

The Role of Positive Emotion and Contributions of Positive Psychology in Depression Treatment: Systematic Review

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Abstract: The present study aims to conduct a systematic review of the literature by checking the impact of positive emotion in the treatment of depression and on the use of strategies of positive psychology which involves positive emotion to treat and reduce symptoms of depression. For this purpose, we conducted searches in databases ISI Web of Knowledge, PsycINFO and PubMed and found a total of 3400 studies. After inclusion application and exclusion criteria, 28 articles remained, presented and discussed in this study. The studies have important relations between humor and positive emotion as well as a significant improvement in signs and symptoms of depression using different strategies of positive psychology. Another relevant aspect is the preventative character of the proposed interventions by positive psychology by the fact that increase well-being and produce elements such as resilience and coping resources that reduce the recurrent relapses in the treatment of depression. The strategies of positive psychology, such as increasing positive emotions, develop personal strengths: seeking direction, meaning and engagement for the day-to-day life of the patients, appear as potentially tools for the prophylaxis and treatment of depression, helping to reduce signs and symptoms as well as for prevention of relapses.

Keywords: Depression, emotion, positive psychology, resilience.

INTRODUCTION

Positive psychology is a psychological approach targeted to emphasize people skills and to promote their cognitive functioning, physical and emotional health. Martin Seligman, American psychologist, established in January 1998 the conceptual basis of positive psychology at the time he assumed the presidency of the American Psychological Association (APA). Seligman [1] stressed the fact that psychology needed to study also the human qualities and not only the weaknesses and illnesses. The focus of clinical psychology intervention was mental illness, understanding and how to reduce the signs and symptoms associated to psychiatric disorders. According to Wood and Tarrier [2] prior to the event of positive psychology the negative aspects of life were taken into consideration and the positive aspects were disregarded. These authors don't suggest the study of positive functioning as a separate field of clinical psychology, but

rather that clinical psychology itself changes to become a more integrative discipline.

Seligman, Steen, Parks & Peterson [3] point out that positive psychology emphasizes the study of positive emotion, the personal strengths and skills of the human being, as well as the positive institutions, which are institutions that allow the experience and expression of positive emotions such as the family and the community to enhance mental health and promote wellness. According to Sin & Lyubormirsky [4], extending the positive emotion in daily life of patients is one of the main goals of positive psychology. Positive emotions as joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe and love play a central role in the treatment and can function as a kind of protection against stress and depression. [5-8] pointed the importance of positive emotions on psychological well-being. [9-12] have shown that positive automatic thoughts and optimistic style of thinking also offers protection against depression and are indicators of happiness and well-being.

[6, 13-15] pointed an important aspect studied by positive psychology: resilience and how to make people more resilient in when facing adversity. Resilience refers to the

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capacity for successful adaptation or change in the face of adversity. Studies suggest several ways to achieve this goal. These authors noted the importance of developing resilience to manage depression and that it is supported by social support, affective ties and expansion of positive emotions. [10] stressed the role of positive cognitive triad in the development of resilience in life satisfaction and depression and reinforcing the positive cognitions are important factors to promote resiliency and well-being.

Positive psychology has been used to treat various mental disorders. In the treatment of depression, a model intervention was developed by Seligman, Rashid & Parks [16] and they called it positive psychotherapy (PPT), aiming to increase objective and subjective welfare, positive emotion, positive behaviors and cognitions. [17] highlight the strategies of positive psychology are generating positive coping resources that alleviate depression and reduce their relapses.

Thus, the present study aims to conduct a systematic review of the literature on the impact of positive emotion in the treatment of depression and on the use of positive psychology strategies that involves positive emotion to treat and reduce symptoms of depression.

METHODOLOGY

Eligibility criteria

The methodology of this study will follow the PRISMA model (*Preferred Reporting Items for Systematic reviews and Meta-Analyses*) for the determination of eligibility.

1- Type of studies - The studies were randomized clinical trials, prospective cohort studies, cross-sectional observational studies and case-control studies in order to generate evidence regarding the effects and the impact of positive emotion in the treatment of depression;

2- Type of participants - no limitation of age, young women with depression or not;

3- Types of intervention - positive psychology strategies or emotion in evaluating patients with depression or not. Some articles compared these interventions to controlled groups by the symptoms of depression and the scores of depression scales.

4- Types of measures - depression, anxiety, mood, well-being, personality, quality of life, positive and negative affect, gratitude, hope, stress, resilience, life satisfaction, self-esteem, automatic thoughts, happiness, meaning, mindfulness were analyzed by using of specific scales.

Sources of information

The articles included in this study were selected in searches in the database ISI Web of Knowledge, PubMed and PsycINFO in September 2013, without restriction in any of the databases. From own references found in the electronic databases, it was also performed a manual search.

Search

All searches in databases used the terms “positive psychology”, “emotion” and “depression”.

Selection of studies

The selection of the studies was carried out by two independent authors, which in case of divergences have sought a consensus on the selection. The evaluation consisted in the filtering of the studies, from the analysis of the title, followed by summary and analysis after the full article. In need to solve possible disagreements between the two experts, a third evaluator was requested for the due order. Complete relevant articles were obtained and evaluated with inclusion and exclusion criteria, described below.

Search of Data

The following data was extracted from the articles: sample size, characteristics of participants, type of intervention, scales used, measurements of hope, happiness, well-being, depression, anxiety and others and meaningful main results. In addition to these, several other information about methods and results were collected. These procedures were performed by two independent investigators have reached a consensus in the case of divergence.

Exclusion Criteria

The articles that used interventions not associated with emotion, population with mental diseases differing from depression, specific samples composed of children, neurological disease, those who do not have detailed the procedure applied, or did not present results of variables emotion and humor.

Risk of Bias in Studies

For the assessment of risk of bias of each item included it was analyzed: the presence of eligibility criteria for participants of the sample; the random allocation of participants, the results of all times from the analysis of more than 85% of the sample, the presence of the control group, presentation of results and the variability of the results inter groups.

The flowdiagram is shown below (Fig. 1).

RESULTS

The categorization of the studies included in this study is presented below in accordance to the design of the studies (Table 1 and 2).

CROSS-SECTIONAL OBSERVATIONAL STUDIES

Cross-sectional observational studies were found in 7 articles. In the first, [18] investigated the relationship between personality, mood and memory. 62 individuals participated in three sessions where they were asked to encode adjectives that described themselves or not, for that, subjects heard a recording with 39 adjectives and on a sheet of paper where this 39 adjectives were written and followed by meanings, the subjects were asked to circulate if the adjective heard described themselves. The next moment, they were asked to recall many adjectives as they could in two minutes and write down as many of the adjectives as possible. After the recall task the participants were asked to fill out the following questionnaires: a short 18-item Profile of Mood States [19], Tension/ Anxiety (POMS T); Depression (POMS D) and Vigor (POMS V); State and Trait versions of the State

