

# **Masterthesis**

## **Effect and Use of Positive Psychology Interventions in Clinical Practice. A Systematic Literature Review.**

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## **Abstract**

Positive psychological interventions [PPI] might offer a new way in the treatment of mental disorders. In contrast to regular treatment which mostly focuses on deficits and symptoms, PPIs focus on positive aspects such as happiness or strengths of the individual. It has been suggested that clinical populations might also benefit from PPIs. Therefore, this systematic literature review investigates the use and effect of PPIs within clinical populations to examine their potential for clinical practice. The literature search was conducted in May 2017 and includes 14 studies which used PPI as or within a treatment of mental disorder. PPIs were found to be effective in the reduction of symptoms and increase of well-being and life satisfaction and were even effective or more effective than regular treatment when compared to it. Further, users of the treatment showed good user acceptance and satisfaction. However, regarding use of the PPIs no real tendency could be found as a wide variety of different PPI treatments was offered within the included studies. Therefore, this review concludes that PPIs are a promising therapeutic approach which might be implemented into regular treatment in the future. Yet, more effect research is essential for this implementation.

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# **1 Introduction**

## **1.1 Relevance**

According to the World Health Organization mental health “is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively, and is able to contribute to his or her community” (WHO, 2004). Given this definition, mental health is more than just the absence of psychopathology. This definition implies that subjective emotional well-being and positive functioning are crucial elements of mental health (Bolier, Haverman, Westerhof, Riper, Smit & Bohlmeijer, 2013b). However, most treatments for psychopathologies like Cognitive Behavioral Therapy [CBT] aim to reduce the impact of a mental disorder, but do not focus on improving well-being. Therefore, treatment options are needed that improve well-being in the common treatments for mental disorders. One promising method to achieve this might be the use a positive psychology intervention [PPI]. As promising as this rather new field of psychology looks, there is a lack of knowledge about the use and effect of PPIs for people suffering from mental disorder. Hence, there is need to gather systematic evidence of the use and effects of PPIs in these settings. Therefore, this study will use common systematic review methods to gather knowledge over PPIs used for clinical populations. Finally, a conclusion will be drawn based on the available literature which might help healthcare professionals to make a more informed decision on positive psychological intervention for people suffering from mental disorder.

## **1.2 Mental health**

The study at hand will follow the mentioned WHO definition of mental health. Therefore, full mental health consists of three key elements and the absence of mental disorders (Keyes & Magzar-Moe, 2003). Well-being can be described as a multidimensional construct with three key elements which will be discussed in the following section.

The first element, emotional well-being, consists according to Ed Diener (1984) of three aspects which are the amount of positive feelings, the amount of absence of negative feelings and the amount of which the individual is happy with his or her own life. In two recent reviews, emotional well-being was found to be associated with a better healthier and longer life and also faster recovery from illness (Diener & Chan, 2011; Lamers, Westerhof, Bohlmeijer, Klooster & Keys, 2011). The second element, psychological well-being can also be described as self-fulfillment or self-realization. According to Ryff (1996) there are six key dimensions of psychological well-being: Environmental mastery, personal growth, purpose in life, autonomy, self-acceptance and positive relationships. The last element of well-being is

social well-being. According to Keys (1998) there are five dimensions of social well-being which are social integration, social contribution, coherence, actualization, and acceptance.

Additionally, there can be made a distinction between well-being and symptoms of pathology. In the two continua model, there is made a clear distinction between these two concepts. Westerhof and Keys (2010) argued that there is the pathogenic and the salutogenic approach of mental health which can be seen as two different but related factors. The results of a recent study among Dutch adolescents indicated that people who score high in well-being generally have less pathology. However, there are participants with a mental disorder that scored high in well-being and people without mental disorder that scored low in well-being (Lamers et al., 2011). Therefore, causality between these two factors remains unclear.

Nevertheless, this research indicates that well-being can be a predictor of pathology. According to Lamers (2012), well-being can be seen as a protection of pathology as most people who start suffering from mental disorder have a decrease of well-being three month earlier. Hence, promoting well-being might be an effective strategy to prevent pathology, improve productivity and reduce health care uptake (Keys, 2007; Huppert, 2004)

Other benefits of well-being follow from the broaden and build theory. According to the broaden and build theory, positive emotions which are part of the multidimensional concept of well-being, broaden an individual's attention, cognition and behaviour on the short term. This broaden-effect leads to the building of resources of social, cognitive and physical assistance in the long term. This effect is referred to as build effect (Fredrickson, 2001).

According to this theory people can benefit from positive emotions in the long and short term. Therefore, finding ways to systematically enhance well-being can be seen as an important challenge of psychology, because it can positively contribute to mental health, well-being and might even be a promising way to prevent pathology.

As promising as this information might seem in the treatment of mental disorders, mental health is still mostly seen as the absence of mental disorders (Westerhof & Keyes, 2010). Focusing on psychopathology in clinical practice has led to an effective reduction of pathological symptoms but this does not necessarily include the enhancing of well-being (Rashid, 2009). Therefore, treatments like CBT might be further improved by promoting mental health as a multidimensional construct, which includes the promotion of well-being. This could provide the opportunity to make patients more resilient, perceive more subjective wellbeing and build up important resources of social, cognitive and physical help. One of the fields within psychology that is concerned with the promotion of emotional, physiological and social well-being and goes in line with a multidimensional concept of mental health is

positive psychology.

### **1.3 Positive psychology**

Within psychology the subdiscipline positive psychology is concerned with the study of positive emotions and positive character traits (Seligman, Steen, Park & Peterson, 2005). This field was pushed within modern psychology by Seligman and Csikszentmihaly's in 2000. They claimed psychology should, instead of focussing mainly on pathology and the healing of it, concentrate more on positive traits and the promotion of them, because they have the possibility of preventing pathology and enhance well-being as a whole (Seligman & Csikszentmihaly, 2000). Since this publication more than 18.000 articles have been published in the field of positive psychology and the amount of citations can be compared to other subdisciplines like social psychology (Bolier et al, 2013b). The intention of positive psychology is to have a more complete understanding of the human being, which includes the negative and the positive experiences (Selingman, et. al, 2005). Therefore, positive psychology is concerned with understanding the relation and interaction between suffering and happiness and interventions that might promote well-being and reduce suffering (Seligman, et. al., 2005). A further aim is to learn how individuals and communities can build their qualities to flourish (Seligman & Csikszentmihalyi, 2000). Summarizing, it can be said that positive psychology aims to promote mental health in the sense of the WHO definition. This ambition is important because it might have the potential to prevent pathology, enhance resilience of people and let them cope better with stressors of everyday life (Keys, 2007; Huppert, 2005; Cohn & Fredrickson, 2009). One way to achieve this is the use of PPIs.

