



**Bournemouth
University**

A Critical Review of the Impact of Acceptance and Commitment Therapy on Depression

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***A Critical Review of the Impact of Acceptance and
Commitment Therapy on Depression***

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Msc Foundations of Clinical Psychology

2017/2018

Word Count:14.900

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Reference Id	21656
Status	Approved
Date Approved	27/06/2018

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Faculty	Faculty of Science & Technology
Status	Postgraduate Taught (Masters, MA, MSc, MBA, LLM)
Course	MSc Foundations of Clinical Psychology
Have you received external funding to support this research project?	No

Project Details

Title	A Critical Review of the Impact of Acceptance and Commitment Therapy on Depression
Proposed Start Date of Data Collection	06/06/2018
Proposed End Date of Project	30/07/2018
Supervisor	Helen Bolderston

Approver	Helen Bolderston
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Does your research require external review through the NHS National Research Ethics Service (NRES) or through another external Ethics Committee?	No
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External Ethics Review

Research Literature

Is your research solely literature based?	Yes
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JOURNALISM / BROADCAST RESEARCHERS: I confirm that I have consulted and understand the Research Ethics Supplementary Guide: For Reference by Researchers Undertaking Journalism and Media Production Projects (available on the Research Ethics page)	Yes
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Acknowledgement

Foremost, I would like to express my sincere gratitude to my supervisor Dr. Helen Bolderston for her supporting attitude and meticulous scrutiny about my dissertation. Her valuable and sincere guidance encouraged me during all phases of writing this thesis. I consider myself lucky to have such a grace and wisdom as my supervisor rather than anyone else.

Next to her, I would like to thank Simon Thompson.

I feel obliged to use this opportunity to utter my special thanks to Prof. Dr. Hüsnü Erkmen, Prof. Dr. Sinan Canan and Dr. Asil Özdoğru from the University of my graduate Uskudar University.

Finally, I pay my deep and sincere sense of gratitude to my mother Fatma Taşkın and my father Cemal Taşkın. Their endless and unconditional love, help and support either morally, physically and financially, have pushed me beyond limits to come to this stage. There are no words to describe my deep gratitude to have such a perfect family. This journey would not have been possible if not for them, and I dedicate this milestone to them.

Database and Search Word Information

The literature that constituted the main structure of this study was based on review of relevant manuscripts within the last ten years. Although up-to-date literature is the main basis, some older research were also included to introduce fundamental theories and significant leading findings. This inclusion was appropriate and necessary for the lack of recent studies on some specific subjects.

The relevant clinical research was collected by reviewing the literature among various commonly used, internationally valid databases such as: Pubmed, Researchgate ScienceDirect, Google Scholar, Bournemouth University Library Resources, and contextuallscience.

The used keywords and phrases to review databases for collecting relevant clinical research included: *"depression"*, *"Acceptance and Commitment Therapy"*, *"randomized control trials"*, *"treatment as usual"*.

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Abstract

Clinical behaviour analysis is a growing field, one in which complex and common clinical concerns are evaluated, especially those that significantly affect public health. Depression is one of the most common clinical phenomena that affects public health in terms of the considerable financial expenditure it requires, and more importantly it can lead to suicide.

The complexity of depression, especially in accordance with comorbidities, resistance to treatment and high rates of recurrence, has led to numerous studies being carried out on the various treatment approaches. There are three types of approaches to treatment for depression: biological, physiological and psychological. Biological treatment mainly refers to pharmacological administration in order to reduce depressive symptoms. However, a partial response or unresponsiveness can lead to persistent functional impairment and increased relapse rates. Exercise is a non-pharmacological, physiological treatment for depression, which becomes more beneficial with regular implementation. Psychological treatments are found to be more effective, since mood swings, experienced disappointments, emotional and physical loss or stressful events can negatively affect the biological components for which biological and physiological treatments are insufficient. According to several studies, third-wave intervention therapies such as cognitive and behavioural therapies (CBT), acceptance and commitment therapy (ACT), and dialectical behaviour therapy (DBT) are much more effective than supportive counselling. Although CBT is a commonly used method of psychotherapy in the treatment of depression, which involves directing the patient to

understand his or her own depression and to learn how to fight it, it has some limitations. These limitations include the need for the patient's self-commitment, the lack of sufficiency in terms of minimising the risk of recurrence, and the fact that it is not suitable for comorbid depression. An increasing number of randomised controlled trial (RCT) studies have taken place in the literature in order to evaluate the efficacy of ACT in the treatment of depression.

The main goal in ACT is to achieve psychological flexibility. Psychological flexibility is the use of all human skills, and it involves encountering the mind, feelings, anticipations, intuitions, needs, the external world and relationships in repetition. According to empirical studies, ACT has a better effect than treatment as usual (TAU) and controls. However, more studies should be conducted in order to claim a certain superiority for ACT over traditional therapies, and RCT methodologies should be improved in further studies. Based on this fact, the aim of this critical review is to review the currently published literature. Some current RCTs targeting the efficacy of ACT in depression, the efficacy of early intervention with ACT, and comorbid depression with anxiety disorder, alcohol use disorder and psychosis are included below. Additionally, in relation to another aspect of evaluating ACT in the treatment of depression, two further studies are included, one of which is an evaluation of ACT in obese women with depressive symptoms, and the other is a comparison of the efficacy of ACT when administered by psychologists and non-psychologists.

According to these studies, ACT has been found to reduce depressive symptoms in comorbid depression as well as decreasing other symptoms of related psychological disorders. There has also been a clinically important finding that non-psychologists can become able to

administer ACT after a short period of being trained by professionals. This will be a beneficial approach to overcoming the lack of authorised ACT administerers. However, these results have shown some conflicts based on significant factors, such as sample size (insufficient), control groups (limited mostly by waiting list controls), a lack of comparability due to the lack of similar studies, and inter-rating evaluations.



1. INTRODUCTION

1.1. DEPRESSION

1.1.1. What is Depression?

Depression is one of the most threatening problems in terms of community health (Kanter, Busch, Weeks & Landes, 2008). The high prevalence rates, increased risk of chronicity and increased frequency of suicidal behaviour, and the resulting loss of power and economic consequences, are increasing the importance of depression research. According to a report by the World Health Organization (WHO) in 2001, depression is the second most common reason for Disability Adjusted Life Years (DALY) for people aged between 15 and 44 years. The same report estimated that by the year 2020 depression would be the most significant disturbance affecting working life (Reddy, 2010).

According to The Diagnostic and Statistical Manual of Mental Disorders, Volume 5 (DSM-V), depression is defined as a mental disorder that leads to attention deficiency and is accompanied by at least two weeks of loss of pleasure, interest and desire to do daily activities, lack of sleep, or appetite imbalances, of which many are accompanied by suicidal thoughts and perceived extreme negativity (American Psychiatric Association, 2013). According to DSM-V criteria, the previous “Mood disorders” chapter (in DSM-IV) is split into two chapters: “Bipolar and related disorders” and “Depressive disorders”. Disruptive mood disorder, major depressive disorder (MDD), persistent depressive disorder, premenstrual dysphoric disorder, substance related depressive disorder, depressive disorder due to medical

condition and unspecified depressive disorder are the seven most common types of depressive disorders (Uher, Payne, Pavlova & Perlis, 2013).

1.1.2. DSM-V Diagnostic Criteria of Depression

In the present psychiatric nosology, the diagnostic criteria for all categories of depressive disorders are well-defined in DSM-V. Due to the most common depressive disorder being MDD, the diagnostic criteria are classified as follows (Ng, How & Ng, 2016):

A. According to the DMS-V criteria for MDD, at least five of the following symptoms should be present for the majority of the day, almost every day, for two consecutive weeks. One of the symptoms should be depressive mood or loss of interest or pleasure (anhedonia).

- ✓ Depressed mood - sadness, depression, emptiness, feelings of helplessness during most of the day
- ✓ Loss of interest and pleasure in almost all activities
- ✓ Insomnia or excessive sleep (hypersomnia) nearly every day
- ✓ Significant loss of appetite or weight change
- ✓ Psychomotor retardation or agitation
- ✓ Low energy or fatigue nearly every day
- ✓ Poor concentration
- ✓ Poverty or guilt considerations
- ✓ Recurrent thoughts about death or suicide (Regier, Kuhl & Kupfer, 2013)

- B. The symptoms lead to impairment or clinically significant distress in the sufferer's social and occupational life.
- C. No attribution of episodes to any other psychological effects of the substance of another medical condition.
- D. Schizophrenia, schizoaffective disorder, schizophreniform disorder, delusional disorder, or other specified and unspecified schizophrenia spectrum and other psychotic disorders are no better in terms of explaining the presence of major depressive episodes.
- E. There should not be a manic episode or a hypomanic episode background.

The presence of criteria A to C indicates a major depressive episode (American Psychiatric Association, 2013).

1.1.3. Epidemiology of Depression

Chronic MDD and dysthymic disorder are the two major types of depression, with high prevalence all over the world (Blanco et al., 2010). They can be seen at any age, but are more common in middle age and especially in people aged 25 to 44 years. The prevalence of life-long major depression has ranged from 4% to 17% in various studies (Topuzoğlu, 2015; Thapar, Collishaw, Pine & Thapar, 2012). Additionally, the risk of depression has been found to be twice as high for women (25%) as it is for men (12%) (Gelenberg, 2010). However, as age progresses, this difference between men and women decreases (Gelenberg, 2010).

1.1.4. Comorbidity of Depression with Other Disorders

Comorbidity refers to the coexistence of two or more diseases at a given time. There are many studies in the literature that show the frequency of other Axis I disorders in MDD (Zimmerman, Chelminski & McDermut, 2002). The main finding in these studies is not only that the prevalence of psychiatric disorders accompanying MDD is high, but also that they affect the onset, course and treatment process of depression (Thapar et al., 2012). Approximately half of the patients in one study were shown to have suffered from an anxiety disorder as comorbidity over a one-month period (Zhiguo & Yiru, 2014). The most common disorders are social phobia, panic disorder, generalised anxiety disorder, obsessive-compulsive disorder and post-traumatic stress disorder (Ohayon & Schatzberg, 2010; Flory & Yehuda, 2015). However, there are also studies showing comorbidity with alcohol use disorder and impulse control disorder (Zhiguo & Yiru, 2014). Since the etiopathogenesis of psychiatric disorders has not been well elucidated, it is difficult to answer the question of whether two separate diseases are actually present at the same time, or whether the second disease accompanying the present disorder is a consequence of the psychiatric disorder (Zhiguo et al., 2014).

1.1.5. Treatment of Depression

The treatment of depressive disorders involves the correct diagnosis and determination of treatment goals (Thapar et al., 2012). The main goals of depression treatment are as follows: the selection of appropriate anti-depressant drugs, the evaluation

and treatment of additional medical disorders, the identification of suicide risk, the provision of treatment compliance, evaluation of the course of treatment, the administration of appropriate doses and duration if antidepressant medication is given, informing the patient about side effects, the maintenance of the effective response to the treatment, and evaluation of the need for psychotherapy (Dunlop, Scheinberg & Dunlop, 2013; Courtet & Lopez-Castroman, 2017).

There are three types of treatment approaches for depression: biological, physiological and psychological (Grover, Gautam, Jain, Gautam & Vahia, 2017). The selection of which type of treatment is needed can be done based on the diagnosis, severity and relapse history of the current depression (Ng et al., 2016).

1.1.5.1. Biological Treatments

Pharmacological treatment with antidepressant drugs constitutes a common biological treatment. There are two major classes of medications: tricyclic antidepressants (TCA) and monoamine oxidase inhibitors (MAOI) (Kupfer, 2005). One of the issues to be considered in antidepressant treatment is the fact that 15% to 35% of patients have a partial response or no response, in spite of adequate treatment (Mauskopf et al., 2009). Partial response or unresponsiveness leads to persistent functional impairment and increased relapse rates (Kupfer, 2005). Although antidepressant drugs can treat 70% to 80% of patients diagnosed with depression, a substantial interest in alternative invasive treatment options has been increasing (Al-Harbi, 2012). Other non-pharmacological treatments are electroconvulsive

therapy, transcranial magnetic stimulation therapy, light therapy, vagus nerve stimulation and brain stimulation therapy using implants (Fitzgerald, 2013).

1.1.5.2. Physiological Treatments

Although the efficacy of these treatment is known to be short-term unless performed with a regular approach, it constitutes a beneficial alternative for patients who are not willing to use anti-depressants (Busch et al., 2016). Physical therapy and exercise treatment stimulate the nervous system which leads to endorphine release. This hormones help the improvement of individual's mood and reduce stress (Mikkelsen, Stojanovska, Polenakovic, Bosevski & Apostolopoulos, 2017). Indirect benefits such as weight control, preserving cognitive function, maintaining muscle mass and strength lead to self-esteem improvement in depressive patients (Blake, 2012).