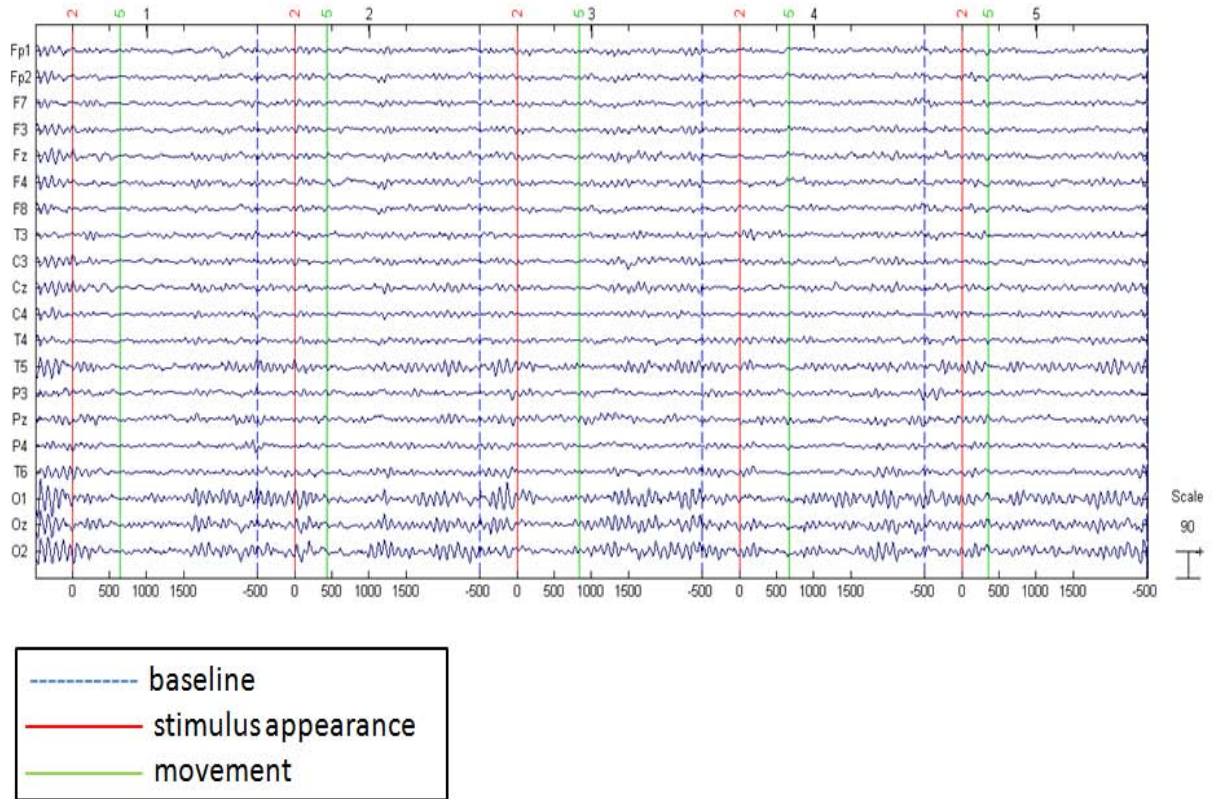


Fig. (1). Flow diagram of selected studies.

Table 1. Summary of Prospective Cohort, Cross-Sectional Observational and Case-Control Studies on the Role of Positive Emotion and Contributions of Positive Psychology in Depression Treatment

Authors	Objective	N	Design	Main Results
Lewinsohn,PM;Libet,J.	Investigate the relationship between humor and pleasant activities.	30	Prospective cohort study	Three groups of 10 subjects (depression, psychiatric and control) during 30 consecutive days engaged in enjoyable activities and measured their mood. The results showed a significant association between pleasant activities and mood state suggesting a clinical utility.
Lightsey,O.R.	Evaluate if automatic positive thoughts could function as protective factors to stress and depression.	152	Prospective cohort study	The results confirmed the hypothesis that automatic positive thoughts are predictors of happiness and higher frequency of them was associated with greater future happiness. This findings suggests that positive automatic thoughts had an impact on immediate and on future well-being alleviating depression.
Kuppens,P Nezlek,J.B,	Examine how subjects regulated their emotions in daily life and how this affected their emotional experiences and their psychological adjustment.	153	Prospective cohort study	Over the course of three weeks participants described as they had adjusted the emotion in terms of reassessment or inhibition of positive and negative emotions. The results showed that the reappraisal situations to increase positive emotions was positively related to self-esteem, psychological adjustment and positive affect, in contrast, suppressing the expression of positive emotions was associated with decreased self-esteem, decreased psychological adjustment and increased negative emotions. These analyses suggested that positive and negative emotion played diferentes roles in mediating the psychological adjustment and self-esteem.

Table 1. contd....

Authors	Objective	N	Design	Main Results
Sawyer, M.G.; Pfeiffer, S.; Spence, S.H.	Investigate the impacts of positive and negative management strategies and optimistic thinking style in depressive symptoms.	5634	Prospective cohort study	The results showed that teens who made greater use of negative coping strategies and less use of positive coping strategies and optimistic thinking were at increased risk for higher levels of depressive symptoms. This findings suggest that negative life events and negative coping strategies precede and likely contribute to the onset of depressive symptoms while positive coping strategies and optimistic thinking may have a protective effect against depression.
Wenze, S.J.; Gunther, K., & Forand, N.R.	Analyze the relationship between cognitive reactivity (relationship between thought and mood) and depression.	63	Prospective cohort study	The results pointed out that cognitive reactivity remained predictive of follow-up depressive symptom scores ($p < 0.05$) and accounted for 6.1% of the variance in follow-up depressive symptom. Dysfunctional attitudes were predictive of follow-up depressive symptom, controlling for initial depressive symptom ($p = 0.06$) and account for 5.5% of the variance in follow-up depressive symptoms. Cognitive reactivity was somewhat more predictive of follow-up depressive symptom scores in participants who had experienced high levels of life stress. This results indicate that cognitive reactivity serves as a risk factor for the development of depressive symptoms.
Mauss, I.B.; Shallcross, A.J.; Troy, A.S.; John, O.P.; Ferrer, E.; Wilhelm, F.H. Gross, J.J.	Examine whether dissociation between positive emotion experience and behaviors predicts two facets of psychological functioning- depressive symptoms and well-being- and if so, whether these effects are mediated by social connectedness.	135	Prospective cohort study	The results showed that positive experience-behavior dissociation predicted social connectedness ($p < 0.05$); social connectedness was negatively associated with depressive symptoms ($p < 0.05$) and positively associated with well-being ($p < 0.05$). This study showed that the more participants positive experience and behaviors were dissociated during a positive emotion induction, the greater levels of depressive symptoms and the lower levels of well-being participants experienced six months later.
Shankman, S.A.; Klein, D.N.; Torpey, D.C.; Olin, T.M.; Dyson, M.W.; Kim, J.; Durbin, E.; Nelson, B.D. & Tenke, C.E.	Assess if high negative emotionality (sadness, fear, anger) and low positive emotionality (anhedonia, lack of enthusiasm, lack of energy) in children are risk factors for developing depression.	329	Prospective cohort study	The results showed that both low positive emotionality and high negative emotionality are sufficient for conferring risk for depression. Using EEG asymmetry as a marker for depression, the direction of interaction suggests that children with low positive emotionality or high negative emotionality are at risk for depression and children with both temperamental traits are not a greater risk than those with only one.
Catalino, L.I. & Fredrickson, B.L.	Evaluate whether and how routine activity promote flourishing - a state of optimal mental health.	208	Prospective cohort study	Comparing flourishers to depressed and non flourishers the authors discovered that flourishers respond more positively to pleasant activities, ranging from interacting to learning. The analysis pointed out important differences in flourishers individuals in positive emotionality that modify significantly the capabilities of coping and feeling of well being and that the maintenance of this blossoming is the importance given to ordinary everyday experiences as, for example, chat with a colleague, helping, interacting, playing, learning, spiritual activity and exercising.
Gruber, J.; Kogan, A.; Quoidbach, J.; & Mauss, I.B.	Examine the Psychological health correlates of positive emotion variability versus stability.	N ¹ 244 N ² 2391	Prospective cohort study	In Study 1 participants who experienced greater positive emotion variability throughout the 14 day period reported worse Psychological health including decreased life satisfaction and increased depression and anxiety ($ps < 0.05$). In study 2 participants who reported greater positive emotion variability throughout the previous day reported worse Psychological health and decreased daily and life satisfaction and subjective happiness ($ps < 0.01$).

Table 1. contd....

