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Escola de Psicologia

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From psychopathology to optimal functioning: contributions to therapy in depressed adolescents

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STATEMENT OF INTEGRITY

I hereby declare having conducted this academic work with integrity. I confirm that I have not used plagiarism or any form of undue use of information or falsification of results along the process leading to its elaboration.

I further declare that I have fully acknowledged the Code of Ethical Conduct of the University of Minho.

From psychopathology to optimal functioning: Contributions to therapy in depressed adolescents

ABSTRACT

Adolescent depression has alarming prevalence rates, mainly due to consequences of depression on the psychosocial functioning of adolescents (Hankin et al. 2015). Some authors have suggested combining strategies from Cognitive Behavioral Therapy (CBT) and Positive Psychological Interventions (PPI) to increase depression treatment success (Karwoski et al., 2017). This dissertation aimed to develop a manualized individual therapy, entitled "Optimal Functioning Therapy for Adolescent" (OFTA, Teixeira & Freire, 2014) for the treatment of depression. OFTA focus simultaneously on decreasing depressive symptoms and achieving adolescent optimal functioning, by integrating and adapting strategies from CBT and PPI. The second aim was to evaluate the contents and strategies of OFTA and its structure. For this, we first conducted a case study with a female adolescent diagnosed with Major Depressive Disorder. The assessment of OFTA was made using retrospective measures and the Experience Sampling Method (ESM, Csikszentmihalyi & Larson, 1987) from baseline to a 4-month follow-up. Findings showed an improvement in positive trait characteristics and reduction of depressive symptoms; higher levels of momentary positive mood and self-satisfaction and lower levels of momentary negative mood; as well as increased engagement and diversification of life contexts (activities, places, and companies). Then, OFTA was assessed in a pilot study with 22 clinically depressed adolescents recruited in a public hospital. This study also followed a longitudinal design using retrospective measure. Results showed a statistically significant decrease of depressive symptoms and negative affect and an increase of positive affect, self-esteem, and life satisfaction from baseline to follow-up. In this pilot study, only 12 participants answered to ESM questionnaires. Findings from those participants showed a decrease of depressive symptoms and negative affect and an increase in positive affect (measured retrospectively and momentarily). Results on external contexts, showed that participants increased time spent at home and in passive leisure activities. In general, this dissertation shows promising results of OFTA for the treatment of adolescent depression and optimal functioning enhancement, revealing the importance of integrating CBT and PPI strategies.

Keywords: adolescents, depression, experience sampling method, optimal functioning, positive psychology interventions.

Da psicopatologia ao funcionamento ótimo: Contributos para terapia em adolescentes deprimidos

RESUMO

A depressão na adolescência tem taxas de prevalência alarmantes, principalmente devido às consequências da depressão no funcionamento psicossocial dos adolescentes (Hankin et al. 2015). Alguns autores sugerem que combinar estratégias da Terapia Cognitivo-Comportamental (TCC) com Intervenções da Psicologia Positiva (IPP) aumenta a probabilidade de sucesso do tratamento da depresssão (Karwoski et al., 2017). Esta dissertação procura, primeiramente, desenvolver uma intervenção individual manualizada para o tratamento da depressão, intitulada de "Terapia para o Funcionamento Ótimo de Adolescentes" (OFTA, Teixeira & Freire, 2014). A OFTA foca-se tanto na redução de sintomatologia depressiva como na promoção do funcionamento ótimo de adolescentes, através da integração da TCC e da IPP. O segundo objetivo é avaliar os conteúdos, as estratégias e a estrutura da OFTA. Para isso, primeiramente, realizou-se um estudo de caso como uma adolescente diagnosticada com Perturbação Depressiva Major. Foram usadas medidas retrospetivas e em tempo real, mais especificamente o *Experience Sampling Method* (ESM, Csikszentmihalyi & Larson, 1987), desde o momento pré-teste ao *follow-up*. Os resultados mostram aumentos nas dimensões positivas e uma redução nos sintomas depressivos; níveis mais elevados de afeto positivo momentâneo e autossatisfação; além de níveis mais baixos de afeto negativo momentâneo, bem como um maior envolvimento e diversificação dos contextos de vida (atividades, lugares e companhias). De seguida, foi realizado um estudo piloto com 22 adolescentes clinicamente deprimidos recrutados num hospital público. Este estudo segue um *design* longitudinal com medidas retrospetivas. Os resultados mostram uma diminuição estatisticamente significativa dos sintomas depressivos e do afeto negativo, e um aumento do afeto positivo, autoestima e satisfação com a vida, desde o pré-teste ao *follow-up*. Dos 22 participantes, apenas 12 responderam ao ESM no estudo piloto. Os resultados mostram uma diminuição dos sintomas depressivos e do afeto negativo, e um aumento do afeto positivo (retrospetivamente e em tempo real). Em relação aos contextos externos, os resultados mostram que os participantes aumentaram o tempo passado em casa e em atividades de lazer passivas. No geral, esta dissertação mostra resultados promissores da OFTA tanto para o tratamento da depressão em adolescentes como para a melhoria do seu funcionamento ótimo, através da integração da TCC e da IPP.

Palavras-chave: adolescentes, depressão, experience sampling method, funcionamento ótimo intervenções da psicologia positiva.

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LIST OF ABBREVIATIONS

BDI-II - Beck Depression Inventory II

BSI - Brief Symptom Inventory

CBT - Cognitive Behavioural Therapy

ESM - Experience Sampling Method

MDD - Major Depression Disorder

NA - Negative Affect

OFTA - Optimal Functioning Therapy for Adolescents

PA - Positive Affect

PANAS - Positive and Negative Affect Scale

PPI - Positive Psychology Interventions

PYD - Positive Youth Development

SYTL - Say Yes To Life

TAU - Treatment As Usual

VIA-Youth - Values in Action Inventory for Youth

WBT - Well-Being Therapy

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INTRODUCTION

Adolescence and positive development

For many years, adolescence was considered a turbulent and stressful period of life so often called in the literature as the "storm and stress" period (Bowers et al., 2010; Hall, 1904). Research was focused mainly on adolescent behavioral problems (such as delinquent behaviors, substance abuse, pregnancy, violence, academic difficulties, and other behavioral problems) and on developing interventions to treat those specific problems and mental disorders (Bowers et al., 2010; Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002). Back then, a positive or healthy development was merely defined by the absence of problematic behaviours (Lerner et al., 2005). In the last decades, this negative and deficit perspective of adolescence has gradually changed to a perpective of flourishing and thriving, driven by two approaches: Positive Youth Development (PYD) and Positive Psychology.

According to the PYD, adolescents are seen as full of strengths and resources that can be fostered and optimised to achieve their full potential (Freire, Lima, Teixeira, Araújo, & Machado, 2018; Lerner et al., 2005; Zarrett & Lerner, 2008). The PYD can be conceptualised through the "Five Cs" model (Bowers et al., 2010; Zarret & Lerner, 2008). Those Cs are the following: competence (positive view of their actions in specific areas such as social, academic, cognitive, and vocational); confidence (overall sense of self-esteem and self-efficacy); connection (positive bond between the individual and family, peers, school, community, institutions); character (individual respect for rules and social norms); and caring (individual ability to empathize with others). The development of these skills or five Cs would lead to a sixth C that is "contribution" (involvement in volunteer activities, serve the community). Adolescents that have high levels in these Cs are on the right trajectory for positive development and have a lower risk of engaging in problem behaviours (Bowers et al., 2010; Zarret & Lerner, 2008). Based on this PYD approach, several youth psychological interventions have emerged and focus on creating opportunities in daily life contexts to build positive resources and skills that would lead to a positive youth development and a healthy life trajectory (Freire et al., 2018; Lerner et al., 2005; Lerner et al., 2011).

Research on PYD emphases both risk and protective factors existent in adolescents environments, such as family, school, peer group, and community (Catalano et al., 2002; Youngblade et al., 2007). When the adolescents' strengths and skills are aligned with positive ecological resources, it decreases the probability of engaging in problem behaviours and increases the likelihood of engaging in healthy behaviours, leading to a positive development (Lerner et al., 2005; Schneiders et al., 2006; Youngblade et al., 2007). Oppositely, the lack of individual/contextual resources and the existence of

problems in adolescents' life contexts (for instance, family conflict, aggression, and negative emotions) has been associated with an increase of negative behaviours and a decrease in positive behaviours, increasing the risk of psychopathology, such as depressive disorders (Lerner et al., 2005; Schneiders et al., 2006; Youngblade et al., 2007).

In the last decades, the emergence of Positive Psychology (Seligman & Czikszentmihaly, 2000) contributed to a change in the concept of mental health from not just the absence of illness to the presence of well-being as well. This new approach also recovered the Psychology's aim of studying and increasing knowledge on optimal human functioning (Rashid, 2009; Sin, Della Porta, & Lyubomirsky, 2011; Wood & Tarrier, 2010). Optimal functioning refers to individuals becoming their best self and fulfilling their potential (Seligman & Czikszentmihaly, 2000).

Traditionally, research in Psychology was mainly focused on the negative aspects of human functioning (such as negative emotions) to better understand and prevent disorders and develop effective treatments, neglecting the importance of advancing knowledge and cultivating positive aspects of human functioning (Duckworth, Steen, & Seligman, 2005; Seligman & Csikszentmihalyi, 2000; Sin et al., 2011). Positive psychology readdressed this unbalanced research focus by studying and cultivating positive psychological resources, such as positive emotions, life satisfaction, strengths, personal growth, life meaning (Bohart, Elliot, Greenberg, & Watson 2002; Seligman & Czikszentmihaly, 2000; Sin et al., 2011).

Research has shown those positive and negative aspects of human functioning are connected and in interaction, often sharing the same continuum, making incomplete their independent study (Wood & Tarrier, 2010). More specifically, the absence or lack of positive characteristics (such as positive emotions, high self-esteem) can predict the development of mental disorders better than the presence of negative characteristics, depending on their interaction (Wood & Tarrier, 2010). In the same line, negative and positive characteristics can be considered positive or negative depending on the situation/context and motivation (Nakamura, 2011; Wood & Tarrier, 2010). Research has shown that there is a negative side to what is considered positive and a positive side to what is deemed negative (Nakamura, 2011). As an example, in a gambling context, dispositional pessimism can be more beneficial than optimism decreasing the risk of addiction (Gibson & Sanbonmatsu, 2004). Thus, the distinction between positive and negative is seen as too simplistic and reductive (Nakamura, 2011; Wood & Tarrier, 2010). It is this integrative knowledge of the positive and negative aspects of human functioning, or in a more broader sense the integrative knowledge on psychopathological and normative development, within an ecological perspective that can help us to better understand psychopathology

and how to achieve optimal functioning (Drabick & Kendall, 2010; Freire, Teixeira, Silva, & Matias, 2014).

Thus, promoting adolescents optimal functioning implies the alleviating of psychopathological symptoms and the enhancement of well-being, positive emotions, strengths and life meaning, within developmental and ecological processes (Freire et al., 2014; Nakamura, 2011; Seligman, Rashid, & Parks, 2006; Sin & Lyubomirsky, 2009; Wood & Tarrier, 2010). It is necessary to keep in mind that today we are living an era of global and social changes and challenges that affect the development and life trajectory of adolescents (Dahl, Allen, Wilbrech, & Suleiman, 2018). It is the integration of youth strengths, competencies, and ecological resources that can lead to a healthy development or to a unhealthy development with multiple negative consequences for the individual, as it is the case of depression (Bowers et al., 2010; Lerner et al., 2005; Schneiders et al., 2006; Zarret & Lerner, 2008).

Adolescent depression

According to DSM-5, Major Depression Disorder (MDD) core symptoms are a depressed mood and anhedonia (that should be present for two weeks or more), which cause significant personal suffering and social impairments (APA, 2013; Hermens et al., 2015; Midgley et al., 2015). Other symptoms of MDD include decreased energy or fatigue; difficulty to concentrate; thoughts of guilt and worthlessness; pessimistic perspective about the future; insomnia and/or hypersomnia; loss or increased appetite; weight loss or gain; self-harm and suicide ideation or attempt (APA, 2010). Although MDD is very similar between adults and adolescents, one of the leading features of adolescent depression is irritability (Midgley et al., 2015). Other symptoms have been considered specific of adolescent depression diagnoses, such as problems with peers and family, social withdrawal, loneliness, school dropout, sleeping problems, and self-harm (Keles & Idsoe, 2018; Midgley et al., 2015).

Moreover, adolescent depression has also been characterised in the literature by higher levels of negative affect and lower levels of positive affect (Forbes, Williamson, Ryan, & Dahl, 2004; Silk, Forbes, & Whalen, 2011). Research has consistently shown that the combination of low positive affect and high negative affect increases the risk of developing depression in adolescents and adults and is associated to lower levels of well-being (Brieant et al., 2018; Harding, Willey, Ahles, & Mezulis, 2016; Larsen, 2009). Negative affect levels are exceptionally high in pubertal girls, which are the ones as well with a higher risk for developing depression (Forbes et al., 2004). However, when compared to negative affect, it is the positive affect that has a more critical role in the development, course, and recovery of

depression and in promotion of well-being (Hartmann et al., 2015; Kuppens, Champagne, & Tuerlinckx, 2012; Stark et al., 2006). Recent research has shown that higher levels of positive affect may buffer negative affect and prevent the reoccurrence of depression (Kuppens et al., 2012; Stark et al., 2006).

Although less common in children, depression is very prevalent in adolescence, especially in later adolescents (Kessler, Avenevoli, & Merikangas, 2001). Research has shown that prevalence rates for major depression in mid to late adolescents have increased in recent years, almost reaching 12% (Merikangas et al., 2010; Mojtabai, Olfson, & Han, 2016). Gender differences in prevalence are only present in post-pubertal children, with girls showing a higher prevalence (Klasen et al., 2015). Reoccurrence rates later in life are also very high (Compton et al., 2004; Horowitz & Garber, 2006; Rohde, Lewinsohn, Klein, Seeley, & Gau, 2012). In childhood and adolescence, depression has comorbidity with other mental disorders, such as anxiety disorders, substance abuse, behavioural disorders, attention-deficit/hyperactivity disorder, and emerging personality disorders (Costello, Erkanli, & Angold, 2006; Midgley et al., 2015).

Depression has numerous consequences for adolescents' lives, causing severe impairments in social and occupational functioning (Hermens et al., 2015; Midgley et al., 2015). The main consequence is suicide, that is considered a severe public health problem (Brière, Rohde, Stice, & Morizot, 2016). Other relevant implications for the lives of depressed adolescents are impairments in school performance and social interactions, loss of social, cognitive, and interpersonal competencies, risk of self-harm, comorbid psychopathology, substance abuse, and impairments in family and peer functioning (Blom et al., 2016; Brière et al., 2016; Gladstone & Beardslee, 2009; Keles & Idsoe, 2018; Kessler et al., 2001; Midgley et al., 2015; Reiter & Wilz, 2015). All of these consequences make it relevant to study the association between depression and environmental factors (Thapar, Cooper, Eyre, & Langley, 2013).

Adolescent depression and daily life

According to ecological and developmental perspectives, a positive or negative developmental trajectory depends on the interaction between individual and environmental features (Nakamura, 2011; Spence, Sheffield, & Donovan, 2003). For instance, factors as adolescent self-efficacy, self-esteem and coping skills, as well as a positive family environment and family and peer support can be considered as protective factors that can prevent depression or be fostered in depression treatments (Klasen et al., 2015). Other factors such as the presence of stressful life events (e.g., abuse, maltreatment, family adversities, negative family relationships, peer rejection and bullying) and the adolescent emotional

response to them can be considered as risk factors for the development of depression (Costello et al., 2006; Hermens et al., 2015; Kessler et al. 2001; Thapar et al., 2013). The effect of these life stressors is higher in adolescents with increased genetic risk (Thapar et al., 2013). For instance, youth with depressed parents have two or three times increased risk of also developing depressive disorders because of genetic and environmental factors (Costello et al., 2006; Kessler et al., 2001; Weissman et al., 2006).

Knowing and understanding adolescent daily functioning in terms of mood fluctuations or patterns and life contexts provide essential information for depression diagnoses and treatment (Rusting & Larsen, 1998). Concerning mood fluctuations, research has shown that depressed individuals have a higher probability of recovery if they have greater positive affect persistence (ability to maintain positive emotions) along the day at treatment baseline (Höhn et al., 2013). As well, healthy individuals with higher positive affect persistence over time are less likely to develop depressive symptoms (Höhn et al., 2013). Furthermore, research has identified gender differences in daily mood fluctuations. The momentary mood in boys tends to have a more significant decrease over time, and momentary positive affect is higher in girls than boys (Larson, Moneta, Richards, & Wilson, 2002).

Research has shown two types of mood patterns: morning-worse and evening-worse. Morning-worse has been associated with a severe and endogenous form of depression, while evening-worse has been associated with a neurotic style of depression (Rusting & Larsen, 1998). Studies show that momentary positive affect has an inverted U shape along the day: lower levels of positive affect in the morning and evening and higher levels of positive affect in the middle of the day (Höhn et al., 2013). This can be explained by the fact that adolescents have more opportunities to experience positive events in the middle of the day (Höhn et al., 2013).

Adolescent life contexts (companies, places, and activities) provide several opportunities for both positive and negative daily experiences. Research has shown that depressed adolescents experience in everyday life higher interpersonal problems (such as social rejection), engage less in social activities and engage in more negative behaviours and less positive behaviours (Kuppens et al., 2012; Nelson, Byrne, Sheeber, & Allen, 2018; Stark et al., 2006).

Studies have shown a link between mood (positive and negative affect) and daily life contexts (companies, places, and activities) (Schneiders et al., 2007; Silk et al., 2011). Youth diagnosed with MDD spend more time alone and less time with family (Silk et al., 2011). The time they spend with family or alone is associated to a higher negative affect and lower positive affect (Schneiders et al., 2007; Silk et al., 2011; van Roekel et al., 2014), while time spent with friends is associated with a

lower negative affect (Silk et al., 2011). Negative affect is higher when adolescents are at home and lower when they are at school and other places (Schneiders et al., 2007). Regarding activities, depressed adolescents show higher negative affect when they are doing nothing when compared to socializing with family and friends or performing leisure activities. Hence, the study of adolescent daily life contexts and mood fluctuations, and the link between them may improve depression diagnosis and treatments. Treatments that take in consideration developmental and contextual factors can be more effective and lead to adolescent optimal functioning (Lerner & Galambos, 1998; Nakamura, 2011; Wood, Linley, Matby, Kashdan, & Hurling, 2011).

Treatments for depression

The early onset of depression, the increasing prevalence rates, and the negative impact of depression on adolescents' social daily functioning, makes relevant the development and identification of effective treatments (Freire et al., 2014; Hermens et al., 2015; Midgley et al., 2015; Mojtabai et al., 2016). The most empirically validated treatment for depression and considered the first line of treatment is Cognitive Behavioural Therapy - CBT (Compton et al., 2004; Keles & Idsoe, 2018). However, the majority of adolescents with severe depression tend to be treated only by pharmacological treatments, such as antidepressants and mood stabilisers (Emslie & Mayes, 2001). In the last two decades, and driven by the Positive Psychology movement, several interventions have been developed to treat depression by focusing on well-being enhancement (Freire et al., 2014), called Positive Psychology Interventions (PPI). All these depression treatments will be discussed in this topic. For a more detailed review see Freire et al. (2014).

Cognitive behavioural therapy and pharmacotherapy

CBT was developed initially for the treatment of depression in adult populations but has been successfully expanded to several mental disorders and applied to children and adolescents (Creswell & O'Connor, 2011). This therapy assumes that depression and other disorders are caused or maintained by dysfunctional patterns of thinking and lack of adaptive coping strategies (Creswell & O'Connor, 2011). Thus, CBT aims to identify and reduce information processing errors and modify dysfunctional beliefs and thoughts. This intervention uses cognitive and behavioural strategies to identify the adolescent's beliefs and change the dysfunctional ones; to develop skills that promote a more adaptive cognitive processing; and to develop coping strategies and problem-solving skills (Creswell & O'Connor, 2011).

Several studies and meta-analysis have shown that CBT is effective for treating depression in adolescents, being suitable for mild and moderate depression (David-Ferdon & Kaslow, 2008; Weersing & Brent, 2006). Randomised controlled trials have shown the effectiveness of individual and group CBT in the treatment of adolescent depression (Compton et al., 2004; Keles & Idsoe, 2018). The Treatment for Adolescents with Depression Study (TADS team, 2007) has demonstrated that CBT effectiveness is similar to medication and medication combined with therapy.

For cases of more severe depression, treatment guidelines suggest the combination of CBT and antidepressants (Hermens et al., 2015). However, studies have shown that these guidelines are not followed in clinical practice, and antidepressants are prescribed to adolescents without offering first a psychological therapy (Hermens et al., 2015). According to Blom et al. (2016), Selective Serotonin Reuptake Inhibitors (SSRIs) are frequently used for the treatment of adolescent depression. These specific antidepressants were initially utilised for the treatment of adult depression (Compton et al., 2004; Blom et al., 2016). It is known in the literature several side effects of this medication in adolescents, such as weight gain, sexual dysfunction, and sleep disturbances; however, their impact on brain development are not entirely studied (Blom et al., 2016). Also, it is essential to take into consideration that the prescriptions of medication for the treatment of depression should be carefully monitored, primarily for suicidal thoughts or behaviours for six weeks (Hermens et al., 2015). Both CBT and pharmacotherapy have shown the efficacy of about 50 to 60% in youth (Gladstone & Beardslee, 2009). However, pharmacotherapy is considered less efficient for the treatment of major depression in adolescents, when compared to adults (Blom et al., 2016).