1.1.5.3. Psychological Treatments

In the development of depression, mood swings, disappointments, emotional and physical loss or stressful events have as much influence as biological effects (Sharpley, 2010). Therefore, pharmacological and other invasive treatment options remain insufficient (Kamenov, Twomey, Cabello, Prina & Ayuso-Mateos, 2016).

Interpersonal therapy (IPT) is a short course therapy (12 to 16 weeks) for depression (Pu et al., 2017). The focus is on the patient's current problems and social relationships. In this approach, depression is considered to be a disease that occurs entirely on the basis of

psychosocial and interpersonal relationships (Cuijpers et al., 2011). It does not aim to reconstruct the personality of the patient. As a result of psychotherapy, the person will understand that depressive symptoms like feelings of guilt and worthlessness are only part of the disease, and relief will be provided (Van Hees, Rotter, Ellermann & Evers, 2013).

According to the studies, third-wave intervention therapies such as cognitive and behavioural therapies (CBT), acceptance and commitment (ACT), and dialectical behaviour therapy (DBT) are much more effective than supportive counselling (Renn & Arian, 2017). ACT has been increasingly discussed for its effectiveness in relation to behavioural activation and engagement in meaningful activities in depressive patients (Kanter, Baruch & Gaynor, 2006). CBT is a commonly used method of psychotherapy in the treatment of depression (Ng et al., 2016). The aim is primarily to direct the patient to understand his or her own depression and to learn how to fight it (Lopez & Basco, 2015). However, there are some limitations to CBT. There is “homework” which the patient is asked to do, so the patient needs to commit himself or herself to the CBT process in order to get the benefits (Nhs.uk, 2010). Also, in cases of treatment-resistant depression and comorbidity of other personality disorders, CBT cannot be helpful. There are also many published randomised controlled trials (RCT) about the effectiveness of ACT in terms of depression comorbidity (Twohig, 2017). ACT has more components than cognitive defusion in anxiety disorders, such as life values, work, psychoeducation, creative hopelessness, behavioural willingness, committed action, and value-guided exposure (Arch & Craske, 2008). It is also shown to be more effective in pain-management.

1.2. ACCEPTANCE AND COMMITMENT THERAPY

ACT is an approach used in action-oriented psychotherapy which originates from traditional CBT and behavioural therapy (Hayes, Strosahl, & Wilson, 2011). It is an adaptation of the view of valid alternatives in changing an individual's way of thinking, which includes paying attention to personal values, mindful behaviour and commitment to action, and these are the main goals of this therapy (Fletcher & Hayes, 2005). CBT in the ACT psychotherapy approach is defined as a member of that family, and it suggests the use of empirical evidence of cognitive behaviour without ignoring the importance of cognition in providing behavioural change (Forman, Herbert, Moitra, Yeomans & Geller, 2007). ACT is a part of the CBT family as well, as it criticises some of the basic propositions of the tradition (Hayes et al., 2011). ACT theorists put forward the basic interventions of the model they have developed and the process of change in the framework of basic scientific research into language and cognition (Hayes, Masuda, Bissett, Luoma & Guerrero, 2004).

The difference between ACT and the traditional CBT approach appears in the midst of the intervention areas, although it emerges at the level of philosophical and scientific method. For example, according to cognitive modeling, each disorder has its own disruptive cognitions, beliefs or information processing mechanisms, and treatment focuses on re-structuring these processes with functional methods, such as cognitive restructuring, or behavioural experimentation (Brown, Gaudiano & Miller, 2011). There are two major meta-analyses examining the efficacy of ACT (Öst, 2008; Powers, Zum Vörde Sive Vörding & Emmelkamp, 2009). Empirical support for these proposals of the cognitive model is weak and sometimes

non-existent, and restructuring the mind may have negative consequences (Wolitzky-Taylor, Arch, Rosenfield & Craske, 2012). In this direction, the ACT approach does not aim to change or decrease the intensity or the frequency of any intrinsic experience (thoughts, emotions, images, nudges or hallucinations) (Gaudiano & Herbert, 2006). This is one of the differences between ACT and the traditional CBT approach in terms of the level of intervention.

The behavioural tradition suggests an inductive method of intellectual psychology in the direction of the development of basic laws, not a deductive science theory (Hofmann, Sawyer & Fang, 2010). According to the empirical status of ACT, some controversies have been found in comparative studies on ACT and CBT in terms of methodology and efficacy. These studies have shown that ACT has a better effect than TAU and controls, and more studies should be conducted in order to claim a certain superiority of ACT over traditional therapies, and RCT methodologies should be improved in further studies (Ruiz, 2010).

1.2.1. Basic Theoretical Ground of ACT: Functional Contextualism

Contextual Behavioural Science, a scientific endeavour, is derived from a philosophical approach defined as functional contextualism (FC), and is a pragmatist interpretation of Skinner's radical behaviourism approach (Leigland, 2010). FC states that functioning should be taken as a basic criterion for testing the accuracy and meaning of psychological propositions. It suggests that all organisms are historically and situationally in a context and interacting with a context, and that the anticipation and direction of behaviour can be achieved by focusing on this interaction (Biglan & Hayes, 1996). In other words, FC argues that when analysing a

behaviour, the behaviour cannot be separated from the context in which it exists, and that only by focusing on its ongoing purpose in that context can this analysis occur (Hayes, Levin, Plumb-Villardaga, Vilatte & Pistorello, 2013). In this respect, it is necessary to clarify the contextual variables in order for a behaviour to be predicted and directed. Models based on two psychological interactions, such as the thought-behaviour relationship, cannot fully express the contextual variables (Rood, Roelofs, Bögels & Alloy, 2010). A thought may be related to a certain behaviour, but only a certain historical and situational context paves the way for the emergence of this thought and behavioural event together. The difference in the FC approach is its emphasis on this relation being controlled by contextual variables, and this effect is not taken into consideration in cognitive models (Hayes et al., 2013).

Hayes et al. (2013) have dealt with the lack of empirical demonstration of rule-guided behaviour, and their investigation into the effect of contextual variables related to the relationship between language and thought and behaviour has resulted in the emergence of the Relational Frame Theory (RFT) (Dymond, May, Munnally & Hoon, 2010). RFT is the most differential characteristic when comparing ACT with other second or third wave therapies in terms of acceptance, values and cognition (Törneke, Soriano & Salas, 2008).

1.2.2. Six Core Processes of ACT

This third wave cognitive behavioural psychotherapy integrates three approaches: “Acept your reactions and be present”; “Choose a valued direction”; and “Take action”. Human beings can act without changing their emotions and thoughts and without fighting

them (Kanter et al., 2006). ACT criticises the idea that previous behavioural therapies are lacking in this direction. ACT aims to increase the ability of an individual to achieve his or her goals by considering their own values (Hasheminasab, Babapour-Kheiroddin, Mahmood-Aliloo & Fakhari, 2015). Metaphors, exercises and paradoxes are used to undermine the literal function of language while emphasising how inadequate it is to describe actual experiences directly and precisely (Hoffmann, Contreras, Clay & Twohig, 2016). The goal of ACT is to achieve psychological flexibility (Scott, McCracken & Trost, 2013). Psychological flexibility is the use of all human skills, encountering the mind, feelings, anticipations, intuitions, feelings, needs, the external world and relationships in repetition (Hayes, Luoma, Bond, Masuda & Lillis, 2006). Experiential avoidance is one of the main causes of psychological inflexibility, especially when taking the necessary steps for valued actions (Luciano, Rodríguez, & Gutiérrez, 2004). In brief, ACT promotes the clarification of values and action according to these values, and, in addition, it promotes defusion in the presence of feared prior events involving valued factors (Arch et al., 2008). ACT accomplishes its goal of personal flexibility with six core processes, which are composed of factors both interconnected and partially overlapped in a Hexaflex model (Figure 1) (Hayes, Strosahl & Wilson, 1999).

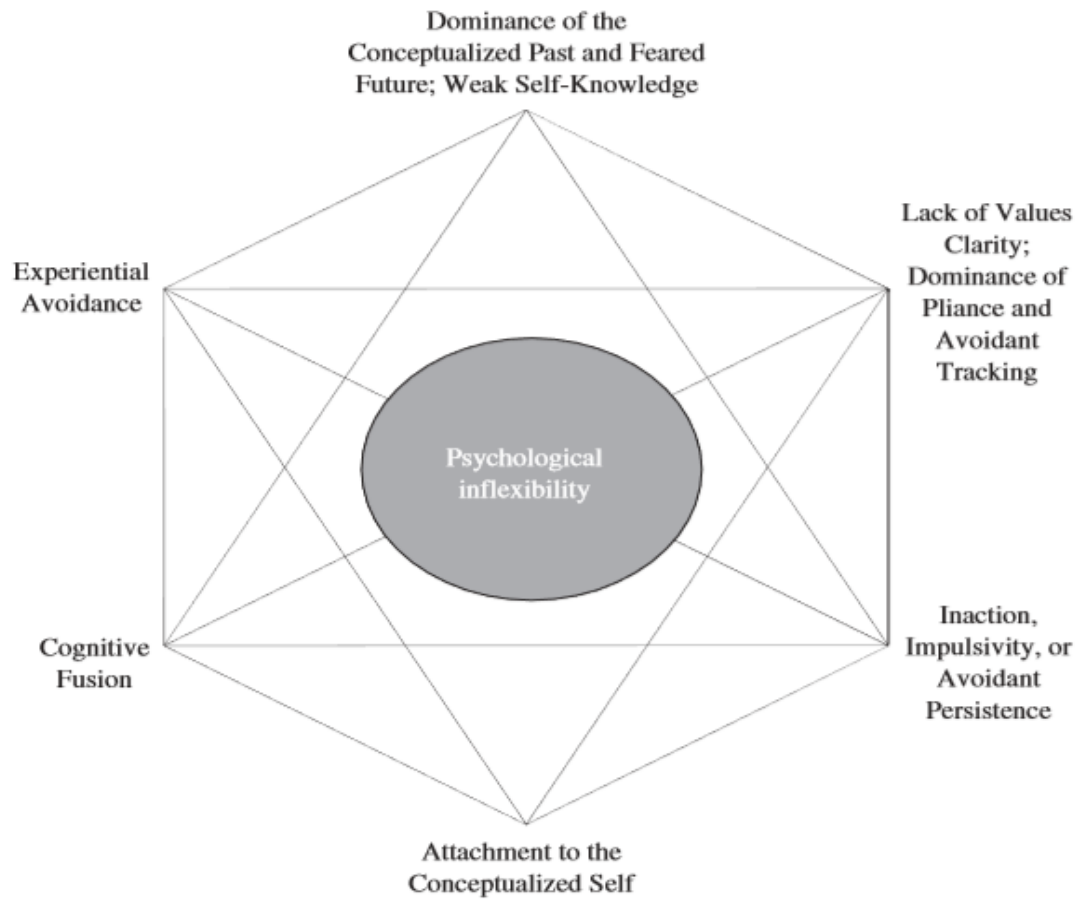


Figure 1: The Hexaflex model of ACT for psychological flexibility and inflexibility. Reprinted from Hayes et al. (1999)

1-Cognitive Defusion: Cognitive defusion can be defined as the dominance of relational frameworks (i.e. verbal content such as thoughts) over behaviour. This condition is not pathological in itself, but the individual is not or will not be aware of other stimuli as a result of an increase in intensity and prevalence of dominance (Ducasse & Fond, 2015). Cognitive defusion aims at a non-verbal, non-judgmental and interpretive posture in order to reduce

the dominance of these cognitive processes. Some of the most common diffusion examples are: repeating a thought until the meaning disappears, writing or imaging the thought with colourful paints, labeling the thought as 'this ... thought', or giving a shape, size and consistency to the thought (Zhang et al., 2018).

2-Acceptance: Experiential avoidance, which is defined as an attempt to change the frequency, intensity and the form of intrinsic experiences such as thoughts, feelings, physical signs, memories and images, although unnecessary, ineffective and functionally deteriorating, is associated with many psychopathological clinical situations. (Juncos et al., 2017). Experiential avoidance can reinforce the regulatory influence of the stimulus on the behaviour avoided by the negative reinforcement principle, and will not provide behaviour consistent with the long-term goals of the individual. ACT recommends acceptance as an alternative to experiential avoidance (Zhang et al., 2018).