Authors	Objective	N	Design	Main Results
Bradley,B.P. & Mogg,K.	Ascertain the relationship between personality, mood and memory.	62	Cross-sectional observational study	The results showed a tendency to remember negative information in subjects with depressive mood and personality vulnerabilities.
Lawton,M,P,Winter, L, Kleban,M.H,Ruckdeschel,K	Determine the contribution of objective and subjective quality of life as positive and negative indicators of mental health in a sample of people of the third age.	602	Cross-sectional observational study	The senior-center subjects were more depressed, had less contact with relatives and had lower activity participation than housing residents, but other model elements were not different. The study demonstrated that participation in objective activities, the quality of friendships and family are associated with positive affection and that quality time is associated with both positive affect and depression.
Dowrick,C, Kokanovic,R,Hegarty,K, Griffiths,F, Gunn,J	Verify the importance of developing resilience to handle depression in 100 depressive subjects met in emergency services of hospitals in Australia.	100	Cross-sectional observational study	One-third of the subjects developed sustained resilience by personal resources consisting of internal forces and another third of the sample sustained their resilience in the expansion of positive emotions. The personal resilience appears to be important in patients with experience of depressive symptoms in primary care.
Wood,A.M.;Maltby,J ; Gillett,R; Lingley,P.A.&Joseph,S	Analyze the role of gratitude in the perception of social support, stress and depression.	N ¹ 156 N ² 87 N=243	Cross-sectional observational study	The results confirmed that the gratitude leads to well-being and social support above the effects of Big Five. It suggests a role for gratitude in well-being and social life protecting people from stress and depression even under the effects of the dimensions given in the personality test.
Liu,Q; Shono,M; Kitamura,T.	investigate the relationship between psychological well-being with depression and anxiety.	545	Cross-sectional observational study	The analysis of the results pointed out that people with greater psychological well-being are more resilient and more resistant to adversity than people with low levels of psychological well-being. In this way, this study could provide an useful implication for clinical work in psychotherapy on well-being promotion to prevent and treat depression and anxiety.
Vranceanu,A-M; Gallo,L.C.& Bogart,L.M.	Evaluate the association between personal experiences, the fleeting affections and depressive symptoms in women	108	Cross-sectional observational study	Women with higher levels of depression reported greater negative affect, less positive affect and more interpersonally conflictive interactions across two days of diary monitoring. According to the authors, social interactions are strong contributors to the relationship between depressive symptoms and affect suggesting that interpersonal functioning as a key factor in etiology and maintenance of depression.
Mak,W.W., Ng,I.S.W. & Wong,C.C.Y.	Establish the role of positive cognitive triad in the development of resilience in life satisfaction and depression in a sample of 1419 university students in Hong Kong.	1419	Cross-sectional observational study	The study revealed that positive cognitions are important factors that contribute to the effect of trait resilience on well-being. Educators and psychologists may consider cognitive mechanisms to promote resiliency and well-being.
Alloy,LB, Crocker,J, Kayne,NT	Check whether there would be differences in perceptions of consensus for positive, negative and neutral events in depressive and non-depressive and the effects of these interpretations both on attributive style and on levels of depression.	52	Case-control study	The depression is not affected by the perception of others but by the perceptions of the self that have a direct association with depression and an effect mediated through attributional style for negative events. The authors pointed out the importance for the development of prevention and treatment strategies to determinate the causes of a depressive attributional style.

Table 1. contd....

Authors	Objective	N	Design	Main Results
Sheeber, L.B.; Allen, N.B.; Leve, C.; Davis, B.; Shortt, J.W.; Katz, L.F.	Delineate the dimensions of affective experience in depressive disorder in adolescents. The affect regulation involved in initiating, maintaining and modulating the occurrence, intensity and duration of the experience.	152	Case-control study	The depressed adolescents didn't maintain happy affective states for as long a time as the healthy ones ($p < 0.01$). The authors highlight the deficit of maintenance of positive affect and the longer duration of physiological responses associated with negative affect as a critical mechanism in depression.
Levens, S.M & Gotlib, I.H.	Verify whether depressed participants were also impaired at selecting relevant positive content in the context of representations in working memory (WM) such an impairment would limit depressed person's ability to use positive material to ameliorate the cognitive effects of negative information.	42	Case-control study	The results presented that for the nondepressed participants, interferences levels differed significantly across conditions ($p < 0.001$) and this participants exhibited lower levels of interference in the emotion focus condition in the neutral and the emotion nonfocus conditions ($p < 0.001$). For the depressed group levels did not differ across conditions ($p > 0.05$) and this participants exhibited higher interference levels than did their nondepressed peers in the emotion focus condition ($p < 0.01$). Nondepressed participants showed less interference for positive than for neutral information and depressed subjects showed equivalent levels of interference for positive and neutral stimuli.

Legend: ANEW: Battery of English Words of Affective Contents; BDI: Beck Depression Inventory; BDI - II: Beck Depression Inventory II; BAI: Beck Anxiety Inventory; CES-D: Center for Epidemiological Studies - Depression Measure; DAS: Dysfunctional Attitudes Scale; DRM: Day Reconstruction Method; EAT: The Computerized Edinburgh Associative Thesaurus; EES: Elevating Experience Scale; ERM: Ego-Resilience Measure; ESM: Computerized Experience-Sampling-Method; HS: Hope Scale; Life: Structure Card-Sorting Task; LOT: Life Orientation Test; MAS: Mindfulness and Awareness Scale; MS: Meaning Scale; PANAS: Positive Affect and Negative Affect; PWB: Psychological Well-Being Scale; SBI: Savoring Beliefs Inventory; SCID-I: Structured Clinical Interview for DSM IV-TR Axis I Disorders; SES: Self-Esteem Scale; SH I: Steen Happiness Index; STAI: Spielberger State-Trait Anxiety Inventory; SVS: Subjective Vitality Scale; SWLS: Satisfaction With Life Scale; VIA-IS: Values in Action Inventory of Strengths

Table 2. Summary of Randomized Control Trials Studies on The Role of Positive Emotion and Contributions of Positive Psychology in Depression Treatment

Authors	Objective	N	Delineation	Results
Beck, J.T., Strong, S.R. (1982)	Check the effect of the communication of the therapist on the symptoms of depressive patients.	30	Randomized Clinical Trial	Depressed subjects were given brief therapy with positive connotations and interpretations, with negative connotations and a control group. Although all groups decreased depressive symptoms, the group that received negative interpretations did not continue treatment while receiving positive interpretation persisted in the treatment and have remitted the symptoms. The scales used were: BDI Scale, Personal Mood Inventory and Barrett-Lennard's Relationship Inventory. The degree of significance of personal impression was $p < 0,001$ of controllability was $p < 0,005$, expectation for change was $p < 0,05$ and $p < 0,01$. In the inventory of relationships the p was $< 0,05$ and the only dimension that presented variation was the resistance with $p < 0,005$. In the BDI the p was $< 0,005$ and $< 0,001$. The significance between treatment and duration time and between the positive and negative connotations presented $p < 0,05$.
Joormann et al. (2005)	Evaluate the ability to intentionally forget negative material between depressive and non-depressive.	72	Randomized Clinical Trial	Depressive participants could forget the negative responses and the more they practiced the intentional forgetting of negative material less basic items they resembled on the final test. Used the BDI-II ($P > 0,10$ for the depressed group and $p > 0,50$ for not depressed) and the Battery of English Words of Affective Contents. The practice of suppressing negative words by depressed presented $p < 0,025$ and the memory of the words from the baseline $p < 0,03$ for all groups.

Table 2. contd....

