

Chapter 8

Major Depression: A Cognitive-Behavioral Perspective to Pathology, Case Conceptualization, and Treatment



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Major depressive disorder is a common, often chronic, and debilitating condition affecting millions of individuals of all ages around the globe. The suffering experienced by about 7% of the population in the USA and Europe and over 264 million people of all ages worldwide (WHO, 2020) contributes to the economic and societal burden incurred by mental disorders, due to loss of productivity, unemployment, and healthcare seeking. Although the majority of patients suffering from depression do not attempt or commit suicide, this particular disorder is one of the most significant proximal predictors of suicide risk. For all these reasons, and for the tremendous impact of major depression on the quality of life and health of individuals, families, and societies (Wittchen et al., 2011), its etiology and treatment has been the focus of attention for many researchers. They have contributed significant evidence regarding its biological, social, and psychological predictors and the effectiveness of various modes of pharmacological and behavioral therapies. This chapter summarizes some of the current evidence regarding the etiological and maintenance factors in major depression, with an emphasis on the psychological perspective associated with cognitive-behavioral therapy (CBT), and delineates the major treatment components of this approach.

Major depressive disorder, as described in the DSM-5, has an episodic course, characterized by periodic major depressive episodes, that, when untreated, can last

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for several months to over a year (Whiteford et al., 2013) with estimates varying in different studies, interrupted by periods of full or partial remission. Major depressive disorder or unipolar depression, as it is also referred to, consists of only depressive episodes without manic or hypomanic episodes, the presence of which warrants a different diagnosis. Specifically, a major depressive episode can be diagnosed if five (or more) of the following symptoms are present during a 2-week period, representing a change from typical functioning (APA, 2013): The primary symptoms are either (1) depressed mood or (2) loss of interest or pleasure, where either one or two occur for most of the day, nearly every day. These primary symptoms must be accompanied by at least four of the following: (3) significant weight loss or weight gain or significant changes in appetite, (4) insomnia or hypersomnia, (5) slowing down of thought and reduced physical movement, (6) fatigue or loss of energy, (7) feelings of worthlessness or excessive guilt, (8) diminished ability to think or concentrate or indecisiveness, and (9) recurrent thoughts of death, suicidal ideation, or a suicide attempt or plan. Notably, for children and adolescents, the predominant mood can be irritable rather than depressed, and weight changes can be substituted by absence of appropriate weight gain. As in the case of other DSM-5 disorders, these symptoms cannot be better explained by a medical condition, or a different disorder, are not the outcome of medications or substances, and cause significant impairment in functioning. DSM-5 also lists a number of specifiers and subtypes, as no two individuals with depression appear to have exactly the same clinical presentation.

A milder and more chronic form of depression, dysthymia, is diagnosed when the depressed mood or loss of interest lasts for at least 2 years in adults (one in children and adolescents) and includes at least two symptoms similar to those described for major depression (i.e., changes in eating/appetite, sleep, low energy or fatigue, low self-esteem, concentration or decision-making difficulty, hopelessness).

Major depression has its onset predominantly in the early adult years (APA, 2013), but adolescents (Costello, Erkanli, & Angold, 2006) and the elderly (Palsson & Skoog, 1997) are also at heightened risk. Notably, as will be discussed later, this is a mainly female disorder, with women being 1.5–3 times more likely to suffer from it, with gender differences already apparent by adolescence (APA, 2013).

8.1 The Psychopathology of Depression

The cognitive-behavioral perspective understands depression as stemming from the interaction of dispositional vulnerabilities, i.e., heredity and temperament, with cognitive characteristics (learned, or inherited) that have to do with how the world is understood and processed. Recent advances in genetic research have shown that major depression risk is to a significant degree heritable, with a heritability rate for about 37%. Although many genes have been shown to have associations with depression, there is no clear picture at this point of a specific genetic substrate for this disorder (or for most other psychiatric disorders). For example, a recent, large

genome-wide association study on major depressive disorder identified numerous genetic variants associated with depression (Wray et al., 2018), but none unique and specific to it. In part, this may be due to the large heterogeneity within the population of depressed individuals, both in symptoms and in developmental trajectories of depression (Dekker et al., 2007).