### **1.4 Positive psychological interventions**

The core ambition of positive psychology is to use scientific knowledge to improve well-being. This ambition resulted in the development and use of PPIs. These interventions can for example aim at strengthening positive emotions and the awareness of those, formulating one's values, intrinsic needs and talents, handling life goals in a positive and optimistic way and dealing with suffering and setbacks. Seligman and colleagues (2005) were the first to develop different short interventions that can be used in supervision of a psychologist or by an individual alone. These short interventions are 'Gratitude visit', 'Three good things in life', 'You at your best', 'Using signature strengths in a new way' and 'Identifying signature strengths'. In a first evaluation of the effectiveness of these interventions 'Using signature strengths in a new way' and 'Three good things' seemed to have the strongest effect on

happiness and depressive symptoms. Increased happiness and decreased depressive symptoms could be measured in participants of these interventions (Seligman, et al., 2005). Within the intervention ‘Using signature strengths in a new way’ participants identify their strengths and apply them in a creative way to their everyday problems. Within the intervention ‘Three good things in life’ participants are asked to write down three good things that happened to them at the end of each day. From these interventions, different forms and applications have been developed. However, it is also argued by Seligman and colleagues (2005), that there is a need for more effect research on these kinds of interventions. Over the last 10 years more effect research have been conducted and a first meta-analysis on this research occurred including 39 studies and 6139 participants from non-clinical population in total (Bolier et al., 2013b).

### **1.5 Effectiveness of PPIs in non-clinical population**

Effect studies for these kinds of positive psychological interventions have been analysed in a recent meta-analysis by Bolier and colleagues (2013b). They conducted a meta-analytic study of the effect of PPIs for non-clinical population (Bolier et. al., 2013b). Almost forty articles were included in the study resulting in a total sample size of 6139 participants. The used interventions were self-help interventions, group training and individual therapy with the outcome measures subjective well-being, psychological well-being and depression. The results indicated that PPIs effectively enhance well-being and reduce depressive symptoms (Bolier et. al, 2013b). According to Bolier and colleagues (2013b) the effects were still small but significant in a follow-up test three or six month after the intervention. These positive effects on well-being and the reduction of depression symptoms might also have a positive influence on clinical populations. Yet, there is a lack of systematic evidence for the use of PPIs for people with a mental disorder. Hence, there is a strong need for peer reviewed studies especially with clinical populations (Bolier et. al., 2013b) to establish evidence for the use of this interventions for clinical populations.

### **1.6 Positive psychological interventions in clinical practice**

To promote PPI within clinical practice, Rashid (2009) argues that psychotherapy can be more than symptom reduction of mental disorder and could be a place where patients can talk about and enhance their positive feelings and strengths next to the treatment of their mental disorder. This goes in line with Keyes (2003), who proposes a psychotherapy with the focus on full mental health and not only the absence of mental disorders. “Psychotherapy needs to be a hybrid enterprise, alleviating deficits as well as promoting happiness.”

(Rashid, 2009, p.467). By adding interventions that enhance well-being into psychotherapeutic practice, patients could receive treatment which improves full mental health.

This means that PPIs might further improve the effect of treatment in clinical practice. Two examples for the implementation of PPIs in clinical practice are positive cognitive behavioural therapy and well-being therapy. Positive cognitive behavioural therapy is more focused on the strengths and abilities of the client than the regular CBT, which focuses on the suffering and negative symptoms. It is enhanced through added positive psychology aspects and interventions, which aim to improve well-being of individuals. The main aim is to make individuals more resilient by focussing on the personal strengths and abilities (Prasko et. al., 2016). Therefore, positive CBT will be included in this systematic literature review. Well-being therapy will be excluded from this research as it will be topic of a similar systematic literature review (Ontas, 2017). Therefore, this research will review effect research on PPT and PPI within clinical practice.

### **1.7 Research question**

This research will focus on the use and effect of PPIs within clinical populations and answer the following research question:

1. How are PPIs used in the treatment of mental disorder?
2. What are the effects of PPIs, used in the treatment of mental disorder?

## **2. Method**

This research will follow the guidelines of a systematic literature review of Meta-analyses (Pim Cuijpers, 2016). Important and relevant databases were searched to find studies about positive psychological interventions for people suffering from mental disorder. Main objectives of the study at hand were to analyse PPIs regarding their use and effect within existing or as a standalone treatment for mental disorders. These findings were summarized and a conclusion was drawn to answer the research questions.

## **2.1 Databases**

According to Cuijpers (2016) there are three important bibliographical databases that should be used to conduct a systematic literature review. These databases are Pubmed, PsycInfo and the Cochrane Central Register of Controlled Trials [CENTRAL]. Additionally, the citation based database Scopus will be included. The use of a citation based database offers the possibility to view articles that cite the articles that were included thorough regular database searching. This function offers the possibility to identify additional studies that meet the inclusion criteria (Cuijpers, 2016). These four databases were used conducting the search for this systematic literature review. Additionally, studies were identified through references of included literature. The search was conducted in May 2017.

## **2.2 Search terms and search filters**

The search was performed using the main search terms positive psychology, positive interventions and PPI. The last search term is an abbreviation for positive psychology interventions. These search terms were combined using the operator “OR”. Since PPI can also be an abbreviation for other terms such as “prepulse inhibition” and “psychopathic personality inventory”. These terms were excluded by using the operator “NOT”. Furthermore, the main search terms were in sequence combined with the search terms “mental disorder”, “mental disease”, “mental health care”, “psychotherapy” and “clinical psychology”. The additional search terms were combined with the main search terms with the operator “AND”. As positive cognitive behavioural therapy is also included in this research two more main search terms “positive cognitive behavioural therapy” and “positive CBT” were included. However, these two search terms were not combined with additional search terms as records retrieved were already specific enough (Cuijpers, 2016).

The search terms were found by looking into studies that meet the inclusion criteria (Cuijpers, 2016). In Table 1 an overview is presented of the search terms and their combinations.