Nevertheless, CBT has received some criticisms in the last decade due to his and small effect sizes and high rates of relapse according to studies with an extended follow-up period (Blom et al., 2016; Compton et al., 2004; Curry et al., 2011; Keles & Idsoe, 2018). According to recent meta-analysis studies, CBT has been considered less effective in randomised controlled trials, possibly due to the use of active control groups (Johnsen & Friborg, 2015; Keles & Idsoe, 2018). There is still a great need for more randomised controlled trials to assess the advantages of complementing pharmacotherapy with psychotherapy. Psychological treatments have managed to achieve their goal of reducing depressive symptoms, but the primary focus of this interventions consists in symptom reduction and on individuals not filling the criteria to depression diagnoses (Duckworth et al., 2005; Wood & Tarrier, 2010).

Positive Psychology Interventions

PPI emerged from positive psychology, that contributed to a change in the concept of psychotherapy from "a place where only troubles are discussed" to "a place where strengths are discovered, where positive emotions are cultivated, where gratitude and optimism are fostered" (Rashid, 2009, p. 462). According to this new perspective, the promotion of positive affect, engagement, and life meaning and positive resources would buffer depression (Duckworth et al., 2005; Seligman et al., 2006). Thus, PPI have been defined as "treatment methods or intentional activities that aim to cultivate positive feelings, behaviours, or cognitions" (Sin & Lyubomirsky, 2009, p. 468).

PPI have demonstrated efficacy in the enhancement of well-being and reduction of depressive symptoms in adult samples (Bolier et al., 2013; Sin & Lyubomirsky, 2009). Sin and Lyubomirsky (2009) meta-analysis suggest more significant benefits in individual PPI as opposed to group therapy, and for more extended periods. The authors also found that depressed individuals demonstrated more gains from PPIs than non-depressed individuals.

Nevertheless, PPI have been developed mostly for the adult population. Few studies that implemented PPI were conducted with adolescent samples and assessed depressive symptoms when compared to research in adults. In adolescence, PPI has been mostly developed and delivered to normative samples, such as the Well-Being Therapy (WBT, Fava, 1999; Fava & Ruini, 2003; Fava & Tomba, 2009) and the Positive Psychotherapy (Rashid, Anjum, & Lennox, 2006). The WBT was implemented to a normative adolescent sample at a school setting to promote psychological well-being (Ruini, Belaise, Brombin, Caffo, & Fava, 2006). When compared, the CBT and the WBT intervention groups showed equivalent results in terms of reduction in symptomatology and improvements in psychological well-being. However, the CBT group significantly decreased depression symptoms, while the WBT group did not. The Positive Psychotherapy (Seligman et al., 2006) has been adapted and implemented to a children group intervention in a school setting to reduce depressive symptoms by promoting positive emotions, character strengths, and meaning (Rashid et al., 2006). Although the intervention group showed higher pleasant, engaged, and meaningful life and happiness scores than the control group, results did not show differences between groups regarding life satisfaction and depression symptoms. Therefore, both the WBT and Positive Psychotherapy have not yet proven that they can decrease depressive symptoms in adolescents.

Nevertheless, more recent studies (Manicavasagar et al., 2014) have been able to show that PPI can enhance well-being and decrease depressive symptoms in adolescents. As an example, the "Bite Back" is an online positive psychology program implemented with a normative sample of adolescents

from 12 to 18 years old. This program includes several activities in the following themes: gratitude, optimism, flow, meaning, hope, mindfulness, character strengths, healthy lifestyle, and positive relationships. The Bite Back has shown efficacy in reducing depression and stress and enhancing well-being when compared to control conditions (Manicavasagar et al., 2014). In the same line, another study tested the efficacy of a positive writing intervention through a resource diary using a normative adolescent sample (Reiter & Wilz, 2015). This intervention aimed to promote well-being, emotion regulation and resource realisation, and to prevent symptoms of depression in 77 adolescents from 13 to 15 years. Findings presented evidence of beneficial effects on improving well-being and decreasing symptoms of depression, such as fewer worries and less rumination when compared to the comparison group (neutral writing group).

However, PPI studies have presented several methodological limitations that need be overcome to evaluate most robustly the efficacy of these interventions, showing the need for conducting more studies in this area (Wood & Tarrier, 2010). PPI has also received some criticism because they are focused almost remarkably on positive functioning, neglecting negative functioning of individuals (Bohart et al.,, 2002; Wood & Tarrier, 2010). Nevertheless, research in positive psychology have already included the integration between the negative and the positive (Nakamura, 2011).

Psychological interventions, such as CBT and PPI, should not only be focused on reducing symptoms expecting individuals to achieve well-being, or not only be focused on promoting well-being expecting symptoms to diminish or disappear (Bohart et al., 2002; Nakamura, 2011; Wood & Tarrier, 2010). In order to achieve adolescents' optimal functioning, psychological interventions should focus intentionally and simultaneously on reducing depressive symptoms but also promoting positive resources and well-being in an integrative way (Nakamura, 2011; Sin et al., 2011; Teixeira & Freire, 2017). Still, studies of PPI using adolescent clinical samples are very much needed.

The current doctoral dissertation intends to contribute to the development of innovative interventions that focus on the negative and positive aspects of human experience and their interaction in an integrative way, to reach the adolescent's optimal functioning in an ecological and developmental perspective.

Real-time measures: Monitoring treatment success

Real-time measures are crucial to the study of the quality of subjective experience in everyday life and in the interaction between individuals and environment (Csikszentmihalyi & Larson, 1987; Hektner, Schmidt, & Csikszentmihalyi, 2007). This type of measures, such as the Experience Sampling Method

(ESM, Csikszentmihalyi & Larson, 1987), have contributed to increasing knowledge about normative development and psychopathology and daily life functioning in adolescence (Schneiders et al., 2007). Understanding adolescents' functioning through their subjective experience and their interaction with everyday life contexts may inform how clinicians can improve depression treatments and promote optimal functioning (Silk et al., 2011).

In ESM studies, research participants carry mobile electronic devices (or smartphones) to signal them to answer self-report questionnaires several times a day in the flow of daily life (Hektner et al., 2007; Trull & Ebner-Priemer, 2009). Through those repetitive measurements, researchers have access to internal (affective, cognitive, motivational) and external (activities, social interactions, places) variables of human experience in their natural setting at the time they are occurring without cognitive bias (Hektner et al., 2007). Variables of moods, thoughts, symptoms, and behaviours are always changing accordingly to the time of day and events (Schneiders et al., 2007; Trull & Ebner-Priemer, 2009). This is especially relevant in the study of psychological disorders as depression (Wenze & Miller, 2010). Several studies have shown specific patterns of diurnal variations in mood in depressed individuals and the association between stressful events and symptoms (Brown, Strauman, Barrantes-Vidal, Silvia, & Kwapil, 2011; Höhn et al., 2013; Wenze & Miller, 2010). This method has the advantage of measuring even small changes in the daily life experience in their natural settings (Silk et al., 2011; Trull & Ebner-Priemer, 2009). More specifically, ESM allows researchers and clinicians to known how depressed mood changes from the beginning to the end of therapy; which life contexts and activities are associated with negative and positive affect; whether a specific strategy or homework assignment contributed to a change in mood; and if individuals are implementing the strategies learned in therapy in their everyday lives (Wenze & Miller, 2010).

However, in clinical research and practice, psychological dimensions, symptoms, and treatment progress are usually assessed using retrospective self-report questionnaires and interviews in a single moment (Rot, Hogenelst, & Schoevers, 2012; Trull & Ebner-Priemer, 2009). Although commonly used, retrospective measures have been considered incomplete because individuals have difficulties to remember how they felt in a particular situation/context (Schneiders et al., 2007; Silk et al., 2011). Those measures are more sensitive to individuals' memory bias, such as: remembering experiences more personally significant; experiences that are still recent in memory; experiences that are noteworthy or uncommon; experiences related to the present-day mood state (Trull & Ebner-Priemer, 2009). These natural memory biases are more prominent in depressed individuals because of dysfunctional

cognitions and beliefs that lead to an exaggeration of symptoms and memory imprecisions (Rot et al., 2012). All those memory biases may compromise reliability and validity (Trull & Ebner-Priemer, 2009).

Since ESM gathers information (e.g., mood) at the exact time they are occurring in everyday life, it has the advantage of reducing memory biases (Trull & Ebner-Priemer, 2009; Trull, Ebner-Priemer, Brown, Tomko, & Scheiderer, 2012; Wenze & Miller, 2010). The fact that individuals are assessed in their natural environments, instead of a laboratory context, increases ecological validity and reliability (Hektner et al., 2007; Wenze & Miller, 2010). Thus, ESM can be used as a complementary measure of self-report retrospective measures or retrospective interviews that are current and commonly used to assess treatments efficacy in clinical settings and research.

Nevertheless, few studies have used real-time measures to monitor treatment progresses, especially in clinical settings (Trull & Ebner-Priemer, 2009; Wenze & Miller, 2010). The use of ESM in the assessment of the effectiveness of psychological interventions for the treatment of depression seems to be critical and can provide more information about the benefits of those interventions in the adolescents' daily life.

Aims and structure of the dissertation[1]

The first and primary aim of the current thesis was to develop a manualized individual therapy protocol, entitled Optimal Functioning Therapy for Adolescents (OFTA, Teixeira & Freire, 2014). This therapy was developed to treat MDD in adolescents. The main distinguishing characteristic of OFTA is the inclusion of an intentional goal of promoting adolescents' optimal functioning, while traditional psychological interventions (such as the CBT) focus on the elimination of depressive symptoms.

OFTA was developed taking into consideration knowledge and understanding from positive and negative aspects and their interaction to treat depression and achieve optimal functioning (Nakamura, 2011; Wood & Tarrier, 2010). Adolescent optimal functioning depends on how adolescents cope with developmental changes and challenges, their developmental assets and personal resources, environmental factors and the interaction individual-environment (Bowers et al., 2010; Drabick & Kendall, 2010. Lerner et al., 2005; Nakamura, 2011).

In line with the positive psychology perspective, adolescents are seen as having already positive personal resources (such as character strengths, optimism, flow, life purpose) that can also be fostered to buffer depressive symptoms and intentionally promote optimal functioning (Klasen et al., 2015;

[1] The project of the current dissertation was approved by the Ethics Committee of the University of Minho (Appendix).

Seligman, Steen, Park, & Peterson, 2005; Nakamura, 2011; Rashid, 2015). The promotion of those positive traits is especially relevant in depressed adolescents because usually they lack those personal resources or are not aware of them in their everyday life due to cognitive bias (Seligman et al., 2005; Rashid, 2009). This therapy also intends to develop agency in depressed adolescents, helping them to be producers of their development (Lerner et al., 2005; Nakamura, 2011).

OFTA follows an ecological perspective since research has consistently shown the importance of life contexts to optimal functioning (Lerner et al., 2005; Nakamura, 2011). In therapy, life contexts can be transformed into positive resources instead of obstacles to improve optimal functioning (Nakamura, 2011). This is especially relevant in depression, where adolescents face impairments in their social and occupational functioning (Hermens et al., 2015; Midgley et al., 2015). In this sense, OFTA takes advantage of already existing positive resources in adolescents environments (e.g., positive family interactions, supportive peers and teachers, leisure contexts) and in other cases help them to cope with adversative conditions (e.g., enhancement of secondary control) (Freire et al., 2018; Lerner et al., 2005; Lerner et al., 2011; Spence et al., 2003).

One of the main innovations of OFTA is the integration of strategies from CBT and PPI and adaption of CBT's strategies through positive psychology perspective following suggestions from literature (Karwoski, Garratt, & Ilardi, 2006; Ingram & Snyder, 2006). Some authors have suggested that CBT could be more effective if complemented with strategies from PPI based on the conceptual and technical overlap between both (Karwoski et al., 2006; Ingram & Snyder, 2006). This combination of strategies has been made for adult samples (e.g., Bannink, 2012; Carr & Finnegan, 2014), but not to adolescents samples. In accordance to literature, clinically depressed adolescents would especially benefit from this since it is expected that adding PPI strategies to CBT would increase the effectiveness of the former and prevent future relapses and reoccurrence of depression in adulthood.

In the scope of this dissertation, it was elaborated a manual of OFTA that includes the theoretical framework, information regarding topics of modules and sessions, strategies included, in-session and homework exercises and structure. This manual is intended to be used by clinical psychologists in individual therapy (after being empirically tested and validated). The first chapter of the current dissertation presents OFTA's characterization in terms of its theoretical framework, structure, contents and strategies.

The second aim of the current thesis was to preliminarily assess OFTA to validate the theoretical contents and strategies used this therapy (in-session exercises and homework) and structure (number of sessions, duration of sessions). More specifically, we intended to understand whether OFTA protocol

produces changes in clinically depressed adolescents regarding negative variables (depressive symptoms and negative affect) and positive variables (positive affect, self-esteem, and life satisfaction, psychological well-being, self-satisfaction). Those variables were included due to their importance regarding depression and optimal functioning (Bohart et al., 2002; Forbes et al., 2004; Seligman & Czikszentmihaly, 2000; Silk et al., 2011; Sin et al., 2011). The assessment of OFTA follows a longitudinal design that included four different periods: baseline, middle intervention, post-intervention; and follow-up.

Positive and negative variables will be assessed using two different but complementary measurements: retrospective and real-time measures (ESM). The inclusion of ESM is crucial to assess the internal subjective experience of depressed adolescents (momentary positive and negative affect) and their external contexts (activities, places, and companies). Adolescents' optimal functioning will be considered achieved if research participants decrease their depressive symptoms and negative affect, increase positive affect, self-esteem, life satisfaction, psychological well-being, and self-satisfaction, and improve their daily life functioning (increase of time spent ooutdoors, with others and in leisure activities).

For this preliminary assessment of OFTA, two studies were conducted: a study case and a pilot study. The study case is presented in the second chapter of the current dissertation. This study presents the results of OFTA's implementation to a female adolescent diagnosed with MDD and recruited in a Service of Psychology. The results obtained in this first OFTA's implementation encouraged a second one to a larger adolescent sample (pilot study). Although OFTA was designed to treat MDD, in this pilot study, we included adolescents that had clinical symptoms of depression, regardless of having the diagnosis of MDD. The sample of this study was recruited in a public hospital from September 2016 until April 2017. The final sample was 22 participants. However, only 12 adolescents accepted to participate in the experience sampling part of the study. The first chapter that makes OFTA characterisation presents the retrospective part of this pilot study regarding the 22 participants; while the third chapter presents changes in daily life mood (positive and negative affect) and contexts (places, companies, and activities) of the 12 participants. Due to studies exploratory nature, there are some differences between the case study and the pilot study regarding the number of assessments (the case study did not include the middle intervention period) and some positive variables differed between both studies.

Following the three chapters, this dissertation includes a conclusions section, with limitations and future research direction, as well as a discussion of relevant implications for research and clinical practice.

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Chapter I

Optimal Functioning Therapy for Adolescents: an introduction and preliminary results[2]

Abstract

The prevalence rate of depression in adolescents is of 20% (Hankin et al., 2015). Although Cognitive Behavioral Therapy (CBT) is considered the most effective treatment for depression, some authors suggest integrating Positive Psychology Interventions (PPI) strategies to CBT (Karwoski, Garratt, & Ilardi, 2006; Ingram & Snyder, 2006). This combination of strategies would improve depression treatment success by addressing directly individuals' optimal functioning (Karwoski et al., 2017). Following this suggestion, the Optimal Functioning Therapy for Adolescents (OFTA) was conceived for the treatment of depression and promotion of optimal functioning in clinically depressed adolescents. Firstly, the current study aims to present OFTA's manualized individual protocol of 14 sessions. Secondly, this study intends to present preliminary results of OFTA's implementation to a clinically depressed adolescent sample recruited in a public hospital. This longitudinal study comprises four assessment moments: baseline; middle intervention; post-intervention; and 4-months follow-up. In each of those moments, participants answered to self-report retrospective measures on psychopathological variables (depressive symptoms and negative affect) and positive variables (positive affect, self-esteem, and life satisfaction). The final sample included 22 adolescents, with a mean age of 16.64 years old (SD=1.05). From those, twelve were on antidepressant medication. Results show a statistically significant decrease of depressive symptoms and negative affect and an increase of positive affect, self-esteem, and life satisfaction from baseline to follow-up. Adolescents taking antidepressant medication had a more significant decrease in the depressive symptomatology. These preliminary results confirm the importance of combining strategies from CBT and PPI for the treatment of adolescent depression. Notwithstanding, in future studies, the effectiveness of OFTA should be assessed using an experimental design.

Keywords: adolescence, depression, optimal functioning, cognitive-behavioral therapy, positive psychology interventions.

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1. Introduction

Adolescence period is one of significant and several individual changes (physical, psychological, cognitive, emotional, behavioural, and social), at the same time that environmental changes are occurring in adolescents' life contexts (Lerner et al., 2005; Schneiders et al., 2006). As a developmental period, adolescence has very demanding challenges, such as identity formation, the need of autonomy from parents, the complexity of peer and family relationships and the start of romantic relationships (Peeters et al., 2016). The way each adolescent adjust to these individual and contextual changes and their emotional response to these changes impacts adolescents' life trajectory (Schneiders et al., 2006). For instance, an intense emotional reaction to negative interpersonal events increases the risk of depression in adolescents (Charbonneau, Mezulis, & Hyde, 2009). Emotional developmental processes at this age are complex, making adolescents at higher risk for mal-adjustment that may cause high psychosocial functioning impairment (Nelson, Byrne, Sheeber, & Allen, 2018). The risk of developing depressive symptoms is especially higher after 13 years old and for females (Klasen et al., 2015; Papadakis, Prince, Jones, & Strauman, 2006). Prevalence rates of depression have been increasing considerably along the years (from 8.7% to 11.3%), and consequences of depression in adolescence social functioning are very well known and reported in the scientific literature (Hermens et al., 2015; Midgley et al., 2015; Mojtabai, Olfson, & Han, 2016; Nelson et al., 2018).

Depression has been characterised by the combination of low positive affect and high negative affect in the literature (Forbes, Williamson, Ryan, & Dahl, 2004; Silk, Forbes, & Whalen, 2011). However, studies have shown that the lack of positive affect, more than the presence of negative affect, predicts depression (Weinstein, Mermelstein, Hankin, Hedeker, & Flay, 2007). A longitudinal study showed that individuals that reported higher positive affect levels in adolescence were more likely to have fewer relationship problems, healthier adjustment, positive work functioning and self-worth in adulthood (Kansky, Allen, & Diener, 2016). On the other hand, negative affect levels in adolescent was not a predictor of those outcomes in adulthood (Kansky et al., 2016). Therefore, psychological interventions should make the promotion of positive emotions as a primary goal to treat depression in adolescence and to prevent later reoccurrence in adulthood.

CBT is considered one of the most researched and effective treatments of depression in adolescent, especially group CBT (Compton et al., 2004; David-Ferdon & Kaslow, 2008; Rosselló, Bernal, & Rivera-Medina, 2008; The TADS team, 2007). Its effectiveness is also comparable to antidepressant medication alone and the combination of medication and therapy (The TADS team, 2007). Despite that, studies continue to show high reoccurrence rates (Horowitz & Garber, 2006;

Rohde et al., 2012). Moreover, traditional psychological treatments of depression have been mainly focused on the reduction of negative emotions, weaknesses, and symptoms instead of intentionally targeting the promotion of positive emotions, strengths and well-being (Seligman, Rashid, & Parks, 2006). On the other hand, PPI has been focused on the enhancement of those positive variables. Studies have shown that PPI has been effective not only in promoting well-being but also decreasing depression (Bolier et al., 2013; Sin & Lyubomirsky, 2009). Most studies of PPI are in group format interventions, using normative and adult samples (Bolier et al., 2013; Sin & Lyubomirsky, 2009; Wood & Tarrier, 2010).

Few studies have compared CBT and PPI effectiveness to treat depression using clinically depressed adult samples (Asgharipoor, Farid, Arshadi, & Sahebi, 2012; Chaves, Lopez-Gomez, Hervas, & Vasquez, 2017). For instance, Chavez et al. (2017) compared the Integrative Positive Psychological Intervention for Depression (group intervention) with group CBT. The authors found no differences in both interventions regarding depressive symptoms and positive outcomes. In the same line, Asgharipoor et al. (2012) compared the Positive-oriented Psychotherapy with another group CBT. The results showed that the Positive-oriented Psychotherapy was more effective in increasing happiness, but no differences were found between both group interventions regarding well-being and depressive levels.

Regarding adolescents' normative samples, four examples of PPI reported in literature are the Well-Being Therapy (Ruini, Belaise, Bronbin, Caffo, & Fava, 2006), the Positive Psychotherapy (Rashid, Anjum, & Lennox, 2006), the "Bite Back" (Manicavasagar et al., 2014), and a positive writing intervention through a resource diary (Reiter & Wilz, 2016). All those interventions have been able to show that PPI can enhance well-being, but only the last two interventions showed a reduction of depressive symptoms when compared to control conditions. Nevertheless, there is still a lack of studies of PPI that includes clinically depressed adolescent samples.

Some authors have proposed a combination of techniques and strategies of CBT and PPI for the treatment of depression (Bannink, 2012; Carr & Finnegan, 2015; Ingram & Snyder, 2006; Karwoski, Garratt, & Ilardi, 2006). While CBT strategies would be focused on decreasing depressive symptoms, PPI strategies would focus on well-being enhancement and development of positive resources, that could prevent relapses and increase the efficacy of CBT. One example is the Say Yes To Life (SYTL; Carr, Finnegan, Griffin, Cotter, & Hyland, 2016) group intervention, which includes strategies from CBT, PPI, and mindfulness-based cognitive therapy. This intervention was compared to Treatment As Usual (TAU) using a sample of adults diagnosed with Major Depression Disorder. Results showed that 72% of individuals from the SYTL recovered three months after therapy against 28% from TAU (Carr et al.,

2016). To the best of our knowledge, there is any study that follows this suggestion for adolescents clinical samples, as there is for adults (Bannink, 2012; Carr & Finnegan, 2015).