To address the heterogeneity observed among those suffering from this disorder, research has also focused on identifying behavioral endophenotypes for depression (Gottesman & Gould, 2003), i.e., heritable characteristics that form part of the mechanism linking genes to disease expression. Promising endophenotypes, found more strongly in families of patients with depression compared to the general population, include neuroticism, decreased sensitivity of the reward system, harm avoidance, decreased cognitive control, negative affectivity, and behavioral inhibition. Research on such predisposing temperament and personality factors remains inconclusive, however, given measurement issues, and the relative dearth of longitudinal research (Lim, Barlas, & Ho, 2018) and twin studies. Some evidence suggests only modest to moderate genetic association between major depression, neuroticism, and self-reported depressive symptoms (Kendler, Gatz, Gardner, & Pedersen, 2006; Kendler & Myers, 2010), with the latter potentially representing a different factor more closely related to either transient negative affect or a milder, chronic depressive style (Kendler et al., 2019), rather than with true, episodic expressions of major depression.

A core characteristic that seems to be the most proximal predictor of depression is a negative thinking style (Alloy et al., 2000; Panayiotou & Papageorgiou, 2007) that includes a propensity toward rumination, negative attributions and interpretations, self-focused attention on negative aspects of the self, self-blame, and increased over-general memory especially of negative personal events. According to the cognitive vulnerability hypothesis (e.g., Alloy, Abramson, Walshaw, & Neeren, 2006), people who are vulnerable to either depressive symptoms or major depressive episodes have a specific, negative attribution style. They interpret negative events as caused by themselves, and by stable and global factors (including their own flawed characteristics). This negative thought content is caused or at least maintained by a series of well-established cognitive biases in the way information is processed by depressed individuals, both adults and children/adolescents. Cognitive biases underlie the preferential processing of negative information in various disorders; however, in addition to this negativity bias, there also seems to be an absence of the more normative positivity bias in depressed people (Armstrong & Olatunji, 2012; Peckham, McHugh, & Otto, 2010). The fact that these biases exist, according to some evidence, in non-symptomatic children of depressed parents (Kujawa et al., 2011), and among individuals without depression who later develop symptoms, suggests that they play a causative role in the pathogenesis of depression (Everaert, Koster, & Derakshan, 2012). However, more research is needed to establish these as true endophenotypes, as heritability studies are limited (Goldstein & Klein, 2014). These biases, whether acquired or inherited, include, more specifically, the preferential attention to negative information, negative interpretations of ambiguous information (Wisco & Nolen-Hoeksema, 2010), and enhanced memory for negative

content (Koster, De Raedt, Leyman, & De Lissnyder, 2010; Peckham et al., 2010). Their persistence may be sustained by poor executive control that leads to failure of disengagement and inhibition of depressive thought content (Joormann, Yoon, & Zetsche, 2007).

With regard to attention biases, these appear to involve primarily difficulty in disengagement from negative information, rather than increased selective attention to negative stimuli (De Raedt & Koster, 2010), with the latter being more common in anxiety. Correspondingly, the pattern of attentional avoidance of negative information often seen in anxious individuals is not typically observed in depression. Interpretation biases pertain especially to ambiguous self-relevant information (Wisco & Nolen-Hoeksema, 2010), which is interpreted in a negative, self-deprecating light. Concerning memory biases, depressed individuals tend to recall over-general and negative memories compared to non-depressed individuals (e.g., Williams et al., 2007). These ways of processing information about the world, the self, and the future seem to interact and feed into each other (Everaert et al., 2012), playing a crucial role in maintaining negative content in awareness and making the world appear hopeless and threatening. Although CBT treatments initially focused more on the content of thought, rather than on the way information is processed, such empirical evidence from basic science is progressively informing CBT, leading to experimentation with promising therapeutic components like attention bias modification (e.g., Beevers, Clasen, Enock, & Schnyer, 2015; Yang, Ding, Dai, Peng, & Zhang, 2015) and cognitive bias modification therapy (e.g., Joormann, Waugh, & Gotlib, 2015), either as stand-alone treatments or components of a broader CBT protocol.