3-Being Present: Cognitive fusion and experiential avoidance lead individuals to pass towards past- or future-focused mental activity from the individual's context. These mental activities emerge as rumination and anxiety (Pots et al., 2016).. The aim of ACT is to focus voluntarily and flexibly on the moment. This allows the individual to return to a functional behavioural repertoire in the direction of their own long-term values and goals. This can only be done by using the defining function of the language on the internal and external events rather than the judging and interpreting functions (Ducasse et al., 2015).

4-Self as context: Individuals write interpretive and judicial narratives about themselves. ACT aims to improve the approach in which self-experienced interventions are not self-defining, but are separate events that occur in themselves and do not need to be changed or removed (Hoffmann et al., 2016). At this point the individual can be directed towards their long-term values, adding meaning to their life, without having to make reference to their own stories about their behaviour. The contextual self is improved by mindfulness exercises, metaphors, and experiential exercises (Zhang et al., 2018; Ducasse et al., 2015).

5- Values: Values in terms of ACT are long-term life goals that can be chosen by the individual, verbally expressed, dynamic and varied (Prevedini, Presti, Rabitti, Miselli & Moderato, 2011). An ACT therapist helps patients to contact their values and select these values as a reference to themselves in the selection of their behavior (Hoffman et al., 2016).

6- Committed Action: ACT encourages the development of larger patterns of effective action linked to chosen values (Juncos et al., 2017). Although this approach is like traditional behavioural therapy, almost any behaviourally coherent behaviour change method can be fitted into an ACT protocol, including exposure, skills acquisition, shaping methods, and goal settings (Pots et al., 2016)

In brief, according to reviews of the psychopathological and treatment model of ACT, it interferes with the basics of human nature, which are language and cognition (Juncos et al., 2017). There are supportive data on ACT in the process of change, and the severity of psychological disorders such as depression and anxiety (Hoffmann et al., 2016). It has also been shown that ACT works through different processes of action to CBT (Hancock et al., 2017). However, more well-controlled studies should be conducted to come to the conclusion that ACT is more effective than CBT (Ruiz, 2010). Some of the current RCTs targeting the efficacy of ACT in depression, the efficacy of early intervention with ACT, comorbid depression with anxiety disorder, alcohol use disorder and psychosis are critically reviewed below. Additionally, in terms of another aspect of evaluating ACT in depression, there are two more studies which include the evaluation of ACT in obese women with depressive symptoms, and a comparison of ACT as administered by psychologists and non-psychologists.

2. CRITICAL REVIEW

2.1. Bohlmeijer, Fledderus, Rokx and Pieterse (2010)

Depression is one of the most common psychological disorders that affect public mental health. Despite effective treatment, only 40% of the burden of depression can be avoided. Depressive symptomatology can be a predictor of developing clinical depression. Therefore, early interventions should be developed to help individuals who are not in need of medical intervention but are suffering from depressive symptomatology. The treatment process of depression is also challenging, long-period and expensive, which constitute the need for effective approaches before diagnosis of depression with depressive symptomatology. The current literature does not include sufficient information about cost-effectiveness of ACT. Arch and his colleagues (2012) indicated that ACT is associated with access of more therapy so it showed an advantageous situation in terms of reducing cost of all treatment. Bohlmeijer et al. (2010) conducted a study in the Netherlands which was designed to evaluate the efficacy of early intervention based on ACT for depressive symptomatology. The secondary aim was to examine the effects of the ACT process on experiential avoidance (EA), which is a loss of motivation connected with thoughts and feelings. This mechanism is involved in depression as well as in other psychopathology.

The study participants were selected from individuals who responded to an advertisement describing the target group of the study as people who were willing to recover from depressive symptoms by accepting ACT intervention. 140 responders, aged 18 years or older, were assessed for eligibility. The exclusion criteria were if a respondent was undergoing

current treatment at a mental health centre, had started psychopharmacological treatment in the last three months, had no psychological complaints of symptoms, or had missed more than two sessions. Randomisation was used to select 93 participants, with 49 of the participants assigned to ACT intervention, and the other 44 placed on the waiting list. The socio-demographic characteristics of the participants were recorded as gender, age (<50 and ≥50 years), race, occupation, and education level.

The participants were asked to complete some measures at the time of baseline (T0), after two months of post-treatment, which was right after the intervention (T1), and at the follow-up stage, which was five months after the baseline (T3). These assessments of the primary measure of depression were carried out using the “Center for Epidemiologic Studies Depression-Scale (CES-D)” questionnaire with the secondary measures of anxiety, fatigue and alcohol addressed by the “Hospital Anxiety and Depression Scale-Anxiety Subscale (HADS-A)” and “Checklist Individual Strength (CIS)”, and EA as a process was measured using the “Acceptance and Action Questionnaire-II (AAQ-II)” (Levin, Luoma, Lillis, Hayes & Vilardaga, 2014). The HADS-A total score has a range between 0 and 21, whereby higher scores indicate more severe anxious symptoms. The AAQ-II total scores range from 10 to 70, and a higher total score shows higher acceptance and less EA of the individual.

The ACT intervention was a group-based intervention (seven individuals per group), and it included 82 hours of weekly sessions. The six core processes of ACT were performed during the sessions, which were: *“willingness to experience negative emotions and thoughts, cognitive defusion, contact with the present moment, self as context, values and committed*

action". The participants in the waiting list group did not receive any intervention. They attended ACT intervention as the study ended.

A non-parametric Mann-Whitney U test was used to compare scores between the groups, and Cohen's d test for calculating effect size was used as a statistical test. A p value of less than 0.05 was considered to be statistically significant.

According to a comparison of the means and the standard deviations of the demographic variables, no statistically significant difference was detected between the ACT intervention group and the waiting list group. However, the acceptance scores were lower and accordingly the EA scores were higher than the general Dutch population. The number of participants reporting alcohol misuse was similar in the ACT intervention group and the waiting list group (8 and 10 participants, respectively). Therefore, in terms of alcohol misuse there was no significant difference between the groups. The depression scores were lower in the ACT intervention group, and there were differences between the baseline, post-treatment and follow-up measurements. Anxiety was also lower in the ACT intervention group at the post-treatment ($p=0.006$) and follow-up ($p=0.043$) stages. Similar results were shown for fatigue.

As a result of this study, lower levels of depression and higher acceptance at the beginning of ACT intervention indicated the higher efficacy of ACT on individuals with non-severe depressive disorders. As expected, the AAQ-II scores improved as the ACT intervention sessions increased.

When the study was evaluated from the viewpoint of results, its main strength was the correlation with the existing literature, which showed the effectiveness of ACT in reducing depressive symptomatology. However, there are apparent limitations that might interfere with the reliability of results. One of the most important limitations was the lack of diagnostic instruments being used, so it was not certain that the participants were suffering from any other mental health issues. The participants were classified as <50 and ≥ 50 years of age, which indicated that the age of 50 is considered as a cut-off, although this was not an intended issue in the study design. Additionally, this study was based only on the self-reports of the participants. However, there should be a clinical assessment in order to increase the reliability and strength of the study. Another important limitation was using the waiting list group as a control, which might include non-specific, uncontrolled factors. An active control group should be included in order to overcome this uncertainty.

2.2. Dalrymple et al. (2014)

Most of the studies in this field, including the one described in the previous section, are designed to evaluate the efficacy of ACT in terms of depression only. Some psychiatric cases can be diagnosed with two or more behavioural disorders at the same time, which is termed psychiatric comorbidity. As mentioned in the chapter titled “Depression”, MDD is commonly shown in comorbidity with anxiety disorders. The effect of ACT is being evaluated for such cases, as in the study by Dalrymple et al. (2014). They published the preliminary results of their study, with the aim of developing an integrated acceptance-based behavioural

treatment for depression and comorbid social anxiety disorder (SAD). Although SAD is one of the most common comorbid anxiety disorders with depression, patients tend to seek treatment for depression rather than SAD. Comorbidity of depression and SAD leads to more severe results than depression alone. According to the onset of SAD, critical factors, such as the severity of depression, pharmacological treatment outcomes (treatment-resistance in depression), and recurrences show different patterns. In addition, it was shown that depression and SAD comorbidity could affect the mechanism of psychotherapy in a negative way. For example, DeRubeis et al. (2005) showed that the severity of depression in a subject who had comorbid SAD got worse after CBT. ACT has been shown to be effective in the separate treatment of depression and SAD. Therefore, in this study, they hypothesised that ACT integrated with behavioural therapy as an adjunctive treatment to pharmacotherapy could decrease depression and SAD symptoms significantly.

This study included participants who had been diagnosed with a depressive disorder (MDD in partial remission, or depressive disorder not otherwise-specified (DDNOS), or dysthymic disorder) according to DSM-IV. They were also seeking treatment. The participants were at least 18 years old, as in the previously described and other studies. Since depression is rarely seen in children, most studies include individuals aged 18 years or older. Participants with bipolar disorder, borderline personality disorder and psychotic disorders were excluded. The presence of any other comorbid disorders were permitted only if they were not considered to be a primary diagnosis. Also, all of the participants had to be able to read, speak and complete tests in English.

Among the 45 consenting individuals, 38 of them were eligible due to the inclusion criteria. 31 of them started to receive the same protocol in the same order in the psychiatry department. The principal researcher, Dalrymple, who was trained and well-experienced in ACT practice, behavioural activation (BA) and exposure therapy, supervised the other therapists in the study, who were clinical psychology students.

The integration exposure therapy and ACT for SAD was based on a prior trial. BA exercises were integrated for depression. Additionally, this treatment plan was designed as an adjunctive treatment to pharmacotherapy. The treatment was planned to last for 16 weeks (16 sessions), including sessions and routine pharmacological treatments. At the initial sessions (sessions 1-3), the withdrawal and avoidance patterns of participants were revealed and their strategies were evaluated, in order to overcome those negative experiences and thus increase the quality of life. In session 4, exposure exercises were performed. Behaviours were linked to specific values that would give meaning to the individual's life. After practicing these relationships in each session with acceptance- or mindfulness-based skills, experiential exercises and metaphors were carried out between the 5th and 9th sessions to help the participants realise the difference between reality and their method of evaluation. At sessions 10 and 11, metaphors (such as the chessboard metaphor) and exercises (observer) were used to help the participants contact their observer selves. The participants were asked to clarify the value of their lives, and they practiced specific behaviours in relation to that value. These values and willingness were linked in the committed action phase during the 14th and 15th sessions. Finally, the participants were assisted in terms of preventing relapses. All of the

patients received pharmacotherapy during the sessions, without any restrictions on the type or amount of medication.

The Structured Clinical Interview for DSM-IV Axis I Disorders was used to determine study eligibility. Doctorate-level psychologists and research assistants with Bachelor's degrees in biological or social sciences diagnosed the participants. The Structured Interview was administered to confirm the absence of borderline personality disorders for DSM-IV Personality Disorders. The severity of symptoms was evaluated using *The Quick Inventory of Depressive Symptomatology*, with both the self-report and clinician versions used. Social anxiety fear and avoidance were assessed separately using *The Liebowitz Social Anxiety Scale*. SAD symptoms (self-reported) were evaluated using the Social Phobia and Anxiety Inventory. The satisfaction of individuals in terms of their health and social lives, in other words, their quality of life, was assessed using The Quality of Life Inventory (QOLI). The *World Health Organization Disability Assessment Schedule* was used to assess functional impairment demonstrating a measure of disability. Behavioural avoidance was measured using the Behavioural Activation for Depression Scale. The *Acceptance and Action Questionnaire-II* (AAQ-II) measured psychological inflexibility. The adapted version of the *Reaction to Treatment Questionnaire* (RTQ) for this study was used to measure treatment expectancies and the perceived credibility of the treatment. The *Client Satisfaction Questionnaire-8* (CSQ-8) was implemented by an independent assessor, and it asked about the most useful treatment in terms of the participants' approaches approaches. It also assessed the ways in which the participants found the treatment beneficial. Information about pharmacotherapy

sessions was obtained from the adapted version of the *Outpatient Visit Clinical Record Form*. Assessments were done at the pre-, mid- (after the 8th session) and post-treatment (after the 16th session) stages. A repeated measures of variance analysis was performed to evaluate any changes in outcome, and Pearson correlations were analysed for the pre-, mid- and post-treatment scores.