Table 1. *Main search terms and additional search terms*

Main search terms	Additional search terms	Combination
Positive psychology OR positive interventions OR PPI*	Mental disorder	Positive psychology OR positive interventions OR PPI AND mental disorder
Positive psychology OR positive interventions OR PPI*	Mental disease	Positive psychology OR positive interventions OR PPI AND mental disease
Positive psychology OR positive interventions OR PPI*	Mental health	Positive psychology OR positive interventions OR PPI AND mental health
Positive psychology OR positive interventions OR PPI*	Psychotherapy	Positive psychology OR positive interventions OR PPI AND psychotherapy
Positive psychology OR positive interventions OR PPI*	Clinical psychology	Positive psychology OR positive interventions OR PPI AND clinical psychology
Positive cognitive behavioural therapy		Positive cognitive behavioural therapy
Positive CBT		Positive CBT

\*prepulse inhibition and psychopathic personality inventory were excluded using the operator “NOT”

Additionally, the results were limited by using search filters (Cuijpers, 2016). The following section lists the search filters that were used in every database. In the database Pubmed after entering the search terms, the filter functions on the left side were used. The articles were limited to clinical studies and clinical trials. In the databases Psycinfo and CENTRAL no search filters were used. In the database, Scopus after entering the search terms the following filters were used on the left side of the webpage. A subject area filter was used to limit the findings to psychology. Further only documents with the type article and written in English were included.

### 2.3 In-, and exclusion criteria and selection process

It is very important for a systematic review to define in-, and exclusion criteria to have an explicit decision making of which studies should be included in the review (Cuijpers, 2016).

According to Cuijpers (2016) it is important to be as detailed as possible concerning the participants and interventions. Concerning participants, studies were included if the participants suffer from mental diseases like for example depression or a personality disorder. Studies were excluded if the participants were not suffering from mental disorders. Concerning interventions, studies were included if a PPI was given as or within a treatment. Studies were excluded if the treatment or intervention is not or does not include a PPI. Studies using well-being therapy are excluded as this approach will be topic of a different systematic literature review (Ontas, 2017). Finally studies not written in English were excluded.

The selection of the studies was done in five steps. In the first step, abstracts were identified through database searching and additional sources. In the second step, duplications were removed. Third, the abstracts were screened and articles which did not meet the inclusion criteria and/or did not meet the exclusion criteria were excluded. Fourth, articles with no full access to the article text were excluded. Finally, full text articles were screened.

## **2.4 Data extraction**

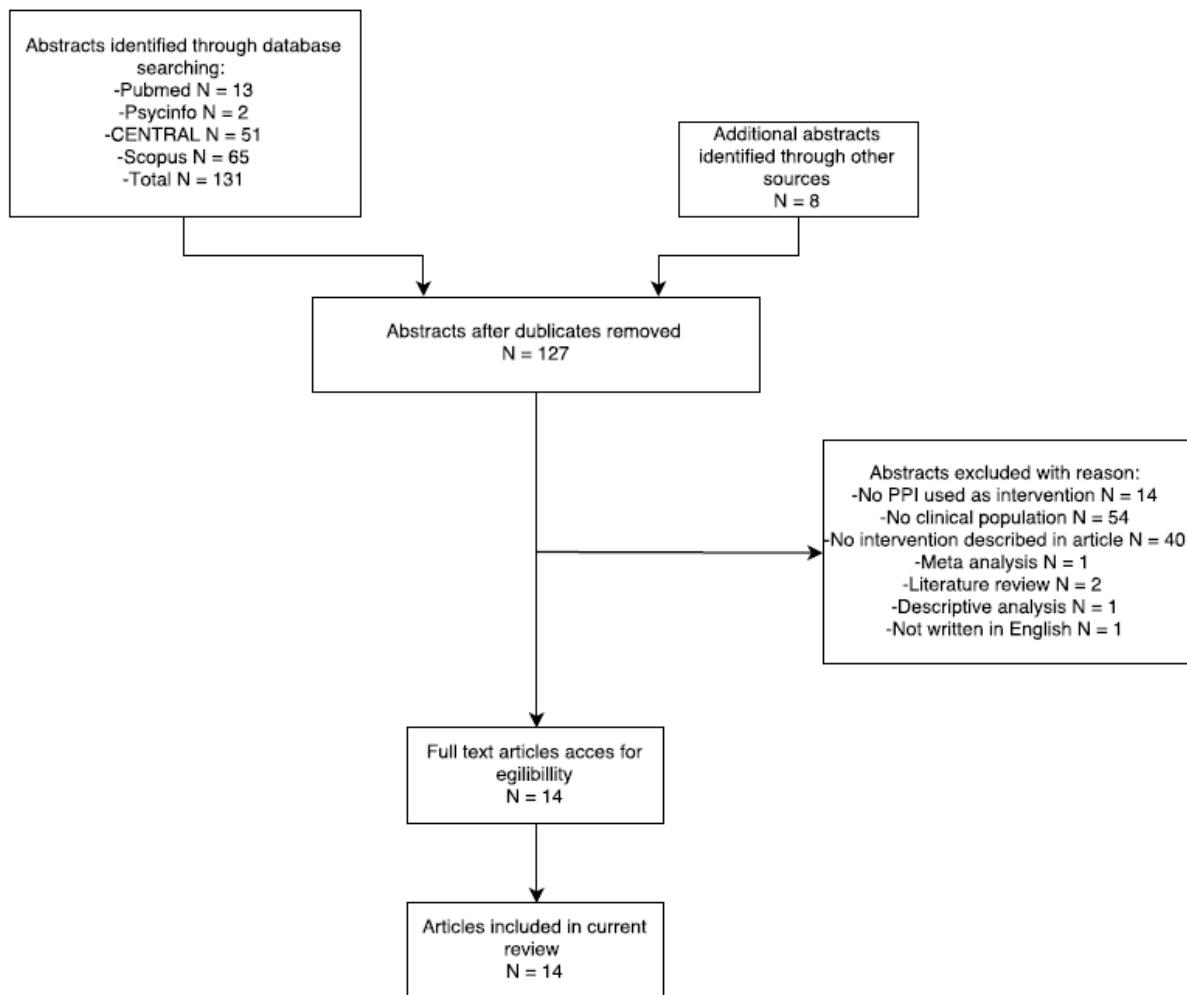
One by one the studies were read and relevant data was extracted. Extracted data included the following information for each study: identification of name of the authors, publication year and location, description of the study, study design and the intervention which was used, sample characteristics (study population and sample size) and main results.