It is generally believed that depression episodes in a person with these hereditary, cognitive, and emotional risk characteristics are triggered by stressful life events (Ingram, Miranda, & Segal, 1998), often associated with some type of loss (loved ones, health, way of life, self-esteem) and exposure to such events predicts increased risk for depression, especially among those who experienced early childhood trauma and/or have temperamental risk factors like neuroticism (Kendler, Kuhn, & Prescott, 2004). Depressed individuals report more negative life events than non-depressed people, potentially, in part due to their negatively biased memory and in part because they have actually experienced such events, which may have increased their vulnerability.

In terms of emotional reactivity, depression has been associated with a pattern of hypo-reactive autonomic responses to negative emotional stimulation and sometimes during rest, potentially reflecting apathy, behavioral inactivation, and passive avoidance (Schiweck, Piette, Berckmans, Claes, & Vrieze, 2019). Depression has also been associated with decreased heart rate variability (Carney et al., 2001) suggesting reduced cardiovascular activity (Agelink, Boz, Ullrich, & Andrich, 2002) and poor autonomic flexibility and emotion regulation ability (Panayiotou, Panteli, & Vlemincx, 2019, Panayiotou, 2018). Low skin conductance (Williams, Iacono, & Remick, 1985) has also been associated with depression. Reduced emotional reactivity may be indicative of a learned helplessness pattern of responses and

physiological and behavioral immobilization (Porges, 2001), where one has learned that no action will result in positive outcomes (Panayiotou, 2018).

An important aspect of the psychopathology of depression that may have implications for its etiology and maintenance pertains to the gender disparities in prevalence that characterize this disorder. In childhood, prevalence rates are about equal, or, according to some estimates, boys are more likely to be depressed (Nolen-Hoeksema, 1987). At puberty, there is a dramatic reversal of the statistics, with women being about 50% more likely to develop depression. Many explanations have been given to these disparities, though more research seems to be needed in order to reach definitive conclusions. Biological or genetic factors have not received much research support (Piccinelli & Wilkinson, 2000). Lower power status in society (Bebbington, 1998; Radloff, 1975), unfavorable for women sex roles, socioeconomic status (i.e., greater poverty among women), and social stereotypes, for example, about gender-appropriate ways of coping, have been implicated (Panayiotou & Papageorgiou, 2007). Other environmental factors have been implicated, like the higher prevalence of childhood abuse among women (Brown, 2002) and the fact that women face a multitude of practical difficulties and negative life events, stemming from their multiple social roles (Nolen-Hoeksema, 1991), which include child-rearing and caring for elderly parents. Although the evidence for many of these predictors remains mixed, these contextual vulnerability factors are believed to interact with more proximal characteristics, such as low self-esteem and personality traits, like neuroticism or behavioral inhibition to increase chances of depression in women. It is likely that these environmental risk factors, some of which exist from an early age, play a critical role in shaping stereotypes, attribution style, negative thinking content, and self-defeating behaviors, which according to the cognitive-behavioral model are the central driving force that drives depression for all individuals, including women (Hankin & Abramson, 2001).

A critical cognitive characteristic that may in part explain the gender differences in depression prevalence, and plays a central role in cognitive models of depression (and related disorders, like social anxiety; Panayiotou & Vrana, 1998), is self-focused attention. It appears that ruminative self-focus and self-consciousness (Panayiotou & Kokkinos, 2006), that is, a tendency to focus on and regurgitate negative thoughts and evaluations about the self, is part of a vicious cycle that maintains depression and other emotional disorders. High levels of self-focused attention increase negative affect by directing attention to it, while higher negative affect has been found to increase self-focused attention, by making the self more salient (Panayiotou, Brown, & Vrana, 2007). According to Nolen-Hoeksema (1987) and Nolen, Wisco, and Lyubomirsky (2008), ruminative self-focus increases dysphoric mood and is maintained by negative reinforcement. It provides the depressed person the illusion that one is doing something active: By rethinking the past to identify faults and limitations, the depressed person believes that they are helping their situation, when in fact one does nothing to change one's life and assume responsibility. In essence, self-focused attention is used as an avoidant emotion regulation strategy, known to contribute to many forms of psychopathology (Panayiotou, Karekla, & Leonidou, 2017). Ruminative self-focus is higher in women than men, perhaps

because men are socialized to use more active problem-solving, while women may be socialized into more passive roles, talking about their problems and seeking emotional help from others (Panayiotou, Karekla, & Mete, 2014). Such differences in coping may contribute to prevalence differences between genders.

