UNIVERSITY OF TWENTE

Working Mechanisms of Expressive Writing - Focusing on the Linguistic Indicators Pronouns, Tense, and Emotion Words

Masterthesis Psychology

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Abstract

Depression is a major problem in today's society. The symptoms not only cause tremendous individual suffering, but also huge economical costs (e.g. therapy, work-absenteeism). In order to reduce the immense aftermath on different levels and to nip initiating symptoms in a bud, scientific interest to develop preventive interventions grew. Researchers of the University of Twente (2011) developed an expressive writing intervention based on the method of Pennebaker (1997). Since the effect of the intervention has already been shown, the current study tried to explore the underlying working mechanisms. Can a change in the respondents writing style explain the gains in positive mental health and the reduction of depressive symptoms? Is there a typical style of writing that is beneficial? Answering these questions might shed a little more light into the dark terrain of the working mechanisms and might allow suggestions to improve the intervention. The focus in the current study was on the following linguistic indicators: the first person pronoun "I", the tense used in the essays, and positive and negative emotions. To get an answer, cross-sectional data of 33 respondents (81.8% female, with a mean age of 57, SD=6.65) was used and analyzed with various MANOVAs. The results of this exploratory study yielded some surprises. All respondents used more positive emotion words and present tense, as well as less negative emotion words and past tense at the end of the course. Respondents who improved in positive mental health used more past-, and less present- and future tense during the total course. Interaction effects were found for present tense and the improved and not improved positive mental health groups. Improved respondents used slightly more present tense in the beginning of the course and, towards the end, even remarkably more. Additionally, an interaction effect was found for future tense and the improved and not improved depression group. Not improved respondents used less future tense at the beginning of the course in comparison with improved respondents. In the not improved group a high point was reached in the middle of the course, but the frequencies decreased hereafter. Not improved respondents used more future tense at the end of the course in comparison to the improved ones. An almost constant decrease of future tense could be observed in the improved group. Although all hypotheses were rejected, the results showed clearly that respondents writing style changed during the course. Nevertheless, further research is needed in order to describe the underlying theories and working mechanisms to our full satisfaction.

Samenvatting

Depressie is een groot probleem in de hedendaagse samenleving. De symptomen veroorzaken enorm leed op indidvidueel niveau, maar ook ontzettend hoge kosten voor de maatschappij (b.v. voor de behandeling of i.v.m. arbeidsongeschiktheid). Om de immense gevolgen op de verschillende niveaus te reduceren en de symptomen in de kiem te smoren, is het wetenschappelijke interesse in het ontwikkelen van preventieve interventies enorm gestegen. Onderzoekers van de Universiteit Twente (2011) ontwikkelden een expessief schrijven interventie, gebaseerd op de methode van Pennebaker (1997). Aangezien het effect van deze interventie reeds is aangetoond, exploreert dit onderzoek de werkings mechanismen die eraan ten grondslag liggen. Kan een verandering in de schrijfstijl van de respondenten de aanwinst van positieve geestelijke gezondheid en de reductie van depressieve symptomen verklaren? Bestaat er een soort typische schrijfstijl wat mensen meer of minder baat bij de cursus laat hebben? Door het beantwoorden van deze vragen, zou men meer inzicht kunnen krijgen over de werkende elementen-, en eventuele verbeteringspunten van de interventie op kunnen sporen. De focus ligt op de linguistische indicatoren: het voornaamwoord „Ik“, de tijd, en de positieve en negatieve emotie woorden. Om een antwoord te verkrijgen werd de data van 33 respondenten (81.8% vrouwen, met een gemiddelde leeftijd van 57, SD=6.65) geanalyseerd met behulp van meerdere MANOVAs. De resultaten van dit exploratieve onderzoek hadden sommige verrassingen achter de hand. Alle respondenten gebruikten zowel meer positieve emotie woorden en tegenwoordige tijd, als ook minder negatieve emotie woorden en verleden tijd aan het eind van de cursus. Respondenten met een verbeterde positieve geestelijke gezondheid gebruikten in totaal meer verleden-, en minder tegenwoordige- en toekomstige tijd. Een interactieeffect werd gevonden voor tegenwoordige tijd en de twee groepen van positieve geestelijke gezondheid. Respondenten die niet verbeterden, gebruikten in het begin iets meer en aan het eind van de cursus opvallend meer tegenwoordige tijd. Ook voor toekomstige tijd en de twee groepen van depressieve symptomen werd een interactieeffect gevonden. Respondenten die niet verbeterden, gebruikten in het begin minder toekomstige tijd dan respondenten die wel verbeterden. In het midden van de cursus werd een hooghtepunt bereikt, waarna de frequenties weer begonnen te dalen. Tegen het einde van de cursus gebruikten de onverbeterede respondenten meer toekomstige tijd. Een bijna constant dalend patroon werd voor de groep gevonden die in depressieve symptomen verbeterde. Alhoewel de hypothesen werden verworpen, lieten de resultaten duidelijk zien dat er tijdens de cursus iets bij de respondenten gebeurde. Wel is er nog meer onderzoek nodig, om de theorien en onderliggende werkende elementen goed te kunnen beschrijven.