# **3. Results**

## **3.1 Search results and study characteristics**

Using the search method, 14 studies were included into this systematic literature review. An illustration of this process which was based on the inclusion and exclusion criteria can be found in Figure 1. This flowchart shows the different systematic steps of this process. The included studies came from three different continents. Five were from North America, six were from Europe and three were from Asia. Further all included articles were published within the last five years. Participants in the studies were diverse, coming from different continents and cultures ranking from children to adult participants. The objectives, the publication year, the location and the authors of the included studies can be found in Table 2. The following sections provide information extracted from the studies regarding the research question. Therefore, the way in which treatments were used and the effect of these treatments will be described.

*Figure 1.* Flowchart of study selection



**Table 2. Study characteristics**

Authors	Year	Location	Objective
Ascone, Sundag, Schlier, Lincoln	2017	Hamburg, Germany	Testing the effect of a brief compassion-focused imagery
Asgharipoor, Farid, Arshadi, Sahebi	2012	Tehran, Iran	Evaluating the effectiveness of positive-oriented psychotherapy compared to cognitive-behavior therapy
Bolier, Haverman, Kramer, Westerhof, Riper, Walburg, Boon, Bohlmeijer, Brownell, Schrank, Jakaite, Larkin, Slade	2013	Utrecht, Netherlands	Examining the clinical effects of a tow month online PPI “Psyfit”
Carr, Finnegan, Griffin, Cotter, Hyland	2016	Dublin, Ireland	Investigate service user experiences of an 11-week group positive psychology intervention for psychosis based on six session standard PPT
Chaves, Gomez, Hervas, Vazquez	2016	Madrid, Spain	Evaluating the effect of the Say Yes to Life positive psychology group psychotherapy program compared with treatment as usual Comparing the efficacy of a manualized protocol of empirically-validated positive psychology interventions (PPI) with a cognitive-behavioural therapy (CBT) protocol
Harrison, Al-Khairulla, Kikoler	2015	London, England	Exploring feasibility, acceptability and possible benefits of a PPI group for inpatient eating disorder
Huffman, DuBois, Healy, Boehm, Kashdan, Celano, Denninger, Lyubomirsky, Kahler, Spillane, Day, Clerklin, Parks, Leventhal, Brown	2014	Boston, United States of America	Assessment of feasibility and acceptability of 9 PPIs and exploring the effect of the exercise
Kahler Spillane, Day, Parks Leventhal, Brown	2014	Providence, United States of America	Developing and exploring the effect and feasibility of a PPT for smoking cessation
Kahler Spillane, Day, Parks Leventhal, Brown	2015	Providence, United States of America	Exploring the effect of a PPT for smoking cessation
Khazaei ,Khazaei, Ghanbari-H.	2017	Torbat e Jam, Iran	Investigating the effect of a PPI treatment for internet addiction
Kwok, Minmin, Tong Kai Kit	2016	Hong Kong, China	Examination of the effectiveness of a group PPI regarding hoop and depression
Meyer, Johnson, Parks, Iwanski, Penn	2012	Hiram, United States of America	Examination of the effectiveness of a group PPT for people with schizophrenia
Wong, Owen, Gabana, Brown, Mcinnis, Toth , Gilman	2016	Indiana, United States of America	Exploring the effects of gratitude writing within psychotherapy

### 3.2 Characteristics and use of PPIs

The 14 included studies used positive psychology as stand-alone or as supplement to a standard treatment. Seven of the studies supplemented a form of PPI to another form of treatment. Six of the studies used group PPIs, three used group positive psychological psychotherapy, three used individual PPIs, one used individual psychotherapy combined with a PPI and one used an online PPI. A wide variety of PPIs was examined in the studies. One of the examined studies only used a brief compassion focused imaginary intervention (Ascone et al., 2017). Another study only used one gratitude writing exercise (Wong et al., 2016). The remaining 12 studies used multiple PPIs ranging from 4 used PPIs (Asgharipoor, 2012) to 12

used PPIs (Chavec et al., 2016). Further, the duration and the amount of sessions that were given as a treatment varied widely. Two studies had only one session as a treatment (Ascone et al., 2017; Wong et al., 2016). Eleven studies differed in the duration between 5 and 20 weekly sessions which lasted between 30 and 120 minutes each. The online PPI treatment offered a 2-month access to the online intervention and participants were free to use it as much as they liked (Boilier et al., 2013). Additionally, the participants characteristics show a big diversity. Six studies had participants suffering from depression. In one of these six, studies participants were school children (Kwok et al., 2016). Three studies examined the effect of PPIs on addiction of which two were concerned with nicotine addiction and one with internet addiction. One article used PPIs for participants with schizophrenia (Meyer et al., 2012) and another one for psychotic patients with paranoid ideation (Acone et al., 2017). The study conducted by Harrison and colleagues (2015) tried to treat patients with an age between 11-18 diagnosed with an eating disorder. Finally, two studies had participants with different mental disorders as participants seeking for psychotherapy were used as participants. A detailed overview of the extracted data regarding the use of the PPIs can be found in Table 3.