8.2 Cognitive-Behavioral Conceptualization of Depression Etiology and Maintenance

Although cognitive and behavioral theoretical frameworks to the conceptualization and treatment of depression are somewhat distinct, in practice CBT clinicians typically apply protocols incorporating aspects of both perspectives. With each theory emphasizing somewhat different etiological routes to the development and maintenance of depression, ultimately, thoughts, affective reactions, and behaviors and the way they mutually affect each other are central to the understanding and treatment of depression and other affective disorders, as the review above indicates. CBT therapists understand that most individuals seek therapy because of emotional distress. However, as they explain to their clients from the very early sessions of treatment, emotions occur automatically and are difficult to change directly. Because emotions are mutually connected to and mutually influence thoughts and behaviors, change in negative affect and depression is expected to come about after the client is able to modulate and change one's thoughts/interpretations and/or one's behavior. Central to both the cognitive and behavioral perspective is a functional analysis of the client's behavior (including the client's thoughts). Understanding the ABCs that maintain depression, i.e., the Antecedents, Behaviors, and Consequences in repeated chains of depressive behaviors (such as oversleeping, overeating, avoiding social interactions, thinking thoughts like "I'm useless," etc.), provides a window into the individualized maintenance mechanisms of depression. It also provides hypotheses that therapist and client jointly test and experiment with in order to incur therapeutic change. The case formulation (Eells, 2007), in addition to the problem list, precipitants of current problems, and maintenance mechanisms, typically includes identified predisposing factors, both individual and contextual, and the strengths and weaknesses the client brings to therapy that might impact its success (e.g., good vs. poor insight, a supportive vs. unsupportive home environment). Therapy takes place in a collaborative, hypothesis testing, solution-focused approach where therapist and client are active agents of change. As in all therapy, a strong therapeutic alliance and commitment to a shared conceptualization are prerequisites for positive outcomes.

8.2.1 *The Behavioral Perspective*

The role of behavioral withdrawal, which leads to decreased opportunities for positive reinforcement, plays a central role in the behavioral point of view. This perspective postulates that depressive behaviors, like staying in bed, overeating, ruminating,

using substances, and other depressive patterns, are reinforced positively or negatively and maintained by their consequences, which must therefore be closely monitored and identified, a major goal of therapy. Identifying strategies for reducing the reinforcement of depressive behaviors can be an important treatment component (Hopko, Lejuez, Lepage, Hopko, & McNeil, 2003). A fundamental goal of therapy is to modify behavior directly (Dimidjian, Martell, Addis, & Herman-Dunn, 2008) so as to increase the likelihood of positive reinforcement and solve the problems that lead to stress. Although focusing on patterns of behavior and their contingencies in the present, this approach does not ignore the client's history. It suggests that patterns of behavior that prohibit one from living a fulfilling life in the present may have been reinforced and shaped by one's past (traumatic) experiences. Behaviors that should lead to positive consequences may have been extinguished through punishment or non-reinforcement (e.g., Ferster, 1981). This elicits depressed mood, which in turn makes it less likely for the person to emit such behaviors, in order to feel better or solve life problems. Instead, depressed individuals typically engage in self-focused attention and rumination (Nolen-Hoeksema, 1987; Panayiotou & Papageorgiou, 2007) and try to avoid and escape situations that might result in what they predict will be adverse consequences and emotions but may be necessary to enjoy a fulfilling life. Avoidance and withdrawal (of many forms) are conceptualized as coping behaviors, reinforced by the short-term relief they produce; in the long term, however, they keep one away from engaging with important aspects of their lives and relationships. Behavioral activation, the therapeutic approach stemming from this conceptualization, even though more clearly behavioral than cognitive, is a core component in many forms of CBT, including the classical cognitive therapy model for depression as proposed by Beck (1979).