Thus, the present study aims to present the Optimal Functioning Therapy for Adolescents (OFTA), which constitutes a first attempt to integrate and adapt strategies from Cognitive Behavioral Therapy (CBT) and from Positive Psychology Interventions (PPI) for the treatment of adolescent depression (Freire, Teixeira, Silva, & Matias, 2014; Teixeira & Freire, 2017). Besides, it also aims to present the preliminary results of the OFTA implementation to a clinically depressed adolescent sample. For that, we included measures of negative trait variables (depressive symptoms and negative affect), and positive trait variables (positive affect, self-esteem, and life satisfaction). We expect that the integration of CBT and PPI strategies will considerably contribute to a reduction of psychopathological symptoms (in terms of negative affect and depressive symptoms) and simultaneously enhancement optimal functioning in adolescents (in terms of positive affect, self-esteem and life satisfaction).

1.1 Optimal Functioning Therapy for Adolescents: characterisation

Under the scope of a doctoral thesis, a manualized individual therapy protocol (Teixeira & Freire, 2014), OFTA, was developed for the treatment of Major Depressive Disorder (14-17 years old) and optimal functioning promotion in adolescents. The promotion of optimal functioning consists of building positive aspects of human functioning (such as well-being, positive emotions, life satisfaction, personal resources), also taking in consideration the negative aspects of human functioning (such as sadness, negative emotions, weaknesses, depression). Thus, optimal functioning can be achieved by the elimination/reduction of psychopathology and the enhancement of positive psychological resources (Freire et al., 2014; Seligman et al., 2006).

OFTA serves as an example on how to integrate two different treatment approaches (CBT and PPI) to enhance adolescent's optimal functioning and treat depression simultaneously, offering a balanced approach to positive and negative aspects of the experience (Freire at al., 2014; Wood & Tarrier, 2010). For this, literature guidelines regarding the conceptual and technical overlap between CBT and PPI strategies were followed (Ingram & Snyder, 2006; Karwoski et al., 2006). For example, there is a conceptual overlap between CBT's replacement of negative and irrational thoughts to more realist ones (cognitive reappraisal) and positive psychology's exploration of alternative interpretations of events preferring positive but realistic ones (reality negotiation) (Karwoski et al., 2006). This kind of overlap allows the use of PPI to enhance CBT effectiveness in the treatment of depression (Ingram & Snyder, 2006; Karwoski et al., 2006).

Since depression may cause impairments in adolescents' social functioning (e.g., reduced social contacts, academic problems, negative interactions with peers and family), OFTA includes a developmental and ecological perspective (Hermens et al., 2015; Midgley et al., 2015). This perspective underlines the interaction between the individual and the environment in order to promote the development of a healthy life trajectory (Spence, Sheffield, & Donovan, 2003). Knowledge of both psychopathological and normative development (understood in a continuum) increase the understanding of how to use developmental factors and life contexts to treat depression (Drabick & Kendall, 2010). OFTA intentionally uses adolescents life contexts to increase adolescents well-being by encouraging, for example, the engagement in structured leisure activities. This kind of activities offers adolescents the opportunity to increase self-esteem and experience positive interpersonal interactions with peers (Freire, 2006).

Conceptually, OFTA is organised in three modules: the first module aims to promote positive emotions, behaviours, and thoughts; the second module seeks to identify and optimise personal resources and strengths; and the third module seeks to develop flow, hope and optimism. This theoretical framework was based on a group positive youth intervention, called "Challenge: To be+" (Freire, Lima, Teixeira, Araújo, & Machado, 2018), in the Portuguese context, which follows PPI's assumptions. OFTA intervention focuses on building positive emotions, character strengths, and optimal experiences to achieve positive youth development in adolescents. Challenge: To be+ has been effective in increasing self-esteem and life satisfaction levels in a normative adolescent sample (Freire et al., 2018).

Regarding its structure, OFTA is a fourteen-week manualized individual therapy protocol, one session per week, each having a duration of 60-90 minutes. Table 1 shows OFTA's structure and specific strategies used within each module and sessions. OFTA includes homework assignments to encourage adolescents to be more engaged in their life contexts by applying the strategies learned in therapy in their natural settings. This will contribute to a diversification of activities that will lead to the development of new skills and happiness (Rashid, 2009).

Each session begins with a discussion about how the week went, revision of homework, introduction to the theme and strategies of the session, and homework planning for the following week. In each session, all the activities have a sequence in terms of complexification (starting from less complex ones) to develop a sense of self-efficacy and improvement. The aim of each session and activities is also discussed with the adolescent in terms of what they are intended to improve and promote. The three modules have a sequential conceptual framework, intentionally planned, taking into

account what is considered that adolescents will be able to work in each specific phase of therapy. However, it is not certain that the goals of each module will be achieved right at the end of each module since they also depend on the severity of the depression. In this sense, the aims of each module continue to be worked and reinforced in the following modules, which leads to an accumulation of learnings and skills throughout the therapy.

Next, we present the aims of each module, along with their theoretical framework.

Module I – Promotion of positive emotions, behaviours, and thoughts

The primary goal of this first module is to promote positive emotions, behaviours, and thoughts. The promotion of positive emotions is particularly relevant for depressed adolescents since depression is characterised by having high negative emotions (Fredrickson, 2001) and diminished ability to experience positive affect (Hartmann et al., 2015). The focus on building positive emotions can counteract negative affect and enables the remission of depressive symptoms (Höhn et al., 2013).

Depressed individuals have more difficulty in remembering and storing positive emotions and experiences when compared to negative ones (Rashid, 2009; Romero, Sanchez, & Vásquez, 2014). Thus, the therapy needs to focus on re-educating the attention and memory of depressed individuals (Rashid, 2009). In this sense, this will be accomplished by a set of specific strategies. This can be achieved through the "Three Good Things" exercise (Seligman et al., 2006), adapted for OFTA, that will help adolescents to focus on positive events that occur during their week. Another strategy consists of talking and writing first about past positive experiences and activities and then about present positive experiences and discuss how those positive life experiences have impacted adolescents' mood states in order to foster a proactive behaviour. Writing about positive experiences can cause a boost in mood (Burton & King, 2004; Duckworth, Steen, & Seligman, 2005). As well, talking about positive events can increase positive affect and well-being (Gable et al., 2004).

To specifically promote positive behaviours adolescents are encouraged to engage in several activities that match their interests and competencies, providing the opportunity for the adolescent to interact with peers (Rashid, 2009). Participation in structured leisure activities is strongly encouraged since it has been associated with positive functioning variables, such as self-esteem, life satisfaction, and psychological well-being (Freire, 2006). The promotion of positive behaviours is particularly relevant in adolescent since the core depressive symptoms consist of lack of pleasure and interest in activities.

Since depression is characterized by negative cognitions, cognitive distortions, and biased interpretations of reality (Beck, Rush, Shaw, & Emery, 1979), this module also aims to increase positive

thoughts, by exploring alternative interpretations of reality and by identifying and challenging negative cognitions to later replace them with positive patterns of thinking. This will be conducted through the cognitive restructuring strategy (Beck et al., 1979). The adolescent is also encouraged to identify positive thoughts during the week and to develop new ones about himself, others and life in general, counteracting the negative pattern of thoughts of depression.

This module intends to enhance adolescent secondary control over uncontrollable current adverse events and problems that occurred in adolescent past or are presently occurring. This aim can be operationalised by controlling one's reaction to such adverse events (Bannink, 2012; Karwoski et al., 2006). Thus, this strategy is operationalised by asking the adolescent to share and write about negative experiences or life events and to reflect on ways of interpreting them as opportunities for personal growth and developing meaning (Rashid, 2009). Also, this module includes the identification of adolescents life contexts that have not been affected by their problems and what skills and competencies the adolescents have developed in those contexts. The adolescents are encouraged to transfer those skills to the contexts that are affected by problems to cope with and reduce them (Bannink, 2012).

In general, this module addresses the initial reduction of depressive symptoms and increase of well-being through the combination of adapted CBT and PPI strategies. At the end of this module, it is expected that the adolescent has more positive emotions, engages in more positive behaviours in several daily life contexts, has diminished substantially negative cognitions and has more positive thoughts, contributing to a reduction in depressive symptoms. Achieving these goals will allow the work on well-being enhancement in subsequent modules. However, adolescents with moderate to severe depression may take longer to achieve these goals. Hence the work done in this first module will be continued parallel and gradually in subsequent modules.

Module II - Identification and optimisation of personal resources and strengths

After a decrease in symptoms and increase in positive emotions, cognitions and behaviours, it will be possible to identify and optimise character strengths and personal resources, which will contribute to feelings of self-efficacy and self-esteem (Park & Peterson, 2006). This module will help to change the focus on weaknesses that usually depressed individuals emphasise. This will be operationalised by the strategy of sharing and writing successful experiences from past and present (Beck, 1995; Karwoski et al., 2006) and identifying the strengths and skills adolescents' have developed through these experiences.

The Values in Action Inventory for Youth (VIA-Youth – Park & Peterson, 2006) is used to identify adolescent strengths. This questionnaire assesses five signature strengths from a list of 24 strengths of character. According to Seligman et al. (2006), character strengths can act as buffers of mental illness, justifying the need to introduce their identification and development as a goal of depression treatments. The adolescent is encouraged to use and foster their signature strengths in different life contexts. This strategy was adapted from "Using Your Strengths," in which the adolescent is invited to use a different strength in a new way during the week (Seligman et al., 2006).

According to Haidt (2002), improving the most developed strengths and, simultaneously, the less developed ones can benefit individuals. Therefore, the adolescent is also encouraged to engage in specific activities to build a less used strength. Additionally, the adolescent learns how to apply his/her character strengths for solving the problems they are facing. This strategy is based on the CBT solving problems strategy and adapted from a positive psychology perspective (Rashid, 2009).

At the end of this module, it is expected that the adolescent achieves a better knowledge of himself/herself and his/her character strengths and be able not only to apply them to his/her daily life activities in several life contexts but also learn how to use them to solve problems.

Module III – Promotion of flow, hope, and optimism

Module III focuses on promoting flow and fostering hope and optimism as a goal of achieving agency, life purpose, and satisfaction. Flow refers to a positive state of consciousness, which reflects the perception of a balance between high challenges required by the task and the appropriate competence to deal with those challenges (Nakamura & Csikszentmihalyi, 2002). According to Karwoski et al. (2006), more and more clinical psychologists are incorporating strategies based on the flow experience in their interventions to increase involvement of individuals in activities that promote this kind of experience. The adolescent involvement and repetition of this kind of experience enhance skills and promotes a positive development (Karwoski et al., 2006). Thus, this module strategies include identifying adolescents' activities that promote flow and increase its frequency in their life contexts. Because they are cognitively more demanding and intrinsically challenging, flow activities are only introduced at this stage of therapy, where it is expected that adolescents have already significantly decreased their depressive symptoms and are already experiencing higher levels of well-being in everyday life.

Hope is the opposite of feeling despair and hopelessness about the future that is present in depression, playing a crucial role in the health and well-being of individuals (Feldman & Snyder, 2005).

Individuals that experienced higher levels of hope are the ones who experience a more significant reduction in depressive symptomatology and report higher self-esteem, meaning and purpose in life (Carver & Scheier, 2002; Fieldmen & Snyder, 2005; Sin, Della Porta, & Lyubomirsky, 2011). According to the theory of Hope (Snyder, Cheavens, & Sympson, 1997), hope involves: thinking about short or long-term goals; the perception of the individual about his/her cognitive capacity to develop ways or paths to achieve these objectives; and a motivational component that ensures that the individual will be able to start and maintain the necessary efforts to stay in these ways or paths (Jiang, Huebner, & Hills, 2013). Therefore, this module includes the establishment of future life goals by the adolescent and specifying the different paths necessary to achieve these objectives, developing a life project for the future. This is operationalised by determining specific small steps required to achieve life goals (pathways), discussing what the adolescent can start doing right know (agency), and motivating a proactive behaviour.

In the same way, promoting optimism, which is visualizing one's positive future, is an essential aim of this module, since optimism helps to cope with adversity and is associated to a lower depression risk (Carver & Scheier, 2002; Karwoski et al., 2006; Sin et al., 2011). This fact can be explained because pessimists tend to attribute negative events to internal factors inherent to the individual, and the positive events to external factors (Bannink, 2012; Carver & Scheier, 2002; Karwoski et al., 2006; Sin et al., 2011). For optimists, this process is reversed. Optimistic individuals think positively about the future and anticipate positive outcomes, which is associated with well-being (Vilhauer et al., 2012). As well, optimists use several skills like planning, goal setting, problem-solving, and adaptive coping strategies (Bannink, 2012; Karwoski et al., 2006; Vilhauer et al., 2012). Usually, depressed individuals lack those skills, thus promoting realistic optimism should be a central aim of depression treatments (Vilhauer et al., 2012). Thus, another strategy of this module consists of identifying and challenging negative expectations that the adolescent may have regarding his/her future. CBT strategies can also be used to change negative or pessimistic thinking bias, by teaching the adolescents how to identify and generate alternative patterns of thinking that are more realistic and positive (Gillham & Reivich, 2004; Weinstein & Klein, 1996).

At the end of this module, it is expected that the adolescent has increased his/her general well-being, has improved engagement in his/her daily life contexts, has been able to think positively about his/her future and started to develop a proactive behaviour. The end of this module corresponds to the end of therapy, where it is expected that the general aims of OFTA have been achieved in terms of decreased symptomatology and promotion of optimal functioning of adolescents. As mentioned

previously, it is expected that the integration of CBT and PPI strategies will have greater effectiveness (than when implemented separately) in the treatment of depression and that adolescents have more skills to avoid the re-occurrence of symptoms in the future.

Table 1.
OFTA presentation

Structure	Session	Description of session aims	Homework assignment
Initial session	1	• To get to know the adolescent and his/her daily life. • To discuss and define the therapeutic goals. • To write and sign a therapeutic contract with therapy goals.	Write the "Three Good Things" that happened each day for a week.
Module I	2	• To identify and recognize experiences of well-being and happiness that occurred in the past and present of the adolescent life. • To identify and plan positive and pleasant activities to perform during the week.	Engage in positive and pleasant activities in various contexts of adolescent life during a week.
	3	• To analyze different ways of interpreting reality and problems (positive and/or negative; rational and/or irrational) and its association with feelings and behaviors. • To discuss the influence of positive patterns of thinking on adolescent feelings and behaviors. • To enhance secondary control over uncontrollable adverse events or problems (see the positive side of negative experiences).	Register interpretations (positive and/or negative) of situations that happened during the week and associated feelings and behaviors.
	4	• To challenge negative/irrational thoughts and develop positive alternative thoughts (cognitive restructuring).	Register automatic thoughts and develop alternative thoughts, associating the respective feelings and behaviors during the week.
	5	• Continue to practice how to challenge negative/irrational thoughts and develop positive/rational alternative thoughts. • To identify the life contexts that are not affected by adolescent problems and identify the factors that may be contributing to success in these contexts. • To learn how to transfer the skills used in one successful context to another where problems are present.	Register during the week what the adolescent was able to change in the desired direction, what he made to accomplish this change, and record thoughts, feelings and behaviors triggered by the changes that were made.

(continued)

Table 1

OFTA presentation

Structure	Session	Description of session aims	Homework assignment
Module II	6	• To identify and discuss experiences of success that occurred in the past and present of adolescent's life. • To identify life experiences that contributed to the development of skills/strengths. • To discuss the importance of several life contexts that give the adolescent the opportunity to develop different skills/strengths.	Write a story about an experience of life that contributed to the development of a competency/strength.
	7	• To answer VIA-Youth questionnaire and to identify adolescent's signature strengths. • To reflect and discuss the advantages of the use of those strengths. • To identify what kind of activities or behaviors the adolescent have engaged that allowed his/her development.	Share VIA-Youth results with significant others (for example, family members, friends, teachers...).
	8	• To attend and plan for opportunities to apply adolescent's strengths in their life contexts. • To think and plan about new and different ways to use his/her strengths. • To find opportunities in his/her daily life to develop different strengths. • To plan and schedule specific behaviors/activities having the intentional goal of developing a strength chosen by the adolescent.	"Using Your Strengths" exercise: to intentionally use different strengths in a new way during the week and write a short text about how he/she used these strengths and registered the level of well-being achieved.
	9	• To see problems as opportunities to learn and develop new strengths. • To think and plan about different ways of using adolescent's strengths for solving his/her problems.	Choose a character strength to use intentionally in a specific problem of adolescent life, following the guidelines established in the session.

(continued)

Table 1

OFTA presentation

Structure	Session	Description of session aims	Homework assignment
Module III	10	• To identify activities that induce a state of flow. • To encourage adolescents to intentionally incorporate flow activities into their daily life routines within different life contexts.	Engage intentionally in flow-inducing activities in various contexts of adolescent life during a week.
	11	• To continue to encourage the implementation of diversified flow activities in which the adolescent puts into practice their skills and talents. • To increase gradually the challenge levels of the flow activities that will improve adolescent's performance.	Choose a flow activity and intentionally increase the challenge in order to improve performance.
	12	• To foster hope and optimism through the setting of future life goals and discussion of the steps needed to achieve them. • To establish future life goals for each context of adolescent life. • To identify and challenge possible negative expectations that the adolescent may have regarding his/her future.	Register positive thoughts regarding the future and own feelings.
	13	• To establish specific small steps necessary to achieve adolescent's life goals. • To build and develop the adolescent life project for the future in accordance with their life goals. • To discuss and plan what the adolescent can start actively doing right now (behaviors and activities) in order to accomplish his/her future goals.	Put into action the life project.

(continued)

Table 1

OFTA presentation

Structure	Session	Description of session aims	Homework assignment
Final session	14	• To summarize learnings in each module. • To encourage the incorporation of learned strategies in adolescent daily life. • To conduct relapse prevention. • To discuss changes that have occurred in the everyday life of the adolescent (what adolescent did to achieve these changes, what is needed in order to maintain these changes and what still needs to change).	None.

2. Method

2.1 Participants

Participants were adolescents with depressive symptoms referred for psychiatric treatment at a public hospital. In total, 40 adolescents were contacted to participate in a clinical evaluation session to assess eligibility to participate in the current study. Adolescents to be eligible had to be aged between 14 and 18 years old and score above 13 points on the Beck Depression Inventory (BDI-II). As for the exclusion criteria, we defined substance abuse and the existence of psychotic symptoms. Of the 40 adolescents, 36 adolescents were assessed for eligibility because it was not possible to contact four adolescents. From those, four adolescents did not meet the inclusion criteria, seven declined to participate in the study, one adolescent discontinued the intervention after the beginning of OFTA, and two were excluded from the research because the time between sessions was more than two weeks. Thus, the final sample consists of 22 participants.

2.2 Procedures

Participants first participated in clinical assessment sessions to assess the presence of depressive symptomatology and inclusion/exclusion criteria. The clinical assessment was made first by a psychiatrist and later by a clinical psychologist. Each adolescent was interviewed separately from parents or legal guardians, that were interviewed after. Adolescents participating in this study and their parents/guardians gave their written informed consent to receive OFTA and complied with research procedures. Adolescents that did not meet the inclusion/exclusion criteria or declined to participate in the study received treatment as usual from the hospital. According to a longitudinal design, participants were evaluated using retrospective self-report questionnaires at baseline (after clinical assessment sessions and before OFTA first session), middle intervention (after OFTA's seventh session), posttest (after OFTA's fourteenth session), and follow-up (four months after completing OFTA). The therapy was delivered individually and on a weekly or bi-weekly basis to all participants in a total of 14 sessions. All participants attended the 14 sessions. Extra sessions were provided to parents or legal guardians for psychoeducational purposes and to promote a positive family environment and interactions. All sessions were provided to all participants by the same clinical psychologist in the hospital facilities. This study was approved by two Ethics Committees: one from the university and the other from the hospital where the study was conducted.

2.3 Measures

Sociodemographic questionnaire. Participants answered a brief sociodemographic questionnaire to assess their age, gender and school year.

Depression. The Beck Depression Inventory II (BDI-II, Beck, Steer, & Brown, 1996; Portuguese validation of Martins, Coelho, Ramos, & Barros, 2000) is a 21-item self-report instrument used to assess the presence of depressive symptoms and their severity. The BDI scale was developed based on the diagnostic criteria for Major Depression Disorder in the DSM-IV-TR (APA, 2010). This instrument contains a 4-point scale for each item, ranging from 0 to 3 according to the severity of each item. The total score is calculated by the sum of all items, and the maximum total score is 63. Scores between 0 and 13 indicate minimal depression, 14-19 indicate mild depression, 20-28 indicate moderate depression and 29-63 indicate severe depression. The cut-off point for clinical symptoms is a score above 13. This scale presents a Cronbach alpha of .89 in the Portuguese validation (Coelho, Martins, & Barros, 2002). In the current study, this scale shows a Cronbach alpha of .78 at baseline.

Positive and negative affect. The Positive and Negative Affect Scale (PANAS, Watson, Clark, & Tellegan, 1988; Portuguese validation of Galinha & Pais-Ribeiro, 2005) was used to evaluate the frequency individuals experience positive and negative emotions in the past two weeks. This scale is divided into a positive and negative affect subscale of 10 items each. Each item is rated in a 5-point Likert scale that ranges from 1 ("very slightly or not at all") to 5 ("extremely"). Total scores for each subscale ranged from 10 to 50. Higher scores correspond to higher levels of positive and negative affect. The Portuguese validation of the positive affect subscale showed a Cronbach alpha of .86 and .89 for the negative affect subscale (Galinha & Pais-Ribeiro, 2005). In this study, the Cronbach alpha was .28 for the positive affect subscale and .88 for the negative affect subscale, at baseline.

Self-esteem. The Rosenberg Self-Esteem Scale (Rosenberg, 1965; Portuguese validation of Romano, Negreiros, & Martins, 2007) was used to measure an individuals' global self-worth taking in consideration positive and negative feelings about themselves. This scale includes 10 items measured in a 4-point Likert scale that ranges from 1 ("strongly disagree") to 4 ("strongly agree"). Total scores range from 10 to 40, with higher scores showing higher levels of self-

esteem. In the Portuguese validation of this scale, items that evaluate positive self-esteem showed a Cronbach alpha of .74 and items that evaluate negative self-esteem showed a Cronbach alpha of .63 (Romano et al., 2007). In this study, the Cronbach alpha was .86 at baseline.