**Table 3. Use and specifications of treatment**

Author	Application of Treatment	Used PPI/Treatments	Stand-alone vs. supplemental treatment	Intervention design	Study Population
Ascone et al. (2017)	- Group PPI	-Brief compassion focused imaginary	-Stand-alone treatment	-One session with a negative affect before intervention	-German psychotic patients with paranoid ideation
Asgharipoor (2012)	-Group PPT	-Personal strengths, gratitude exercise, life map and meaningful life,	-Stand-alone treatment	-12 weeks of positive oriented psychotherapy	-Iranian patients with major depressive disorder
Bolier et al. (2013)	-Online PPI	-6 modules each offering psychoeducation and one PPI regarding: (1) personal mission statement and setting your goals, (2) positive emotions, (3) positive relations, (4) mindfulness, (5) optimistic thinking, and (6) mastering your life.	-Stand-alone treatment	-2 months “psyfit” access with at least one completed module	-Dutch adults from general population with mild to moderate depression seeking therapy or counselling
Brownell et al. (2014)	-Group PPI	-positive responding, savouring, personal strengths, gratitude, forgiveness and identifying positives from negative situations, mindfulness listening to music and therapist self-disclosure	-Supplemented treatment	-11 weekly session with a duration of 90 minutes each	-English population diagnosed with psychosis
Carr et al. (2016)	-Group positive psychological psychotherapy (Say yes to life program)	-Identifying personal strengths, possibilities, potentials and goals; Gratitude exercise, Forgiveness exercise, Savouring experience	-Supplemented treatment	-20 2-h sessions of group treatment including CGT and PPIs	-Irish adults with major depressive disorder
Chaves et al. (2016)	-PPI Group Therapy	-Psychoeducation and in between session exercises: Positive emotions, savouring, Emotion regulation, Mindfulness, counting one's blessings, Best possible self, positive relationships, Counting kindness, Self-compassion, Using ones signature strengths, Obituary/Biography, Goal setting	-Stand-alone treatment	-10 weekly sessions with a duration of 120 minutes each	-Spanish adult women with DSM-IV diagnosis of major depression or dysthymia
Harrison et al. (2015)	-Group PPI	-Three good things, gratitude letter, act of kindness, loving kindness meditation, signature strengths	-Supplemented treatment	5 weekly sessions with a duration of 60 minutes each	English female inpatients between age 11-18 diagnosed with eating disorder
Huffman et al. (2014)	-Individual PPI	-Gratitude letter, Personal strengths, Act of kindness, Important, enjoyable and meaningful activities, Counting blessings, Best possible self (social relation), Best possible self (accomplishments), Forgiveness letter, Behavioural commitment to values-based activities	-Supplemented treatment	9 random daily PPI exercises introduced by a study trainer	American patients hospitalized for suicidal thoughts or behaviours mostly diagnosed with mood disorder

<i>Author</i>	<i>Application of Treatment</i>	<i>Used PPI/Treatments</i>	<i>Stand-alone vs. supplemental treatment</i>	<i>Intervention design</i>	<i>Study Population</i>
Kahler et. al (2014)	-Individual PPT (Counseling + PPI)	-Using Signature Strengths in a new way, Three Good Things, Gratitude Visit, Savouring, Active/constructing Responding, Positive Service, Savouring kindness exercise	-Supplemented treatment	6 sessions with a duration of 60 to 30 minutes each	American smokers attempting to stop smoking
Kahler et al. (2015)	-Individual PPT (Counseling + PPI)	-Using Signature Strengths in a new way, Three Good Things, Gratitude Visit, Savouring, Active/constructing Responding, Positive Service, Savouring kindness exercise	-Supplemented treatment	6 sessions with a duration of 60 to 30 minutes each	American smokers who were seeking smoking cessation treatment
Khazaei et. Al. (2017)	-Group PPI	-Positive stories, using your strengths, forgiveness, expression of emotions, thankfulness, letter of forgiveness, gratitude notebooks, Psychoeducation	-Stand-alone treatment	10 Session	Iranian ungraduated first semester students with internet addiction
Kwok et al. (2016)	-Group PPI	-Gratitude intervention (counting blessings, writing letters of gratitude, and keeping gratitude journals) + Hope intervention (improve goal setting and planning skills, foster hopeful thinking, and enhance goal pursuit activities)	-Stand-alone treatment	8 weekly sessions with a duration of 90 minutes each	Chinese school children with child depression
Meyer et al. (2012)	-Group PPT	-using your strengths, three good things, biography, gratitude visit, active/constructive responding, and savouring, Positive Service , positive goal and mindfulness minute	-Stand-alone treatment	10 weekly sessions with a duration of 90 minutes and an additional booster session 6 weeks after the last session	Americans with a diagnosis of schizophrenia
Wong et al. (2016)	-Psychotherapy combined with gratitude writing	-Gratitude writing	-Supplemented Treatment	One session between standard psychotherapy	American adults seeking university based psychotherapy

### 3.3 Effect of PPIs

Of the 14 included studies, 13 used some sort of scale to quantify effects of the specific treatment. The other study only measured satisfaction with the intervention through a semi structured interview and focus groups (Brownell et al., 2014). Therefore, 13 of the included studies are quantitative while Brownell and colleagues (2014) used a qualitative method to measure results. The studies that used quantitative measurement methods had a wide variety regarding measurement instruments. Most frequently used outcome measure was the Beck Depression inventory which was used by three studies (Asgharipoor et al., 2012; Carr et al.,

2016; Chaves et al., 2016). Further, the sample size of the studies showed a big diversity, ranking from N=8 (Harrison et al., 2015) to N= 293 (Wong et al., 2016). Of the 14 included studies, five were pilot studies with a pre-post-test design, which tried to explore the effect of PPIs. One of these pilot studies compared the effect of PPT to CBT (Asgharipoor, 2012). The other four pilot studies used pre-, post-test designs without control groups to measure the effect of the interventions (Harrison et al., 2015; Huffman et al., 2014; Kahler et al., 2014; Meyer et al., 2012). Eight studies were randomized control trials and one was a non-randomized controlled clinical trial to compare the effect of PPIs to another condition. Three of these studies compared the intervention with no intervention or a waiting list control group (Bolier et al., 2013a; Khazaie et al., 2017; Kwok et al., 2016). Four of these studies compared the positive interventions to standard psychotherapeutic treatment (Brownell et al., 2014; Carr et al., 2016; Chaves et al., 2016; Kahler et al., 2015). In the study carried out by Ascon and colleagues (2017) the effect of a compassion focused imaginary exercise was compared to a normal imaginary exercise. Three conditions were compared in the research conducted by Wong and colleagues (2016). In this study, the effect of psychotherapy with gratitude writing was compared with psychotherapy plus expressive writing and psychotherapy only.

Regarding the main results of all included studies, the research conducted by Brownell and colleagues (2014) measured positive feedback over the PPIs and participants rated these interventions as useful. Two other studies that included satisfaction with the intervention in the measured outcomes also indicate good acceptance and satisfaction with the used interventions (Ascon et al., 2017; Kahler et al., 2014)). In the research by Ascon and colleagues (2017) psychotic patients with paranoid ideation received a brief compassion focused imaginary exercise in the experimental group. Most participants appraised the PPI which indicates good acceptance. Also, Brownell and colleagues (2014) who compared PPT with standard psychotherapeutic practices collected positive feedback about the group experience and the interventions were rated as useful by the participants who were diagnosed with psychosis. Additionally, Kahler and colleagues (2014) who investigated the effect of PPT on participants with nicotine addiction reported high satisfaction with the treatment and the intervention was rated as useful by participants. This also indicates good acceptance of the intervention.