Behavioral activation, as part of a more comprehensive CBT protocol or as a stand-alone brief treatment (Lejuez, Hopko, & Hopko, 2001), has received empirical support for its efficacy (Dimidjian et al., 2006), which was deemed equivalent to antidepressant pharmacotherapy but with longer-lasting effects. By increasing behaviors that may lead to rewards and actively solve life problems, while decreasing avoidance and withdrawal, it aims not to necessarily increase happiness directly and immediately, but to improve wellbeing and quality of life through increased engagement with ones' valued life goals and progressive engagement with rewarding behaviors. This changed context may in turn work to improve mood. Furthermore, the aim of behavioral activation is not, as often misunderstood, to just increase the amount of behavior in general (i.e., go to the gym, sort out one's house). Instead, in a collaborative, systematic, and guided manner, it aims to identify important target behaviors that are valued by the client and facilitate engagement with them. It does so by breaking the behavior down into smaller chunks, or by creating a hierarchy based on the difficulty of execution (Hopko et al., 2003). Client and therapist then identify and resolve obstacles to execution, practice in and outside of session, and increase the probability of success, for example, using prompts and reminders while at the same time acknowledging that the required change is challenging and difficult for the client to implement (Dimidjian et al., 2008). Cognitive rehearsal, i.e., practicing the assignment in one's imagery, may be used to predict difficulties and prepare successful homework completion. In its application the treatment is highly

idiographic, in that it is based on the detailed functional analysis of each client's behavioral patterns. Toward this aim, rating scales and record forms are frequently used where the client keeps careful track of their behaviors, often several times a day. Of importance is that the client comprehends and agrees to the rationale for this treatment and engages in it. It is very important that doubts are addressed and the pain of the client is heard. Change is not easy (otherwise the client would have found solutions without therapy), and one should not be made to feel that their distress or vulnerability is not valid. Therapists often find that clients are convinced that they must first feel better and then engage in meaningful behaviors, rather than the other way around. They may in essence be afraid that by being effective in their lives their pain won't be heard—these issues must be addressed with compassion and empathy, and the link between decreased goal-directed behavior and lack of positive outcomes must be clearly understood.

Behavioral activation is based on collaborative exploration of the observations the client makes of their own lives and requires practice and application of what was learned in therapy through between session homework assignments. As in all CBT treatments, homework is very important, empowering the client and making them responsible for their own progress. As such, it is typically reviewed first and extensively as part of the agreed agenda of each session. If goals are not accomplished, careful assessment of the contingencies and circumstances is the focus of the next session to identify obstacles. It is important that unaccomplished goals are not presented as client failure, but rather as due to a goal that was not broken down enough, to obstacles that were not identified, or to prompts and reminders that were not set. It is very important to reformulate and change the assignments, to increase the probability that success will happen. As Beck has put it, the first step in the goal of preparing a meal may involve boiling an egg (Beck, 1979); success is expected to motivate further change. Homework successes are actively praised by the therapist (token economy protocols can be used in inpatient settings; Lejuez et al., 2001), and the patient and therapist fully review the processes that facilitated success. Then the client is called to maintain and/or generalize these new behaviors to ensure that they begin to become part of their behavioral repertoires.

8.2.2 The Cognitive Perspective

From a cognitive perspective as described by the influential work of Ellis (e.g., Ellis, 1957), Beck (e.g., Beck, 1995), Padesky (e.g., Padesky & Greenberger, 2012; Hawley et al., 2017), and others, the interpretation and meaning given to various stressors and events by the individual is typically what instigates negative emotions, and behaviors, which in turn help to perpetuate and reinforce depressogenic cognitions. However, cognitions, emotions, and behaviors mutually affect each other, and therapy must take all three components into account. According to Beck's model, depression involves negative schemas, i.e., mental representations about the self, the world, and the future, called the cognitive triad. These "core beliefs" are activated

by stressful life events and lead to “cognitive distortions” or “automatic thoughts” (e.g., regularly catastrophizing, overgeneralizing, etc.) which tend to be repeated across situations. Core beliefs about the self (e.g., perfectionism) hold a central role in depression (Hawley, Ho, Zuroff, & Blatt, 2006), and their modification may be necessary to achieve change, especially for chronic or recurrent symptoms. These central stereotypes are associated with the negatively biased information processing discussed above and form a framework into which the world fits: Information congruent with these schemas is attended to preferentially, the world is interpreted through their filter, and memory is increased for congruent rather than incongruent information. The more these schemas are practiced, by repeated activation in memory, the more they become reinforced and ingrained (Ingram, 1984).