According to the study results, the functioning and symptoms of the patients were significantly improved, and the patients were highly satisfied with the treatment. The strength of the external validity of the study was high because it was conducted in a typical outpatient psychiatry practice. Various factors, such as functioning and quality of life, were evaluated via multiple approaches in terms of multiple time points, self-reports, and independent assessors. Although these factors seem to be strengths of the study, the small sample size and the certainty of the results constitute limitations. A small sample size completed all of the sessions and therapies as designed, and this might create bias. In addition, the results from a small sample size indicate only preliminary results, therefore larger randomised trials should be conducted. Another important conflict was the uncertainty over the reasons for the favourable outcomes. It was not clear if the results were specific to ACT therapy or pharmacotherapy. The improvements should be clarified, specifically on the basis of pharmacotherapy or psychotherapy. In conclusion, the study contributed to the literature with a new approach to addressing acceptance-based behavioural therapy for depression and SAD comorbidity. The significant improvements in depression, social anxiety, quality of life and functioning which were seen at the end of the 16 sessions indicated a promising

therapeutic method of treatment for depression and SAD comorbidity, which should be studied on a larger scale and by comparing it with other treatments. Psychotherapy findings have been more mixed, with one study showing that patients who received CBT for depression fared worse when comorbid SAD was present (DeRubeis et al., 2005).

2.3. Petersen and Zettle (2009)

Another common comorbidity with depression is substance use disorders, especially alcohol use disorders, which are commonly seen in comorbidity with mood disorders. According to epidemiological studies, the prevalence rate of mood disorders and any alcohol use disorder is 21.8%. Major depression is the most common depressive disorder, and alcohol use disorder co-occurs with a rate of 16.5% (Petersen et al., 2009). The most prevalent Axis I diagnosis was major depression, with a 60% rate in both outpatient and inpatient mental health and substance abuse treatment services. Axis I is one of the five axis models in the DSM multi-axial system of diagnosis, which indicates a clinical disorder and its symptoms that require treatment. However, comorbidity remains a critical struggle, especially in terms of the treatment of mental health disorders. Patients should be assessed using a multidimensional approach to treating depressive symptoms while keeping the symptoms of alcohol use disorder under control. Some studies were conducted to develop sequential treatment approaches; however, this model was designed primarily to resolve or stabilise primary diagnosis while delaying the comorbid disorder. The parallel approach treats co-occurring disorders at the same time, which leads to cost issues for fractionating services. Based on this

fact, studies into integrated treatment approaches became in-demand in relation to management of the comorbidity of mental illness and substance abuse, as these approaches have shown promising results.

Peterson et al. (2009) conducted a preliminary study with this approach, aiming to extend the earlier studies by evaluating the relative impact of ACT with treatment as usual (TAU), as an integrated approach for the management of patients with both depression and alcohol use disorder. They preferred ACT because of its beneficial results in depression and alcohol use disorder treatments separately. Another basis of this selection was ACT's impact on weakening avoidance, which is a common pathogenic process within various clinical human sufferings. The hypothesis of the study was that patients suffering from both depression and alcohol use disorders would benefit more from ACT than TAU.

The study included 29 individuals who had been admitted for alcohol use disorder treatment, and had also been diagnosed with depressive disorder, according to DSM-IV criteria. The exclusion criteria were that they should not be diagnosed with substance induced depression and should not show symptoms of intoxication at any stage of the treatment and the study assessment. All of the patients met the inclusion criteria. However, five individuals withdrew from the study for various reasons, including being discharged from the hospital. The other 24 individuals completed all of the phases of the study. They were randomly assigned to ACT and TAU. No significant differences were found in accordance with the demographic characteristics. Depressive disorder not otherwise specified and alcohol dependence was found as the most common comorbidity (TAU n=6, ACT n=7).

Levels of depression were measured using the 21-item version of the Hamilton Rating Scale (HRS) at the pre- and post-treatment stages. The evaluation was conducted with both interviewer-rated and self-reported expressions. The assessors were blind to the participants when they completed the HRS. In addition, each administration was audiotaped, which allowed for a reliability analysis. The scores of both the independent assessors and the interviewers showed an agreement at both the pre-treatment ($p < 0.01$, $r = 0.80$) and post-treatment ($p < 0.01$, $r = 0.84$) stages. Another measure was The Beck Depression Inventory Second Edition (BDI-II), which was administered as a self-reported evaluation of depression. This measure was found to have high internal consistency and reliability due to previous studies. The acceptance and action questionnaire (AAQ) was used to measure EA such as unwanted memories, thoughts, emotions and bodily sensations. AAQ is known to be an appropriate measure for evaluating the mechanism of action within ACT. The pre-treatment AAQ scores were found to be positively correlated with both depression scales, but not with the number of consumed drinks. Treatment dosage was measured, including the duration of treatment phases, hours of therapy received, and number of therapy sessions per individual.

The treatment conditions were arranged via random assignments to TAU ($n = 12$) and ACT ($n = 12$). All of the individuals underwent a 12-step therapeutic approach in the hospital's chemical dependency unit. They were also administered anti-depressant medication under the monitoring of nurses. The dosages and medication did not differ between the two groups. All of the individuals attended group therapy through Alcoholics Anonymous meetings for at least five hours per week. They also attended psychoeducational and medical lectures in order

to improve their health-related behaviours. In the TAU administered group, individuals received sessions primarily targeting alcohol use disorder rather than comorbid depression. In the ACT administered group, individuals received 30 minute sessions addressing both depressive and alcohol-related struggles. The principal researcher conducted the ACT sessions by himself according to the protocol in the ACT book by Hayes. A staff of psychologists subsequently judged and reviewed half of these sessions, which were also audiotaped. This review process was performed via a 10-point Likert scale, which showed a mean rating of 8.2.

The pre-treatment stage was assessed using the Alcohol Timeline Followback Interview (Alcohol TFLB) and the Problems Assessment for Substance-Using Psychiatric Patients (PASUPP), as well as the other measures mentioned above. The PASUPP data did not show any differences between the two groups. The post-treatment assessment, at the time of discharge, also did not show any significant differences between the two groups.

The results of this study showed that ACT reduced EA, as expected, which is considered promising for the treatment of comorbid depression and alcohol use disorders. However, the cost of daily treatment with ACT was higher, which constituted a financial issue regardless of its therapeutic impact. The issue is that health policies supply funding only for the treatment of depressive disorders or chemical dependency, but not both at the same time. There was also uncertainty over the significantly shorter treatment phase for ACT, because the decision to discharge patients, which terminated the treatment, might constitute bias. When the integrity of the discharge issue is set aside, the significant reduction in EA in correlation with

improvement in terms of self-reported depression in the ACT group suggests that ACT could be a successful approach to treating comorbid depression and alcohol use disorder.

2.4. Gaudio et al. (2015)

None of the previous studies evaluated ACT in integration with other treatments for mental disorders. Gaudio et al. (2015) conducted a randomised control trial which aimed to test the feasibility of acceptance-based depression and psychosis therapy (ADAPT) in the treatment of comorbid cases involving depression and psychosis. This study constituted a principle-driven approach, which set it apart from previous studies. They also adopted a different point of view by integrating ACT with psychosis therapy.

Another frequent comorbidity of depression is psychosis, which indicates functional impairment, increased severity of illness, and resistance to treatment. Although pharmacological treatment has recently been used for depression with psychosis, the outcomes are insufficient in terms of relapse rates, response, and continuous functional impairment. Due to this issue, studies including psychotherapeutic approaches are being conducted in relation to this comorbidity. According to previous studies, BA showed efficient results in terms of improving patients' environmental contact, functional engagement and reinforcement. ACT is also known to be an effective approach for both depression and psychosis, separately. Patients with depressive disorders commonly experience EA, and the main effectiveness of ACT is in relation to this point. EA fosters preoccupation with experiences in both depression and psychosis cases. Therefore, the combination of ACT and

BA is considered to be an effective integrated strategy to overcome depressive and psychotic symptoms.

In this study, the researchers hypothesised that ADAPT would be effective in addressing the underlying avoidance of internal unwanted experiences by these patients, by increasing their willingness to cause significant life changes.

This study involved 38 patients at first; however, it included 13 patients with comorbid depression, diagnosed according to DSM-IV criteria, with psychosis, who met all of the inclusion criteria. The patients were randomly assigned to TAU medication and a combination of TAU medication and ADAPT. The inclusion criteria were a diagnosis of MDD with severe psychotic symptoms according to DSM-IV, or a depressive type of schizoaffective disorder (depressive type) determined by the structured clinical interview for DSM-IV (SCID). Additionally, other inclusion criteria were the presence of current MDD based on SCID, being at least 18 years of age, having a sufficient ability to read and speak in English, and receiving pharmacotherapy treatment administered by a clinician. Patients with bipolar disorders and pregnancy were excluded.

The procedure of TAU medication included pharmacotherapy under the management of a community treatment provider. This treatment included antidepressant and antipsychotic medication. This group was evaluated as it is considered a first-line treatment in depression with psychosis. The patients were assessed at the baseline, post-treatment and three-month follow-up stages, with three letters sent to the providers of enhanced assessment and monitoring conditions (EAM). The second group, which was given ADAPT in combination with

TAU medication, was used to evaluate the additional potential effects of ADAPT. The original protocol of 24 sessions over six months was reduced to 16 sessions over four months in order to carry out assessments in a shorter period. The values and goals were clarified after two sessions (phase 1). The Valued Living Questionnaire was used while the therapist supervised the patients as they identified their relevant values and short-term goals. BA skills were introduced during the other six sessions (phase 2), in which EA was functionally analysed. Patients received training on the trigger-response-avoidance pattern (TRAP) and the trigger-response-alternative coping (TRAC) models for coping strategies. In the six sessions of phase 3, efforts including metaphors and experiential exercises for developing mindfulness and acceptance skills were used to promote active change. Finally, the last two sessions (phase 4) were designed to prevent relapse and to allow for successful termination of the treatment.

The SCID-I measure was performed at the baseline to evaluate the Axis-I diagnosis of each patient. The Quick Inventory of Depressive Symptomatology-Clinician (QIDSC) was used for depression, the Brief Psychiatric Rating Scale (BPRS) for symptom severity, the brief version of the World Health Organization Disability Assessment Schedule (WHODAS-II) for reliability and validity when assessing various aspects of psychosocial and physical disability, AAQ-II for EA, the Behavioural Activation for Depression Scale (BADs) for measuring activation and withdrawal related to depression, the Credibility and Expectancy Scale (CES) for measuring the initial expectations of patients in terms of the improvements which would be caused by the treatment, and the Client Satisfaction Questionnaire-8 (CSQ-8) for the patients'

satisfaction with the services . All of these measures were based on the self-reporting of patients, and some involved the findings of the interviewers.

The interviewers were trained in achieving acceptable inter-rater reliability prior to the study. The assessors of the post-treatment stage were kept blind to the conditions of the patients. The baseline and follow-up assessment fees were compensated for patients, which sets this apart from other studies. The patients were assigned to therapists based on availability, which indicated non-randomisation. The creator of ADAPT treated one patient, while the others were treated by three other therapists. All of the therapists had doctorate degrees in clinical psychology.

Cohen's d effect sizes were reported, since the sample size was small. The scores were assessed using non-parametric statistical tests. All of the reports were supplied only for those participants who completed the process.

According to the results of the study, both conditions were accepted by the patients. However, ADAPT, especially in terms of post-treatment assessment, was more favourable in terms of EA and psychosocial functioning. Therefore, ADAPT was suggested as a promising approach to improving the outcomes of patients with depression with psychosis when compared with TAU medication alone. However, this result should be tested in a fully powered randomised trial.

Although this study used a unique approach by integrating two therapies, its methodology and design have some limitations as well as strengths. Some patients were excluded from this study due to their unexpected discharge. Therefore, the sample size was insufficient to

generalise the results. However, it should be considered that only one patient was diagnosed with schizoaffective disorder. This study was carried out in concordance with previous studies suggesting that combined therapy is more beneficial than TAU medication alone. However, there was a limitation of the study caused by reducing the optimal protocol of ADAPT duration to four months, which might affect the magnitude of the effects. In addition, another limiting factor was the comparison of two groups for the severity of depression at the baseline stage in terms of effect sizes. However, this can be overcome in future studies by including larger-scale randomised trials. The randomised design, blind assessments and high treatment integrity were the strengths of this study. Nevertheless, this study has made a valuable contribution to the literature on the treatment of depression with psychosis in favour of ADAPT combined with TAU medication.

2.5. Potts et al. (2016)

The studies described above were focused especially on the treatment of comorbidity of depression with other disorders such as psychosis and alcohol use disorder. However, the risk of developing MDD is an increasing issue worldwide. Although public based interventions seem to be promising, the prevalence of depressive symptoms continues to increase. To overcome the challenge of recruitment, the development of novel intervention strategies is important. CBT is a well-established therapeutic approach to depression. Additionally, meta-analyses have indicated that web-based interventions involving CBT for depression are

effective. Web-based intervention based on ACT had not been studied, even though the efficacy of conventional ACT has been shown in the treatment of depression. Based on this fact, Pots et al. (2016) conducted a randomised controlled trial titled “Acceptance and commitment therapy as a web-based intervention for depressive symptoms: randomised controlled trial”.