Life satisfaction. The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Portuguese validation of Neto, 1993) was used to measure cognitive judgement regarding an individuals' life satisfaction. This scale includes five items measured in a 7-point Likert scale that ranges from 1 ("strongly disagree") to 7 ("strongly agree"). The total scores range from 5 to 35, where higher scores correspond to higher levels of life satisfaction. The Cronbach alpha for the Portuguese validation was .86 (Neto, 1993). In this study, the Cronbach alpha was .79 at baseline.

2.4 Statistical analysis

The nlme package (Pinheiro, Bates, DebRoy, Sarkar, & R Core Team, 2018) in R studio was used to conduct five multilevel analyses aimed to assess differences in depressive symptoms, negative affect, positive affect, self-esteem, and life satisfaction levels over time (baseline, middle intervention, posttest, and follow-up). The models included a random intercept, a fixed effect for time, gender, and antidepressant medication, a random slope for time, and an unstructured covariance structure.

3. Results

3.1 Descriptive Statistics

Participants were aged between 14 and 17 years old, with a mean age of 16.64. The majority of the sample attended the 9th grade (31.8%) and were female (63.6%) Twelve participants were taking antidepressant medication, besides receiving OFTA. Participants completed the all OFTA sessions. Table 2 shows the percentages, means and standard deviation of the sample demographic characteristics. Taking in consideration BDI-II classification of depression severity, baseline levels of participants were the following: mild (N=6); moderate (N=8); and severe (N=8). The means and standard deviations of positive (positive affect, self-esteem, and life satisfaction) and negative variables (depressive symptoms, negative affect) included in this study are shown in Table 3.

Table 2

Sample characteristics

		N (%) / M (SD)
Gender	Female	14 (63.6%)
	Male	8 (36.4%)
Age		16.64 (1.05)
School grade	7th grade	1 (4.5%)
	8th grade	2 (9.1%)
	9th grade	7 (31.8%)
	10th grade	6 (27.3%)
	11th grade	4 (18.2%)
	12th grade	2 (9.1%)
		2 (16.7%)
Antidepressant medication	Yes	10 (45.5%)
	No	12 (54.5%)

Table 3

Descriptive of positive and negative variables over time

	Time assessment			
	Baseline	Middle	Posttest	Follow-up
	M (SD)	M (SD)	M (SD)	M (SD)
Depressive symptoms	26.18 (8.30)	8.91 (9.00)	3.36 (4.34)	6.05 (8.69)
Negative affect	2.63 (.95)	1.79 (.69)	1.37 (.39)	1.60 (.61)
Positive affect	2.11 (.73)	2.93 (.88)	3.27 (.76)	2.82 (1.01)
Self-esteem	2.37 (.61)	3.01 (.56)	3.34 (.47)	3.21 (.49)
Life satisfaction	3.11 (1.18)	4.14 (1.49)	4.65 (1.27)	4.62 (1.23)

3.2 Changes in negative and positive variables over time

Table 4 presents the multilevel results regarding the effect of time on negative dimensions (depressive symptoms and negative affect) and positive dimensions (positive affect, self-esteem, and life satisfaction). According to results, the depressive symptoms were significantly lower in all assessment periods (middle intervention, posttest, and follow-up) when compared to baseline and when controlling for gender. There was a main effect of antidepressant medication, showing that the decrease of depressive symptoms was higher in the participants that received medication. Negative affect levels also decreased in all assessment periods when compared to baseline, while controlling for gender and antidepressant medication. Also, results showed an increase in positive affect, self-esteem, and life satisfaction levels in all assessment periods when compared to baseline and when controlling for gender and antidepressant medication.

Table 4

Changes in positive and negative variables over time

	Depression symptoms	Negative affect	Positive affect	Self-esteem	Life satisfaction
Fixed effects	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
Intercept	22.93	2.52	2.29	2.58	3.63
	(2.39)***	(.22)***	(.30)***	(.19)***	(.43)***
Middle	-17.27	-.84	.81	.64	1.03
intervention	(1.96)***	(.18)***	(.19)***	(.12)***	(.31)**
Post-	-22.82	-1.26	1.15	.96	1.55
intervention	(1.96)***	(.18)***	(.19)***	(.12)***	(.31)***
Follow-up	-20.14	-1.03	.70	.84	1.51
	(1.96)***	(.18)***	(.19)***	(.12)***	(.31)***
Gender	-1.63	-.05	-.25	-.19	-.60
	(2.23)	(.20)	(.30)	(.18)	(42)
Antidepressants	4.88	.32	-.03	-.20	-.30
	(2.15)*	(.19)	(.29)	(.18)	(.40)

*p<0.05, *** p<0.001

3.3 Clinical significance

At post-intervention, 95.45% of participants (21 out of 22 participants) achieved more than 50% decrease in their baseline BDI-II scores (Dimidjian et al., 2006). For the total sample, post-intervention depressive symptoms varied according to the following: minimal (N=21) and mild (N=1). Thus, only one participant scored above the clinical threshold in BDI-II (scores higher than 13). This specific participant started with severe symptoms at baseline, mild at post-intervention and minimal at follow-up.

At follow-up, 90.90% of participants (20 out of 22 participants) achieved more than 50% decrease of BDI-II scores, and three participants scored above the clinical threshold. For the total sample, follow-up depressive symptoms changed as following: minimal (N=19); mild (N=2); and severe (N=1). More specifically, from those three: one participant started with severe symptoms at baseline, minimal symptoms at post-intervention, and severe symptoms at follow-up; another participant had mild symptoms at baseline, minimal at post-intervention and mild symptoms at follow-up; and another had severe symptoms at baseline, minimal at post-intervention and mild at follow-up.

4. Discussion

This study was focused on presenting the theoretical framework and structure of OFTA, which was developed to treat depression and promote optimal functioning by integrating strategies from CBT and PPI. We also aimed to show preliminary results of OFTA's implementation to a clinically depressed adolescent sample. We expected that OFTA first module would contribute to an increase of positive affect and decrease in negative affect, by improving positive emotions, behaviours, and thoughts. The second module would increase adolescent's self-esteem by building positive resources and strengths. Moreover, OFTA third module would improve adolescent's life satisfaction by promoting flow, hope, and optimism and working in their life project. The main innovations of this study consist of OFTA being the first therapy that combines CTB and PPI strategies in an integrative way to treat adolescent depression; the inclusion of a clinically depressed adolescent sample in a study of PPI; and having middle intervention assessment period that is uncommon in research.

In general, results showed a decrease of depressive symptoms (as assessed through BDI-II) and negative affect levels. Almost all participants experienced more than 50% decrease in their baseline depressive symptoms and were below the clinical threshold. Findings also showed an

increase of positive affect, self-esteem, and life satisfaction levels from baseline to end of therapy. These results were maintained until a four-months follow-up. More specifically, and regarding depressive symptoms, the reduction of symptoms was significantly higher for adolescents that were taking antidepressant medication. This is similar to studies that show higher efficacy of depression treatments that combine a psychological intervention with medication (The TADS team, 2007). We did not find gender differences in any of the study outcomes. As in Carr et al. (2016) study, the combination of CBT and PPI strategies seems to produce better results when compared to both interventions implemented separately.

Although the inclusion of a middle intervention assessment period is not very common in research, it allows having a better picture of the pattern of therapeutic changes in interventions outcomes (Lopez-Gomez, Chaves, Hervas, & Vazquez, 2017). Results clearly showed a significant decrease in depressive symptoms already in the first half of OFTA, which confirms the intentional conceptual sequence established for OFTA. The very few studies that included a middle intervention assessment moment also showed that individuals experience a fast improvement in the first half of treatment, and improvements have a slower pace in the second part of treatment (Lopez-Gomez et al., 2017; Lutz, Lowry, Kopta, Einstein, & Howard, 2001).

This preliminary study show that depression interventions can become more effective when symptoms relief and enhancement of optimal functioning are targeted in a direct and balanced manner. As well, it shows that the integration of CBT and PPI increase the success of treatment of depression for most participants (Ingram & Snyder, 2006; Karwoski et al., 2006). A longer follow-up period would allow concluding if this integration also helps to prevent future relapses (Ingram & Snyder, 2006; Karwoski et al., 2006). Interpretation of results should be made carefully because of study limitations, such as low sample size, lack of a control group, and a short period of follow-up.

Although PPI are steadily growing, there is still a need for further research to develop, implement, and assess psychological interventions for the treatment of adolescent depression that integrates PPI and CBT strategies. As well, there is still a lack of research regarding the effects of a PPI on adolescents' daily life functioning (mood and contexts). Thus, and as a next step, we intend to assess whether OFTA produces changes in adolescents' daily life, using real-time measures as the Experience Sampling Method (Csikszentmihalyi & Larson, 1987). The use of this kind of methods will also allow to study the occurrence of symptoms in the natural contexts where they arise, to assess mood fluctuations and therapeutic changes over time within

an ecological approach (Trull & Ebner-Priemer, 2009). The combination of retrospective and real-time measures is valuable to the study and understanding of human functioning in terms of social and psychological processes (Reis, 2011).

Although there is still the need to evaluate OFTA effectiveness using an experimental design in future studies, this study can motivate other researchers to invest in the development and assessment of effective forms of treatments (combining CBT and PPI strategies) of adolescent depression that can empower adolescents and contribute to a healthy developmental process, beyond the elimination of symptoms.

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CHAPTER II

From therapy to daily life of a depressed adolescent: Crossing psychopathology and optimal functioning[3]

Abstract

Recently, scientific literature has seen significant development and evaluation of several positive psychology interventions. However, there are still lacking studies that evaluate the efficacy of this type of interventions in clinically depressed adolescents. This paper aims to demonstrate the preliminary results of a new therapy implemented to a 14-year-old female adolescent diagnosed with Major Depressive Disorder: The Optimal Functioning Therapy for Adolescent. This therapy seeks to promote adolescents' optimal functioning by reducing depressive symptoms and increasing well-being. The innovation of this therapy lies in the integration of techniques from Cognitive-Behavioral Therapy and Positive Psychology Interventions. The assessment of this therapy was made using retrospective and real-time or ecological measures (Experience Sampling Method – Csikszentmihalyi and Larson in Journal of Nervous and Mental Disease, 175, 526–536, 1987) in three moments: baseline; post-intervention; and 4-month follow-up. Retrospective results showed improvement in positive trait characteristics and elimination of depressive symptoms maintained until follow-up. Real-time results showed the benefits of the therapy on the participant's daily life regarding external contexts (increased engagement and diversification of activities, places, and companies) and state characteristics (increase in positive mood and self-satisfaction, and a decrease in the negative mood), maintained until follow-up. The Optimal Functioning Therapy for Adolescents contributed to the treatment of Major Depressive Disorder and optimal functioning enhancement.

Keywords: depression, adolescents, positive psychology interventions, optimal functioning, experience sampling method.

[3] This chapter corresponds to a published paper: Teixeira, A., Freire, T. (2017). From therapy to daily life of a depressed adolescent: Crossing psychopathology and optimal functioning. *Current* Psychology. http://doi.org/10.1007/s12144-017-9748-8

1. Introduction

1.1 Depression in adolescence

Depression is one of the most prevalent psychopathologies in the world, with a prevalence of 5.9% for girls and 4.6% for boys (Costello, Erkanli, & Angold, 2006). According to the 2013 National Survey on Drug Use and Health, 10.7% of US adolescents aged between 12 and 17 had at minimum one major depressive episode in the prior year. In Europe, the prevalence rates of several countries range between 2,7%-5,8% (Sund, Larsson, & Wichstrom, 2011). Studies report that 1 in 5 adolescents will experience a major depressive episode between 15 and 18 years (Burgić-Radmanović, 2011) with a reoccurrence rate of 70% within 3 to 7 years (Horowitz & Garber, 2006; Rohde, Lewinsohn, Klein, Seeley, & Gau, 2012). Depression has comorbidity with anxiety disorders where comorbidity rates range between 30 and 80% (Rohde et al., 2012). Adolescent depression has been associated with several adverse outcomes that cause a high functional impairment, such as substance abuse, behavioural disorders, academic problems, impaired social relationships, negative family functioning, health issues and suicide attempts (Burgić-Radmanović, 2011; Horowitz & Garber, 2006; Rohde et al., 2012). Depression is considered one of the leading risk factors for suicide (Pompili et al., 2016; Rohde et al., 2012). Depression is also usually misdiagnosed in adolescence since irritability, mood reactivity, behavioural problems, and other symptoms can be confused with typical problems of adolescence (Thapar, Collishaw, Pine, & Thapar, 2012). Studies report that 70 to 80% of adolescents remain non-treated (Thapar et al., 2012).

Due to the alarming prevalence rates and negative psychosocial consequences, research has focused on the study of effective psychological treatments for youth depression (Bolier et al., 2013). Cognitive Behavioral Therapy (CBT) and Interpersonal Psychotherapy for Adolescents (IPT-A) are considered the most effective treatments of moderate to severe depression in adolescents between 12 and 18 years (Watanabe, Hunot, Omori, Churchill, & Furukawa, 2007). CBT is the most studied and empirically validated for treating depression in adolescents (David-Ferdon & Kaslow, 2008). Individual CBT intervention programs (e.g. *Penn Prevention Program*, *Self-Control Therapy*, and *Coping with Depression-Adolescent*) are considered "probably efficacious" (David-Ferdon & Kaslow, 2008). However, CBT has received some criticism because of its short time effectiveness, and its improvements are mostly related to the reduction of

symptoms (Watanabe et al., 2007), and most recent literature agrees that the reduction of symptoms alone does not guarantee well-being enhancement (Karwoski, Garratt, & Ilardi, 2006).

1.2 Positive youth development and positive psychology interventions

In the last couple of decades, there has been a proliferation of research on Positive Youth Development (PYD) and Positive Psychology Interventions (PPI). The PYD term has emerged in the literature as opposed to the "storm and stress" characterisation of the adolescence (Lerner et al., 2005). PYD can be defined as intentional adolescent engagement in prosocial behaviours and activities within different life contexts to improve skills, strengths, and interests (Lerner et al., 2005). According to Zarrett and Lerner (2008), PYD aims to produce positive outcomes and to help adolescents to achieve their full potential. PYD is also operationalised by the "Five Cs" model, which are competence, confidence, connection, character, caring, and contribution (the sixth C was added later to the model) (Zarrett & Lerner, 2008). For these authors, adolescents who experienced fewer of these Cs in their lives would be at a higher risk of personal, behavioural and social problems during their development.

PPI has been defined as "treatment methods or intentional activities that aim to cultivate positive feelings, behaviours, or cognitions" (Sin & Lyubomirsky, 2009, p. 468). Meta-analysis studies have shown that PPI significantly increases well-being and decreases depressive symptoms (Bolier et al., 2013; Sin & Lyubomirsky, 2009). However, these newer interventions have been implemented mainly with undergraduate students and adults, nonclinical populations and are conducted mostly as homework assignments in the format of self-help or online computer programs. Studies of PPI with adolescent samples are still very scarce. For the adolescent population, there is the Well-Being Therapy (Ruini, Belaise, Brombin, Caffo, & Fava, 2006) and the Positive Psychotherapy (Rashid, Anjum, & Lennox, 2006), but have not been implemented with clinically depressed adolescents.

For the adult population, Asgharipoor, Farid, Arshadi, and Sahebi (2012) compared the effectiveness of PPI and CBT for the treatment of MDD. Results showed that both interventions reduced depressive symptoms, though PPI was found to be more effective in increasing the levels of participants' happiness. The authors suggested that positive activities could be used as a supplement to CBT to decrease depressive symptoms and to improve well-being. Recently, Carr and Finnegan (2015) developed a group psychological intervention program named *Say 'Yes' to*

Life to treat MDD, which incorporates CBT and positive psychology strategies. Nevertheless, to the best of our knowledge, information about its effectiveness was not yet published[4].

Both studies presented are in line with what Ingram and Snyder (2006) and Karwoski et al. (2006) have advocated. For these authors, the efficacy of CBT can be improved with the introduction of principles of positive psychology to analyse cognitions, emotions, and behaviours. They consider that the integration of the techniques from PPI into CBT would improve its benefits (For a revision about youth depression interventions focused on symptom reduction and well-being enhancement see Freire, Teixeira, Silva, & Matias, 2014).

1.3 The optimal functioning therapy for adolescents (OFTA)

The Optimal Functioning Therapy for Adolescents (OFTA) is a manualized individual therapy developed for the psychological treatment of MDD in adolescents from 14 to 17 years in clinical contexts. This age period is considered critical for the development of clinical depression (Hankins et al., 1998). The novelty of this therapy consists in the integration of strategies from traditional CBT (such as, identifying and challenging maladaptive thoughts/beliefs) and PPI (such as the "Three Good Things" and answering VIA-Youth) that are existent in the literature (Beck, 1995; Park & Peterson, 2006; (Seligman, Rashid, & Parks, 2006). Other strategies from CBT and PPI were adapted for OFTA purposes (such as identifying positive thoughts and problem-solving using character strengths). The incorporation of PPI's more positive focus and activities may improve CBT strategies and address its limitations, especially concerning well-being and positive functioning enhancement (Karwoski et al., 2006). Thus, OFTA aims to promote adolescents' optimal functioning by simultaneously focusing the reduction of depressive symptoms and the improvement of well-being; and by also helping the adolescents to be more engaged in their daily life through the performance of homework exercises. Optimal functioning is achieved when psychopathology is absent, and well-being is present (Linley & Joseph, 2004). According to Seligman and Csikszentmihalyi (2000) and Linley and Joseph (2004), optimal functioning consists of a wide diversity of psychological processes and outcomes, such as positive individual traits, optimism, hope, resilience, happiness, subjective well-being, and flow. The promotion of these specific psychological processes can buffer and counteract depressive symptoms (Seligman et al., 2006; Wood & Tarrier, 2010).

[4] At the time this paper was published we had no information about a study regarding the effectiveness of this group intervention program. Meanwhile, a study about this program was already published and it was presented in the first chapter of this thesis.

OFTA includes three different modules according to its aims: Module I consists of the promotion of positive emotions, behaviours, and thoughts; Module II refers to the identification and optimisation of personal resources and strengths; and Module III concerns the development of flow, hope, and optimism. The present study presumes that working these aims, it is possible to counteract and reduce depressive symptoms. Each module is composed of four sessions. Besides modules sessions, there is an initial and a final session. Thus, OFTA is a fourteen-week therapy program, one session per week, each having a duration of 60-90 minutes. All sessions include homework assignments.

1.4 The use of real-time measures to assess depression interventions

The use of the Experience Sampling Method (ESM, Csikszentmihalyi & Larson, 1987) to assess the effectiveness of depression interventions is critical and can complement information obtained by retrospective measures on trait characteristics once it can provide information about the intervention impact on individuals' psychological states and daily life contexts. It also has the advantage of decreasing memory biases and cognitive reinterpretations associated with retrospective measures (Havermans, Nicolson, Berkhof, & DeVries, 2011). ESM is considered a reliable and valid measure for the assessment of individuals' everyday life experiences and state characteristics of mood, cognition, psychopathological symptoms, and behaviours, which may change according to time or events of the day, as opposed to trait characteristics (Ebner-Priemer & Trull, 2009).

According to Ebner-Priemer and Trull (2009), ESM is considered suitable to assess the effectiveness of clinical interventions to treat depression for several reasons. For instance, it allows assessing individuals' daily life in their natural settings as opposed to the laboratory or artificial settings. Also, ESM can help to understand depression, evaluate mood over time, and assess the contexts where many of depressive symptoms emerge during the day. ESM can be used as well to monitor and assess treatment progress, being able to identify even subtle treatment success. When associated with the psychotherapeutic intervention, ESM provides valuable information about positive changes happening in daily life that is associated with the intervention processes (Csikszentmihalyi & Larson, 1987). Studies have validated the use of this methodology in patients with MDD (Telford, McCarthy-Jones, Corcoran, & Rowse, 2012).

1.5 Study aims

This study seeks to preliminary assess the effects of OFTA on trait and state characteristics of a female adolescent diagnosed with MDD, using retrospective and real-time measures, respectively. The aim was to analyse the benefits of OFTA overtime on the adolescent's positive trait characteristics of self-esteem, psychological well-being, satisfaction with life and positive affect and negative trait characteristics of negative affect, depressive symptoms and general psychopathological symptoms. It is expected that OFTA will increase the levels of positive traits and decreases the levels of negative traits. Also, it was intended to analyze positive state characteristics of positive mood and self-satisfaction and negative state characteristics of negative mood; as well to analyze external characteristics of the adolescent's daily life, such as her companies (who is she with?), activities (what is she doing?) and places (where is she?). The assessment of momentary positive and negative mood fluctuations was given attention because of its importance for the development, course, and recovery of depression (Hartmann et al., 2015). An increase of her day to day positive mood and self-satisfaction and a reduction of negative mood was anticipated. As well, we expected OFTA to contribute greater involvement in daily life activities, places, and social interactions.