Authors	Objective	N	Delineation	Results
Seligman <i>et al.</i> (2005)	Test of positive psychology interventions to increase happiness using five different strategies and a control strategy.	577	Randomized Clinical Trial	The survey tested if some exercises were effective to decrease depression. To measure the happiness and depression the study used the CES-D and the SHI. At least three of the strategies were effective in increasing individual happiness and reduction of depressive symptoms. For the effects of happiness scores by time and by the interaction found a $p < 0,001$ and depression scores the significance for the time and to the interaction $p < 0,001$.
Seligman, M.; Rashid, T., Parks, A.C. (2006)	Demonstrate the effectiveness of positive psychotherapy in the treatment of depression.	N ¹ = 40 N ² = 32	Randomized Clinical Trial	Positive psychotherapy is used in the treatment of depression by increasing the positive emotion, engagement and meaning. Two groups: one with average to moderate depression and another with a high degree of depression were referred to the positive Psychotherapy and both treatment groups produced decreased levels of depression. The scales that they valued such results were: BDI ($p > 0,003$ to depressive and $p > 0,05$ for control) and SWLS ($P > 0,001$)
Fredrickson <i>et al.</i> (2008)	Check the theory that positive emotions lived repeatedly build personal resources to health.	139	Randomized Clinical Trial	The subjects practiced meditation and produced an increase of positive emotions and as a result of the personal resources which in turn increased life satisfaction and decreased depressive symptoms. MAS Scales, HS, SBI, LOT, ERM, Ryff's PWB, SWLS and CES-D, were used. The relationship between time and meditation presented $p < 0,0001$ and the relationship with the positive emotion had $p = 0,05$.
Huta, V. & Hawley, L. (2010)	Investigate the relationship between psychological forces and cognitive vulnerabilities to study its effects on well-being.	N ¹ 241 N ² 54 N=295	Randomized Clinical Trial	Both in the study with healthy subjects and with depressive ones, the relationship between forces and vulnerabilities is clear, but not listed as mere opposites on a continuum. But both affect well-being. The scales used in the study were VIA-IS, DAS, BDI-II, SWLS, PANAS, SES, SVS, MS, EES. The p in all scales was $p < 0,01$.
Bylsma, L.M.; Taylor-Clift, A. & Rotenberg, J. (2011)	Analyze the relationship of positive emotional reactivity and negative emotional reactivity to everyday events into three groups with major depression, with minor depression and healthy.	99	Randomized Clinical Trial	The depressives have a higher reactivity to daily events enjoyable and less reactivity to unpleasant daily events. Emphasizes also the role of the assessment of the events and the severity of depression in emotional reactivity. The measurements were carried out through the following instruments: BDI-II, BAI, DRM and ESM. Both the BDI-II as the BAI showed $p < 0,001$. Pleasant and unpleasant activities on DRM and the ESM presented $p < 0,05$.
Albarracin, D. & Hart, W. (2011)	Examine the relationship of action and inaction and humor.	N ¹ 87 N ² 139 N ³ 81 N ⁴ 140 N=447	Randomized Clinical Trial	Through four experiments the mood of participants was manipulated to be positive, neutral and negative in terms of variables such as general actions, inactions and neutral concepts. The results showed that positive affect and action concepts produced similar effects in increasing behavioral activity and better performance than concepts of inaction and negative affect. The instruments used were: write about an experience very happy or very frustrating, the Computerized Edinburg Associative Thesaurus, verbal and intellectual ability. The relationship between positive, neutral and negative mood and action and inaction presented $p = 0,04$.
Dagleish <i>et al.</i> (2011)	Relate the number of depressive episodes in interpreting the life structure information for the past and the future in groups with and without depression.	50	Randomized Clinical Trial	The data showed a depressive profile relative to the past with predominance of negative information and vulnerability in depressive group and in participants at remission, but surprisingly the groups showed no significant differences in ratings of life structure for the future. The scales used were SCID, Life-Structure Card-Sorting Task, BDI, STAI and PANAS. The BDI, the STAI and PANAS had $p < 0,005$.

ANEW: Battery of English Words of Affective Contents; BDI: Beck Depression Inventory; BDI - II: Beck Depression Inventory II; BAI: Beck Anxiety Inventory; CES-D: Center for Epidemiological Studies - Depression Measure; DAS: Dysfunctional Attitudes Scale; DRM: Day Reconstruction Method; EAT: The Computerized Edinburgh Associative Thesaurus; EES: Elevating Experience Scale; ERM: Ego-Resilience Measure; ESM: Computerized Experience-Sampling-Method; HS: Hope Scale; Life: Structure Card-Sorting Task; LOT: Life Orientation Test; MAS: Mindfulness and Awareness Scale; MS: Meaning Scale; PANAS: Positive Affect and Negative Affect; PWB: Psychological Well-Being Scale; SBI: Savoring Beliefs Inventory; SCID-I: Structured Clinical Interview for DSM IV-TR Axis I Disorders; SES: Self- Esteem Scale; SH I: Steen Happiness Index; STAI: Spielberger State-Trait Anxiety Inventory; SVS: Subjective Vitality Scale; SWLS: Satisfaction With Life Scale; VIA-IS: Values in Action Inventory of Strengths

Trait Anxiety inventory (STAI - [20]); The Beck Depression Inventory (BDI; [21]) and The Eysenck Personality Questionnaire (EPQ; [22]) which comprises Neuroticism, Extraversion, Psychoticism and Lie Scales. The results showed a tendency to remember negative information in subjects with depressive mood and personality vulnerabilities.

Lawton *et al.* [23] evaluated the contribution of objective quality of life (measured by amount of external social development indicators) and subjective (personal judgment of satisfaction) with aspects of development as positive and negative indicators of mental health in 602 elderly subjects from senior-center and several housing environments volunteers who responded to the Philadelphia Geriatric Center Multilevel Assessment Instrument (MAI; Lawton, Moss, Fulcomer & Kleban; [24]). To measure objective quality of life (OQOL) the composites indices of MAI relating family contact, friends contact and activity participation such as religious attendance, movies, playing cards, eating out or gardening were included. Subjective quality of life (SQOL) was measured by family quality (how much do your relatives make you feel loved and cared for?) by the time quality with interviews about daily aspects of their lives with such questions: How often you want your day to be shorter? Almost everything I do each day is enjoyable (The adjusted goodness-of-fit-index (AGFI; [25])). The senior-center subjects were more depressed, had less contact with relatives and had lower activity participation than housing residents, but other model elements were not different. The study demonstrated that participation in objective activities, the quality of friendships and family are associated with positive affection and that quality time is associated with both positive affect and depression.

Dowrick *et al.* [13] verified the importance of developing resilience to handle depression in 100 depressive subjects met in emergency services of hospitals in Australia. After the emergency care, subjects responded to semi-structured telephone interviews – CATI (Computer Assisted Telephone Interview), lasting an hour, held by phone that addressed participation in depressive experiences, views of the causes of stress, ways to manage depression and stress, social support and health service use. The article focused on the answers given to three specific questions: when did you first realize that you had a depressive stress process or concern and what did you firstly decide to do? Is there anything else that you have tried to do to minimize depression, stress or concern? All that was attempted, what was the most useful? The authors assessed how respondents rate personal resilience when comparing to help received from professional sources. The analysis of the responses claimed that one-third of the subjects presented evidence of resilience supported by social and affective ties. One-third of the subjects developed sustained resilience by personal resources consisting of internal forces and another third of the sample sustained their resilience in the expansion of positive emotions. The personal resilience appears to be important in patients with experience of depressive symptoms in primary care.

Wood *et al.* [8] analyzed the role of gratitude in the perception of social support, stress and depression through two studies. In the first study 156 students responded to The Gratitude Questionnaire-6 (GQ-6; [26]) and Social Support

sub-scale of the college student version of the Interpersonal Support Evaluation List ([27]) and underwent tests as The Center for Epidemiological Studies Depression Scale (CES-D; [28]) and The Perceived Stress Scale (PSS; Cohen & Williamson; [29]). The results showed that gratitude lead to improving levels of social support, promotes lower levels of stress and depression over time. In study two, 87 students have completed the same tests and questionnaires from the study one, plus The Big Five Personality Inventory (BFI; [30]). The results confirmed that the gratitude leads to well-being and social support above the effects of Big Five. It suggests a role for gratitude in well-being and social life protecting people from stress and depression even under the effects of the dimensions given in the personality test.

Liu, Shono & Kitamura [15] conducted a study to investigate the relationship between psychological well-being with depression and anxiety. 545 Japanese University students responded to Subjective Well-Being Scale of Ryff's (SPWB- [31]) and The Hospital Anxiety and Depression Scale (HADS- [32]). All six dimensions of the scales of Psychological Well-being Inventory (Autonomy - AU, Environment Mastery - EM, Personal growth- PG, Positive relationships with others- PR, Purpose of life - PL and Self-acceptance - AS) were moderately negatively correlated with depression and anxiety. The analysis of the results pointed out that people with greater psychological well-being are more resilient and more resistant to adversity than people with low levels of psychological well-being. In this way, this study could provide a useful implication for clinical work in psychotherapy on well-being promotion to prevent and treat depression and anxiety.

In another study, [33] evaluated the association between personal experiences, the fleeting affections and depressive symptoms in women, for that, it was used Ecological Momentary Assessment (EMA-[34]), The Center for Epidemiologic Study of Depression Scale (CES-D; [28]) and handheld computer containing a diary 39 likert-type scale items assessing affect, and the nature of the current or most recent social interaction derived from the Diary of Ambulatory Behavioral States to test the associations among depressive symptoms, social experiences and momentary affect in 108 women that were recruited for two consecutive days of registration on a portable computer their social interactions, their emotional experiences and their depressive symptoms, 50 in 50 minutes, from the time they woke up until the time of sleep. The participants answered questions about mood on their social interactions. Women with higher levels of depression reported greater negative affect, less positive affect and more interpersonally conflictive interactions across two days of diary monitoring. According to the authors, social interactions are strong contributors to the relationship between depressive symptoms and it affects suggesting that interpersonal functioning is a factor key in etiology and maintenance of depression.