The aim of this study was to compare the efficacy of web-based intervention involving ACT, with an active control group and waiting list patients who suffer from depressive disorders. Participants were selected from responses to advertisements in Dutch national newspapers and on the internet, asking for volunteers who were willing to take part in this research by assessing how they cope with their emotions using a free web-based intervention method. The inclusion criteria were being aged 18 or older, having mild to moderate depressive symptoms, obtaining scores above 10 in the Dutch version of the Center for Epidemiological Studies – Depression (CES-D) scale, and completing the baseline measurement. The exclusion criteria included individuals who scored less than 10 points in the CES-D, had received psychological or psychopharmacological treatment for a mental complaint within the past three months, did not have the ability to read and speak in Dutch, and were not able to spend 30 minutes per day, up to three hours per week, to take part in the intervention and daily practice. Additionally, indications of suicide risk according to the Mini International Neuropsychiatric Interview (MINI) and the Sheehan Disability Scale (SDS) was another of the exclusion criteria.

Five Master's degree psychology students conducted telephone interviews with the participants who passed the initial screenings. These students had undertaken a one-day workshop and had been supervised by licensed clinical psychologists in terms of CBT, ACT and expressive writing during the clinical assessments. The clinical interviewers were masked by randomised conditions to ensure a non-biased manner. Randomisation of the participants was performed after the clinical interviews.

The web-based ACT intervention therapy included a self-help intervention called "Living the Full", which was found to be promoting psychological flexibility. Higher scores indicated individuals with high levels of acceptance. This model was based on nine online modules, which were divided into three parts. The six core processes were: composed acceptance, cognitive defusion, mindfulness, self as context, choice of values in different life domains, and committed action. The avoidance and control strategies were reflected in the first part of the intervention, the ability to stay in contact with the present experiences was handled in the second part of the intervention, and awareness of the individual's important personal values and decision-making were processed in the third and final part of the intervention. The prevention of relapse within self-management and action plans was also included in the intervention.

The active control condition was planned based on Pennebaker's expressive writing paradigm, which has effects on various mental health outcomes. The term "active" was based on the expressive writings of the individuals in relation to their highly stressful experiences. Nine sessions in three sections were conducted, including psycho-educational writings on

emotional regulation. The participants were asked to write about their positive experiences in the last three modules of the active control intervention, including the aspect of self-management for preventive purposes.

The participants on the waiting list did not undergo any intervention. However, they were free to access other forms of care. They were informed that they could benefit from this web-based intervention six months after the baseline stage. The participants in the web-based ACT and active control web-based intervention conditions completed nine sessions over 12 weeks.

The CES-D measure was the primary outcome, in which higher scores indicated more depressive symptoms. The secondary outcome was the inclusion of diagnostic classification, positive mental health, anxiety symptoms, psychological flexibility, and mindfulness. The assessments were performed at the baseline stage, at post-treatment, and then three months, six months and 12 months after the baseline.

According to the results of this study, 256 participants were selected from 436 volunteers based on the inclusion and exclusion criteria. 82 were included in the ACT group, 67 were included in the excessive writing group (the active control condition), and 87 were in the waiting list control group. There were no significant differences between the groups at the baseline stage ($p < 0.001$). For the analysis of repeated measures, ANOVA was performed to evaluate the outcomes of the patients. The outcomes of the patients at the post-treatment stages at six and 12 months after the baseline were found to have significantly improved in the ACT group in terms of depressive symptoms. Therefore, web-based ACT therapy was

suggested as an effective and applicable intervention for patients with depressive disorders as a result of this study.

There is a controversy over how the researchers of this study carried out the evaluation. The study showed smaller effects at the six month follow-up stage when compared with other studies. This effect could be associated with recovery in the waiting list control group, because the waiting list control group did not undergo any interventions, which could lead to a worsening of depressive moods. Besides, this study has some significant strengths. Its important contribution was that the results suggest that both interventions could be effective on people with recurrent depression. One of the most important strengths of this study was its comparison of two control groups instead of only using a waiting list control group. The reliability of the outcome measures was also enhanced by semi-structured interviews. The adherence was also higher (84%) when compared with other internet-based studies. However, there were some limitations too. The recruitment strategy brought the possibility of self-selection bias to mind. Additionally, the majority of the participants were well-educated individuals, which constitutes a conflict in terms of generalising the results, in spite of the large sample size. The reliability of the inter-rater for diagnostic classification was not assessed, which brings another conflict to the study. Nevertheless, this study contributed to the literature by standardising the format of web-based ACT intervention. The supervision of licensed psychologists was an important standard to consider. This study should be corroborated with future studies, even though ACT was found to have larger effects on expressive writings in a short period in patients with depressive symptoms.

2.6. Rafiee, Sedrpoushan and Abedi (2013)

The studies described above included both genders. However, gender-specific contributions are also involved, such as the self-confidence of women, especially based on their physical characteristics. According to feminist theory, women judge their appearance in dependence with men, which leads to increasing feelings of powerlessness and helplessness. Situations such as pregnancy, childbirth and violence perpetrated by men have a critical impact on the development of depression among women. Therefore, studies should be conducted in this field. According to relevant studies in the literature, CBT was found to be effective in terms of improving body image by inducing weight loss in the second phase of treatment. A study which involved 61 women who were dissatisfied with their weight showed the correlation between body satisfaction and mental health. In the previously mentioned articles, there was no specific consideration of gender or physical conditions, apart from having depressive symptoms. However, Rafiee et al. (2013) enlightened a different point of view in relation to ACT in the treatment of depression with their study, which was designed to evaluate the effect of ACT on reducing the symptoms of depression and dissatisfaction with body image among obese women in Isfahan, Iran. They hypothesised that ACT was effective in reducing depression among women who are obese.

This study included overweight women aged between 20 and 45 years at a nutrition and diet therapy clinic in Isfahan between 2012 and 2013. One centre was selected randomly from 10 nutritional centres in Isfahan, under volunteer conditions. The sampling was performed via one-to-one interviews which took place in the clinics every day. Beck's Depression Scale and

Fisher's Body Image Test were used to select participants. Individuals with scores of higher than 11 in Beck's Depression scale and with scores of between 46 and 136 in Fisher's Body Image test were selected. Fisher's Body Image Test involves a Likert scale indicating women's satisfaction with their appearance (Andersen & LeGrand, 1991). 34 women were randomly assigned into experimental and control groups. Two patients were randomly excluded during the study.

The experimental group received the ACT approach through eight sessions, once a week (for two hours), while the control (or in other terms evidence) group did not receive any intervention. The ACT period lasted for two months.

The tests of the pre-test, post-test and control groups were included in this semi-experimental study. All of the individuals were followed for a month after the study. The results were analysed according to the repeated measures between the groups as found by ANOVA, and a p value of lower than 0.05 was found to be significant.

According to the descriptive research findings, the mean values of the experiment groups for the pre-test, post-test and follow-up stages were as follows: 23.8, 20.2 and 20.47, respectively; while these findings from the evidence (control) group were as follows: 23, 22.67 and 22.4, respectively. After the statistical analysis of each group, a statistically significant difference was found between the two groups in terms of depression. There was a significant difference between pre-test, post-test and follow-up stages, at a level of $p < 0.01$. However, there was no significant difference between the two measures. This result meant that ACT

was effective in reducing depression and body image dissatisfaction. However, these findings would need to be confirmed with further analysis.

There are some factors of this study that should be evaluated before conducting further studies from the same point of view. Although it may seem to be a strength to be a leading study on this subject, the specific design of this study cannot be compared. However, some apparent factors should be questioned. In previous studies, the number of ACT sessions ranged from 12 to 16. In this study, the experimental group received only eight sessions, which should be increased in further studies in order to provide optimisation and make reliable comparisons between studies. The follow-up stage could lead to bias, because only one month after treatment the efficacy of ACT could remain. Therefore, it was not certain that the reduction of depressive symptoms in the follow-up stage would be persistent. Another limitation was the sample size, as it was insufficient to generalise the results to all obese women with depressive symptoms. The selection of cases remained dependent on the nutritional centre, and more centres which specialise in the same disorder should be included in order to evaluate the facts for all obese women. It would also increase the reliability of the study to have an active control group as well as non-treated controls.

2.7. Richardson, Bell, Bolderston and Clarke (2018)

The final article to be critically reviewed in this dissertation is different to the previous ones. Although this open control trial was poorer in qualitative terms than the previous RCT, it has been included in this thesis because it is the only study evaluating the efficacy of ACT

for complex patients in a community mental health centre by comparing the methods of delivery used by psychologists and non-psychologists. The outcomes of patients based on their clinical interventions has frequently been evaluated in the recent literature. However, it is important to reveal the consequences of ACT in terms of its practice and efficacy based on the training status of the psychologists and non-psychologists delivering the treatment. The study by Richardson et al. (2018) involved a preliminary small-scale and pre- and post- open trial plan.

The study was conducted in a National Health Service (NHS) community mental health service provision, which treats adults who have severe and continuous mental health issues. Multidisciplinary Team (MDT) staff and qualified therapists mainly deliver dialectical behaviour therapy (DBT). Later, ACT was also included to provide intervention from psychiatric nurses, social work colleagues and occupational therapists, alongside psychological therapists. Psychological therapists mainly delivered ACT to complex patients with significant health problems, multiple co-morbidity of depression, and higher suicide risk.

The questionnaires were completed after 12 to 16 sessions of the ACT therapy which is a routine part of the process in the NHS, so this research was approved as a service assessment

Researchers H.B. and S.C. provided training to 12 non-psychologist staff and eight psychological therapists over the course of five days. The trainees focused on one case at a time, and received fortnightly guidance. Three of the eight psychological therapists left after a little time, due to maternity or adoption leave. After six months, only four of the 12 non-psychologist trained staff remained.

The Clinical Outcomes Routine Evaluation (CORE-OM), the Patient Health Questionnaire (PHQ-9), the Cognitive Fusion Questionnaire (CFQ) and the Valued Living Questionnaire (VLQ) were used to measure the outcomes of the pre-, post- and three months after therapy stages. Among the 29 clients who received ACT, 21 were female and eight were male. The clients had a wide age range, from 21 to 67 years. 13 of the clients completed ACT and post-treatment questionnaires provided by psychologists, while 10 of the clients completed ACT and post-treatment questionnaires provided by non-psychologists. However, this number decreased in the follow-up evaluations. Multiple analysis of variance (MANOVA) was performed to analyse the outcomes over time in the clients who completed both the post-therapy and the follow-up evaluations.

This study suggested that ACT is an effective therapeutic approach for complex patients with depressive disorders such as comorbidity. A reduction in depressive symptoms and improved cognitive fusion was detected in the post-treatment stage and at the three month follow-up stage. The values' action and importance were only increased in the post-treatment evaluation. There was no significant difference between the psychologist and non-psychologist groups, which shows that non-psychologist medical staff possess promising potential in terms of treating complex depressive patients after receiving ACT training from a professional. Finally, the higher drop-out numbers in the non-psychologist group suggest that more careful recruitment of staff is needed.

There are some significant strengths and limitations that should be emphasised in relation to the design, methodology and results of this study. As it was conducted under the routine

processes of the health centre, it represented the real settings of the complex depressive participants. This was the first of the strengths to be mentioned. However, the limited sample size came forward as a common limitation in all of the studies examined in this paper. The standardisation was not sufficient in terms of completing questionnaires after three months, the variation of the total session numbers, and the non-random allocation of clients to psychologists or non-psychologists. Among these limitations, it was interesting that only five days of training was sufficient in order for the non-psychologists to deliver effective ACT. In the normal routine, ACT was delivered by psychologists in complex depressive cases. This result is promising, in that it could solve the problem of there being a lack of professionals who can administer ACT. However, the lack of a control group was a very important limitation. The most contributive and valuable studies are composed of RCTs which evaluate novel treatment strategies. Thus, this study should be re-conducted in further studies with a larger sample size of both clients and therapy deliverers (psychologists and non-psychologists), as well as including a control group to provide more certain and reliable results.