2. Method

2.1 The participant

The participant was a 14 years old female adolescent. She was living with her parents and older brother. Her family has an average socioeconomic level. She attended the 9th grade in a public school. Problems consisted of persistent feelings of sadness, low self-esteem, loss of appetite and significant weight loss (5kg in 5 months), difficulty in sleeping and light sleep, decreased school grades, lack of interest in daily activities including structured leisure activities, difficulty making friends, and isolation in school. After two clinical evaluation sessions conducted by a clinical psychologist, the participant received the diagnosis of MDD according to DSM-IV-TR criteria and the clinical levels she obtained in the Beck Depression Inventory. In general, depressive symptoms increase significantly at 13 years old (Papadakis, Prince, Jones, & Strauman, 2006). After that age, girls are twice more likely than boys to suffer from depression due to psychosocial, environmental and biological factors (Papadakis et al., 2006). In this study, the participant problems started because of psychological bullying that she suffered during the 8th

grade by her best friends at the time. According to literature, girls' vulnerability to depression is even greater when they experience negative life events that have interpersonal consequences such as peer rejection (Cyranowski, Frank, Young, & Shear, 2000; Kessler, Avenevoli, & Merikangas, 2001). In our case study, the participant and her parents reported no history of suffering bullying in school or of presenting psychological problems before the 8th grade. The intervention started when she was in the 9th grade, and the bullying problems were no longer occurring. Despite this, she did not feel integrated into her class or had friends at school. According to all gathered information, during the OFTA therapy process, there were no major life events in the adolescent's life that could interfere with the assessment of the intervention.

2.2 Procedures

The adolescent and the family requested psychological support in a Psychology Service at a university campus. She participated in two clinical evaluation sessions for diagnosis definition purposes according to the usual procedure in the Psychology Service. OFTA sessions were implemented once a week for 14 weeks and were free of charge. All sessions were implemented by a clinical psychologist and supervised by a senior clinical psychologist. All ethical research principles were followed according to APA (2010). Informed consent was obtained from the girl and her parents. This study was approved by the Ethics Committee of the University.

2.3 Study design

The assessment of OFTA was carried out in three steps: baseline (after the clinical evaluation sessions and before session 1); post-intervention (after session 14); and 4-months follow-up. This assessment was made using retrospective and real-time measures as gathered by the ESM method. All research procedures were held out of therapeutic sessions. As concerns retrospective measures, the participant answered several instruments in each moment of assessment in the Service of Psychology. Through the ESM, it was obtained information from three weeks of the participant daily life (corresponding each week to each of the three time points), allowing access to the subjective experience in natural contexts and at different times throughout the day. These assessment weeks occurred between psychological sessions. The participant carried in each assessment week an electronic device (Machado, Gomes, & Freire, 2009) and seven booklets (one booklet for each day of the week) with several sheets with open-ended questions (each sheet is named Experience Sampling Forms, ESF). The ESM was only

used to assess the efficacy of OFTA and not as a therapeutic technique. The participant answers to the booklets were not discussed between the clinical psychologist and the participant. Figure 1 illustrates the study design.

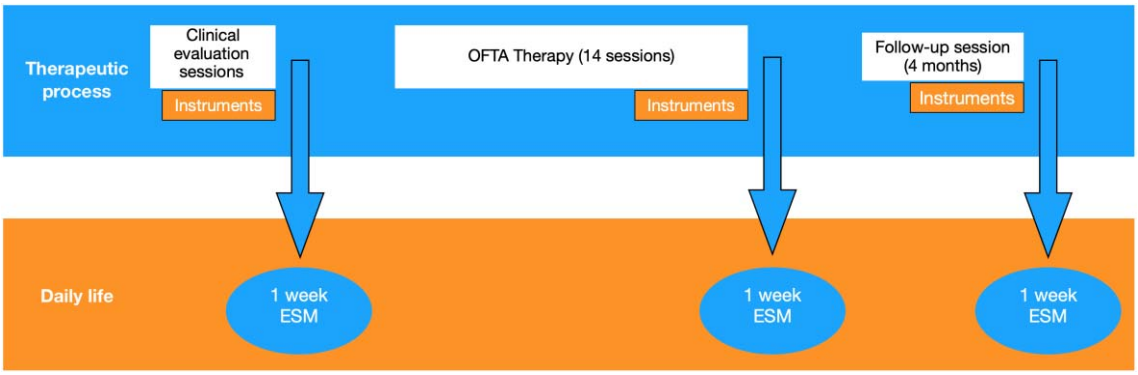


Figure 1. Therapy assessment design.

2.4 Measures

2.4.1 Retrospective measures of positive trait characteristics

Self-esteem. The Rosenberg Self-Esteem Scale (Rosenberg, 1965; Portuguese validation of Romano, Negreiros, & Martins, 2007) measures global self-worth considering positive and negative feelings about the self. The 10-items of this scale are answered using a 4-point Likert scale (from 1 = "strongly disagree" to 4 = "strongly agree"). Total scores range from 10 to 40. Higher scores indicate higher self-esteem levels. The Portuguese validation of this scale showed an internal consistency of .63 for the items that assess negative self-esteem and .74 for the items that assess positive self-esteem (Romano et al., 2007).

Satisfaction with Life. The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Portuguese validation of Neto, 1993) assesses global cognitive judgments of individual's life satisfaction. This scale has a total of 5-items answered on a 7-point Likert scale (from 1 = "strongly disagree" to 7 = "strongly agree"). Total scores range between 5 and 35. Higher scores indicate greater satisfaction with life. The Portuguese validation showed an internal consistency of .86 and a 2-week test-retest reliability of .90 (Neto, 1993).

Psychological Well-Being. The Psychological Well-Being Scale (Bizarro, 1999) is a 28-items scale answered on a Likert scale of 6-points regarding the self-evaluation of the frequency of occurrence (from 1 = "never" to 6 = "always"). Higher mean scores indicate higher levels of

psychological well-being. Although this scale has five subscales, in this study, only the means of the total scores were used. The Portuguese validation of this scale showed an internal consistency of .93 for the total scale score and ranged between .85 and .90 for its subscales (Bizarro, 1999).

Positive Affect. The Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegan, 1988; Portuguese validation of Galinha & Pais-Ribeiro, 2005) assess to what extent individuals experienced every emotion in the last two weeks. This scale is divided into two subscales: positive affect and negative affect, each consisting of 10 items. Participants' answers this scale using the 5-points Likert scale (from 1 = "very slightly or not at all" to 5 = "extremely"). Total scores on each subscale range between 10 and 50. Higher scores indicate higher levels of positive affect or negative affect. The Portuguese validation of this scale showed an internal consistency of .86 for the positive affect subscale (Galinha & Pais-Ribeiro, 2005).

2.4.2 Retrospective measures of negative trait characteristics

Negative Affect. This variable was measured by the negative affect subscale of the Positive and Negative Affect Schedule (PANAS, Watson et al., 1988). Characterisation of this subscale was presented above. This negative affect subscale presented an internal consistency of .89 in the Portuguese validation (Galinha & Pais-Ribeiro, 2005).

Depressive Symptoms. The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996; Portuguese validation of Martins, Coelho, Ramos, & Barros, 2000) was developed to assess the severity of depression in adolescents and adults, and a set of symptoms according to the diagnostic criteria for depression disorder described in the DSM-IV-TR (APA, 2010). This inventory consists of 21 items and response format consists of the presentation of 4 to 6 sentences to individuals choose the one that best represents the way he/she felt in the past two weeks. Results from each item range from 0 to 3 and the total score range from 0 to 63 (0-13 = "minimal"; 14-19 = "mild"; 20 to 28 = "moderate"; >29 = "severe"). The Portuguese validation of this scale showed an internal consistency of .89 (Coelho, Martins, & Barros, 2002).

General psychopathological symptoms. The Brief Symptom Inventory (BSI, Derogatis, 1993; Portuguese validation of Canavarro, 1999) is a 53-item self-report scale that assesses global psychological distress regarding nine dimensions of symptoms and three Global Indexes. This inventory uses a Likert scale of 5-points (from 0 = "not at all" to 4 = "extremely"). Higher scores indicate a higher level of psychopathological symptoms. For this study, only the Global

Severity Index was used. This index is calculated by the mean of all the subscales scores. In the Portuguese validation, the alpha reliability coefficients ranged between .70 and .80 for the symptoms dimensions and global indices, except for phobic anxiety and psychoticism that presented both an alpha coefficient of .62 (Canavarro, 1999).

2.4.3 Real-time measure

ESM was used to collect data about the adolescent's daily life state characteristics (positive and negative mood, and self-satisfaction) and the contextual aspects (activities, places, and companies). She received an electronic device programmed to emit eight beeps at random moments each day (>30 minutes between beeps), from 8:30h to 22h for seven days. At every beep, the participant should answer an ESF from a booklet (1-2 min average response time). The ESF includes several open-ended questions related to the social context ("Who are you with?"), places ("Where are you?"), activities ("What are you doing?"), date and time of filling the questionnaires, and several Likert scales (ranging from 0 "not at all", to 12 "extremely") that assess positive mood state (happy, cheerful, joy, good mood), negative mood state (angry, bored, sad), and self-satisfaction state ("Do you feel satisfied with yourself?"). According to methodological guidelines, any ESFs answered 20 minutes or more after signalling were not considered to avoid distortions associated with memory (Hektner, Schmidt, & Csikszentmihalyi, 2007). The adherence of participants with MDD to this methodology is considered satisfactory, allowing a valid representation of the daily life of these individuals (Telford et al., 2012).

2.5 Data analysis

Data analysis was performed using SPSS (v. 22.0). This software was used to generate descriptive statistics (frequencies, means, and standard deviations). Using the beep-level, linear mixed effects modelling for the composite variables of positive mood and negative mood states was performed, and for the single-item of self-satisfaction state. Previously to that analysis, we tested the factorial structure of mood states through a principal component analysis with Varimax rotation. This analysis identified two factors that explained 64,67% of the intra-individual variance. Four items (happy, cheerful, joy, good mood) loaded heavily on the first factor that measures positive mood (47.32% of the intra-individual variance). Three items (angry, bored, sad) loaded heavily in the second factor that measures negative mood (17.35% of the intra-individual variance).

Daily contexts such as company, activities, and places were analysed qualitatively through content analysis. The categories used were based on previous studies conducted in our research group. In the present study, interrater reliability of all external contexts was performed by two raters and disagreement was solved by a third independent rater. Kappa statistics showed high consistency between raters regarding activity (Kappa=.86, p=.001), places (Kappa=.95, p=.001), and company (Kappa=.95, p=.001). These categories were analysed using the percentage of their frequency.

3. Results

3.1 Compliance

The participant provided a total of 110 ESM reports, which is 65.48% of maximum possible (baseline = 34 reports; post-intervention = 42; follow-up = 34). All ESFs were answered in less than 20 minutes after the beep.

3.2 Preliminary results of OFTA on trait characteristics

Table 5 presents the participant's descriptive results of positive and negative trait characteristics in the three assessment periods. Concerning positive traits characteristics, results showed an increase of self-esteem, satisfaction with life, psychological well-being, and positive affect levels from baseline to post-intervention. This increase is maintained at follow-up for all positive functioning variables, except for self-esteem that decreases. Regarding negative trait characteristics assessed at baseline, the girl showed high negative affect, moderate depression levels, and clinical values of general psychopathology symptoms. At post-intervention, a substantial decrease of negative affect can be observed, minimum levels of depressive symptoms and normative values of general psychopathology symptoms. This decrease is maintained at follow-up. Thus, it appears that OFTA intervention affected the participant's increase of positive trait characteristics and the reduction of her negative trait characteristics found at baseline.

Table 5

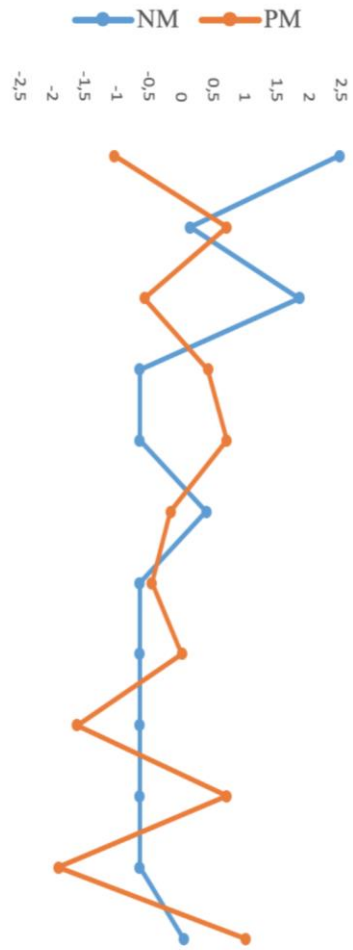
Changes in participant's positive and negative trait characteristics over time

Traits	Baseline	Post-intervention	Follow-up (4 months)
Positive traits			
Self-esteem (10-40)	29	40	22
Satisfaction with life (5-35)	21	34	35
Psychological well-being (1-6)	3.43	5.86	5.89
Positive affect (10-50)	27	40	44
Negative traits			
Negative affect (10-50)	31	11	11
Depression	25	1	1
General psychopathological symptoms	1.54	0.17	0.26

3.3. State characteristics

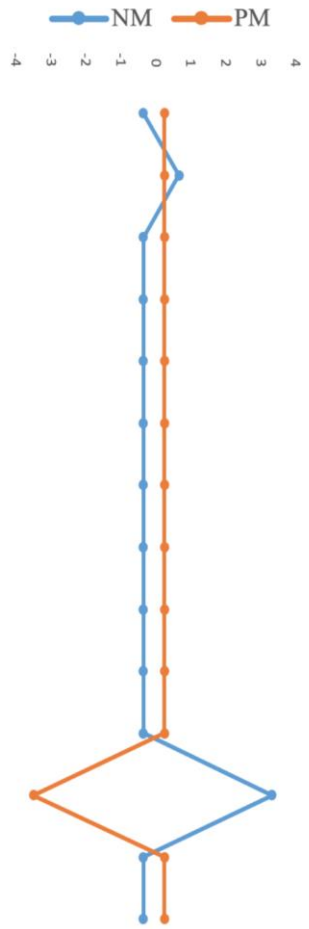
Regarding positive and negative mood, the baseline, post-intervention, and follow-up weeks are graphically represented with the aim of illustrating the fluctuations of positive and negative mood during seven days of each week. Positive and negative mood states are presented using Z-scores, using 0 as the girl average mood score.

Looking at Figure 2 (baseline week), positive and negative moods fluctuate during day and week. Lower values of positive mood seem more associated with morning periods and activities such as being in the bedroom, sleeping and alone. Analysing Figure 3 (post-intervention week), positive and negative mood seems more stable during the day and throughout the week, except for one situation when she was at a friend's house. At follow-up (Figure 4), positive and negative moods seem mostly stable throughout the day and week.



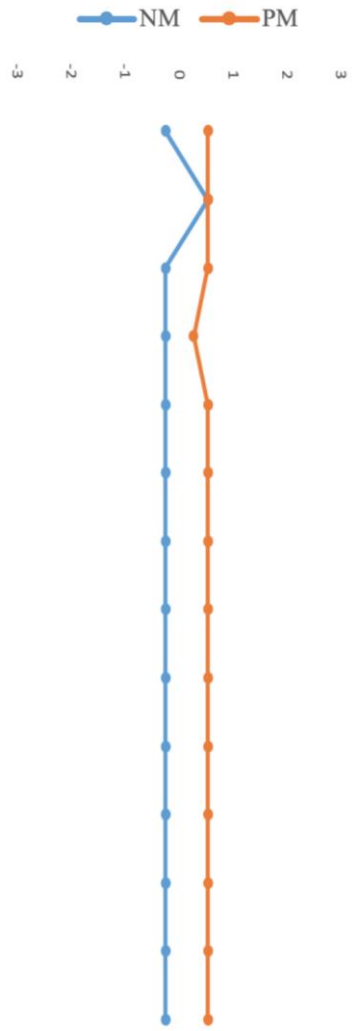
		Location/Activity/Company
Tuesday	Morning	Bedroom/getting dressed/alone.
	Afternoon	Kitchen/chores/mother; Living room/watching TV/alone; Yard/reading/alone; Laundry room/playing/alone.
Wednesday	Afternoon	Office/internet social network/alone; Office/watching TV/alone; Living room/watching TV/alone; Living room/reading/father; Kitchen/making cookies/mother.
Thursday	Afternoon	Kitchen/watching TV/alone; Office/watching TV/father; Bedroom/reading/alone; Office/watching TV/brother and mother.
Friday	Morning	Bedroom/sleeping/alone.
	Afternoon	Living room/watching TV/alone; Office/searching recipes/alone.
Saturday	Morning	Bedroom/sleeping/alone.
	Afternoon	Bathroom/getting dressed/alone; Office/playing a computer game/father; Bedroom/reading/alone; Kitchen/cooking/alone.
Sunday	Morning	Bedroom/sleeping/alone.
	Afternoon	Terrace/dinner/parents, brother and uncles.
Monday	Morning	Bedroom/sleeping/alone.
	Afternoon	Terrace/reading/alone; Kitchen/lunch/mother and brother; Terrace/reading/mother; Living room/watching TV/alone; Living room/reading/alone.

Figure 2. Fluctuations in the positive and negative mood states (using Z-scores) in the baseline week.



		Location/Activity/Company
Wednesday	Morning	Office/watching TV/alone.
	Afternoon	Living room/watching TV/alone; Living room/packing cookies/mother; Bathroom/getting dressed/alone; School/training handball/coach and teammates; Kitchen/cooking/alone; Living room/watching TV/mother
Thursday	Morning	Office/computer (e-mail)/father.
	Afternoon	Kitchen/lunch/parents; Kitchen/making cookies/alone; Kitchen/eating cookies/alone; Living room/making handicraft/alone.
Friday	Morning	City center/shopping/friend.
	Afternoon	City center/shopping/friend; Pastry shop/snack/mother; Kitchen/having dinner/parents and brother.
Saturday	Morning	Office/breakfast/mother.
	Afternoon	City center/shopping/parents; Coffee shop/snack/mother.
Sunday	Morning	Living room/breakfast/mother; Living room/watching TV/alone.
	Afternoon	Living room/household chores/parents; Kitchen/cooking/mother; Office/reading/alone; Bathroom/take a shower/alone; Living room/watching TV/alone.
Monday	Morning	Kitchen/breakfast/parents
	Afternoon	Corridor/household chores/alone; Cousin house/making a gift/cousin; Cousin house/watching TV/cousin; Friend house/talking/mother, friend and friend mother; Living room/reading/alone.
Tuesday	Morning	Bedroom/sleeping/alone; Bedroom/getting dressed/alone.
	Afternoon	Car/listen to music/parents and brother; Street/Receiving a gift/parents, brother and uncles; Car/talking/parents and brother; Cousin house/playing/cousin; Cousin house/dinner/parents, brother, cousin and uncles.

Figure 3. Fluctuations in the positive and negative mood states (using Z-scores) in the post-intervention week.



		Location/Activity/Company
Wednesday	Morning	Kitchen/preparing breakfast/alone;
	Afternoon	Bathroom/getting dressed/alone; Kitchen/giving food to the dog/father and dog; Street/walking/father and dog; Street/talking/father and dog; Living room/playing with the dog/mother and dog.
Thursday	Morning	Bedroom/sleeping/alone; Bedroom/making the bed/alone.
	Afternoon	Bedroom/choosing clothes/alone; Bedroom/studying/alone.
Friday	Morning	Bedroom/sleeping/alone; Kitchen/eating/alone.
	Afternoon	Shoes shop/buying boots/mother; Kitchen/reading the newspaper/dog.
Saturday	Morning	Kitchen/eating breakfast/mother, brother and dog; Car/listen to music/parents, brother and dog.
	Afternoon	Hotel/playing/cousins; Hotel/walking the dog/cousins.
Sunday	Morning	Hotel room/sleeping/cousins; Hotel terrace/setting the table/parents, brother, cousins and dog.
	Afternoon	Sierra/walking/ parents, brother, cousins and dog; Coffee shop/choosing an ice cream/ parents, brother, cousins and dog; Restaurant/choosing dinner/ parents, brother, cousins and dog.
Monday	Morning	Bedroom/sleeping/alone; Living room/watching TV/dog.
	Afternoon	Bathroom/taking a shower/alone; Bedroom/reading/alone; Living room/studying/dog.
Tuesday	Morning	Bedroom/sleeping/alone; Living room/studying/brother and dog.
	Afternoon	Kitchen/washing the dishes/mother; Living room/studying/alone; Having dinner/parents, brother and dog.

Figure 4. Fluctuations in the positive and negative mood states (using Z-scores) in the follow-up week.

An analysis was computed to test whether OFTA may have contributed to this positive and negative mood state stability over time by performing linear mixed effects modelling. This type of analysis was also performed to examine if OFTA may have produced any change in self-satisfaction state. Table 6 presents the descriptive statistics of these variables.

Table 6

Changes in participant's state characteristics over time

Dependent variables	Baseline M (SD)	Post-intervention M (SD)	Follow-up M (SD)
Positive mood	10.40 (.09)	11.99 (.09)	11.99 (.09)
Negative mood	.28 (.08)	.06 (.07)	.00 (.08)
Self-satisfaction	6.91 (.36)	8.14 (.32)	12.00 (.36)

Note: item response scale ranged from 0 to 12.

Results on linear mixed models showed that there was a statistically significant effect of moment of assessment in positive mood state ($F_{(2,107)}$ = 98.11, p = .001, η^2 = .647), negative mood state ($F_{(2,107)}$ = 3.43, p = .036, η^2 = .060), and self-satisfaction state ($F_{(2,106)}$ = 55.44, p = .001, η^2 = .511). Table 7 shows a statistically significant increase in positive mood and self-satisfaction states from baseline to post-intervention and from baseline to follow-up. Besides, negative mood state decreases from baseline to post-intervention and from baseline to follow-up. Regarding differences between post-intervention and follow-up, pairwise comparisons only showed statistically significant differences in self-satisfaction (p = .001), that is higher at follow-up.

Table 7

Estimates of fixed effects in state characteristics over time

Dependent variables	Parameter	β	SE	t value	*p*	95% CI [Lower, Upper]
Positive mood	Intercept	10.40	.09	110.21	.001	[10.21, 10.58]
	Post-intervention	1.59	.13	12.54	.001	[1.34, 1.84]
	Follow-up	1.59	.13	11.91	.001	[1.32, 1.85]
Negative mood	Intercept	.27	.08	3.52	.001	[.12, .43]
	Post-intervention	-.21	.11	-2.01	.05	[-.42, -.00]
	Follow-up	-.27	.11	-2.49	.01	[-.49, -.06]
Self-satisfaction	Intercept	6.91	.36	19.06	.001	[6.19, 7.63]
	Post-intervention	1.23	.49	2.55	.012	[.27, 2.19]
	Follow-up	5.09	.51	10.00	.001	[4.08, 6.10]

3.4 External contexts

Presented here is the frequency of the participant's life contexts, regarding her activities, places, and companies in each week. The goal was to verify whether OFTA promotes greater involvement of the participant in her daily life.