Mak, Ng & Wong [10] investigated the role of positive cognitive triad in the development of resilience in life satisfaction and depression in a sample of 1419 university students in Hong Kong. The subjects responded to the following on line tests: The Ego-Resilience Scale [35]; The Chinese version of 10-item Rosenberg Self-Esteem Scale [36];

The 10 item View of the World Scale a Subscale of The Cognitive Triad Inventory [37]; The six- item State Hope Scale [38]; Satisfaction With Life Scale (SWLS; [39]) and The Beck Depression Scale II (BDI-II; [40]) where they were analyzed levels of resilience, vision of themselves, vision of the world, vision of future, life satisfaction and depression. The study revealed that positive cognitions are important factors that contribute to the effect of trait resilience on well-being. Educators and psychologists may consider cognitive mechanisms to promote resiliency and well-being.

PROSPECTIVE COHORT STUDIES

The first prospective cohort study was conducted by Lewinsohn & Libet [41], in order to investigate the relationship between humor and pleasant activities. 30 students were divided into three groups of ten components each. A group was composed of depression, another with anxious disorders or other disorders different from depression and a control group. The participants answered The Pleasant Events Schedule [42] choosed one of the 320 events or activities to engage and at the end of the day, the students indicated in wich activity they had been engaged and their humor was evaluated through The Depression Adjective Check List [43]. The subjects were followed for 30 consecutive days and the study showed a significant association between pleasant activities and mood state suggesting a clinical utility to identify a small number of important activities which are related to the patient's mood state.

Lightsey [9] evaluated if automatic positive thoughts could function as protective factors to stress and depression. 152 volunteers underwent two testing sessions, one at the beginning of the research and another six weeks later. The testing used was The Beck Depression Scale (BDI; [21]), Automatic Thoughts Questionnaire - Positive (ATQP; [44]), Automatic Thoughts Questionnaire (Hollon & Kendall [45]), Life Experience Survey (LES; [46]), The Hassles Scale (HS; [47]) and Happiness Measures (HM; [48]). The interval of six weeks provided the occurrence of stress in the daily life of individuals. The subjects returned for a new follow-up testing three months after. The results confirmed the hypothesis that automatic positive thoughts are predictors of happiness and higher frequency of them was associated with greater future happiness. These findings suggest that positive automatic thoughts had an impact on current and on future well-being. In view of these findings, clinical treatment would focus on increasing patients' positive automatic thoughts which may help to increase happiness and reducing negative automatic thoughts may be important for alleviating depression.

Nezlek & Kuppens [49] examined how 153 subjects regulated their emotions in daily life and how this affected their emotional experiences and their psychological adjustment. For three weeks the participants described as they had adjusted their emotions in terms of reappraisal (consists of changing the interpretation of the situation to lessen the emotional impact) or supression (consists of inhibit external reactions of feelings) of positive and negative emotions and qualified as reevaluating or suppressing the emotional experience according to the model proposed by Gross and John [50] using the following items for reappraisal: "When I try to

feel more or less positive emotions I change what I'm thinking about..." and for deletion: "When I feel positive or negative emotion I take care not to express...". Self-esteem was measured by Rosemberg Self-Esteem Scale [36] and its psychological adjustment in accordance with Beck's cognitive triad for depression of vision of itself, and future sight. The results showed that the reappraisal situations to increase positive emotions was positively related to self-esteem, psychological adjustment and positive affect, in contrast, suppressing the expression of positive emotions was associated with decreased self-esteem, decreased psychological adjustment and increased negative emotions. These analyses suggested that positive and negative emotion played diferentes roles in mediating the psychological adjustment and self-esteem.

Sawyer, Pfeiffer & Spence [11] accompanied 5089 teenagers for one year to investigate the impacts of positive and negative management strategies (ways how people react in the face of situations, behavioral aspect) and optimistic thinking style in depressive symptoms (cognitive aspect). So, it was used the following instruments: The Center for Epidemiological Studies Depression Scale (CES-D; [28]); List of Threatening Experiences Questionnaire (LTE-Q; [51]); Social Problem Solving Inventory – Revised (SIPS-R; [52]); The Self Reporting Coping Scale (SRCS; [53]) and Optimistic Thinking Style ("Beyondblue Schools Research Initiative" [54]). The results showed that teens who made greater use of negative coping strategies and less use of positive coping strategies and optimistic thinking were at increased risk for higher levels of depressive symptoms. These findings suggest that negative life events and negative coping strategies precede and likely contribute to the onset of depressive symptoms while positive coping strategies and optimistic thinking may have a protective effect against depression.

Wenze, Gunthert & Forand [55] investigated the relationship between cognitive reactivity (relationship between thought and mood) and depression. 63 students of Psychology replied to tests: The Center for Epidemiological Studies Depression Scale (CES-D; [28]), The Dysfunctional Attitudes Scale (DAS; Weissman & Beck [56]), Positive And Negative Affect Scale-Expanded Form (PANAS-X; [57]) and Automatic Thoughts Questionnaire (ATQ; [45]). After testing the subjects, during a week, four times a day their mood and thoughts registered on a handheld computer. Six months after, the depressive symptoms were again measured and the participants completed a measure of negative life events: The College Student Life Events Schedule (Sandler & Lakey [58]). The results pointed out that cognitive reactivity remained predictive of follow-up depressive symptom scores ($p < 0.05$) and accounted for 6.1% of the variance in follow-up depressive symptom. Dysfunctional attitudes were predictive of follow-up depressive symptom, controlling for initial depressive symptom ($p = 0.06$) and account for 5.5% of the variance in folow-up depressive symptoms. Cognitive reactivity was somewhat more predictive of follow-up depressive symptom scores in participants who had experienced high levels of life stress. These results indicate that cognitive reactivity serves as a risk fator for the development of depressive symptoms.

Shankman *et al.* [59] assessed if high negative emotionality (sadness, fear, anger) and low positive emotionality (anhedonia, lack of enthusiasm, lack of energy) in children are risk factors for developing depression. The sample of 329 pre-school children was observed in the laboratory in 12 sessions with selected episodes to mention relevant behaviors removed from Laboratory Temperament Assessment Battery (LAB-TAB; [60]) and taxes on EEG were performed in specific environment. The results showed that both low positive emotionality and high negative emotionality are sufficient for conferring risk for depression. Using EEG asymmetry as a marker for depression, the direction of interaction suggests that children with low positive emotionality or high negative emotionality are at risk for depression and children with both temperamental traits are not a greater risk than those with only one. The authors indicated that these temperamental traits may be good targets for preventative strategies.

Catalino & Fredrickson [14] investigated whether and how routine activity promote flourishing - a state of optimal mental health. The authors claim that flourishers experience greater positive emotional reactivity to pleasant events and build more resources over time. To test how positive emotional reactivity in routine activities can promote mental health the authors recruited 208 subjects to during five consecutive weeks respond to The Day Reconstruction Method (DRM) on line and report a typical weekday. Before the participants respond to DRM, the group answered to the following test: The Five Facet Mindfulness Questionnaire [61], The Beck Depression Inventory (BDI; [21]), Beck Anxiety Inventory (BAI; [62]), The Composite International Diagnostic Interview Short Form- Alcohol Dependence and Drug Dependence (CIDI-SF; [63]) and The Mental Health Continuum-Short Form [64]. The result of the testing and implementation of DRM enabled the group was classified as: flourishers (108), non flourishers (67) and depressed (33). Three months after, the subjects who completed the DRM were invited to respond again to The Five Facet Mindfulness Questionnaire [61] in this stage the participants slipped to 178 subjects who was the final sample. Examining the daily lives of flourishers compared to depressed and non flourishers the authors discovered that flourishers respond more positively to pleasant activities, ranging from interacting to learning. The analysis pointed out important differences in flourishers individuals in positive emotionality that modify significantly the capabilities of coping and feeling of well being and that the maintenance of this blossoming is the importance given to ordinary everyday experiences as, for example, chat with a colleague, helping, interacting, playing, learning, spiritual activity and exercising.