3. DISCUSSION

3.1. Critical Discussion of Recent Literature

Over the last two years, studies on the use of ACT in the treatment of depression have been increasingly conducted based on both ameliorative and preventive goals. Even though CBT is a form of psychotherapy commonly used in the treatment of depression, ACT, which is an empirically-based psychological intervention, targets a fundamental problem in depression called “*experiential avoidance*” (Arch et al., 2008). ACT teaches an individual to notice, accept and embrace his or her feelings, thoughts and memories associated with his or her depressive situation, while CBT focuses on changing the negative patterns in a person’s cognition, and showing coping strategies. As clinical behaviour analysis has become a rapidly growing field, studies into ACT intervention in the treatment of clinical depression have been published. The aim of this dissertation is to evaluate the impact of ACT on depression by critically reviewing several empirical studies in the recent literature. By reviewing five RCTs, one pilot study and a well-established open-controlled trial article, I will assess the current status of ACT studies, their limitations and strengths within a comparison of these articles and other studies in the literature, and will include suggestions for future studies into ACT on depression.

The review of ACT research has typically been divided into four parts in the evaluations by Hayes et al. (2006) and Ruiz (2010), as follows: correlational studies, experimental research, mediation studies and clinical trials. The meta-analysis of Öst (2008), which included seven

studies, is one of the leading evaluations of ACT studies. Even though he found ACT to be quantitatively more favourable than active treatments, he emphasised the fact that due to the methodological content, ACT could not fulfil the criteria to be considered an empirical validated treatment (Ruiz, 2010). The studies included in my critical review were composed of clinical trials and experimental research to reveal the strengths, progressions and limitations of ACT studies, using an approach based on the relevant literature and reviews.

The most important strength of the evaluated research was definitely the correlation of the study results with the previous relevant literature. There are no other studies evaluating the efficacy of ACT as an early intervention in the treatment of depression. Compton et al. (2004) showed that CBT is the best early intervention approach to treating depression disorders in children and adolescents. In the reviewed article by Bohlmeijer et al. (2010), they highlighted the effect of early intervention with ACT on the reduction of depressive symptomatology. However, this study cannot be compared with Compton's study, because the sampling was composed of adults (people aged 18 or over), while Compton evaluated younger participants. Both ACT and CBT seem to be effective as an early-intervention in the treatment of depression, and a comparative degree of treatments should be revealed in the same age groups and by including active groups of opposing treatment types. Comorbidity diagnoses should be taken into account in the treatment of Axis I disorders (Petersen et al., 2002). From this point of view, Kaufman and Baucom (2013) presented a detailed case report of 12 sessions of BA treatment on comorbid MDD and SAD. They found improved depression symptoms, and higher self-esteem scores. Arch et al. (2012) suggested ACT as another

promising effective therapeutic approach to the treatment of co-occurring anxiety disorders in depression, especially in cases of comorbid MDD and SAD. The findings of improved functioning and symptoms, according to the second article reviewed in this thesis (Dalrymple et al., 2014), were in correlation with the previous relevant literature. ACT was also found to be promising in the treatment of comorbidity of alcohol use disorder and depression, especially by decreasing experiential avoidance, in the study by Peterson and Zettle (2009). This leading study still continues to show similarities with recent relevant studies, such as the one by Thekiso et al. (2015). The groups involved in these studies were very similar (ACT and TAU). The fourth reviewed article (Gaudiano et al., 2015) is the only study in the literature which integrated ACT and psychosis therapy, although the findings supported ADAPT, especially in the post-treatment phase. Gaudiano et al. (2015) conducted another RCT of the same comorbidity using only ACT and TAU. When comparing the clinical findings with the literature, the fifth study, by Pots et al. (2016), obtained better results than the previous study by Lappalainen, Langrial, Oinas-Kukkonen, Tolvanen and Lappalainen, (2015), which found that web-based ACT is of minimal benefit in the treatment of depressive symptoms. This may be related to the fact that Pots' study was conducted at a later date and used a better study design. As mentioned before, the study into the efficacy of ACT on obese women is also unique, indicating reduced depressive symptoms (Rafiee et al., 2013). However, this finding was not absolutely reliable due to its limitations. The last study (Richardson et al., 2018), which was quite different to the others, confirmed the existing evidence of the efficacy of ACT in the treatment of depression, as Ruiz (2010) assessed in his review. However, the most important

contribution of this study was the potential efficacy of ACT on complex depressive patients who were treated by minimally trained non-psychologists. In brief, all of the reviewed articles were in correlation with the previous and further relevant studies. These findings support the use of ACT as an effective approach to the treatment of various comorbidities of depression, obesity and complex cases.

All of the evaluated ACT studies were found to support various significant aspects of this approach. However, almost all of the studies referred to preliminary results with some methodological limitations. This limitation was also emphasised in the review by Öst (2008). The efficacy of an ACT-specific treatment approach against traditional behavioural principles such as CBT was not evaluated in any of the studies. This assessment needs to be performed in further research, as most current studies have not attempted to split the effects of these two fundamental treatment approaches. One of the most important limitations was “small sample size”. In a study by Hayes et al. (2004), they demonstrated high reliability and validity by including 2,400 participants. In terms of the studies evaluated in this thesis, Pots et al. (2016) conducted the study with the largest sample size (256 participants). The participants were gathered by placing advertisements in newspapers and on websites, informing people about the study. This study was the only one which standardised a web-based intervention of ACT in the treatment of depressive individuals. Amongst all of the studies, this one came to the forefront with its sample size as well as its use of control groups. This study included both an active control group and a waiting list control group. This is an important issue in terms of overcoming the non-specific influences arising from waiting list controls. According to a meta-

analysis by Powers et al. (2009), ACT was found to be significantly better in the waiting list control group or placebo group, with an effect size of 0.68, while this value was 0.42 in the TAU group.

Additionally, Powers et al. (2009) found that ACT was no more effective than established treatments (such as CBT). When Levin and Hayes (2009) re-evaluated these results with some corrections, such as outcomes being mislabeled as secondary or primary, they found that ACT was significantly more effective in established treatments. All of the studies aimed to evaluate the outcomes of ACT treatment. None of the studies compared ACT with more commonly used CBT. The comparisons were generally performed with TAU or non-treated individuals (waiting list controls). Therefore, I could not make an assessment of ACT's efficacy in comparison to established treatments. In three studies, the ACT approach was evaluated in relation to comorbidities of depression, which were social anxiety disorder, alcohol use disorder and psychosis. These comorbidities are known to be the most common ones according to the literature. Therefore, the evaluations of the efficacy of ACT in the treatment of these clinical conditions were important. The use of ACT in these comorbidities was found to be effective in terms of decreasing depression scores, experiential avoidance, and the severity of other disorders rather than depression. In my opinion, independent replicative trials should be performed by using larger samples and more sophisticated designs (including active controls as well as waiting list controls), in order to confirm these promising findings of ACT in the treatment of comorbid depression. Öst (2008) also highlighted the need to attempt to generalise the published findings into clinical routines. Collaborations between

mental health clinics are particularly necessary. Nevertheless, the recent evidence seems to show the moderately strong efficacy of ACT at this relatively early stage of such studies. However, it still remains unclear at this point which specific advantages, if any, ACT has over ongoing well-established interventions (such as traditional CBT).

The measures selected to evaluate treatment outcomes constitute an important issue in designing empirical studies into psychotherapeutic approaches. AAQ is gold-standard measure of ACT outcomes for experiential avoidance and acceptance. This measure was used in every study. However, the measures of depression varied between the studies. The Centre for Epidemiological Studies – Depression (CES-D) was commonly used. The feasibility evaluation study by Guadiano, Bush and Wenzer, (2015) was a good example, with its well-designed methodology for measuring outcomes. However, this study was also limited by its small sample size and the reduction of the optimal ADAPT duration to four months. Öst (2008) developed a rating system for evaluating the analysis of the study results with a form called Psychotherapy Outcome Study Methodology Rating Form (POSMRF). This consisted of 22 items, rated by a 3-point scale (poor, fair and good). None of the studies included in my review had used this rating scale, which might constitute a limitation in comparison with the literature.

Another important factor which I noticed whilst critically reviewing all of the studies was the participants included for scoring. In most of the studies, the evaluations were based on the self-reports of patients only. Making an assessment based on this unilateral perspective is not

healthy. An inter-rater, blinded to the participants if possible, should be included in the study design.

According to Öst's evaluation (2008), the checks for therapists' competence constituted an important issue when evaluating the quality of a study's design. Considering the studies reviewed here, I noticed that four of the studies included psychologists (or psychology students) trained by experts in the field of ACT, CBT and BA. Smout, Hayes, Atkins, Klausen and Duguid, (2012) showed the methodological ratings of 17 studies into ACT, and they found that following Öst's suggestion on this issue, the ratings for therapist competence increased (0.00 to 1.06, indicating a development from poor to poor-fair since 2008).

In almost all of the studies, participants were diagnosed with depressive disorder according to DSM-IV criteria, even in the studies by Dalrymple et al. (2014) and Guadiano et al. (2015), which were conducted after DSM-V. This situation brought to mind how the results of these studies can be associated with individuals who are diagnosed with depression according to DSM-V. However, since the differences between DSM-IV and DSM-V criteria are not considerable, these clinical findings should be correlated. In a descriptive and comparative evaluation by Kanter et al. (2006), they emphasised that other patterns of behaviour should be included when characterising depressive disorders. Since this analysis was done before DSM-V, the lack of characterisation might be overcome.

3.2. Recommendations for Future Studies

According to an overall assessment, I now want to present some recommendations for improving further research and dissemination, specifically for ACT studies. Even though I am making these suggestions, this does not mean that recent ACT researchers have failed when conducting trials involving ACT and depression. However, I believe that attention to these issues should be increased in order to help further clarify the efficacy of ACT. Additionally, this approach can lead to a more direct addressing of the issues highlighted by ACT critics from an empirical point of view.

According to research design methodology, researchers in the field of ACT should be encouraged to consider the traditional characteristics of efficacy research that are more reliably given by the wider scientific community. Also, modified methods of developing and testing should be considered while collecting data. For example, the rating system used by Öst (2008) should be considered in further studies.

According to Hayes et al. (1999), more emphasis is given to changing the functions and contexts of behaviour, instead of the contents or types of behavior in ACT. The primary goal of ACT treatment is not to reduce symptoms, which constitutes the implication of this theoretical distinction. It is certainly important to indicate that the reduction of symptoms should still be considered when showing the results of ACT's efficacy in the treatment of many cases. In contrast, in most of the traditional psychotherapy studies, importance has been given to psychiatric populations in terms of the identification of changes in the DSM-defined primary symptoms of disorders such as major depression; besides, variations in psychosocial impairment and behavioural functioning in a more general concept are frequently being

relegated to secondary outcomes of ACT (Forman et al., 2009). Therefore, there are various results in ACT studies when compared with other studies which include other psychiatric treatments such as pharmacotherapy or CBT.

The treatment outcomes which are considered to be primarily more important should be well-specified by ACT researchers, and should be measured using psychometrically reliable scales. Nevertheless, researchers should continue to use more traditional and common measures of symptoms in their studies as well. By this means, the outcomes will be available for comparison with the outcomes of other treatments. This approach will support the acceptance of ACT results shown through various studies by researchers who do not study ACT. Bach and Hayes, (2002) indicated that recent studies have now started to use this approach more consistently, although early ACT research findings usually consist of a lack of standard symptom measures. In the meta-analysis by Power et al. (2009), this issue was found by traditional CBT researchers to be more confusing. These researchers prefer to use certain measures which are symptom-related outcomes when calculating the effect size of their studies, such as pain severity. These measures usually do not fit well with the actual results of ACT researchers indicating their primary outcomes, such as measures of functioning in the presence of severe pain.

Another issue to be considered in further studies is the independent replication of studies. ACT researchers were initially interested in testing this treatment among a diverse array of populations. They aimed to report the potentially robust effect of ACT, and additionally its transdiagnostic effects. This situation originated from ACT having a more

functional understanding of psychopathology in comparison with syndromal approaches. Nevertheless, larger sample sizes should be included in order to supply more efforts towards replicating previous study results. According to an evaluation by Gaudiano and Herbert (2006), the outcomes of traditional symptom measures were improved using this approach. As another good example of this effort, an Australian research group conducted a study which included a larger grant funding, trialling the assessment of treating medication-resistant psychosis patients with ACT (Thomas et al., 2010).

As well as the independent replication of results, there should be collaboration between researchers in the fields of ACT and CBT. The allegiance effect will be decreased within such co-investigations. The effects of the preliminary results of novel treatments are mistakenly inflated by this situation. A well-established benefit of this collaborative approach was shown in a study into the acceptance-based treatment of general anxiety disorder (Roemer & Orsillo, 2007). In addition, large-scale RCTs will help to document ACT's mechanism and efficacy in specific clinical populations. Moreover, this approach will overcome the critics of Öst (2008) in the meta-analysis of ACT studies.