Further, three studies measured a significant improvement of the positive interventions on happiness (Ascon et al., 2017, Asgharipooe, 2012; Harrison et al., 2015). Three other studies measured a significant improvement of well-being (Bolier et al., 2013a; Chaves et al., 2016; Meyer et al., 2012). However, the enhancement in well-being was found

to be as effective as CBT in the comparative research by Chaves and colleagues (2016). A decreasing effect on symptoms could be found in four of the included studies (Bolier et al., 2013a; Chaves et al., 2016; Khazaei et al., 2017; Meyer et al., 2012). This reduction of symptoms could also be found in a six month follow up on depressive and anxiety symptoms in the research conducted by Bolier and colleagues (2013a). The significant effect on symptom reduction in the research by Chaves and colleagues (2016) could also be found for the control condition, in which CBT was used as treatment. Four studies measured significant rates of recovery (Carr et al., 2016; Kahler et al., 2014; Kahler et al., 2015; Meyer et al., 2012). For example, did Kahler and colleagues (2014) measure a 31,6% recovery rate for nicotine addiction in a six month follow up test. When the intervention was compared to standard psychotherapeutic treatment a significant higher odd of abstinence could be measured in the PPT condition (Kahler et al., 2015). The research conducted by Carr and colleagues (2016) found more than twice as many recoveries in the experimental condition compared to standard psychotherapeutic treatment and additionally significant lower cost per participant. In another study Huffman and colleagues (2014) found moderate effects of PPIs on optimism and hopelessness. A significant higher effect could be measured for gratitude exercises. In another study by Wong and colleagues (2016) a significant effect on mental health by gratitude writing could be measured when compared to control conditions. A detailed overview of the extracted data regarding the effect of the PPIs can be found in Table 4. In the next section, the results are discussed.

**Table 4. Main Results**

Author	Main Results	Study Design	Sample Size	Measurement Instrument
Ascone et al. (2017)	-PPI had significant effect on self-reassurance and happiness -majority of participants appraised the PPI which indicates good acceptance -no other significant effects	-2 armed RCT -Imaginary intervention control group	N = 51	- Self-Criticism and Reassurance Scale - Self-Compassion Scale - self-report items addressing affective states - Q sensor - 18-item Paranoia Checklist - Self-Assessment Manikin - Beck Depression Inventory - Subjective Wellbeing Scale - Oxford test of Happiness - scale of Subjective Units of Distress - Mental Health Continuum-Short Form (MHC-SF) - WHO Well-being Index - Center for Epidemiological Studies Depression Scale - Hospital Anxiety and Depression Scale Anxiety subscale - Medical Outcomes Study-Short Form
Asgharipoor (2012)	-significant increase in happiness for group with PPT compared to CBT -no other significant differences	-2-armed pre-post-test design -Standard psychotherapeutic treatment control group	N = 18	- Beck Depression Inventory - Subjective Wellbeing Scale - Oxford test of Happiness - scale of Subjective Units of Distress - Mental Health Continuum-Short Form (MHC-SF) - WHO Well-being Index - Center for Epidemiological Studies Depression Scale - Hospital Anxiety and Depression Scale Anxiety subscale - Medical Outcomes Study-Short Form
Bolier et al. (2013)	-significant enhancing of well-being and a small but significant effect on general health, vitality, anxiety symptoms and depressive symptoms -in a six month follow up only effects on depressive symptoms and anxiety symptoms did occur	-2 armed RCT -Waiting list control group	N= 284	- Beck Depression Inventory II - Hamilton Rating Scale for Depression - Montgomery–Asberg Depression Rating Scale
Brownell et al. (2014)	-positive feedback about group experience -PPI were rated as useful by participants	-2 armed RCT - Standard psychotherapeutic treatment control group	N= 37	-Semi structured interviews -Focus groups
Carr et al. (2016)	-more than twice as many SYTL treatment completers were recovered 3 months after therapy -significant lower costs for SYTL compared to treatment as usual (€726 vs. €1187)	-2 armed RCT - Standard psychotherapeutic treatment control group	N = 57	- Beck Depression Inventory II - Hamilton Rating Scale for Depression - Montgomery–Asberg Depression Rating Scale
Chaves et al. (2016)	-both conditions were effective in reducing clinical symptoms and increasing well-being -no other significant differences	- 2 armed Quasi-experiment -Standard psychotherapeutic treatment control group	N= 96	- The Beck Depression Inventory-II - SCID interview - The Automatic Thoughts Questionnaire - White Bear Supression Inventory - Positive and Negative Affect Schedule - Beck Anxiety Inventory - Emotion Regulation Scale - Behavioral Inhibition System and Behavioral Approach System Scales - Pemberton Happiness Index - Ryff's Psychological Well-Being Scales

Author	Main Results	Study Design	Sample Size	Measurement Instrument
Harrison et al. (2015)	-75% of patients reporting meaningful improvement in subjective happiness and 87.5% in life satisfaction	-Pre-post-test design -No control group	N= 8	- Patient satisfaction questionnaire - qualitative feedback gathered - The Satisfaction with Life Scale - Subjective Happiness Scale
Huffman et al. (2014)	-most exercises had moderate effect on optimism and hopelessness -gratitude exercises had significant higher effects	-Pre-post-test design -No control group	N= 61	- Quick Inventory of Depressive Symptomatology—Self-Report - Beck Hopelessness Scale - Life Orientation Test Revised
Kahler et al. (2014)	-Satisfaction and attendance with treatment were high -most participants reported using and benefitting from PPI -31.6% of participants sustained smoking abstinence in a six month follow up test	-Pre-post-test design -No control group	N= 19	- brief assessments at each treatment session - Center for Epidemiologic Studies Depression Scale - Positive and Negative Affect Schedule - Client Satisfaction Questionnaire - quitting strategies questionnaire
Kahler et al. (2015)	-compared to ST, a greater percentage of participants in PPT-S were abstinent at 8 weeks, 16 weeks, and 26 weeks, but these differences were nonsignificant -in a more statistically powerful longitudinal model, participants in PPT-S had a significantly higher odd of abstinence	-2 armed RCT -standard psychotherapeutic treatment control group	N= 66	- Structured Clinical Interview for DSM-IV - Positive and Negative Affect Schedule - Center for Epidemiologic Studies Depression Scale
Khazaei et. al. (2017)	-internet use and IA were significantly reduced, -quality of relationships significantly improved	-2 armed RCT -Waiting list control group	N= 48	- severity of Internet use - quality of relationships inventory - Bell's adjustment inventory
Kwok et al. (2016)	-participants of the intervention groups showed a significant decrease in depression and significant increase in life satisfaction partially mediated by hope and gratitude	-2 armed RCT -Waiting list control group	N= 68	- Chinese Hospital Anxiety and Depression Scale - Children's Hope Scale - Gratitude Questionnaire-6 - Satisfaction with Life Scale
Meyer et al. (2012)	-PL group was feasible and associated with possible improvements in psychological well-being, hope, savouring, psychological recovery, self-esteem, and psychiatric symptoms	-Pre-post-test design -No control group	N= 16	- scales of psychological wellbeing - savoring beliefs inventory - dispositional hope Scale - recovery assessment Scale - brief symptom Inventory - social functioning scale
Wong et al. (2016)	-significant effects on mental health in all post-test for PPI group	-3 armed RCT -Standard psychotherapeutic	N= 293	- Behavioral Health Measure-20