Mauss *et al.* [6] investigated whether dissociation between positive emotion experience and behaviors predict two facets of psychological functioning- depressive symptoms and well-being- and if so, whether these effects are mediated by social connectedness. The study used a sample of 135 students and was conducted in three times. Initially there was a survey of levels of depression and well-being were assessed by a Five-item Short Version of The Center for Epidemiological Studies Depression Scale (CES-D; [28]), and The Five-item Satisfaction With Life Scale (SWLS; [39]). In a second moment, six months after, it was verified a positive

excitement and dissociation of behavioral experience by a session where participants watched two minutes of amusing film clip and a laboratory software was used to compute averages for each second of data during the film. Six months after, social connectedness, appraisal social support and belongingness social support were each assessed with Four-item Scales from The Interpersonal Support Evaluation List [65], loneliness was assessed with the Eight-item UCLA Loneliness Scale [66]. The results showed that positive experience-behavior dissociation predicted social connectedness ($p < 0.05$); social connectedness was negatively associated with depressive symptoms ($p < 0.05$) and positively associated with well-being ($p < 0.05$). This study showed that the more participants' positive experience and behaviors were dissociated during a positive emotion induction, the greater levels of depressive symptoms and the lower levels of well-being participants experienced six months later.

In another study, [67] examined the psychological health correlates of positive emotion variability versus stability across 2 distinct studies. The first study used a daily experience approach in 244 adult participants from a U.S. community and they were asked to rate their positive feelings each day before going to bed for 14 consecutive days and indicated how "happy" and "excited" they felt over the past 24 hours on a scale ranging from 1 (very slight/not at all) to 5 (extremely) with combine responses into one positive emotion composite. The authors calculated two scores individually for each participant: positive emotion variation (PE var) as the standard deviation across 14 days and overall positive emotion (PE mean) as the average across 14 days. Participants also completed a self-report version of the Global Assessment of Functioning Scale (DSM-IV), Satisfaction With Life Scale [39], Beck Depression Inventory [21] and The Anxiety Screening Questionnaire [68]. The study 2 adopted a daily reconstruction method in 2391 French adult recruited through a large on line study. Participants were asked to report what they did on the previous day, episode by episode. For each episode participants indicated a positive emotion from The Differential Emotion Scale [69] and again the two scores were calculated the PEvar and the PEmean as the positive emotion average across episodes. The participants completed the Satisfaction With Life Scale [39] and Subjective Happiness Scale [70]. The results showed that the participants of the first study who experienced greater PEvar throughout the 14 day study period reported worse psychological health outcomes including decreased life satisfaction and functioning and increased depression and anxiety ($ps < 0.05$). On the second study participants who reported greater PEvar throughout the previous day experienced worse psychological health outcomes with decreased life satisfaction, daily satisfaction and subjective happiness ($p < 0.01$). These findings support the notion that positive emotion variability plays an important role in psychological health above overall levels of happiness, and that too much variability might be maladaptive and might increase anxiety and depression.

CASE-CONTROL STUDIES

In the first case-control study, [12] examined whether there would be differences in perceptions of consensus for positive, negative and neutral events in depressive and non-

depressive and the effects of these interpretations both on attributive style and on levels of depression. To this end, 52 subjects were divided according to The Beck Depression Scale (BDI; [21]). 23 subjects were classified as depressed, 22 subjects were classified as nondepressed and seven participants were classified neither depressed nor nondepressed. In this phase the subjects were divided into groups of five to ten participants and for an hour responded the following questionnaires in a booklet: The Beck Depression Scale (BDI; [21]), The Attributional Style Questionnaire (ASQ; [71]) and a event questionnaire contained 45 statements written in second person that described positive, negative and neutral interpersonal and achievement events. The results indicated that positive events were rated as having happened more often than negative or neutral ($p < 0.0001$). A main effect of target across all event types suggested that the events were rated as happening more to others than to itself ($p < 0.0001$), an interaction between target and depression indicated that this pattern was truer for depressed participants than nondepressed ($p < 0.01$) and an interaction between event type and target in nondepressed subjects, indicated that positive events were rated as more likely to happen to itself than to others, whereas negative and neutral events were rated as more often to happen to others than to the self ($p < 0.0001$). The depression is not affected by the perception of others but by the perceptions of the self that have a direct association with depression and an effect mediated through attributional style for negative events. The authors pointed out the importance for the development of prevention and treatment strategies to determinate the causes of a depressive attributional style.

Sheeber *et al.* [5] focused on delineating the dimensions of affective experience in depressive disorder in adolescents. The affect regulation involved in initiating, maintaining and modulating the occurrence, intensity and duration of the experience. The affective behaviors of 75 adolescents with major depression were compared to a matched cohort of 77 healthy adolescents and the participants were submitted for these tests: The Center for Epidemiological Studies- Depression Scale (CES-D; [28]), The Diagnostic Interview Kiddie-Sads Trace (K-SADS) [72], The Positive and Negative Affect Scale-Expanded Version (PANAS-X; Watson & Clark [57]), The Meta Emotion Interviews (MEI/CHILD-MEI; [73]) and Behavioral Observations: The Living in Family Environments System (LIFE; [74]). The results showed that depressed boys and girls showed relative duration of dysphoric and angry affect, in particular, depressed boys and girls remained in angry states longer ($p < 0.01$) and depressed girls also remained in dysphoric states longer, than did their healthy peers. The depressed adolescents didn't maintain happy affective states for as long a time as the healthy ones ($p < 0.01$). The authors highlight the deficit of maintenance of positive affect and the longer duration of physiological responses associated with negative affect as a critical mechanism in depression.

In the last case-control study [7] examined whether depressed participants were also impaired at selecting relevant positive content in the context of representations in working memory (WM) such an impairment would limit depressed person's ability to use positive material to ameliorate the cognitive effects of negative information. The authors re-

cruited 42 subjects and according to The Structured Clinical Interview for the DSM-IV (SCID [75]) divided in 20 depressed and 22 healthy and administered Emotion Regency-probes task based on research by Monsell [76] with positive words, neutral and negative content where 260 words with emotional content and 330 neutral words from the Affective Norms for English Words (ANEW; [77]). The results presented that for the nondepressed participants, interferences levels differed significantly across conditions ($p < 0.001$) and this participants exhibited lower levels of interference in the emotion focus condition in the neutral and the emotion non-focus conditions ($p < 0.001$). For the depressed group levels did not differ across conditions ($p > 0.05$) and these participants exhibited higher interference levels than did their non-depressed peers in the emotion focus condition ($p < 0.01$). Nondepressed participants showed less interference for positive than for neutral information and depressed subjects showed equivalent levels of interference for positive and neutral stimuli.

RANDOMIZED CLINICAL TRIALS

Beck & Strong [78] investigated the effects of positive and negative connotation of the speech therapist about the symptoms of depression. The aim of the study was to compare the results of different interpretations of therapists to stimulate changes in depressed patients. For that, 84 students responded to the Beck Depression Inventory [21] and the 30 who had scores between eight and 31 were selected for the study (moderately depressed). The participants were divided into three groups of 10 where a group participated in two interviews with positive interpretations, the other group had two interviews with negative interpretations and the third group was the control and the two sessions only answered BDI Scale, Personal Mood Inventory [79] and Barrett-Lennard's Relationship Inventory [80]. A month after the second interview all students were contacted again and retested in two sessions. At the end of the first interview of the posttest the therapist assigned students a task to perform every day until the next interview, such as walking in a park and greeting a stranger, visiting a friend, or going to the Student Union and saying hello to someone. The difference between the control group and the groups that received intervention was statistically significant ($p < 0.005$). From the 20 subjects who participated in the interviews 16 reported in posttest that suffering had declined or disappeared. The group that received positive interpretations, nine students responded that the mood was no longer a problem for them while five students of the group that received negative interpretation reported that their mood continued to be a problem that causes suffering. This study identifies the interpretation with positive connotation as a therapeutic method facilitator of change to the depression.