The efforts towards dissemination among researchers, clinicians and consumers is also an important aspect for further studies. Although ACT investigators are aware of the various approaches when conducting their studies, non-ACT researchers or scholars should be informed in this field. To specify detailed ACT techniques and processes is important, based on theoretical works. This dissemination will be useful for further collaborations between professional colleagues and academic scientists.

4. CONCLUSION

Depression is one of the most common psychological disorders, and it is growing rapidly as a threat to public health (Topuzoglu et al., 2015). There are various management approaches which can be adopted, such as biological, physiological and psychological treatments. ACT, which is based on mindfulness, is a promising therapy in the treatment of depression, and it uses the approach of training the patient to accept his or her self-reactions and to be present, and additionally training him or her to choose a valued direction and take action towards it (Hofmann et al., 2010). It is a long term treatment with a duration of 12 to 16 sessions, and it involves using metaphors and exercises to help clients create a connection with their values (Ducasse et al., 2015). Although CBT is a common psychotherapeutic approach to depression, it requires the commitment of the patient to the process, including the required homework, which is missed when the patient is not concentrated on the treatment (Arch et al., 2012). Additionally, it is not certain to be effective in preventing the recurrence of depression, and some types of depression may show resistance to the treatment.

The aim of this thesis was to make a valuable contribution to the evaluation of the ACT approach in the treatment of depression from a critical perspective. Seven recent studies have been critically reviewed in comparison with the literature, emphasising both their strengths and limitations, as well as making relevant suggestions for future studies.

The articles were mainly on the efficacy of ACT in the treatment of depression with comorbidities such as social anxiety, alcohol use disorder and psychosis, as well as other frequently studied depressive symptoms. Additionally, there have been leading studies in the recent literature evaluating the effect of ACT through web-based intervention, and also involving obese women, and most interestingly these studies have revealed the influence of trained psychologists and non-psychologists on this process. According to these studies, ACT has been found to reduce depressive symptoms in comorbid depression, as well as decreasing other symptoms of related psychological disorders. There has also been a clinically important finding that non-psychologists can become able to deliver ACT after a short period of being trained by professionals. This will be a beneficial approach to overcoming the lack of authorised ACT administerers. However, these results have shown some conflicts based on significant factors such as sample size (insufficient), control groups (limited mostly by waiting list controls), a lack of comparability due to the lack of similar studies, and inter-rating evaluations. Additionally, all of the studies included individuals who were aged 18 years or older. All of the reviewed studies and relevant literature have shown that ACT is effective in reducing experiential avoidance while increasing acceptance.

Finally, I can conclude that ACT is efficacious in the treatment of a wide range of problems related to depression, mainly in terms of MDD and comorbidity of depression. I have noticed that most of the recent literature includes participants aged 18 years or older. Collaborative studies using a multicentric approach will help to reach larger sample sizes. Therefore, the results will make it possible to generalise the outcomes of ACT in the treatment

of depression. None of the data is sufficient on its own to claim that ACT is a better treatment for depression than CBT. Active controlled, correlational studies should also be conducted in further studies.



REFERENCES

Al-harbi. (2012). Treatment-resistant depression: therapeutic trends, challenges, and future directions. *Patient Preference And Adherence*, 369. doi: 10.2147/ppa.s29716

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Andersen, B., & LeGrand, J. (1991). Body image for women: Conceptualization, assessment, and a test of its importance to sexual dysfunction and medical illness. *Journal Of Sex Research*, 28(3), 457-478. doi: 10.1080/00224499109551619

Arch J., & Craske, M. (2008). Acceptance and Commitment Therapy and Cognitive Behavioral Therapy for Anxiety Disorders: Different Treatments, Similar Mechanisms?. *Clinical Psychology: Science and Practice*, 15(4), 263-279. doi: 10.1111/j. 1468-2850.2008.00137.x

Arch, J., Eifert, G., Davies, C., Vilardaga, J., Rose, R., & Craske, M. (2012). Randomized clinical trial of cognitive behavioral therapy (CBT) versus acceptance and commitment therapy (ACT) for mixed anxiety disorders. *Journal Of Consulting And Clinical Psychology*, 80(5), 750-765. doi: 10.1037/a0028310

Bach, P., & 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), 1129-1139. doi: 10.1037/0022-006x.70.5.1129

Biglan, A., & Hayes, S. (1996). Should the behavioral sciences become more pragmatic? The case for functional contextualism in research on human behavior. *Applied And Preventive Psychology*, 5(1), 47-57. doi: 10.1016/s0962-1849(96)80026-6

Blake, H. (2012). Physical activity and exercise in the treatment of depression. *Frontiers in Psychiatry*, 3. doi: 10.3389/fpsyt.2012.00106

Blanco, C., Okuda, M., Markowitz, J., Liu, S., Grant, B., & Hasin, D. (2010). The Epidemiology of Chronic Major Depressive Disorder and Dysthymic Disorder. *The Journal Of Clinical Psychiatry*, 71(12), 1645-1656. doi: 10.4088/jcp.09m05663gry

Bohlmeijer, E., Fledderus, M., Rokx, T., & Pieterse, M. (2010). Efficacy of an early intervention based on acceptance and commitment therapy for adults with depressive symptomatology: Evaluation in a randomized controlled trial. *Behaviour Research And Therapy*, 49(1), 62-67. doi: 10.1016/j.brat.2010.10.003

Brown, L., Gaudiano, B., & Miller, I. (2011). Investigating the Similarities and Differences between Practitioners of Second- and Third-Wave Cognitive-Behavioral Therapies. *Behavior Modification*, 35(2), 187–200. doi: 10.1177/0145445510393730

Busch, A., Ciccolo, J., Puspitasari, A., Nosrat, S., Whitworth, J., & Stults-Kolehmainen, M. (2016). Preferences for Exercise as a Treatment for Depression. *Mental Health and*

Physical Activity, 10, 68–72. Doi: 10.1016/j.mhpa.2015.12.004

Compton, S., March, J., Brent, D., Albano, A., Weersing, V., & Curry, J. (2004). Cognitive-Behavioral Psychotherapy for Anxiety and Depressive Disorders in Children and Adolescents: An Evidence-Based Medicine Review. *Journal Of The American Academy Of Child & Adolescent Psychiatry*, 43(8), 930-959. doi:

10.1097/01.chi.0000127589.57468.bf

Courtet, P., & Lopez-Castroman, J. (2017). Antidepressants and suicide risk in depression.

World Psychiatry, 16(3), 317–318. doi: 10.1002/wps.20460

Cuijpers, P., Geraedts, A., van Oppen, P., Andersson, G., Markowitz, J., & van Straten, A.

(2011). Interpersonal Psychotherapy for Depression: A Meta-Analysis. *American Journal Of Psychiatry*, 168(6), 581-592. doi: 10.1176/appi.ajp.2010.10101411

Dalrymple, K., Morgan, T., Lipschitz, J., Martinez, J., Tepe, E., & Zimmerman, M. (2014). An

Integrated, Acceptance-Based Behavioral Approach for Depression With Social

Anxiety. *Behavior Modification*, 38(4), 516-548. doi: 10.1177/0145445513518422

DeRubeis, R., Hollon, S., Amsterdam, J., Shelton, R., Young, P., & Salomon, R. et al. (2005).

Cognitive Therapy vs Medications in the Treatment of Moderate to Severe

Depression. *Archives Of General Psychiatry*, 62(4), 409. doi:

10.1001/archpsyc.62.4.409

Ducasse D. & Fond G. (2015). Acceptance and commitment therapy. *Encephale*, 41(1), 1-9.

Dunlop, B. W., Scheinberg, K., & Dunlop, A. L. (2013). Ten ways to improve the treatment of

depression and anxiety in adults. *Mental health in family medicine*, 10(3), 175.

Dymond, S., May, R., Munnelly, A., & Hoon, A. (2010). Evaluating the evidence base for relational frame theory: A citation analysis. *The Behavior Analyst*, 33(1), 97–117. doi: 10.1007/bf03392206

Fitzgerald, P. (2013). Non-pharmacological biological treatment approaches to difficult-to-treat depression. *The Medical Journal Of Australia*, 1(4), 48-51. doi: 10.5694/mjao12.10509

Fletcher, L., & Hayes, S. (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. doi: 10.1007/s10942-005-0017-7

Flory, J. D., & Yehuda, R. (2015). Comorbidity between post-traumatic stress disorder and major depressive disorder: alternative explanations and treatment considerations. *Dialogues in clinical neuroscience*, 17(2), 141.

Forman, E., Herbert, J., Moitra, E., Yeomans, P., & Geller, P. (2007). A Randomized Controlled Effectiveness Trial of Acceptance and Commitment Therapy and Cognitive Therapy for Anxiety and Depression. *Behavior Modification*, 31(6), 772-799. doi: 10.1177/0145445507302202

Gaudiano, B., Busch, A., Wenzel, S., Nowlan, K., Epstein-Lunow, G., & Miller, I. (2015). Acceptance-based Behavior Therapy for Depression With Psychosis. *Journal Of Psychiatric Practice*, 21(5), 320-333. doi: 10.1097/prs.0000000000000092

- Gaudiano, B., & Herbert, J. (2006). Believability of Hallucinations as a Potential Mediator of Their Frequency and Associated Distress in Psychotic Inpatients. *Behavioural And Cognitive Psychotherapy*, 34(04), 497. doi: 10.1017/s1352465806003080
- Gelenberg, A. (2010). The Prevalence and Impact of Depression. *The Journal of Clinical Psychiatry*, 71(03), e06. doi: 10.4088/JCP.8001tx17c.
- Grover, S., Gautam, S., Jain, A., Gautam, M., & Vahia, V. (2017). Clinical Practice Guidelines for the management of Depression. *Indian Journal Of Psychiatry*, 59(5), 34. doi: 10.4103/0019-5545.196973
- Hancock, K., Swain, J., Hainsworth, C., Dixon, A., Koo, S., & Munro, K. (2017). Acceptance and Commitment Therapy versus Cognitive Behavior Therapy for Children With Anxiety: Outcomes of a Randomized Controlled Trial. *Journal Of Clinical Child & Adolescent Psychology*, 47(2), 296-311. doi: 10.1080/15374416.2015.1110822
- Hansen, R., Gaynes, B., Thieda, P., Gartlehner, G., Deveaugh-Geiss, A., Krebs, E., & Lohr, K. (2008). Meta-analysis of Major Depressive Disorder Relapse and Recurrence With Second-Generation Antidepressants. *Psychiatric Services*, 59(10), 1121-1130. doi: 10.1176/appi.ps.59.10.1121
- Hasheminasab, M., Kheiroddin, J. B., Aliloo, M. M., & Fakhari, A. (2015). Acceptance and commitment therapy (ACT) for generalized anxiety disorder. *Iranian journal of public health*, 44(5), 718.
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2011). *Acceptance and commitment therapy: The process and practice of mindful change*. Guilford Press.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy* (p. 6). New York: Guilford Press.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., Toarmino, D., ... & Stewart, S. H. (2004). Measuring experiential avoidance: A preliminary test of a working model. *The psychological record*, 54(4), 553-578.

Hayes, S., Levin, M., Plumb-Villardaga, J., Villatte, 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), 180–198. doi: 10.1016/j.beth.2009.08.002

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), 1-25. doi: 10.1016/j.brat.2005.06.009

Hayes, S., Masuda, A., Bissett, R., Luoma, J., & Guerrero, L. (2004). DBT, FAP, and ACT: How empirically oriented are the new behavior therapy technologies?. *Behavior Therapy*, 35(1), 35-54. doi: 10.1016/s0005-7894(04)80003-0

Hoffmann, A., Contreras, B., Clay, C., & Twohig, M. (2016). Acceptance and Commitment Therapy for Individuals with Disabilities: A Behavior Analytic Strategy for Addressing Private Events in Challenging Behavior. *Behavior Analysis In Practice*, 9(1), 14-24. doi: 10.1007/s40617-016-0105-4

Hofmann, S., Sawyer, A., & Fang, A. (2010). The Empirical Status of the “New Wave” of CBT.

The Psychiatric Clinics of North America, 33(3), 701–710. doi:
10.1016/j.psc.2010.04.006

Juncos, D., Heinrichs, G., Towle, P., Duffy, K., Grand, S., & Morgan, M. et al. (2017).