As shown in Figure 5, during baseline week, the participant spent most of her time in activities related to leisure/free time (watching TV, reading, the internet, social networks); and maintenance (sleeping, having lunch/dinner). In the second and third week, other activities emerged, such as socialising (talking with others) and productive (studying).

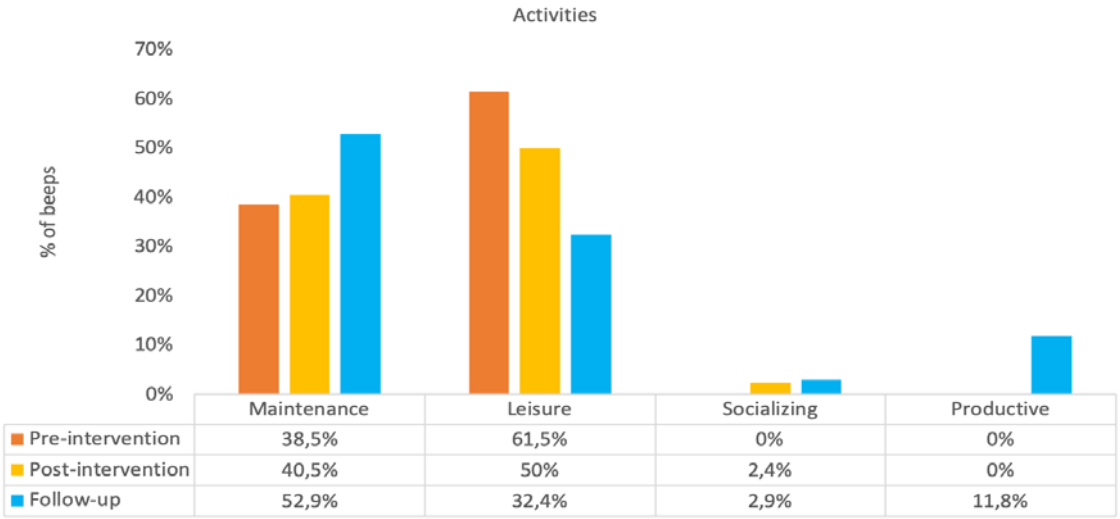
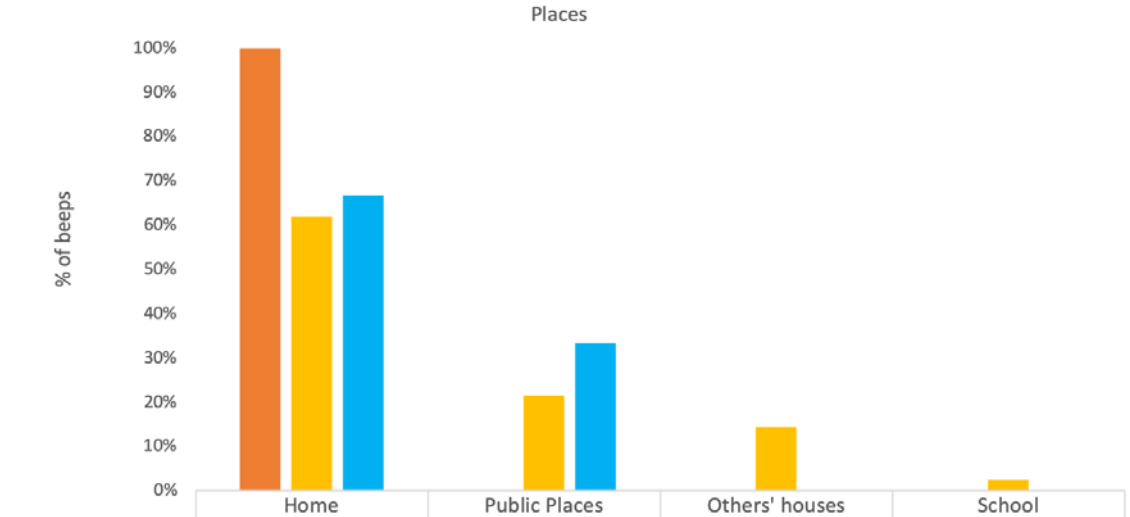


Figure 5. The frequency of activities performed during the three weeks of assessment.

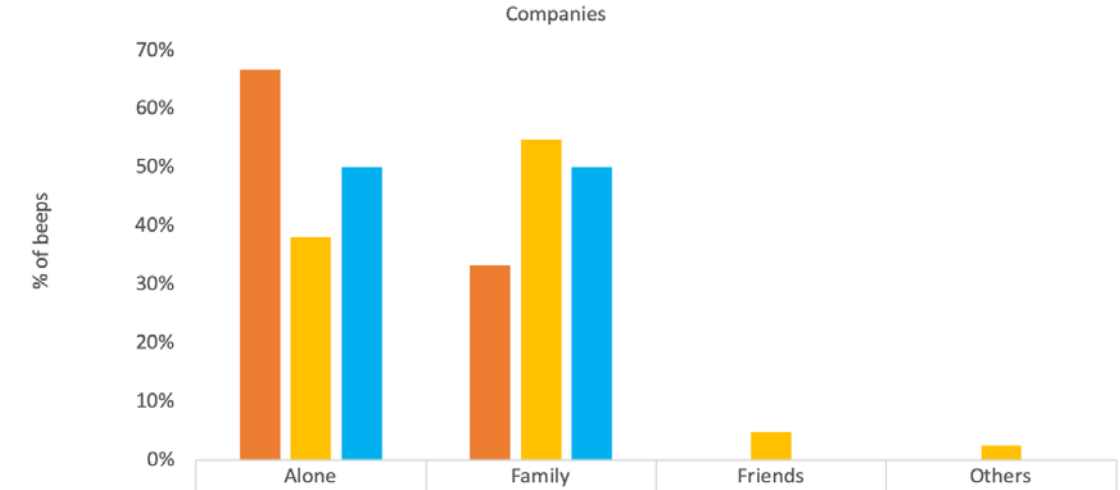
Regarding places, Figure 6 shows that the participant spent her time only at home during the first assessment, while in the remaining weeks she decreases her time spent at home and begins spending part of her time in public places (street, city centre, coffee shop), others' houses (friends and cousins' houses), and school.



	Home	Public Places	Others' houses	School
Pre-intervention	100%	0%	0%	0%
Post-intervention	61,9%	21,4%	14,3%	2,4%
Follow-up	66,7%	33,3%	0%	0%

Figure 6. The frequency of places during the three weeks of assessment.

Regarding companies (Figure 7), in the first week, the participant spent most of her time alone and with family. In the following weeks, there is a decrease in the percentage of time spent alone and an increase in time spent with family, friends, and others.



	Alone	Family	Friends	Others
Pre-intervention	66,7%	33,3%	0%	0%
Post-intervention	38,1%	54,7%	4,8%	2,4%
Follow-up	50%	50%	0%	0%

Figure 7. The frequency of company during the three weeks of assessment.

In general, it seems to be greater involvement of the girl in her several life contexts regarding activities, places, and companies during post-intervention and follow-up.

4. Discussion

OFTA was intentionally developed for the treatment of MDD in adolescents and the promotion of their optimal functioning. Its structure and contents are aimed at promoting positive emotions, behaviours, and thoughts, identifying and optimising personal resources and promoting flow, hope, and optimism, using adapted strategies of CBT and PPI. This may have contributed to the participant's increase of positive traits characteristics and a decrease in negative trait characteristics. OFTA therapy seems to contribute to the enhancement of positive states characteristics, decreasing of negative states characteristics, and increasing frequency and diversification of activities, companies, and places. Thus, the preliminary results confirmed what was expected about the benefits of OFTA in these areas.

Particularly, regarding trait characteristics, OFTA seemed to be effective in increasing participant's self-esteem, satisfaction with life, psychological well-being, and positive affect from baseline to post-intervention, maintaining its results until follow-up. Only the self-esteem trait was an exception regarding follow-up maintenance. This result does not conform to the literature, which suggests that trait self-esteem is more stable and unlikely to change over time, contrary to state self-esteem (as measured by ESM), that is more likely to change (Fuller-Tyszkiewicz et al., 2015). Nevertheless, more information would be needed to understand the participant's decrease in self-esteem at follow-up. The implementation of OFTA to a larger sample of adolescents would allow further understanding of whether this short-term effect is specific of the participant of this study or whether it is a specific feature of OFTA. Furthermore, OFTA seemed to be effective in the decrease of negative trait characteristics of negative affect, depressive symptoms, and general psychopathological symptoms from baseline to post-intervention, maintaining its results at follow-up. OFTA preliminary results on trait characteristics seem to be in line with other studies that have found the efficacy of this kind of interventions in enhancing well-being and decreasing depressive symptoms (Bolier et al., 2013; Sin & Lyubomirsky, 2009).

Regarding state characteristics, the preliminary results showed the benefits of OFTA on the increase of positive mood and self-satisfaction and decrease of negative mood over time. Although the participant's baseline levels of positive mood were already high, and the levels of negative mood were low, the results showed significant increases in positive mood and decreases

of negative mood at post-intervention and follow-up. The high baseline levels of positive mood may have been one of the factors relevant to therapy success. According to Höhn et al. (2013), depressed patients with higher levels of positive mood at baseline are more likely to respond to treatment. Studies have reported that moments of high positive mood are associated with a more favourable course of depression, than lack of negative mood, especially for individuals in their first episode of depression (Hartmann et al., 2015). Literature has shown that positive and negative emotions are separate and independent constructs (Karwoski et al., 2006). According to Wood and Tarrier (2010), people who have a disorder may also have positive emotions. These emotions can help to predict disorders and diminish the impact of negative life experiences. Thus, to contribute to a good prognosis for treatment success, it is essential to focus on the promotion of positive emotions right at the start of the therapy, as it is the case of OFTA's first module.

The lower positive mood state and higher negative mood state during morning periods at the baseline is consistent with studies that suggest a morning-worse pattern in depressed individuals. According to Rusting and Larsen (1998), this pattern is considered more common in severely depressed individuals. Other studies have found mood variations in the form of an inverted U-shape in depressed samples: positive affect states are lower at the beginning and end of the day and higher in the middle of the day, which is the period of the day that offers more opportunities to experience pleasant events (Höhn et al., 2013). The girl's morning-worse pattern is no longer evident in post-intervention and follow-up, demonstrating the benefits of OFTA. Our results also support the notion that OFTA may have contributed to the reduction of the positive and negative mood fluctuations in participant daily life during the day and week.

Furthermore, OFTA seemed to have enhanced self-satisfaction state over time. This finding conforms to literature that suggests that state self-satisfaction is more susceptible to change and context/situational dependent (Fuller-Tyszkiewicz et al., 2015). Thus, the increase in the frequency and diversification of participant's external contexts may have also contributed to the increase of self-satisfaction over time.

Concerning daily life external contexts, preliminary results seem to show an increase in the frequency and diversification of activities, places, and companies. At baseline, the participant's spent most of her time in maintenance and passive leisure activities, alone and at home. On the other hand, at post-intervention and follow-up, the girl started to engage in another kind of activities such as socialising and productive, spending more time in public places and others'

houses and spending less time alone and more time with family, friends, and others. OFTA's focus on the intentional implementation of strategies in several life contexts may have contributed to this increase in frequency and diversification of external contexts. This OFTA aim is especially relevant since depression causes impairments in several life contexts, for instance social (reduction of social contacts), productive (study, school work) and leisure activities (more time spent in passive leisure), which can persist even after treatment recovery (Barge-Schaapveld, Nicolson, Hoop, & DeVries, 1995).

In general, our results seem to support the importance of including optimal functioning promotion as a therapeutic aim, besides the reduction/elimination of depression symptoms. Our findings are in line with other studies that have suggested that the addition of PPI strategies to CBT would enhance the effectiveness of the intervention in the treatment of depression. Furthermore, this study allowed us to see the potential that PPI strategies may have in the adolescent population, drawing attention to the need for studies that evaluate the effectiveness of such interventions. One of the main advantages of the present study consisted of the examination of changes in the daily life experiences associated with clinical improvements. The participant's assessment in her natural contexts allowed for a deeper understanding of the benefits of OFTA regarding internal state characteristics of positive and negative mood and self-satisfaction, and external characteristics of her daily activities, companies, and places.

A next research step will consist of OFTA implementation to a larger sample of depressed adolescents (both male and female) to assess its effectiveness, taking into consideration the use of randomised controlled trials to compare OFTA with other types of interventions, and a longer period of follow-up. Overcoming these study limitations would strengthen the assessment of OFTA's impact on the treatment of depression in adolescents and will allow making valid comparisons between the effectiveness of OFTA and other existing interventions such as CBT, IPT-A, and PPI. Compared with adult populations, PPI for adolescents are still rare. That is why clinical researchers should continue to study the effectiveness of those interventions based on optimal functioning promotion to provide tools to clinical psychologists for combating adolescent depression. The use of measures that evaluate adolescents' behaviours as a way of assessing the benefits of therapy in the everyday lives of adolescents is encouraged. The results of this study may inspire clinical and school psychologists to include validated exercises of PPI in their regular interventions to increase adolescent's well-being.

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CAPÍTULO III

Towards optimal functioning of depressed adolescents: Changes in affect and daily life after therapy[5]

Abstract

Adolescent depression has alarming prevalence rates and causes impairments in several life contexts. There is a need for depression treatments that focus simultaneously on decreasing symptoms and increasing well-being to achieve adolescent optimal functioning. This pilot study aims to examine changes in adolescents' depressive symptoms, in positive and negative affect (measured retrospectively and momentarily), and everyday life contexts (companies, activities, and locations), after receiving the Optimal Functioning Therapy for Adolescents (OFTA). This therapy integrates and adapts strategies from Cognitive Behavioral Therapy (CBT) and Positive Psychology Interventions (PPI). Participants were 12 clinically depressed adolescents with a mean age of 15.4 years old. This pilot study has a longitudinal design with adolescents filling out self-report retrospective questionnaires and engaging in a week of experience sampling in four assessment periods: baseline, middle intervention, post-intervention, and 4-months follow-up. Results showed a decrease of depressive symptoms and negative affect and an increase in PA over time (measured retrospectively and momentarily). After therapy, participants increased the time spent at home and engaging in passive leisure. No changes were found regarding time spent in active leisure and being with others. This study reveals promising results regarding the combination of CBT and PPI strategies for the treatment of adolescent depression and to enhance optimal functioning.

Keywords: Adolescent depression, positive affect, negative affect, daily life, optimal functioning.

[5] This chapter corresponds to a paper written in collaboration with Professor Marieke Wichers and Evelien Snippe, PhD., in the scope of a protocol between the University of Minho and the University of Groningen.

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1. Introduction

Depression is common in adolescence, with symptoms increasing significantly at 13 years old, especially for girls (Kessler, Avenevoli, & Merikangas, 2001; Klasen et al., 2015). The estimated prevalence rate for major depression is 5,6% in 13-18 years old adolescents (Costello, Erkanli, & Angold, 2006). Depression in childhood or adolescence increases the risk of reoccurrence later in life profoundly (Compton et al., 2004); around 70% of youth that experienced depression will have another episode within five years (Richmond & Rosen, 2005). Depression has also been associated with a higher risk of suicide in adolescents (Valois, Zullig, & Hunter, 2015).

Adolescent depression is mainly characterised by a change in mood, loss of interest and pleasure in activities, and irritability (Gladstone & Beardslee, 2009; Midgley et al., 2015). Other symptoms include diminished concentration, social withdrawal, loneliness, sleeping difficulties, problems at school and with peers, and self-injuries (Midgley et al., 2015). In addition to that, depressed youth show lower positive affect (PA) and higher negative affect (NA) and a lower ratio between PA/NA compared to healthier children and adolescents (Forbes, Williamson, Ryan, & Dahl, 2004; Silk, Forbes, & Whalen, 2011). Studies have shown an increase in NA and a decrease of PA in the transition to adolescence in normative samples (Frost, Hoyt, Chung, & Adam, 2015; Weinstein, Mermelstein, Hankin, Hedeker, & Flay, 2007; Henker, Whalen, Jamner, & Delfino, 2002), increasing the adolescents' vulnerability to the development of psychopathology (Schneiders et al., 2007). Evidence support that decreases in PA, more than increases in NA, have been associated with a higher risk of depressive mood in adolescents (Weinstein et al., 2007). This may be explained by the role of PA as a buffer of the NA effects (Burke, McArthur, Daryanani, Abramson, & Alloy, 2018; Wichers, Lothmann, Simons, Nicolson, & Peeters, 2012).

Besides changes in mood, daily life contexts have been associated with depressive symptoms (e.g., Frost et al., 2015; McCullough, Huebner, & Laughlin, 2000; Schneiders et al., 2006; Snippe et al., 2016). Studies have shown that adolescents spend more time with their classmates in school, following family, friends, and others (Schneiders et al., 2007; van Roekel et al., 2014). However, clinically depressed youth spend more time alone and less time with family (Silk et al., 2011). The majority of adolescents spend more time at home, following school and other places (Schneiders et al., 2007), but depressed adolescents spend less time in public places when compared to non-depressed (Merrick, 1992). Regarding activities, passive and unstructured leisure activities have been associated with depressive symptoms in adolescence

(Hektner, Schmidt, & Csikszentmihalyi, 2007). As well, depressed adolescents spend less time on socialising activities than their counterparts (Merrick, 1992).

Understanding adolescent positive and negative mood and their daily life contexts may inform how clinicians can improve depression treatments (Silk et al., 2011). There is a need for depression treatments that focus simultaneously on increasing PA and decreasing NA, decreasing time spent alone, increasing time spent outside the house, and increasing time spent on socialising and active leisure activities.

The most evidence-based treatment, Cognitive Behavior Therapy (CBT), has managed to achieve their goal of reducing NA and depressive symptoms, but they do not intentionally focus on improving PA (David-Ferdon & Kaslow, 2008; Weersing & Brent, 2006). This might explain why, even though CBT has been found adequate for the treatment of mild and moderate depression (Weersing & Brent, 2006), some adolescents do not respond positively to CBT and its reduced longstanding effects in studies with longer follow-ups (Blom et al., 2016; Compton et al., 2004). Therefore, the efficacy of CBT might be improved by complementing it with a treatment that does explicitly focus on changing contexts and improving PA, such as Positive Psychology Interventions (PPI) attempt to do (Sin, Della Porta, & Lyubomirsky, 2011). PPIs seek to promote positive emotions, positive behaviours, and positive cognitions (Sin & Lyubomirsky, 2009). According to its perspective, depressed individuals lack PA and intentionally promoting it would buffer and counteract depressive symptoms by itself (Seligman, Rashid, & Parks, 2006).

However, PPIs have mostly been developed and delivered to non-clinical adolescent samples (Sin & Lyubomirsky, 2009). Therapies such as the Well-Being Therapy (Ruini, Belaise, Brombin, Caffo, & Fava, 2006; Ruini et al., 2009), and the Positive Psychotherapy (Rashid, Anjum, & Lennox, 2006) have shown improvements in the psychological well-being of adolescents, but have failed to show a reduction in depressive symptoms. More recent studies have been able to show that PPI can enhance well-being and decrease depressive symptoms in non-clinical adolescent samples, such as the "Bite Back" (Manicavasagar et al., 2014) and a positive writing intervention through a resource diary (Reiter & Wilz, 2015). Therefore, PPIs seem to be promising for clinical samples as well.

Considering the effectiveness of CBT on reducing depressive symptoms and the benefits of PPIs on increasing PA, an integration of CBT and PPI was developed in the form of the *Optimal Functioning Therapy for Adolescents* (OFTA, Teixeira & Freire, 2017). This therapy integrates and adapts specific strategies from CBT and PPIs already existent in the literature (Ingram & Snyder,

2006; Karwoski, Garratt, & Ilardi, 2006). Another innovative component of OFTA is the proximity between therapy and adolescents' daily life contexts through the performance of homework assignments, in which they have the opportunity to apply the strategies learned in therapy. OFTA is structured in three modules: the first module focuses on promoting positive emotions, behaviours, and thoughts; the second module seeks to identify and optimise personal resources and strengths; and the third module aims to promote activities that induce flow, hope, and optimism. These modules all aim at improving adolescents' optimal functioning, defined as the presence of well-being and absence of symptoms. To the best of our knowledge, OFTA is the first intervention specifically developed for depressed adolescents that integrates and adapts CBT and PPI strategies.

As OFTA aims to produce changes in symptoms, mood, and daily life contexts, the experience sampling method (ESM) seems to be an adequate measure to assess changes in the natural setting of daily life associated to treatment success (Silk et al., 2011; Trull & Ebner-Priemer, 2009). More specifically, the ESM allows examining whether OFTA is associated with an increase in PA, a decrease in NA and whether adolescents spent more time in different life contexts, and started to engage in different activities. The ESM has the advantage of reducing memory biases because individuals provide information about their mood and daily life contexts repeatedly at the moment during several days (Trull, Ebner-Priemer, Brown, Tomko, Scheiderer, 2012). This is especially relevant in the case of depressive disorders, which in addition to the individual's natural memory bias, there is a memory bias due to dysfunctional cognitions that characterise depression (Rot, Hogenelst, & Schoevers, 2012). Although the ESM has proven to be useful to monitor response to treatments for psychopathology, including depression (Trull & Ebner-Priemer, 2009), only a few studies have used ESM to that end (e.g., Barge-Schaapveld & Nicolson, 2002; Wichers et al., 2009).