Joormann *et al.* [81] examined whether depressive patients could intentionally forget negative material. 72 volunteers were divided between depressive and non-depressive according to DSM IV Structured Clinical Interview (SCID [75]) and responded to the Beck Depression Scale II (BDI-II; [40]) (the average score for the 36 subject of control group was 1.8 and the average for the depressive group 36 was 27.5). The first phase was the learning moment and 36 words negative content, neutral 36 positive and 36 were selected

from the Battery of English Words of Affective Contents [77] (ANEW: 1999) and were paired to be presented to the participants and be memorized. The sessions lasted from 60 to 90 minutes and the first phase was to learn where 43 pairs of words were presented on the computer screen for five seconds each. The participants were instructed to study the words for later testing. At the end of this phase, the subjects were tested and needed to get 50% correct to follow for next step. The participants that do not achieve the goal answered to the Beck Depression Scale II (BDI-II; [40]) tests and Strategies Questionnaire and not progressed.

In the second phase, the participants were instructed not to think in the words that appeared on the computer in red and to answer and memorize the words that appear in green. Half of the participants were asked to suppress positive words and negative answer and the other half the other way around. In the third phase, the subjects were instructed to remember all the words of the learning phase and the words deleted and remembered and in this stage each word appeared in black by four seconds on the computer. The group without depression presented a percentage of 84% for remembrance of positive words deleted and reinforced negative versus 83% for the reverse situation. The depressive group presented 85% for recalling words that suppressed the positive content and reinforced the negative against 73% for remembrance that suppressing the negative content words and stressed the positive. The study showed that depressive participants managed to intentionally forget negative words content and suggests that this training can become a strategy able to combat negative thoughts of depressive rumination.

Seligman *et al.* [3] have developed research in order to prove the effectiveness of positive psychology interventions to increase happiness. The survey was conducted online and the authors prescribed five exercises to increase happiness and a placebo control. An exercise focused on developing gratitude (write a letter of gratitude and delivering it to someone important), two focused on developing talents and strengths (identifying personal strengths and using their strengths in different ways), two emphasized making patients what was good in them (you at its best - they reported a time where they were happy and what forces were at that time and three good things in life where they described three situations that were good on the day and causes). The placebo group was writing exercise for a week about recent memories. In this sense, 577 participants were recruited on line in a month and completed two questionnaires, The Center for Epidemiological Studies-Depression Scale (CES-D; [28]) and The Steen Happiness Index (SHI; [3]). The subject visited a specific Web site where they were encouraged to print the instructions and perform the same exercises during a week and then return to the Web site to completed follow-up questionnaires in one week, one month, three months and six months and answered the same measures of happiness and depression. Only 411 subjects completed the five follow-ups and were considered statistically. The results showed that two of the exercises (using their personal strengths and three good things in life) increased levels of happiness and depression symptoms decreased for six months. The exercise of gratitude visit generated positive changes for a month and the other two exercises and the placebo showed transient effects on levels of happiness and depressive symptoms.

Research has shown that exercises that emphasize personal and positive emotion forces immediate effect by increasing the levels of happiness and reducing depressive symptoms.

In another study, [16] produced two surveys in order to prove the effectiveness of positive psychotherapy, one with medium to moderately depressed adults and another with severely depressed adults. The first study described 40 moderately depressed subjects with scores between 10 and 24 on the Beck Depression Inventory-II (BDI-II; [40]) were recruited. Nineteen participants were submitted to positive psychotherapy, 21 of the control group were not submitted to psychotherapy. The treatment lasted six weeks with sessions of two hours duration. Both groups were tested soon after the intervention, three months, six months and one year after the intervention with the following instruments: The Beck Depression Scale II (BDI-II; [40]) and The Satisfaction With Life Scale (SWLS; 1985).

Participants who have undergone positive psychotherapy showed decrease of depressive symptoms and increased satisfaction with life during the intervention and this result is sustained over time. In the second survey reported by the authors, 32 severely depressed subjects were allocated in three modes of intervention in order to analyze its effects. Eleven have undergone positive psychotherapy with only 14 sessions following the protocol proposed by the authors. Nine were subjected to the usual psychotherapy treatment depression and were attended by five psychologists and a last group of 12 individuals in addition to the usual psychotherapeutic treatment made use of antidepressants. After the interventions the participants were subjected to the following tests: Hamilton Rating Scale for Depression (HRSD; [82]); Zung Self-Rating Scale (ZSRS; [83]); Outcome Questionnaire (OQ; [84]); The Satisfaction With Life Scale (SWLS; [39]) and were assessed for the remission of depression symptoms. The results indicated that the positive psychotherapy performed better than the others with margin calls results in all instruments. In PPT group ZSRS presented 43.27 score against 54.67 from usual treatment and 55.70 from usual treatment plus medication. In Outcome Questionnaire, the PPT group scored 45.82 versus 63.67 and 55.50. And in the SWLS, the score was 21.91 against 19 and 18.50, increasing the positive emotion, engagement, meaning and significantly, reducing the levels and depression symptoms.

Fredrickson *et al.* [85] conducted a survey in order to investigate the effects of loving-kindness meditation on health and well-being. The 139 subjects were divided between 67 that initially would receive training in meditation and 72 that would be initially from the control group. For nine weeks, all participants were instructed to practice this meditation and to access a Web site in order to complete the following questionnaires: Mindfulness and Awareness Scale [86]; Hope Scale [38]; Savoring Beliefs Inventory [87]; Life Orientation Test LOT: [88]; Ego-Resilience Measure [35]; Psychological Well-Being Scale [31]; Dyadic Adjustment Scale [89]; Positive Relations With Others, [90]; Satisfaction With Life Scale [39] and Center for Epidemiological Studies - Depression Measure CES-D; [28]. After a week of response to the questionnaires the group of 67 subjects participated in a workshop with daily practice of meditation and every day the subjects visited the Web site and reported their

emotions and the time spent with meditation the day before and completed the Modified Differential Emotions Scale (mDES; [91]) on-line monitoring continued for another week after the workshop ended. At the end the participants completed the same instruments as a posttest. Two months after, the meditation workshop began to the control group of 72 subjects, but there were no further measurement. The study showed that participants who invested an hour per week practicing meditation significantly increased their positive emotions in everyday situations of life, their social interactions and their personal resources and reduced their symptoms of depression.

Huta & Hawley [92] conducted two surveys with healthy individuals and depressive to verify the role of personal strengths and vulnerabilities in well-being. In the first study 241 healthy participants attended search on line where the focus was to analyze the influence of positive well-being about the negative affect and depression. Subjects completed a survey on line and then answered to the following inventories: Values in Action Inventory of Strengths (VIA-IS; Peterson & Seligman [93]); Dysfunctional Attitudes Scale DAS; [56]; Beck Depression Inventory Second Edition BDI-II; [40]; Satisfaction With Life Scale SWLS; [39]; Positive Affect and Negative Affect [94]; Self-Esteem [95]; Subjective Vitality Scale [96]; Meaning [97] and Elevating Experience, [97]. The results pointed an interaction between strengths and vulnerabilities and suggest that personal forces protect people against harmful effects of vulnerabilities. The second study reported in the article presented 54 depressive individuals, with a minimum score of 14 in the Beck Depression Scale II (BDI-II; [40]), which were submitted to cognitive-behavioral protocol of the book *The Mind over mood: change how you feel by changing the way you think* [98] before and after respond to the survey with the instruments previously reported on the first study of the article. The focus of the second study was to analyze the relationship between forces and vulnerabilities in depressed. The results reinforce personal forces have main role in reducing depressive symptoms and points out that three forces in particular promoted the recovery of depression: hope, appreciation to the beautiful and excellence and spirituality.

Bylsma *et al.* [99] evaluated the emotional reactivity to daily events in depressive and healthy subjects. 99 participants after answering the Structured Clinical Interview for DSM IV-TR Axis I Disorders (SCID-I) were divided into three groups: 35 with major depression, 26 with minor depression and 38 healthy and they were submitted to Computerized Experience-Sampling-Method (ESM; [100]). For three consecutive days the subjects recorded in a handheld computer programmed to sound an alarm 10 times during the day (between 8 a.m. and 11 p.m.) to the individual account of humor and the context and nature of the most important emotional events that had occurred since the last record. After the three days of ESM logs the handheld was returned and the Day Reconstruction Method (DRM; [100]) was answered. DRM requested participants to rebuild the previous day structuring it as a continuous series of episodes describing details such as what they were doing, time of episodes, and thoughts and feelings involved. While the subjects submitted to DRM they answered Beck Depression Inventory-II (BDI-II; [40]); and The Beck Anxiety Inventory (BAI; [62]).

