.	**39**

APPENDIX8

The Mindfulness Attention Awareness Scale (MAAS)

Day-to-Day Experience

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1 Almost Always *2 Very Frequently* *3 Somewhat Frequently* *4 Somewhat Infrequently* *5 Very Infrequently* *6 Almost Never*

6Almost Never	5Very Infrequently	4Somewhat Infrequently	3Somewhat Frequently	2Very Frequently	1Almost Always	**statement**	**NO**
						I could be experiencing some emotion and not be conscious of it until sometime later.	1
						I break or spill things because of carelessness, not paying attention, or thinking of something else	2

						I find it difficult to stay focused on what's happening in the present.	3
						I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	4
						I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	5
						I forget a person's name almost as soon as I've been told it for the first time.	6
						It seems I am "running on automatic," without much awareness of what I'm doing.	7

						I rush through activities without being really attentive to them	8
						I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	9
						I do jobs or tasks automaticall y, without being aware of what I'm doing	10
						I find myself listening to someone with one ear, doing something else at the same time.	11
						I drive places on 'automatic pilot' and then wonder why I went there.	12
						I find myself preoccupied	13

						with the future or the past	
						I find myself doing things without paying attention.	14
						I snack without being aware that I'm eating	15

APPENDIX9

White Bear Suppression Inventory(WBSI)

This survey is about thoughts. There are no rights or wrong answers, so please respond honestly to each of the items below. Be sure to answer every item by circling the appropriate letter beside each.

5Strongly agree	4Agree	3Neutral or don't know	2Disagree	1Strongly disagree	Statement	NO
					There are things I prefer not to think about.	1
					Sometimes I wonder why I have the thoughts I do.	2
					I have thoughts that I cannot stop	3
					There are images that come to mind that I cannot erase.	4
					My thoughts frequently return to one idea	5
					I wish I could stop thinking of certain things.	6
					Sometimes my mind races so fast I wish I could stop it.	7
					I always try to put problems out of mind.	8
					There are thoughts that keep jumping into my head.	9
					There are things that I try not to think about	10
					Sometimes I really wish I could stop thinking.	11
					I often do things to distract myself from my thoughts.	12

					I have thoughts that I try to avoid	**13**
					There are many thoughts that I have that I don't tell anyone	**14**
					Sometimes I stay busy just to keep thoughts from intruding on my mind.	**15**

APPENDIX10

Automatic Thoughts Questionnaire (ATQ), second version

Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you over the last week. Please read each item carefully and circle the appropriate answers on the answer sheet in the following fashion (1 = "not at all", 2 = "sometimes", 3 = "moderately often", 4 = "often", and 5 = "all the time"). Then, please indicate how strongly, if at all, you tend to believe that thought, when it occurs. On the right hand side of the page, circle the appropriate answers in the following fashion (1 = "not at all", 2 = "somewhat", 3 = "moderately ", 4 = "very much", and 5 = "totally).

Frequency	**Degree of Belief**
1 not at all, 2 sometimes, 3 moderately often, **4 often, and 5 all the time**	**1 not at all, 2 somewhat,** **3moderately, 4 very much and 5 totally**

Degree of Frequency12345	**Statement**	**Degree of Belief 12345**	**NO**
	I feel like I'm up against the world.		**1**

	I'm no good.		**2**
	Why can't I ever succeed?		**3**
	No one understands me.		**4**
	I've let people down.		**5**
	I don't think I can go on.		**6**
	I wish I were a better person.		**7**
	I'm so weak.		**8**
	My life's not going the way I want it to.		**9**
	I'm so disappointed in myself.		**10**
	Nothing feels good anymore.		**11**
	I can't stand this anymore.		**12**
	I can't get started.		**13**
	What's wrong with me?		**14**
	I wish I were somewhere else.		**15**
	I can't get things together.		**16**
	I hate myself.		**17**
	I'm worthless		**18**
	I wish I could just disappear.		**19**
	What's the matter with me?		**20**
	I'm a loser.		**21**
	My life is a mess.		**22**
	I'm a failure.		**23**
	I'll never make it.		**24**
	I feel so helpless.		**25**
	Something has to change.		**26**
	There must be something wrong with me.		**27**
	My future is bleak.		**28**

	It's just not worth it.		**29**
	I can't finish anything.		**30**

APPENDIX11

Debriefing Form

Over the last decade, Acceptance and Commitment Therapy (ACT) has become an increasingly popular treatment for many clinical disorders and has been demonstrated to be particularly effective with Depression. ACT is a therapeutic approach in which the negative meaning of human language is altered and used to bring about a more adaptable, flexible approach to living.

Typically, Depression in Saudi Arabia has been treated using traditional Cognitive Behavioral Therapy (CBT). To date, no study has applied ACT with this population. Thus, the current proposal is an attempt to examine the usefulness of the ACT approach by applying it in studying some cases at university Teaching Hospital in Saudi Arabia.

The psychological scales especially scales of depression assess frame of mood, avoidance and physiological symptoms. These scales will enable the researcher to know the status of the participant before treatment, and when completed after treatment will inform the researcher of the efficacy of the therapeutic intervention, ACT.

If you experience any negative effects on completion of your participation please visit the Department of Psychiatry or Emergency Unit in King Khalid Hospital.

I hope this has helped to clarify the purpose of the study you have just undertaken.

If you have any further comments or queries, please let me know (alda-ha@hotmail.com).

APPENDIX12

Demographics

Please indicate the answer by circling or underlining the correct choice

What is your living situation?

Married | single | living with a spouse

Do you have any children?

Yes | No

If yes – how old are they?

Do you have any grandchildren?

Yes | No

If yes – how old are they?

Do you currently work?

Yes | No

If retired, what was you previous occupation?

What is your annual household income?

Is there a trustworthy person you could turn to for advice if you have questions, concerns or problems?

Yes | No

b: If yes, who?

Do you have family close by who can help if you need them?

Yes | No

Education (Highest level of schooling successfully completed to date)

What is your age? _____years

APPENDIX13

Participant Letter

The effectiveness of Acceptance and Commitment Therapy (ACT) in patients presenting with Depression in Saudi Arabia.

Thank you for taking the time to read more about this study.

Please read the Participant Information Sheet carefully. This sheet should tell you all you need to know about the study. If you have any questions, please contact Adel Aldaha, on 014671717.

If you decide to take part in the study, please sign the consent form.

Finally, please remember that taking part in this study is voluntary. Whether or not you decide to take part will not change any care you receive now or in the future.

Yours faithfully,

Adel Aldaha
Researcher and Clinical Psychologist.