treatment and standard psychotherapeutic treatment supplemented by expressive writing control group

- Linguistic inquiry word count

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## 4. Discussion

This section discusses the main results of this systematic literature review and the possible implications. Further limitations of this study are mentioned and suggestions for further research are given. In general PPIs in clinical practice seem to be effective but at this point the evidence is still weak and future research is needed to establish them into clinical practice.

First, the three studies that included user experience with PPI or PPT all reported a positive feedback from participants (Ascon et al., 2017; Brownell et al., 2014; Kahler et al., 2014). Hence, it might be implicated that participants rate PPIs as useful and acceptance among participants is high. Swift and Callahan (2009) indicated within their meta-analysis of client's preference in treatments that not including user's acceptance into the development of therapy or interventions might lead to increased dropout and lower outcomes. Further, they argue that user's perception of a treatment may help improve quality of life after treatment. In the evaluation of standard psychotherapeutic practice user's experience is often not included as predefined evaluation categories as for example symptom reduction are used (Nilsson, 2007). Hence, PPIs might have a benefit of high user acceptance in comparison to standard psychotherapeutic treatment. This could lead to lower dropout, a positive effect of the treatment and an improvement in quality of life after treatment. Yet, none of the studies compared user's acceptance of PPIs to standard psychotherapeutic treatment. Thus, more research is needed to statistically support this possible benefit. Additionally, the use of PPIs within treatment might also bring benefits for the therapist practicing it. In an overview of effect studies Macdonald (2007) found that solution-focused therapy might decreases burn out for therapists. Yet, solution focused therapy is not a form of PPI, but both treatments try to motivate change in a positive manner, do not make use of extensive diagnostic of problems and do not explicitly search for pathology (Bannink & Jackson, 2011). These factors might have an influence on the therapists. Thus, therapists might also benefit from the use of PPI. However, no study in this review did include the effect of PPIs on the therapist practicing it and further research is needed.

Second, 13 of the included 14 studies measured a significant effect of PPIs on outcomes in clinical practice. These 13 studies reported either a significant increase in well-being, happiness or mental health, a significant decrease of symptom reduction, a significant recovery rate or were at least as effective as standard psychotherapeutic treatment. Five of these studies were pilot studies of which four did not include a control condition (Harrison et al., 2015; Huffman et al., 2014; Kahler et al., 2014; Meyer et al., 2012). The studies reported improvements in participant's happiness, life satisfaction, optimism, hopelessness, well-being and symptom reduction. This corresponds with the meta-analysis done by Bolier and colleagues (2013b) in which a significant effect on well-being and symptom reduction of PPIs could be shown in non-clinical population. However, these four studies did not compare the effect of the intervention to standard psychotherapeutic treatment or any other intervention. Therefore, the effect might be caused by other factors than the PPIs. Further, three studies out of the eight which used randomized control trials compared the effect of PPIs to no treatment or waiting list control groups (Bolier et al., 2013a; Khazaie et al., 2017; Kwok et al., 2016). The results of these studies show a significant enhancing in wellbeing, reduction of symptoms and in the research conducted by Kwok and colleagues (2016) even a significant increase in life satisfaction. Therefore, it can be concluded that PPIs bring benefits to people suffering from mental disorder when compared to waiting list or no treatment. These results suggest that PPIs can usefully be implicated into a stepped care approach (Bolier et al., 2013b; Straten, Seekles, Veer-Tazelaar, Beekman, Cuijpers, 2010). In this approach patients begin their treatment with a low-intensive intervention which can be self-help or guided self-help before receiving more intense face-to-face psychotherapy and antidepressant medication if necessary. This approach is especially effective and cost-efficient when low-intense interventions can be offered via internet or in a group context (Straten et al., 2010). Additionally, four studies compared the effect of PPIs to standard psychotherapeutic treatment (Asgharipoor, 2012; Carr et al., 2016; Chaves et al., 2016; Kahler et al., 2015). These findings indicate that PPIs or PPT are more effective for the treatment of mental disorder or as effective as standard psychotherapeutic treatment. When PPIs were included into normal treatment as done by Ascan and colleagues (2017) and Wong and colleagues (2016) significant enhancement of mental health and happiness was reported. These results indicate that PPI supplemented to standard psychotherapeutic treatment might also improve therapy outcomes. Participants might on the one hand reduce their symptoms and on the other hand improve their well-being and happiness (Keyes, 2003; Rashid, 2009). Furthermore, PPIs might help patients in remission to build up resilience and to strengthen them for normal life

(Bolier et al., 2013b). This goes in line with the argumentation by Rashid (2009) who claims that PPI offer an equal opportunity for clinical patients as it does for people without mental disorder to flourish.

Third, a variety of PPIs were used in the included studies with a variety of intervention length and frequency. As almost all studies did measure meaningful results or an effectiveness as standard psychotherapeutic treatment no implication regarding which amount or length of PPI session might be most beneficial for participants can be made. In addition, also the form of interventions differed. Nine studies did use PPI as a group intervention. Four studies used individual sessions as a treatment. An exception is the research conducted by Bolier and colleagues (2013a). The online intervention program “Psyfit” was used and participants could use the application as often as they liked. Therefore, the effectiveness of different forms of PPIs cannot be compared. To compare the effectiveness of different PPIs a new research approach is needed to evaluate which might work best for participants. Suggestions for a new research approach will be described later in this section.