The results showed that the depressive subjects report their failures, highest rates of negative affect and negative social interactions while healthy participants report their successes, positive affection and positive social interactions and that the depression participants are also more reactive nicely to daily events that healthy ones.

Albarracín & Hart [101] reported four experiments that examined the relationship between action, inaction and humor. In the first experiment, 87 psychology students were induced to experience happiness and anger and wrote a letter to a friend about a personal living experienced happiness, frustration or anger. Participants who would try neutral mood were asked to write about a typical day in their lives. Five minutes after that, completed sentences with 20 neutral, positive and negative words that connoted both action (motivation, make, behavior, engaged, action, do, go and active) and inaction (still, pause, interruption, calm, cripple, unable to stop and freeze). The task is part of the Computerized Edinburg Associative Thesaurus [102]. Shortly after, the subjects completed 21 issues accessing verbal ability (antonyms, complete sentences and analogies) and mathematical ability (resolution of problems and algebraic equations). The results showed that participants in positive mood and neutral conditions showed better performance in terms of action while the negative mood showed conditions for inaction.

In the second experiment, 139 participants completed the same sentences with words of neutral content (button, cement, chair, lock, pencil, carpet and paper), and the humor was also induced to happiness and anger. Shortly after the subject participated in a decision test where a story was received to be read ("Mr. Miller"; [103] and after reading this material were asked to choose between 12 titles of articles that were relevant to reaching a decision. The numbers of articles that the subjects read were taken into account and the result showed that the design of action increased the selection of articles on subjects who have experienced positive mood and that it decreased in participants who experienced negative mood. In the third experiment, a sample of 81 participants were induced to experience happiness and anger and soon after the organizing and completing scrambled sentences using words of inaction (first experiment) and neutral words (second experiment). On the next moment they received a celebrity photo for review and then they answered questions about what the recall from the image. The results also revealed an association with positive humor and action and negative mood with inaction influencing on memory performance. The experiment four replied the first with 140 students of Psychology except that negative mood induced was the sadness instead of anger. The four experiments that reinforced the negative affect thwart the activity and increase the inaction while the positive affect enhance and reinforce the action as well as the performance.

Dalgleish *et al.* [104] recruited 50 volunteers who completed the Structured Clinical Interview for the DSM-IV Axis I were divided into 16 depressed, 17 remitted depression at least for three months and 17 never depressed in order to verify the structure of life. A week later the subjects were submitted to Life-Structure Card-Sorting Task proposed by Zajonc and adapted by Linville [105] where they were asked to divide their lives into chapters and instructed

to write their story using the words set out in 46 cards both for the past and for the future. Immediately after that they answered to the following tests: Beck Depression Inventory (BDI; [40]), the Spielberger State-Trait Anxiety Inventory (STAI; [20]) and Positive Affect Negative Affect Scale (PANAS; [94]). The data showed a depressive profile relative to the past with predominance of negative information and vulnerability in depressive group and in participants at remission, but surprisingly the groups showed no significant differences in ratings of life structure for the future. This research points out that even with a history of depression people can contemplate the future not as a mere projection of the past.

DISCUSSION

In this study we aimed to conduct a systematic review of the literature on the impact of positive emotion in the treatment of depression and on the use of strategies of positive psychology that involves positive emotion to treat and reduce symptoms of depression. It has been observed through the studies, [3, 16, 85, 8, 11, 92, 10, 14] that strategies of positive psychology have impact on signs and symptoms of depression, as well as seeming to prevent and increase well-being, producing protective elements, such as resilience and coping capabilities that reduce relapses in the treatment of depression. The positive emotion and the relations with depression and well being was observed through the studies [9, 23, 12, 49, 13, 5, 15, 55, 67, 59, 6].

The positive psychology, according to Wood & Tarrier [2] introduced a new form of treatment which puts in evidence the study of virtuous aspects of human nature in addition to developing personal forces believing that the same work as protectors against the disease. In this context [17], the positive psychology is the science of qualities and resilience.

Based on the analysis of selected studies on depression and positive psychology as certain a vast repertoire of strategies in order to increase the positive emotion and promote cognitive opening necessary for the treatment. A lot of strategies were used successfully, we emphasize the pleasant activities as religious service, watching movies, playing cards, eating out, gardening [23, 41], mindfulness [85, 14], meditation [85], gratitude [8], the development of positive cognitions through the restructuring of negative content thoughts [7], changing the style of thinking from pessimist to the optimist [12, 11, 10]), social connectivity [6], developing talents and strengths to increase coping strategies [3,85,8]), expanding social support network in order to develop resilience and well-being, positive emotion, engagement, achievement, and positive relationships ([13, 8, 11, 14, 6, 10].

All the techniques used in the surveys [11, 2, 10, 7, 78, 92] aim to reduce vulnerabilities, enhance personal forces and resources to lessen the impact and therefore the losses generated by depression and thus develop resilience and well-being.

In [33,10,11,55,12,101] stressed the importance of positive social relationships support generators as support for the development of resilience and reducing the levels of stress

and depression, indicating therapeutic possibilities to strengthen social support network.

The positive cognitive triad (positive view of yourself, of the world and of the future), automatic positive thoughts and optimistic were highlighted by Crocker, [10-12] as generators of satisfaction, resiliency and reducing levels of depression. In this context, psychologists must develop strategies in order to teach their depressive patients the importance of the development of positive cognitive triad, and optimistic style of automatic thoughts positive. According to Dalgleish *et al.*, [104] it was observed that individuals with a history of depression and with negative information and vulnerability in the life on the past and on present, surprisingly managed to contemplate the future not only as a mere projection of the past. This finding challenges the literature that claims that the negativity and hopelessness are present on the vision of future of depressive and brings the possibility of therapeutic intervention in this cognitive aspect.

The behavioral aspect is also reviewed [23, 85] that emphasize the role of pleasant activities in order to reduce the intensity of the depression, through the engagement in pleasant activities to minimize depression and produce well-being.

Another fundamental aspect of positive psychology is to develop personal forces like: talents, strengths and abilities in patients with much vulnerability, because these personal forces are protective elements and produce well-being [18,10,78,92] allege that the forces have key role in reducing depressive symptoms and demonstrated in their research that three forces: the hope, the appreciation of the beautiful and excellence and spirituality, promoted depression recovery despite cognitive vulnerabilities submitted by individuals.

It was observed [9, 19, 49, 11, 14, 10, 3, 16, 85, 92, 6, 67] that the development of positive emotion has led to a better psychological functioning and consequently a reduction of symptoms of depression.

A limitation of the study, however, lies in the fact that most articles have produced qualitative results showing the improvement of patients in behavioral terms. It would be interesting that new studies focus on production of quantitative data with statistical treatment.

CONCLUSION

On the basis of selected articles it was established that the strategies of positive psychology are potentially effective tools for the prophylaxis and treatment of depression. The positive emotion, in fact figured in many strategies used in the presented research [9, 19, 49, 11, 14, 10, 3, 16, 85, 92, 6, 67] and is directly related to the improvement of the levels of depression. Increasing positive emotion, developing personal forces, seeking direction, meaning and engagement for the daily patient proved to be important and meaningful strategies for reducing the signs and symptoms and relapse, so applicants in depression [78, 18, 10, 6, 14].

The applicability of the findings of this study is characterized by a range of strategies which are important therapeutic procedures for reduction levels of depression. However, the use of a repertoire of differentiated strategies hindered a comparative analysis of the effectiveness of treatments and

the accession and evasion of it. In this sense, it would be interesting more researches to be carried out using a limited number of strategies, this way comparative analysis can be performed.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflicts of interest.

ACKNOWLEDGEMENTS

Declared none.

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Received: July 16, 2013

Revised: September 16, 2013

Accepted: September 16, 2013

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