The goal of the cognitive component of CBT is to increase awareness of the role of cognitions and interpretations on mood and behavior, to train the client to identify cognitive distortions, and to come about with more realistic interpretations of situations. The aim is *not* to attach silver linings to difficult situations, but to realize and mitigate the exaggeration, persistent self-blame, and stable, over-general interpretations that often sustain negative thinking. As in all CBT, sessions are relatively structured, following a mutually agreed agenda. Homework is always assigned and discussed. However, room is allowed for patients who may feel the need to briefly discuss something that seems outside the set agenda in order to sustain rapport and show empathy.

Several important tools are used in the process of identifying and challenging dysfunctional cognitions and core beliefs. The Socratic dialogue involves the process of questioning by the therapist about particular depressive situations and cognitions that the client brings into therapy. The goal of elaborate questioning is to direct the client’s attention to important details (in light of over-general memory) and to help them discover patterns of thinking and behavior that maintain depression. This process, in addition to focusing questions, involves empathic reflection by the therapist, summary statements, and synthesizing questions that help the client produce their own conclusions about maintenance mechanisms and patterns in their behavior, in a process of “guided discovery” (Kazantzis, Fairburn, Padesky, Reinecke, & Teesson, 2014). Through Socratic dialogue the “downward spiral” (Beck, 1995) of client’s negative thinking can be identified. With questions like “What makes this important?”, “Why would that matter?”, “What would it mean to you if ...?”, the central fears and concerns of clients can be derived from their generalized statements and ruminations.

Automatic thought records are another crucial tool in CBT. Although various versions of these exist, they are essentially a diary of situations that triggered negative thoughts and emotions and at a later step include the assignment of challenging the thoughts and reappraising the situation. The columns of the record typically include a brief note of the situation, the thoughts that immediately preceded one’s emotional reaction, the emotions experienced and their intensity, and finally the rebuttal of the thought with a more balanced, rational one that is produced after the available evidence is weighted. A final column showing the outcome (new interpretation and new emotions) may be included. Much practice in session, modeling by

the therapists, and guided discovery by the client is required to effectively identify and correct dysfunctional automatic thoughts. Role-playing, questioning, and imagery can help elicit them. Practice in identifying and weighing the evidence for and against the dysfunctional interpretation, to reach the necessary reappraisal, is encouraged by the therapist. Padesky and Greenberger (2012) suggest that the client must be fully convinced that the evidence is in favor of the new restructured thought and against the distorted one, or the automatic thought will persist. To achieve this conviction, specific columns can be added to the thought record, where evidence for and against an automatic thought are carefully recorded, with persistent exploration of “any other evidence” that still might linger in support of the distortion. Finding out collaboratively with the client, through Socratic questioning and self-discovery, that the evidence does not support the faulty assumption will facilitate change. In all cases, automatic thoughts are treated as hypotheses to be tested. If prior experience is not adequate to provide evidence for or against them, therapist and client design behavioral experiments (i.e., behavioral assignments that directly speak to the assumptions of the automatic thought—e.g., that one will faint if one tries to ask a question in class) to assemble new evidence.