Acceptance and Commitment Therapy for the Treatment of Music Performance
Anxiety: A Pilot Study with Student Vocalists. *Frontiers In Psychology*, 8. doi:
10.3389/fpsyg.2017.00986

Kamenov, K., Twomey, C., Cabello, M., Prina, A., & Ayuso-Mateos, J. (2016). The efficacy of
psychotherapy, pharmacotherapy and their combination on functioning and quality
of life in depression: a meta-analysis. *Psychological Medicine*, 47(03), 414-425. doi:
10.1017/s0033291716002774

Kanter, J., Baruch, D., & Gaynor, S. (2006). Acceptance and commitment therapy and
behavioral activation for the treatment of depression: Description and
comparison. *The Behavior Analyst*, 29(2), 161-185. doi: 10.1007/bf03392129

Kanter, J., Busch, A., Weeks, C., & Landes, S. (2008). The nature of clinical depression:
Symptoms, syndromes, and behavior analysis. *The Behavior Analyst*, 31(1), 1-21. doi:
10.1007/bf03392158

Kaufman, E., & Baucom, K. (2013). Treating Comorbid Social Anxiety and Major
Depression. *Clinical Case Studies*, 13(3), 265-281. doi: 10.1177/1534650113508220

Kupfer, D. J. (2005). The pharmacological management of depression. *Dialogues in clinical*

neuroscience, 7(3), 191.

Lappalainen, P., Langrial, S., Oinas-Kukkonen, H., Tolvanen, A., & Lappalainen, R. (2015). Web-

Based Acceptance and Commitment Therapy for Depressive Symptoms With Minimal Support. *Behavior Modification*, 39(6), 805-834. doi: 10.1177/0145445515598142

Leigland, S. (2010). Functions of research in radical behaviorism for the further development of behavior analysis. *The Behavior Analyst*, 33(2), 207–222. doi: 10.1007/bf03392220

Levin, M., & Hayes, S. C. (2009). ACT, RFT, and contextual behavioral science. *Acceptance and Commitment Therapy: Contemporary research and practice*, 1-40.

Levin, M., Luoma, J., Lillis, J., Hayes, S., & Vilardaga, R. (2014). The Acceptance and Action Questionnaire – Stigma (AAQ-S): Developing a measure of psychological flexibility with stigmatizing thoughts. *Journal Of Contextual Behavioral Science*, 3(1), 21-26. doi: 10.1016/j.jcbs.2013.11.003

Lopez, M., & Basco, M. (2015). Effectiveness of Cognitive Behavioral Therapy in Public Mental Health: Comparison to Treatment as Usual for Treatment-Resistant Depression. *Administration And Policy In Mental Health And Mental Health Services Research*, 42(1), 87-98. doi: 10.1007/s10488-014-0546-4

Luciano C, Rodríguez M, & Gutiérrez O (2004). A proposal for synthesizing verbal context in experiential avoidance disorder and acceptance and commitment therapy.

International Journal of Psychology and Psychological Therapy, 4, 377-394.

Mauskopf, J., Simon, G., Kalsekar, A., Nimsch, C., Dunayevich, E., & Cameron, A. (2009).

Nonresponse, partial response, and failure to achieve remission: humanistic and cost burden in major depressive disorder. *Depression And Anxiety*, 26(1), 83-97. doi: 10.1002/da.20505

Mikkelsen, K., Stojanovska, L., Polenakovic, M., Bosevski, M. & Apostolopoulos, V. (2017).

Exercise and Mental Health. *Maturitas*, 106, 48-56.

Ng, C., How, C., & Ng, Y. (2016). Major depression in primary care: making the

diagnosis. *Singapore Medical Journal*, 57(11), 591-597. doi: 10.11622/smedj.2016174

Nhs.uk. (2010, July 15). *Cognitive behavioral therapy- Considerations*. Retrieved from:

<http://www.nhs.uk/Conditions/Cognitive-behaviourtherapy/Pages/Advantages.aspx>

Nieuwsma, J. A., Trivedi, R. B., McDuffie, J., Kronish, I., Benjamin, D., & Williams, J. W.

(2012). Brief Psychotherapy for Depression: A Systematic Review and Meta-Analysis.

International Journal of Psychiatry in Medicine, 43(2), 129–151.

Ohayon, M., & Schatzberg, A. (2010). Social phobia and depression: Prevalence and

comorbidity. *Journal Of Psychosomatic Research*, 68(3), 235-43. doi: 10.1016/j.jpsychores.2009.07.018.

Öst, L. (2008). Efficacy of the third wave of behavioral therapies: A systematic review and

meta-analysis. *Behavior Research And Therapy*, 46(3), 296-321. doi: 10.1016/j.brat.2007.12.005

- Petersen, C., & Zettle, R. (2009) Treating Inpatients With Comorbid Depression and Alcohol Use Disorders: A Comparison of Acceptance and Commitment Therapy Versus Treatment as Usual. *The Psychological Record*, 59(4), 521-536. doi: 10.1007/bf03395679
- Petersen, T., Hughes, M., Papakostas, G., Kant, A., Fava, M., Rosenbaum, J., & Nierenberg, A. (2002). Treatment-Resistant Depression and Axis II Comorbidity. *Psychotherapy And Psychosomatics*, 71(5), 269-274. doi: 10.1159/000064808
- Pots, W., Fledderus, M., Meulenbeek, P., ten Klooster, P., Schreurs, K., & Bohlmeijer, E. (2016). Acceptance and commitment therapy as a web-based intervention for depressive symptoms: Randomised controlled trial. *British Journal Of Psychiatry*, 208(01), 69-77. doi: 10.1192/bjp.bp.114.146068
- Powers, M., Zum Vörde Sive Vörding, M., & Emmelkamp, P. (2009). Acceptance and commitment therapy: A meta-analytic review. *Psychotherapy and psychosomatics*, 78(2), 73-80. doi: 10.1159/000190790
- Prevedini, A. B., Presti, G., Rabitti, E., Miselli, G., & Moderato, P. (2011). Acceptance and commitment therapy (ACT): the foundation of the therapeutic model and an overview of its contribution to the treatment of patients with chronic physical diseases. *G Ital Med Lav Ergon*, 33(1 Suppl A), A53-A63.
- Pu, J., Zhou, X., Liu, L., Zhang, Y., Yang, L., & Yuan, S. et al. (2017). Efficacy and acceptability of interpersonal psychotherapy for depression in adolescents: A meta-analysis of

randomized controlled trials. *Psychiatry Research*, 253, 226-232. doi:

10.1016/j.psychres.2017.03.023

Rafiee, M., Sedrpoushan, N. & Abedi, M. R. (2013). Study the Effect of Acceptance and

Commitment Therapy on Reducing Depression Symptoms and Body Image

Dissatisfaction in Obese Women in Isfahan City (2012-13). *Journal of Social Science for*

Policy Implications, 1(2), 25.

Reddy, M. (2010). Depression: The disorder and the burden. *Indian Journal Of Psychological*

Medicine, 32(1), 1. doi: 10.4103/0253-7176.70510

Regier, D., Kuhl, E., & Kupfer, D. (2013). The DSM-5: Classification and criteria changes. *World*

Psychiatry, 12(2), 92-98. doi: 10.1002/wps.20050

Renn, B., & Areán, P. (2017). Psychosocial Treatment Options for Major Depressive Disorder

in Older Adults. *Current Treatment Options In Psychiatry*, 4(1), 1-12. doi:

10.1007/s40501-017-0100-6

Richardson, T., Bell, L., Bolderston, H., & Clarke, S. (2018). Development and Evaluation of

Acceptance and Commitment Therapy Delivered by Psychologists and Non-

Psychologists in an NHS Community Adult Mental Health Service: a Preliminary

Analysis. *Behavioural And Cognitive Psychotherapy*, 46(01), 121-127. doi:

10.1017/s1352465817000285

Roemer, L., & Orsillo, S. (2007). An Open Trial of an Acceptance-Based Behavior Therapy for

Generalized Anxiety Disorder. *Behavior Therapy*, 38(1), 72-85. doi: 10.1016/j.beth.2006.04.004

Rood, L., Roelofs, J., Bögels, S., & Alloy, L. (2010). Dimensions of Negative Thinking and the Relations with Symptoms of Depression and Anxiety in Children and Adolescents. *Cognitive Therapy And Research*, 34(4), 333-342. doi: 10.1007/s10608-009-9261-y

Ruiz, F. J. (2010). A review of Acceptance and Commitment Therapy (ACT) empirical evidence: Correlational, experimental psychopathology, component and outcome studies. *International Journal of Psychology and Psychological Therapy*, 10(1).

Scott, W., McCracken, L., & Trost, Z. (2013). A psychological flexibility conceptualisation of the experience of injustice among individuals with chronic pain. *British Journal Of Pain*, 8(2), 62-71. doi: 10.1177/2049463713514736

Sharpley, C. (2010). A review of the neurobiological effects of psychotherapy for depression. *Psychotherapy: Theory, Research, Practice, Training*, 47(4), 603-615. doi: 10.1037/a0021177

Smout, M., Hayes, L., Atkins, P., Klausen, J., & Duguid, J. (2012). The empirically supported status of acceptance and commitment therapy: An update. *Clinical Psychologist*, 16(3), 97-109. doi: 10.1111/j.1742-9552.2012.00051.x

Thapar, A., Collishaw, S., Pine, D., & Thapar, A. (2012). Depression in adolescence. *Lancet*, 379(9820), 1056–1067. doi: 10.1016/S0140-6736(11)60871-4

- Thekiso, T., Murphy, P., Milnes, J., Lambe, K., Curtin, A., & Farren, C. (2015). Acceptance and Commitment Therapy in the Treatment of Alcohol Use Disorder and Comorbid Affective Disorder: A Pilot Matched Control Trial. *Behavior Therapy, 46*(6), 717-728. doi: 10.1016/j.beth.2015.05.005
- Thomas, N., Shawyer, F., Castle, D., Copolov, D., Hayes, S., & Farhall, J. (2010). A randomised controlled trial of acceptance and commitment therapy (ACT) for psychosis: study protocol. *BMC Psychiatry, 14*(1). doi: 10.1186/1471-244x-14-198
- Topuzoğlu, A., Binbay, T., Ulaş, H., Elbi, H., Aksu Tanık, F., Zağlı, N., & Alptekin, K. (2015). The epidemiology of major depressive disorder and subthreshold depression in Izmir, Turkey: Prevalence, socioeconomic differences, impairment and help-seeking. *Journal of Affective Disorders, 181*, 78-86. doi: 10.1016/j.jad.2015.04.017.
- Törneke, N., Soriano, M. C. L., & Salas, S. V. (2008). Rule-Governed Behavior and Psychological Problems. *International Journal of Psychology and Psychological Therapy, 8*(2), 141-156.
- Twohig, M., & Levin, M. (2017). Acceptance and Commitment Therapy as a Treatment for Anxiety and Depression. A Review. *Psychiatric Clinics Of North America, 40*(4), 751-770. doi: 10.1016/j.psc.2017.08.009

Uher, R., Payne, J., Pavlova, B., & Perlis, R. (2013). MAJOR DEPRESSIVE DISORDER IN DSM-5: IMPLICATIONS FOR CLINICAL PRACTICE AND RESEARCH OF CHANGES FROM DSM-IV. *Depression And Anxiety*, 31(6), 459-471. doi: 10.1002/da.22217

van Hees, M., Rotter, T., Ellermann, T., & Evers, S. (2013). The effectiveness of individual interpersonal psychotherapy as a treatment for major depressive disorder in adult outpatients: a systematic review. *BMC Psychiatry*, 13(1). doi: 10.1186/1471-244x-13-22

Weismann-Arcache, C., & Tordjman, S. (2012). Relationships between Depression and High Intellectual Potential. *Depression Research And Treatment*, 2012, 1-8. doi: 10.1155/2012/567376

Wolitzky-Taylor, K., Arch, J., Rosenfield, D., & Craske, M. (2012). Moderators and non-specific predictors of treatment outcome for anxiety disorders: A comparison of cognitive behavioral therapy to acceptance and commitment therapy. *Journal Of Consulting And Clinical Psychology*, 80(5), 786-799. doi: 10.1037/a0029418

Zhang, C., Leeming, E., Smith, P., Chung, P., Hagger, M., & Hayes, S. (2018). Acceptance and Commitment Therapy for Health Behavior Change: A Contextually-Driven Approach. *Frontiers in Psychology*, 8. doi: 10.3389/fpsyg.2017.02350

Zhiguo, W. U., & Yiru, F. A. N. G. (2014). Comorbidity of depressive and anxiety disorders: challenges in diagnosis and assessment. *Shanghai archives of psychiatry*, 26(4), 227.

Zimmerman, M., Chelminski, I., & McDermut, W. (2002). Major depressive disorder and axis I Diagnostic Comorbidity. *The Journal of Clinical Psychiatry*, 63(3), 187-93.
doi:10.4088/jcp.v63n0303