This pilot study is the first: (1) to examine the changes in depressive symptoms, PA and NA of adolescents with depressive symptoms after receiving OFTA, and (2) to examine changes in daily life contexts (i.e., locations, companies, and activities) after therapy. We expected that adolescents would decrease depressive symptoms, enhance their PA levels and diminish their NA levels measured as a trait (retrospective questionnaires) and state (experience sampling). Furthermore, we expected that at the end of the intervention, adolescents would be more engaged in their life contexts regarding spending more time in public places, in leisure activities, and the company of significant others.

2. Method

2.1 Participants

Participants were adolescents with depressive symptoms who were referred by their general practitioner for psychiatric treatment in a public Hospital. During this period, a total of 40 adolescents (28 females and 12 males) and their families were approached for study participation. Inclusion criteria were age between 14 and 18 years old and scores above 13 points on the Beck Depression Inventory (BDI-II, Beck et al., 1996) indicating mild, moderate or severe depressive symptoms. Exclusion criteria were substance abuse and the presence of psychotic symptoms. The final sample analysed consisted of 12 participants. Figure 8 shows the flow diagram of participant recruitment.

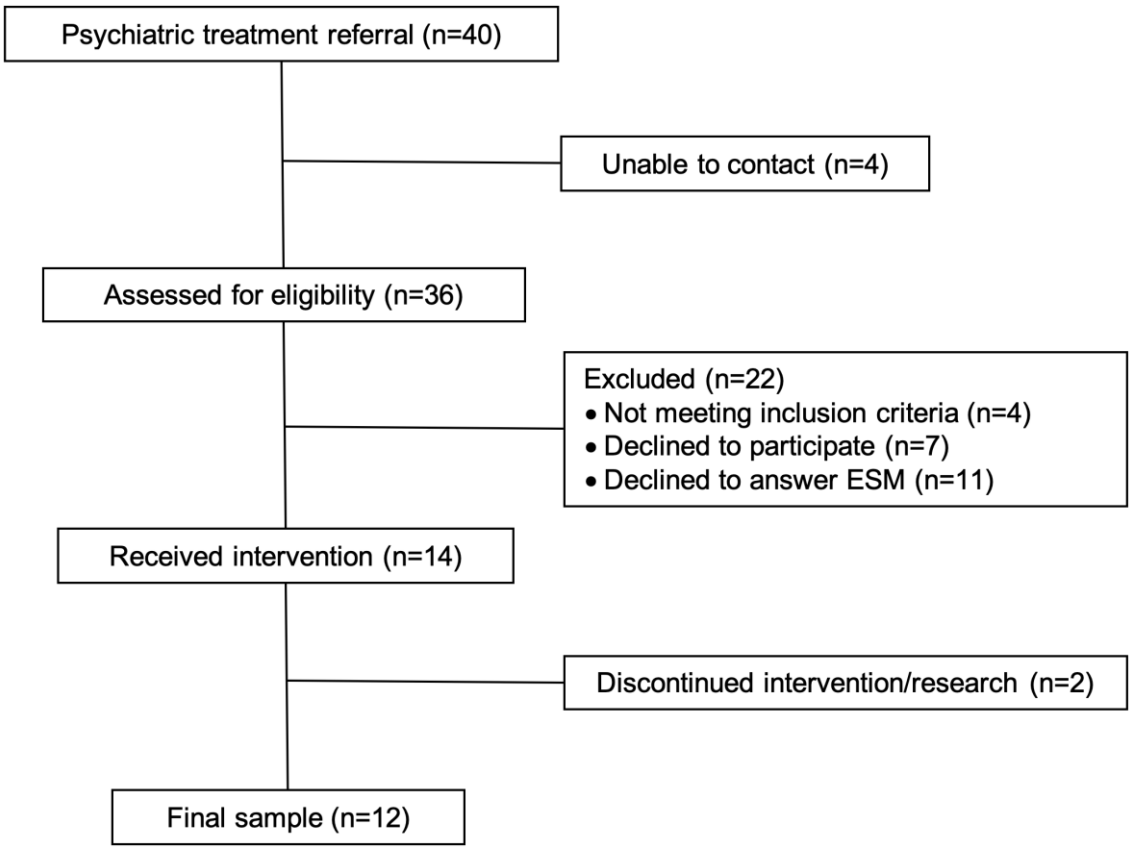

Figure 8. Flow diagram of participants recruitment.

2.2 Design

The present pilot study follows a longitudinal design with adolescents being assessed at four different time points: baseline (before session 1); middle intervention (after session 7);

posttest (after session 14); and at follow-up (4 months after intervention). At each of these assessments, participants answered self-report retrospective questionnaires and engaged in a week of Experience Sampling (ESM).

2.3 Procedures

The current study received approval from the Ethics Committee of the university and the Ethics Committee of the hospital where the study took place. In a first screening interview, inclusion and exclusion criteria were checked, adolescents were asked to complete the BDI-II, and they received oral and written information about the study. Written informed consent was obtained from all adolescents and their parents or legal guardians before participation. The adolescents and their families did not receive any financial or material compensation for participation in the study. Participants who were not willing to participate in the current study or did not comply with the study requirements continued to receive treatment according to care as usual.

Adolescents who accepted to participate in the study were invited to engage in ESM using a paper and pencil method. This ecological momentary assessment methodology allows obtaining real-time self-reports of individuals subjective experience (thoughts, emotions, behaviours) at specific moments during their daily life. Participants received an electronic device named Psychobeeper (developed by citation withheld for review) and seven pocket-sized booklets with ESM questions and answer sheets one for each day of the week. The Psychobeeper was programmed to emit randomised acoustic signals from 8:30h to 22:30h (with a minimum of 30 minutes between signals), eight times a day during seven consecutive days in each assessment week. At each beep, participants filled out the ESM questionnaire from the booklet. Participants were instructed to complete the questions as soon as possible. At the beginning of each ESM questionnaire, participants were asked regarding the time of the beep and the time they answered it. ESM assessments completed in a 20 minutes interval were considered valid and included in the analyses. Each booklet included a page with instructions and end of day reports where adolescents were asked if they had been without the Psychobeeper for some time of the day, at what time and for what reason. Before the assessment week, adolescents participated in a 30 minutes session to receive brief training on ESM procedures and had the opportunity to practice answering the ESM questions to be sure they understood all the questions. At the end of

each assessment week, participants were scheduled to a debriefing session to assess the feasibility of ESM assessments.

2.4 Treatment

All participants attended individual sessions of Optimal Functioning Therapy for Adolescents (OFTA) on a weekly or bi-weekly regularity in Hospital facilities. This therapy includes 14 sessions, each of 60/90 minutes. As described in the introduction, OFTA is an individual therapy that includes strategies from CBT and PPI and was developed for the treatment of adolescent depressive symptoms. OFTA aims to promote adolescents optimal functioning by focusing on an integrative way the reduction of symptoms and the promotion of well-being. To help adolescents to become more involved in their life contexts, all sessions include daily or weekly homework assignments (except for the last session). It is a manualized treatment and was provided by a clinical psychologist trained in OFTA. The sessions were scheduled according to participants availability and avoiding them missing school classes or structured leisure activities. Also, other sessions were planned with parents or legal guardians of adolescents when necessary.

2.5 Measures

Sociodemographic questionnaire. A sociodemographic questionnaire was used to obtain participant information concerning age, gender, school grade, parent marital status, and leisure activities.

Depression. We used the Beck Depression Inventory (BDI-II, Beck, Steer, & Brown, 1996; validation to Portuguese of Martins, Coelho, Ramos, & Barros, 2000) to assess the severity of depression in adolescents. This scale assesses a list of symptoms according to the diagnostic criteria for depression disorder as presented in the DSM-IV-TR (APA, 1994). This questionnaire includes a total of 21 items about depressive symptoms experienced during the past two weeks. Each item ranges from 0 to 3, and total scores range from 0 to 63. Scores can be interpreted as the following: 0-13 minimal symptoms; 14-19 mild symptoms; 20-28 moderate symptoms; and <29 severe symptoms. Scores above 13 are considered clinical symptoms. The Portuguese validation of this scale showed a Cronbach alpha of .89 (Coelho, Martins, & Barros, 2002).

Retrospective positive and negative affect. The Positive and Negative Affect Scale (PANAS, Watson, Clark, & Tellegan, 1988; validation to Portuguese of Galinha & Pais-Ribeiro, 2005) was used to assess adolescents positive and negative emotions experienced during the past two weeks. This scale includes a PA and NA subscale, consisting of 10 items each. Participants rate each item (e.g. interested) on a 5-point Likert scale, ranging from 1 "very slightly or not at all" to 5 "extremely". Total scores can range from 10 to 50 for each subscale, where higher scores show higher levels of PA and NA. The Portuguese validation of this scale showed a Cronbach alpha of .86 for the PA and of .89 for the NA (Galinha & Pais-Ribeiro, 2005).

Momentary Positive and Negative affect ESM was used to assess momentary state affect through a 7-point Likert scale ranging from 1 "not at all" to 7 "extremely". Principal Components Analyses with varimax rotation was conducted on person-centred affect items from the baseline assessment. This analysis identified three factors that explained 50.04% of the intra-individual variance: PA (happy, strong, joyful, sociable, glad, free, good mood, creative, relaxed, and self-satisfied), explaining 26.59% of the variance; NA (lonely, anxious, angry, sad, and irritated), explaining 14.21% of the variance; and weary (sleepy and tired) that explained 9.23% of the variance.

Momentary context ESM was also used to assess external contexts variables (location, activities, and social company). The ESM questionnaires included open-ended questions regarding location ("where are you?"), activity ("what are you doing?"), and social ("Who are you with?") contexts answered at each signal. Participants' answers to these variables were coded by two raters using multiple exclusive categories, which were based on previous qualitative analyses performed in previous studies (citation withheld for review). Disagreements were solved by a third independent rater. Interrater reliability obtained for location, activity, and company was as follows: Kappa = .97, p = .001; Kappa = .94, p = .001; Kappa = .99, p = .001. Then these specific categories were then recoded to measure being at home, active leisure activities, passive leisure activities, and being with others. The resulting category for the location was as follows: 0 "not at home" and 1 "at home". The activity was recoded to 0 "non-active leisure" and 1 "active leisure", and 0 "non-passive leisure" and 1 "passive leisure". Finally, the social context variable was coded as 0 "alone" and 1 "with others".

2.6 Statistical analysis

Since ESM data has a hierarchical structure where multiple measurements (level 1) are nested within participants (level 2), multilevel analyses were conducted using the nlme package (Pinheiro, Bates, DebRoy, Sarkar, & R Core Team, 2018) in R studio.

Multilevel analyses were performed to examine changes in depressive symptoms, retrospective PA, retrospective NA, momentary PA, and momentary NA (dependent variables) over time. The models included a random intercept, a fixed effect for time (0 = baseline, 1 = middle intervention, 2 = post-intervention, 3 = four months follow-up), gender, antidepressant medication, and being on holidays as covariates (fixed effects), and a random slope for time. An unstructured covariance structure was used in these analyses. Effect sizes regarding PA and NA changes from baseline to post-intervention and follow-up were calculated using Cohen d.

Multilevel logistic analyses were conducted to assess changes in the dichotomous dependent variables (not at home versus at home, non-active leisure versus active leisure, non-passive leisure versus passive leisure, alone versus with others) from baseline to follow-up. Again, fixed effects of time, gender, antidepressants, and holidays were included, as well a random intercept for the participant and a random slope for time. An unstructured covariance matrix was used. These analyses were conducted using the lme4 package (Bates, Maechler, Bolker, & Walker, 2015).

3. Results

3.1 Compliance and missing data

In the current study, the total number of valid observations in the four assessment weeks was 1035 (38.5%) of 2688 possible observations. The frequencies and percentages of valid observations at each assessment week were as follows: baseline = 340 (50.6%); middle intervention = 204 (30.4%); post-intervention = 247 (36.8%); and follow-up = 244 (36.3%). Nine observations were excluded because they were answered after 20 minutes. Two participants did not comply with the middle intervention assessment time.

At the end of day, participants mentioned the reasons for not answering the questions, with the most important reasons including being at school, active leisure activity, could not stop the activity, and sleeping. The reasons being at school (baseline = 14; middle = 11; post-intervention = 2; follow-up = 6) and could not stop the activity (baseline = 9; middle = 2; post-intervention = 1;

follow-up = 3) seemed to decrease over time, while the reason performing active leisure (baseline = 9; middle = 10; post-intervention = 17; follow-up = 10) seemed to increase over time. Sleeping (baseline = 6; middle = 5; post-intervention = 5; follow-up = 5) as a reason for not answering the questions stayed the same.

3.2 Descriptive Statistics

Table 8 presents the characteristics of the 12 adolescents participating in the study. All participants completed all planned manualized therapy sessions. The majority of the sample was female and had parents that were divorced. Half of the sample used antidepressant medication in addition to psychological treatment. At baseline, half of the sample reported having at least one structured leisure activity (sports activities, scouts, theatre, and choir), and the other half engaged only in non-structured leisure.

Table 8

Sample characteristics

	N (%) / M (SD)
Gender	
Female	8 (66.7%)
Male	4 (33.3%)
Age	15.4 (1.2)
School grade	
7th grade	1 (8.3%)
8th grade	2 (16.7%)
9th grade	4 (33.3%)
10th grade	1 (8.3%)
11th grade	2 (16.7%)
12th grade	2 (16.7%)

(continued)

Table 8

Sample characteristics

	N (%) / M (SD)
Structured leisure	6 (50.0%)
Parental marital status	
Married	4 (33.3%)
Divorced	8 (66.7%)
Antidepressant medication	6 (50.0%)

The means and frequencies of continuous and categorical outcomes assessed retrospectively or in real-time at each assessment time are presented in Table 9. Participant's baseline levels of depressive symptoms varied between mild (N=1), moderate (N=6), and severe (N=5). The average levels of PA and NA were both relatively low at baseline.

Table 9

Descriptive of study outcomes variables

	Time assessment			
	Baseline % M (SD_b; SD_w)	Middle intervention % M (SD_b; SD_w)	Post-intervention % M (SD_b; SD_w)	Follow-up % M (SD_b; SD_w)
Retrospective outcomes				
Depressive symptoms (BDI-II)	27.5 (5.0)	12.3 (10.3)	4.8 (5.3)	13.3 (11.7)
Trait affect				
PA	2.0 (.9)	2.8 (1.0)	3.3 (.9)	2.5 (1.1)
NA	2.6 (.9)	1.9 (.7)	1.4 (.4)	1.8 (.7)
Real-time outcomes				
Momentary affect				
PA	2.9 (1.5; .8)	3.4 (1.5; .9)	3.7 (1.4; .6)	3.7 (1.5; .6)
NA	2.8 (1.4; .9)	2.2 (1.2; .8)	2.0 (1.2; .6)	2.0 (1.24; .6)

(continued)

Table 9

Descriptive of study outcomes variables

	Time assessment			
	Baseline % M (SD_b; SD_w)	Middle intervention % M (SD_b; SD_w)	Post-intervention % M (SD_b; SD_w)	Follow-up % M (SD_b; SD_w)
Location				
At home	50.9%	68.8%	69.8%	56.2%
School/work	31%	18.4%	8.7%	32.7%
House of others	2.4%	3%	3.3%	2.9%
Public places	14.5%	5.9%	14.5%	8.7%
Parents' work	1.2%	4%	3.7%	0.8%
Recoded location				
At home	50.9%	68.8%	69.8%	55%
Not at home	49.1%	31.2%	30.2%	45%
Activity				
Study/work	27.3%	17.4%	6.6%	29%
Leisure	35.8%	39.3%	40.9%	34.3%
Personal care	23.6%	18.4%	32.6%	21.5%
Socializing	7.9%	9.5%	9.1%	9.5%
Doing nothing	2.7%	7.5%	7%	3.7%
Helping others	0%	4%	2.5%	0.4%
Other	2.7%	4%	1.2%	1.7%
Recoded activity				
Active leisure	12.2%	10.1%	11.2%	8.0%
Passive leisure	33.7%	44.4%	45.5%	37.8%
Other activities	54%	45.5%	43.4%	54.2%
Company				

(continued)

Table 9

Descriptive of study outcomes variables

	Time assessment			
	Baseline % M (SD_b; SD_w)	Middle intervention % M (SD_b; SD_w)	Post-intervention % M (SD_b; SD_w)	Follow-up % M (SD_b; SD_w)
Alone	28.1%	38.6%	40.9%	31.8%
Family	35.9%	39.1%	52.9%	39.3%
Friends	6.6%	8.9%	4.1%	7.9%
Classmates/co-workers	28.1%	11.9%	0.6%	20.2%
Others	1.2%	1.5%	0.8%	0.8%
Recoded company				
Alone	28.1%	38.6%	40.9%	31.8%
With others	71.9%	61.4%	59.1%	68.2%

Note. SD_b = Between subjects' standard deviation; SD_w = Within-subject standard deviation (real time outcomes).

3.3 Change in depressive symptoms and trait affect over time

Table 10 shows the results regarding the effect of time on retrospective depressive symptoms, PA and NA. Depressive symptoms and NA decreased over time while controlling for gender, antidepressant medication, and being on holidays. Depressive symptoms and NA were significantly lower at all time-points (middle intervention, post-intervention, and follow-up) compared to baseline. As can be derived from Table 9, depressive symptoms varied between minimal (N=10) and severe (N=2) at middle intervention, symptoms varied between minimal (N=11) and mild (N=1) at post-intervention, and they varied between minimal (N=10), mild (N=1), and severe (N=1) at follow-up. PA increased over time but was only significantly higher at middle intervention and post-intervention compared to baseline; the increase in PA was not statistically significant at four months follow-up. There was no effect of gender, antidepressants, and holidays on depressive symptoms, NA, and PA.

Table 10

Changes in trait outcome variables over time

	BDI-II	Trait PA	Trait NA
Fixed effects	B (SE)	B (SE)	B (SE)
Intercept	27.7 (3.5)**	2.3 (.5)**	2.7 (.3)**
Middle intervention	-15.1 (3.2)**	.8 (.3)**	-.7 (.3)*
Post-intervention	-22.6 (3.3)**	1.2 (.3)**	-1.3 (.3)**
Follow-up	-19.0 (3.2)**	.5 (.3)	-.9 (.3)**
Gender	-1.9 (2.9)	-.4 (.5)	-.1 (.3)
Antidepressants	2.5 (2.8)	-.3 (.5)	.0 (.2)
Holiday	-0.6 (2.7)	.3 (.3)	.1 (.2)

Note. The gender reference category was girls. *p<0.05, ** p<0.01

3.4 Changes in momentary affect over time

The multilevel analysis results showed a significant decrease in momentary NA levels over time (Figure 9 and Table 11) when controlling for gender, antidepressant medication, and holiday variables. As can be seen in Table 9, NA decreased on average with 0.9 points on a scale from 1-7 from baseline to post-intervention and follow-up. Momentary PA levels increased over time (Table 4) when controlling for gender, antidepressant medication, and being on holidays. Levels of PA were significantly higher (on average 0.7 points) at middle intervention, post-intervention, and follow-up compared to baseline levels of PA. There was a main effect of gender: average levels of PA were higher in boys than in girls over the whole study period. As can be seen in the spaghettis plots (Figure 9 and 10), the majority of adolescents showed an increase in PA and a decrease in NA over time, presenting a moderate within-person effect size at post-intervention (PA Cohen's d = .57; NA Cohen's d = .62) and at follow-up (PA Cohen's d = .57; NA Cohen's d = .62). Participants 11 and 12 were the only ones showing a decrease in PA and an increase in NA over time.

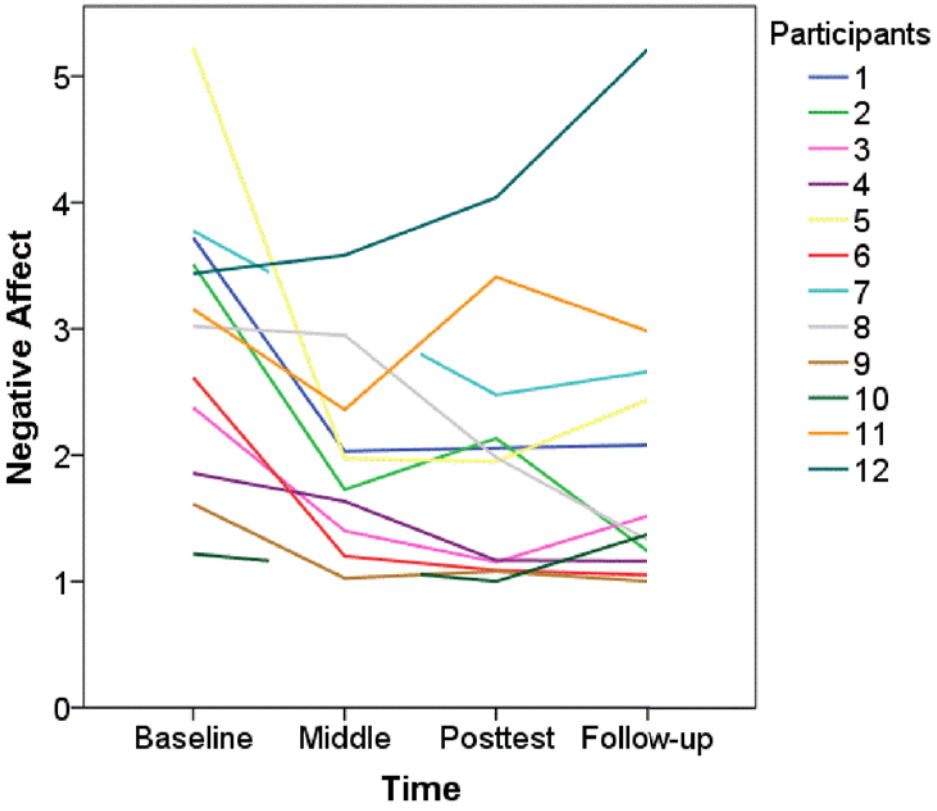

Figure 9. Changes in NA overtime by the participant.