Changing core beliefs, the deeply held stereotypes that permeate many life domains and which were probably reinforced throughout development, is a greater challenge for the CBT therapist and may only need to be undertaken for pervasive and chronic emotional problems, during the final stages of treatment. Core beliefs are difficult to change because they have been created over a lifetime of reinforcement, potentially in the absence of any alternative evidence, and from there on have also shaped the way the world is perceived, understood, and remembered, producing further supportive evidence for their veridicality. Such schemas can be changed using a variety of interventions that aim not only to refute them, but to create new, alternative beliefs to replace them. Various interventions can aid in challenging core beliefs as described in Padesky (1994). The continuum technique involves drawing and discussing continuous dimensions for constructs that are absolute and categorical in the mind of the client, to reinforce flexibility. An example is the use of a “pie chart of blame,” where a client who tends to assume that “it was all my fault” is asked to draw a pie chart on which to think of any potential sources of responsibility for a particular problem and add a representative percentage of “blame” on the pie. Through brainstorming of all potential sources of responsibility, a pie is continuously filled in, and the client contemplates about a more realistic portion of the blame that can be attributed to themselves. The positive log technique involves learning to keep note of all evidence that supports a new, more functional schema. Using the historical test for schema technique, the therapist helps the client identify supportive and disconfirming evidence for long-held schemas from the client’s own developmental history. Overall, the aim in addressing long-standing core beliefs is to ensure that new evidence against them, which supports alternative and more accurate ideas, is actually believable to the client, who is now asked to radically change their view of the self, the world, and the future.

8.3 Future Directions in CBT and Empirically Validated Treatments

Because of the centrality of cognitive biases in the maintenance of depression, as noted above, specific interventions designed to modify these biases are continuously tested, either as stand-alone treatments or as components of CBT protocols. For example, attention bias modification therapy (ABMT) aims to decrease the probability that an individual will look at and focus attention on negative stimuli while increasing the probability that they will focus on affectively neutral stimuli (or in some cases positive stimuli). This is accomplished through computerized programs that guide the participant to “choose” to look more at neutral stimuli, when these are presented in neutral-negative pairs on the computer screen. ABMT has shown promise for various emotional disorders, including depression (Beevers et al., 2015; Yang et al., 2015), but contradictory evidence also exists, with the literature starting to focus on the moderators that determine its effectiveness (Neophytou, 2019). Cognitive bias modification (CBM) techniques, through computerized tasks, have also been used to change negative interpretation biases, which seem central in maintaining depression (MacLeod & Mathews, 2012; Williams et al., 2015). Although several studies have been implemented with promising results, meta-analyses of existing CBM treatments for adult depression show, at present, small effect sizes (Cristea, Kok, & Cuijpers, 2015). It remains to be seen whether further improvement of these interventions, identification of moderators of effectiveness, or combination with other potent components of CBT will improve overall treatment efficacy.

Other developments pertain to the recent accumulation of neuroscientific evidence, aiming to identify biomarkers of specific dysfunctions in depression and the causes of heterogeneity among those suffering from depressive disorders. With the goal of personalized medicine in mind, it becomes progressively important to precisely identify such deficits and target interventions to the unique causes that may underlie depression in each individual. This could become feasible, through neuroimaging to identify sub-categories of depression patterns, for example, those whose depression stems from a dysfunction of the reward system, with primary symptoms of anhedonia, vs. those whose depression derives from resting-state dysfunction, leading to increased rumination (Williams, 2016).

Other contemporary interventions, rather than focusing on specificity, are more generalized and focus on trans-diagnostic symptoms that are maintained by the same core vulnerabilities mechanisms that are shared, for example, between anxiety, depression, and other emotional disorders (Sauer-Zavala et al., 2017). Similar trans-diagnostic approaches can be taken to address shared risk factors, like emotion dysregulation, that are common across disorders. Providing interventions that train core skills of how to accept, reframe, or problem solve difficult emotional situations appears to hold promise, especially as an early prevention application for those who are at risk for a variety of disorders, including depression (Theodorou, 2020, unpublished dissertation). When discussing contemporary developments, one

should also note the multitude of computer-delivered treatments for depression and other disorders that progressively enter the market, often showing equitable effectiveness to live therapy (Richards & Richardson, 2012).

Such developments are promising, stem from the utilization of new technologies, empirical evidence, and theoretical frameworks, and help address the fact that traditional therapies, though effective, do not work for everyone. Depression is common and debilitating. However, improved and acceptable treatments that will add to our current toolbox of effective interventions can only stem from further developments in basic psychological science that more clearly map the etiological and maintenance risk factors in depression and further our understanding of the characteristics of people who are most vulnerable to the effects of this category of psychological difficulties.

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