Fourth, there was a wide variety of mental disorders which were treated with PPIs. In six studies participants suffered from depression. In three studies participants had an addiction disorder. Three other studies had psychotic participants, schizophrenia participants and participants with eating disorder. In the two remaining studies participants were diagnosed with different mental disorders. Even if there is a wide variety of disorders the majority of participants in all studies benefited from PPIs. This suggests that a majority of people suffering from different disorders might benefit from PPIs. However, as 12 studies used several PPIs as intervention there cannot be implicated which PPI might be most effective for a specific disorder. Also, the study conducted by Wong and colleagues (2016) did only use the PPI ‘Gratitude writing’, but participants showed a diversity in mental disorders as adults seeking psychotherapy were participants of the study. For this reason, no implication can be made from these findings regarding the effect of ‘Gratitude writing’ on one specific mental disorder. Only the results by Ascone and colleagues (2017) suggest that brief compassion focused imaginary might improve self-reassurance and happiness in psychotic patients with paranoid ideations. However, it is argued by Hervas (2017) that especially people suffering from depression and anxiety might benefit from PPIs. This research shows that people suffering from depression can benefit from PPIs but a significant higher benefit for this clinical subgroup was not found.

Fifth, results from the included studies indicate that populations from diverse cultures

might benefit from PPIs. Participants of all included studies were from three different continents. Hence, the effect of PPIs might not be limited by cultural differences. Besides, no difference was found for different age groups. For example, did a group PPI significantly decrease depression in Chinese school children with depression (Kwok et al., 2016). In another study done by Harrison and colleagues (2015) English female patients from the age between of 11-18 with an eating disorder reported meaningful improvements. This suggests that PPIs might be effective for a variety of different age groups and can even be used in the treatment of children. The next part of this section will mention limitations of this study.

This study has several limitations. First, no effect scores could be compared as the included studies used a wide variety of measurement instruments. As shown in Table 4 a wide variety of different measurement instrument has been used in the included studies. Therefore, no statistically or meta-analysis comparison of the results is possible and only comparison of general tendencies is possible. But to establish PPIs into clinical practice a more statistically based comparison is necessary. Hence more consistent use of measurement instruments in the research field of positive psychology is needed. Furthermore, this inconsistency in measurement methods makes it difficult to generalize the results of the included studies.

Second, no tendency in outcomes can be found regarding for which mental disorder PPIs might be most effective. Therefore, no generalisation can be made regarding the use of PPIs for a specific clinical subgroup.

Third, the wide variety of used PPIs and the combinations of the PPIs in the studies makes it impossible to make claims about which used PPI is most effective. It might be possible that some of the used PPIs have no influence or less influence than other PPIs.

Fourth, the publication bias might occur in this systematic literature review. This bias describes that outcomes of effect research might be not published when outcomes are negative or not significant and can therefore not be included in this review (Cuijpers, 2016). As all included studies measured positive results and no study finding PPIs to be ineffective for a clinical population this research is in a considerable risk of the publication bias. Yet, it might also be possible that PPIs are very effective in the treatment of mental disorder. Accordingly, more research on this topic needs to be conducted.

Future research on PPI in clinical practice should focus on four aspects that need to be further explored. First, one of the three studies that reported high user satisfaction is a pilot study with a small sample size and no comparison group (Kahler et al., 2014). The study

conducted by Brownell and colleagues (2013) compared user satisfaction of a PPI to standard psychotherapeutic treatment but used qualitative measurement methods. Hence, no statistically supported claim can be made. Therefore, a recommendation for future research might be to focus on comparing large groups of PPI treatment with standard psychotherapeutic treatment regarding user's satisfaction and acceptability. Yet, effect of the treatments should also be included into the research as it is the most important outcome. Further, satisfaction of therapists should be included in future research as therapists might also benefit from the use of PPIs.

Second, future research should focus on more clinical controlled trials comparing the effectiveness of PPI treatments to standard psychotherapeutic treatment to establish the effectiveness and replicate findings of the included studies. If effectiveness of PPI treatments is found to be the same or even better than standard psychotherapeutic treatment in large randomized trials, there is the possibility for a new therapeutic treatment.

Third, as most of the included studies used a variety of included positive interventions with different length and amount of sessions, future research should focus on a comparison of different PPI forms. This could lead to findings about which form of PPI might be most effective. In a comparative study length, amount of sessions and different PPIs should be compared. However, as mentioned earlier a new research approach is needed as comparison of the vide variety of factors with RCTs might be resources and time consuming. A suitable research approach might be fractional factorial design which can reduce the size of experiments which include several factors that need to be compared (Gunst & Mason, 2009). With this approach future research on PPIs could compare different forms of PPIs, treatment length and frequency more cost efficient in shortest time (Guns & Mason, 2009).

Fourth, future research might investigate which disorder can be treated best by PPIs. Therefore, large effect research comparing the effect of treatment within different clinical subgroups is needed. This might further implicate the effectiveness of PPIs on specific mental disorders and can improve already existing treatments. In the next section, an overall conclusion will be drawn.

## **5. Conclusion**

This systematic literature review demonstrates that PPIs appear to be effective in promoting well-being and life satisfaction and in decreasing relevant symptoms within clinical populations. The results indicate that PPIs are more effective than no-treatment or a waiting list condition. Therefore, PPIs can be used in the stepped care approach as it can be effective in a cost-efficient group or online treatment (Straten et al., 2010). Furthermore, the results indicate that PPIs might be evenly or more effective than standard psychotherapeutic treatment in the treatment of mental disorder regarding relevant outcome criteria. However, there is still a lack of RCTs on this field and it is strongly advised to conduct more effect research on PPIs before establishing them into regular treatment. The used experimental conditions were mostly a combination of different PPIs. Therefore, no conclusion can be given of which form of PPI is effective and which not. Future research should establish new research methods like fractional factorial design for this knowledge gap. Additionally, PPIs seemed to have a good user acceptance which can be a crucial factor to successful therapy (Swift and Callahan, 2009). In general PPIs might have the possibility to supplement standard psychotherapeutic treatment within clinical practice, if the positive effects can be replicated in large RCTs. However, researchers in the field of positive psychology should establish common ways of measuring outcomes to make comparison possible. Further, they should focus on large RCT to establish the effectiveness of PPIs and make use of new research practices like fractional factorial design.

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