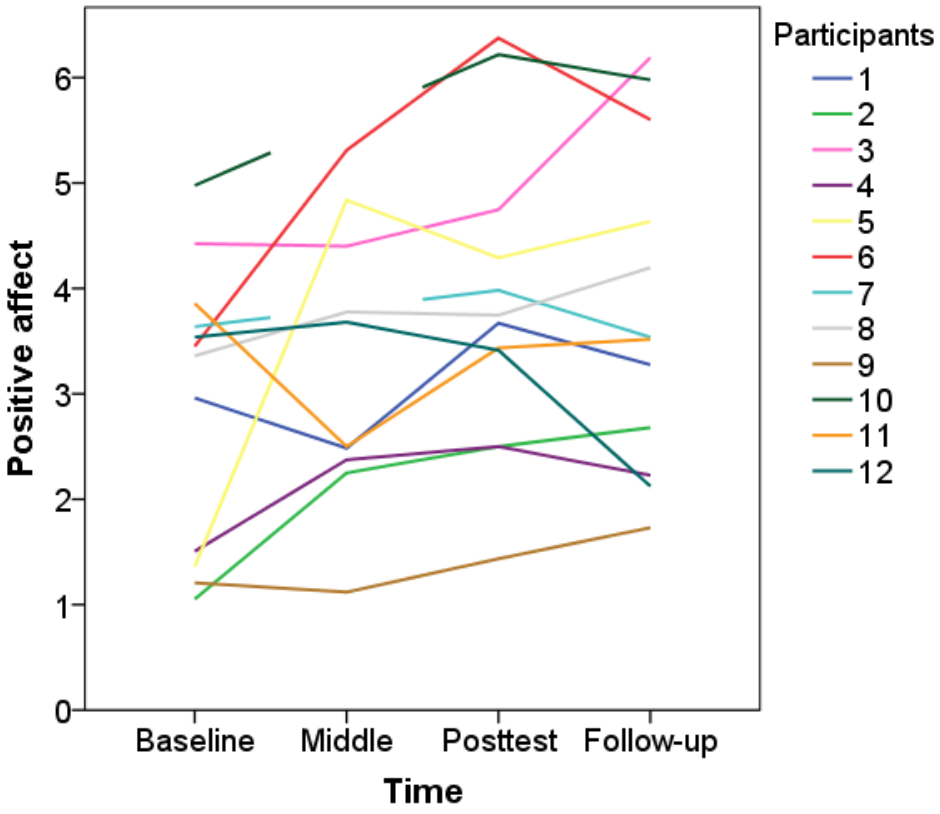

Figure 10. Changes in PA overtime by the participant.

3.5 Changes in contextual variables overtime: location, activity, and company

As shown in Table 11, the multilevel logistic analysis revealed a significant increase in being at home at middle intervention and post-intervention, but not at follow-up. Also, taking antidepressants was associated with adolescents being out of the home while having holidays from school was associated with adolescents being at home. Regarding passive leisure activities, results showed a significant increase in passive leisure activities at middle intervention and post-intervention, but not at follow-up. As well, having holidays were associated with performing passive leisure activities. Results showed no significant changes in performing active leisure and being with others over time while controlling for gender, antidepressants, and holidays.

Table 11

Changes in momentary outcome variables over time

	PA	NA	At home	Active leisure	Passive leisure	With others
Parameters	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)	B (SE)
Intercept	2.4 (.5)**	2.7 (.5)**	.8 (.3)*	-2.3 (.4)**	-.4 (.4)	.9 (.4)*
Middle intervention	.7 (.1)**	-.9 (.1)**	.9 (.3)**	-.2 (.3)	.6 (.2)**	-.4 (.3)
Post-intervention	.9 (.3)**	-1.0 (.2)**	1.2 (.5)*	-.1 (.4)	.5 (.2)*	-.7 (.4)
Follow-up	1.0 (.4)**	-1.0 (.3)**	.7 (.6)	-.7 (.4)	.4 (.2)	-.4 (.6)
Gender	1.6 (.7)*	-.0 (.6)	-.3 (.3)	.3 (.4)	-.5 (.5)	.3 (.5)
Antidepressants	-.1 (.6)	.4 (.6)	-1.2 (.3)**	.3 (.4)	-.4 (.4)	.1 (.4)
Holiday	.2 (.1)	.2 (.1)	.8 (.3)**	.1 (.3)	.5 (.2)*	-.2 (.2)

The frequencies (Table 9) of the location and social company variables revealed that adolescents spend less time in school and less time with their classmates at post-intervention compared to baseline. Therefore, a sensitivity analysis was conducted by excluding observations of school and classmates from the whole sample in the analyses with not home/home and alone/with others as the outcome variables. There was no significant increase in being at home at middle intervention (B = .41, SE = .3, z = 1.3, p = .20), post-intervention (B = .3, SE = .4, z = .7, p = .51), and follow-up (B = .8, SE = .6, z = 1.3, p = .20). As well, no significant increase in being with others at middle intervention (B = -.1, SE = .3, z = -.4, p = .68), post-intervention (B = -.3, SE = .4, z = -.8, p = .43), and follow-up (B = -.3, SE = .5, z = -.6, p = .54).

4. Discussion

This pilot study aimed to gain insight into whether the integration of Positive Psychology Interventions (PPIs) within CBT would promote positive affect and functioning in daily life in depressed adolescents. Specifically, we examined changes in depressive symptoms, PA, NA, being at home, doing leisure, and being alone in daily life after receiving *Optimal Functioning Therapy for Adolescents* (OFTA). The results showed a decrease in depressive symptoms and NA, an increase in PA, and changes in daily life regarding the increase of time spent at home and performing passive leisure activities. This first study on changes in daily life after receiving a combination of CBT and PPI suggests that integrating CBT and PPI strategies may be associated with increased well-being in daily life and reductions in depressive symptoms.

As hypothesised, there was a significant and clinically relevant increase in momentary and trait PA over time, during and after treatment. This result is relevant because PA protects from symptom recurrence and has a buffer effect of NA (Burke et al., 2018; Joiner, Lewinsohn, & Seeley, 2002). Findings showed that levels of NA decreased over time, despite the relatively low levels of NA at the baseline. According to the literature, low levels of NA at baseline is a possible predictor of better and faster treatment response (Forbes et al., 2012). Also, and as expected, participants showed a decrease in depressive symptoms over time. These results are consistent with other studies that implemented PPI to normative adolescent samples, showing an increase of positive dimensions and reduction of symptoms (Manicavasagar et al., 2014; Reiter & Wilz, 2015), as well in line with results on an OFTA's implementation case study (Teixeira & Freire, 2017). As OFTA integrates PPIs and CBT interventions, it goes one step further by complementing the focus of CBT on symptom reduction by targeting the achievement of adolescent's optimal functioning.

Regarding OFTA's aim of making adolescents more engaged in their life contexts, and contrarily to what was expected, the changes in participants' daily lives after receiving OFTA were minimal and in the opposite direction to what was initially hypothesised. Adolescents increased their time spent at home when it was expected an increase in time spent elsewhere. As well, they spent more time performing passive leisure than active leisure. However, and according to the qualitative data obtained on end of day questionnaires, to be in an active leisure activity appeared as the primary reason for not filling out the ESM questionnaires at post-intervention. This may have confounded the outcomes, and therefore, it is also plausible that active leisure did not change or increased from baseline to the end of the intervention. As for time spent with other

people in comparison to time spent alone, results showed no changes over time. An explanation for the absence of a change in time spent in certain daily life contexts is that OFTA may have contributed firstly to a cognitive re-evaluation of life contexts within this time span. It is possible that adolescents needed more time and practice of strategies to change their behaviour in daily contexts. Adding more sessions focused on behavioural change may allow adolescents to interact differently with other people, places, and activities.

Providing OFTA to a clinically depressed adolescent sample and using ESM as a way of monitoring treatment progress were the main strengths of the current study, since the majority of PPI has been studied in non-clinical adolescent samples, and the use of ESM is still scarce in the field of Clinical Psychology (Sin & Lyubomirsky, 2009; Trull & Ebner-Priemer, 2009; Wenze & Miller, 2010). Nevertheless, interpretation of study findings should take into consideration the exploratory nature of the study and some existent limitations that compromise generalisation to a clinical depressed adolescent population, such as a small sample size, low compliance to the ESM assessments, and lack of a control group, and a short-time follow-up.

This pilot study reveals preliminary and promising results regarding the innovation of combining CBT and PPI strategies for the treatment of adolescent depression by increasing PA and decreasing NA. Results also pointed out the need for readjusting the structure of OFTA by increasing the number of sessions. A more in-depth and individual examination of each participant regarding the processes and mechanisms of change in mood and life contexts is needed to increase knowledge on how to improve OFTA effectiveness. A next step could be to examine OFTA effectiveness in a randomised controlled trial and to examine whether OFTA would be successful in treating depressive symptoms in adolescents when compared to CBT and PPI. The high prevalence of teenage depression, its detrimental consequences and the high rate of symptoms reoccurrence later in life, justify the need to obtain a set of empirical validated psychological interventions or strategies to endow clinical psychologists (Compton et al., 2004; Costello et al., 2006; Richmond & Rosen, 2005). The current study may encourage both clinical researchers and practitioners to develop and implement empirically based depression treatments aimed to achieve adolescents' optimal functioning, by reducing symptoms and increasing well-being in daily life in an integrative way.

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CONCLUSION

The central aim of this dissertation was the development of OFTA to treat depression and promote optimal functioning in adolescents. To the best of our knowledge, OFTA is the first therapy developed for adolescents that integrates strategies from CBT and PPI. In OFTA, positive and negative aspects of human experience have equal attention and are understood in an integrative way. In this dissertation, negative variables were assessed by the presence of depressive symptoms and negative affect; and positive variables were assessed by positive affect, self-esteem, life satisfaction, and psychological well-being. Optimal functioning refers to the reduction of those negative variables and enhancement of the positive ones (Bohart, Elliot, Greenberg, & Watson, 2002; Seligman & Czikszentmihaly, 2000; Sin, Della Porta, & Lyubormirsky, 2011). Positive and negative affect were considered the main variables in the three studies due to the critical role they play in adolescent depression and optimal functioning (Forbes, Williamson, Ryan, & Dahl, 2004; Silk, Forbes, & Whalen, 2011). OFTA also includes an ecological perspective by having the aim of improving adolescents' social functioning by producing positive changes in their everyday contexts. The use of ESM to monitor changes in adolescent's daily life contexts associated to therapy improvements was also one of the main advantages of the current thesis since it is not very common in literature especially regarding PPI.

The evaluation of OFTA and its preliminary results had the goal of assessing the theoretical contents and strategies of this therapy (in-session exercises and homework assignments) and its structure (e.g., number of sessions). In terms of OFTA's contents and strategies, preliminary results from the case study and pilot study seem to support OFTA's success in the treatment of depressive symptoms and optimal functioning enhancement. The study case showed a decrease in momentary negative affect and an increase in momentary positive affect and self-satisfaction overtime. Regarding external contexts, findings also showed improvements in social functioning (increased time spent outside the house, with others, and diversification of activities).

All those findings motivated the implementation of OFTA to a larger clinically adolescent sample in the pilot study recruited in a public hospital. This constitutes another strength of the current dissertation since most PPI interventions have been conducted with normative adolescents' samples. Findings from retrospective measures showed a decrease in depressive symptoms and an increase in positive affect, self-esteem and life satisfaction from baseline to post-intervention and follow-up.

In the same line, findings from ESM showed momentary negative mood decreased, while momentary positive mood increased. Results on external variables showed an increase in time spent at home and in passive leisure. Contrarily to what expected, findings did not show an increase of time spent with others (family, friends, teachers, classmates), outside of the house (school, public places) and in structured leisure. We expected those changes due to OFTA's focus on promoting adolescents' agency in everyday contexts. Some hypotheses can be explored regarding this specific result. As mentioned previously (third chapter), performing a structured leisure activity was reported by participants as the most often reason for not complying with ESM procedures at post-intervention assessment period.

Moreover, it is possible that during the unstructured time (when adolescents are in passive leisure and at home), adolescents were more likely to answer to ESM questionnaires, when compared with structured time (when adolescents are at school and in structured leisure activities). Some suggestions to increase participants' compliance with ESM procedures will be present in the next section. Furthermore, it is possible that adding more sessions to OFTA would help participants to be more proactive and engaged in their life contexts. Those sessions could give adolescents more time to practice new skills and implement strategies in their natural settings (Keles & Idsoe, 2018). Research also shows that therapies of longer duration and with a higher number of sessions are considered more effective (Bolier et al., 2013; Sin & Lyubomirsky, 2009).

Furthermore, most studies do not include a middle intervention assessment period, which is relevant to study the progress of therapeutic changes along time (Lopez-Gomez, Chaves, Hervas, & Vazquez, 2017). Our findings showed significant changes in depressive symptoms already at this assessment point, allowing us to conclude about the importance of working on positive emotions, behaviours and thoughts right at the start of the therapy, by using the combination of CBT and PPI strategies.

In general, our findings conform with previous studies conducted with adult and adolescent samples (Asgharipoor, Farid, Arshadi, & Sahebi, 2012; Bolier et al., 2013; Chaves, Lopez-Gomez, Hervas, & Vazquez, 2017; Manicavasagar et al., 2014; Rashid, Anjum, & Lennox, 2006; Reiter & Wilz, 2015; Ruini, Belaise, Brombin, Caffo & Fava, 2006; Sin & Lyubomirsky, 2009). The only study that combines strategies from CBT and PPI (and also mindfulness-based cognitive therapy), but designed for adults with MDD is the Say Yes To Life (SYTL; Carr, Finnegan, Griffin, Cotter, & Hyland, 2016). This group intervention showed a recovery from depression in 72% of

participants three months after therapy (Carr et al., 2016). Findings from OFTA and SYTL show the relevance of joining CBT and PPI for the treatment of depression in adolescence and adulthood. The advantages of these strategies integration should be better explored in the literature.

The studies included in this dissertation showed the importance of paying equal attention to positive and negative aspects of human functioning and served as an example of how to integrate different but complementary strategies to offer clinical psychologist tools to help depressed adolescents to change from a psychopathological life trajectory to one of flourishing and thriving.

Limitations and future studies

Although findings from this dissertation are very promising, some limitations should be taken into consideration when interpreting the results. The low number of participants, the lack of a control group and the short follow-up period prevent the generalisation of the results to a clinically depressed adolescent sample. Another limitation is related to the percentage of compliance with the ESM methodology, which was lower than the percentage of compliance obtained in other studies with depressed adolescents (Telford, Cunningham, Telford, Abhayaratna, 2012). Thus, it is essential to understand and reflect on why adolescents had such a low compliance rate. According to the participants, the reasons for non-compliance were the following: performing structured leisure; being at school; sleeping; forgot carrying the Psychobeeper; could not stop the activity; being sick, and performing passive leisure. ESM has demanding characteristics, which can cause burdensome to participants (Verhagen, Hasmi, Drukker, van Os, & Delespaul, 2016). This may also explain low compliance and lower motivation of participants to comply with ESM procedures (Berkel, Ferreira, & Kostakos, 2017; Verhagen et al., 2016). Maybe the inclusion of a phone call or reminder text messages from the researcher to the participants during the week would have increased compliance with ESM procedures (Hektner, Schmidt, & Csikszentmihalyi, 2007). Financial rewards based on participants compliance should also be considered (Hektner et al., 2007).

Another limitation is concerning to ESM materials. When using paper-and-pencil diaries, there is a chance of participants filling back or forward the ESM questionnaires reconstructing or fabricating data (Broderick, Schwartz, Shiffman, Hufford, & Stone, 2003; Csikszentmihalyi & Larson, 1987; Palmier-Claus et al., 2011). Participants were advised to answer the questionnaires immediately after the beep and not to backfill the questionnaires they were not

able to answer in order to decrease the possibility of having invalid data Participants were also not aware of the number of signals they would receive each day. As well, we offered participants a pocket-size booklet for each day (seven booklets in total) instead of one booklet with questionnaires for the whole week. The questionnaire included two items for time: time of the signal and time of answering the signal. This information was then compared with the software used to program the time of signals. Using all this information, we were able to determine which reports were valid or invalid. Although paper and pencil and electronic diary data have shown both reasonable compliance rates, in future studies we should choose an online electronic format diary (e.g., smartphone applications) that will allow us to have access to data in real-time, more certainty regarding valid data, and to monitor participant compliance more closely (Berkel et al., 2017). Smartphone application would be easier to implement and less burden than paper-and-pencil diaries, since adolescents are already used to carry their phones (Verhagen et al., 2016).

The current dissertation opens new directions for future studies. Now that we know that OFTA has shown the potential to treat depression and increase optimal functioning, the next step should be to conduct a randomised controlled trial. This type of study is considered the most rigorous way of assessing the efficacy of a new treatment in clinical research (Kabisch, Ruckes, Seibert-Grafe, & Blettner, 2011). Therefore, one possibility of research design could be the randomisation of participants in three groups: OFTA (therapy being tested); only CBT; and only PPI. CBT and PPI would function as control groups. This kind of design would assess if the integration of CBT and PPI in OFTA would simultaneously treat depression and improve optimal functioning in a more effective way than either CBT or PPI implemented alone. Sample size should be large enough to identify clinically significant differences between treatments and to allow the generalisation of results (Kendal, 2003). The inclusion of a longer follow-up would allow determining the long-term benefits of OFTA regarding optimal functioning and elimination of depressive symptoms.

Future studies could also include other positive variables associated with optimal functioning that are directly promoted in OFTA's modules, such as flow, optimism and hope. In the same line, the inclusion of a quantitative and/or qualitative measure of participants' perception of their improvement and recovery should be considered as complementary information of OFTA effectiveness (Lopez-Gomez et al., 2017).

Taking into consideration the ecological perspective of OFTA, a future goal should be the development of a protocol for parental sessions. Although the implementation of OFTA included

sessions with parents or legal guardians, those sessions did not follow structured guidelines or had the same number of parental sessions for each participant. Thus, it is necessary to homogenise them to avoid confounding effects. This is especially important since family can be a context of risk factors associated with the onset of adolescents' depressive symptoms and their maintenance, such as parental depression, family conflict, negative interactions, and neglect (Lerner et al., 2005; Poole et al., 2017; Schneiders et al., 2006; Youngblade et al., 2007).

Although individual therapies are also considered more effective than group ones, it is crucial to consider the possibility of adapting OFTA to a group intervention to achieve a higher number of clinically depressed adolescents and due to the need of cost-effective treatments (Keles & Idsoe, 2018). In adolescence, the group context may provide adolescents with a sense of belonging, positive peer interactions, and social support, which could potentiate the effectiveness of OFTA (Drumm, 2006; Freire, Lima, Teixeira, Araújo, & Machado, 2018; Rhee, Ciurzynski, & Yoos, 2008).

Implications for research and clinical practice

Research about depression in adolescents reveals increasingly higher lifetime prevalence rates, early ages of onset, relapses, and reoccurrence in adulthood (Mojtabai, Olfson, & Han, 2016; Rohde, Lewinsohn, Klein, Seeley, & Gau, 2012). Studies also have shown numerous severe consequences for adolescents with depression, being suicide one of the leading implications (Brière, Rohde, Stice, & Morizot, 2016). Thus, there is a strong urge for interventions to treat adolescent depression that enables the achievement of optimal functioning. These interventions should integrate knowledge about negative and positive characteristics of human functioning that would lead to a better understanding of mental health and illness and improved psychological interventions (Freire, Teixeira, Silva, & Matias, 2014).

According to the findings of the current studies and published literature on PPI, clinical practitioners should consider adding PPI strategies to evidence-based interventions, such as CBT (Boiler et al., 2013). The theoretical concepts included in OFTA regarding the promotion of positive emotions, thoughts, and behaviours, identification and optimisation of personal resources and strengths, as well as the promotion of flow, hope and optimism played a vital role in the treatment of depression and optimal functioning, assessed by positive affect, life satisfaction, and self-esteem variables. The identification of positive resources in everyday life contexts and learning coping mechanisms to deal with environmental challenges was also a core aim of OFTA.

Still, more studies are needed to explore the benefits of those strategies' integration regarding the depression treatment, relapse prevention and reoccurrence later in life. The use of ESM in research (as a complement to retrospective measures) can be an effective tool to monitor changes in adolescents daily functioning associated with psychological interventions (Wenze & Miller, 2010).

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APPENDIX

Universidade do Minho

SECVS

Subcomissão de Ética para as Ciências da Vida e da Saúde

Identificação do documento: SECVS 030/2016

Título do projeto: *Da psicopatologia ao funcionamento ótimo - contributos para a psicoterapia em adolescentes com Perturbação Depressiva Major*

Investigador(a) responsável: Dra. Teresa Margarida Moreira Freire, da Escola de Psicologia da Universidade do Minho, e Ana Maria Correia Teixeira, aluna do Doutoramento em Psicologia Aplicada da Escola de Psicologia da Universidade do Minho

Subunidade orgânica: Escola de Psicologia da Universidade do Minho

Outras Unidades: Serviço de Psicologia da Escola de Psicologia da Universidade do Minho; Hospitais e Centros de Saúde; Consultórios/Clínicas de Psicologia

PARECER

A Subcomissão de Ética para as Ciências da Vida e da Saúde (SECVS) analisou o processo relativo ao projeto intitulado "*Da psicopatologia ao funcionamento ótimo - contributos para a psicoterapia em adolescentes com Perturbação Depressiva Major".*

Os documentos apresentados revelam que o projeto obedece aos requisitos exigidos para as boas práticas na experimentação com humanos, em conformidade com o Guião para submissão de processos a apreciar pela Subcomissão de Ética para as Ciências da Vida e da Saúde.

Face ao exposto, a SECVS nada tem a opor à realização do projeto.

Braga, 15 de junho de 2016.

A Presidente

(Maria Cecília de Lemos Pinto Estrela Leão)