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1. Introduction

1.1 Depression: A Problem with Many Dark Sides

Everyone struggles in life somehow: A period of stress is assumed to be an antecedent of most depressive episodes. According to Ormel (1999) it can be about sudden, impetuous events (e.g. job loss or the death of a loved one) or about long-term stressors (e.g. tedious relationship problems or problems at work). However, important and negative life events are not the only risk factors for developing a depression. It is a combination of factors influencing each other, factors like demographics, individual factors, heritability and socio-environmental factors (Spijker & Schoemaker, 2010). About 5.4 % of the Dutch population has to deal with a depressive disorder every year (Meijer, Smit, Schoemaker & Cuijpers, 2006) and the lifetime prevalence of the Dutch population (18-65) is almost 19% (De Graaf, Ten Have, & Van Dorsselaer, 2010). Furthermore, nearly 15 % of the elderly Dutch population is suffering from a depression (Beekman, Geerlings, & Van Tilburg, 1998). In succession of the high incidence waiting lists for treatment are long (Hermans, 2002) and still there is an obstacle to get in personal contact with a psychologist (Spijker & Schoemaker, 2010). It is widely known that depression has a variety of major implications on the personal and socio-economical level. Individuals suffering from depression are often impaired in their social and economic functioning (i.e. vitality, role functioning and mental health) and experience a lower quality of life (Bijl & Ravelli, 2000; Kruijshaar, Hoeymans, Bijl, Spijker, & Essink-Bot, 2003; Üstün & Chatterij, 2001). Depressive individuals experience affective symptoms as sag mood, physical symptoms as increase of weight, as well as cognitive symptoms as suicidal thoughts. (Vandereyken, Hoogduin, & Emmelkamp, 2008). Annually, about 1500 individuals die as a consequence of self-harming behavior (Lanting & Stam, 2009) and nearly one third of them suffered from a depression (Bertolote, Fleischmann, De Leo, & Wasserman, 2004). Furthermore, depression has a high relapse quote of about 75 to 85 percent (Judd, 1997; Keller & Boland, 1998; Mueller, et al., 1999). Apart from these problems at individual level, there are high costs for treatment at health insurance expense and for health-related absenteeism. Psychopathology is the most expensive asset in healthcare with 14 billion euro (21 % of the total costs in healthcare). The costs relating to depression account for 521 million euro for females and 252 million euro for males in 2005 (Poos, Smit, Groen, Kommer, & Slobbe, 2005). As a negative consequence of depression, the costs for health-related absenteeism amount to 953 million euro. Additionally, there are immense costs through the unemployability of 53.000 people in 2002, due to depression (Meijer et al., 2006).

Considering the aftermath on different levels, depression is a major problem that needs to be solved and prevented.

According to the standard procedures concerning depression treatment in the Netherlands there are different approaches: first-step interventions, and psychotherapy and/or pharmacotherapy as second step interventions. First-step interventions are called minimal interventions such as psycho-education, self-help courses, problem-solving therapy, as well as frequent checkups. These methods can be applied to patients with the first episode of a mild depression. If the mentioned first-step interventions did not succeed within 6 weeks, if there is a mild or moderate depression longer than 3 months, or if it concerns a severe or recidivating depression, second-step interventions are taken into consideration. Second-step interventions include psychotherapy (i.e. cognitive-behavioral-, behavioral- or inter-personal therapy), pharmacotherapy or a combination of both (van de Velde, 2005). The attention of scientist from different scientific approaches shifts to inventing new useful interventions to reduce symptoms of a present depression or to reduce depressive feelings and symptoms to prevent an upcoming depression. The prevention of depressive episodes is more and more of scientific interest (Meijer et al., 2006). A subclinical depression, i.e. when not all criteria are met, is the precursor of developing a depression in almost every individual (Cuijpers & Smit, 2008; Smit, Comijs, Schoevers, Cuijpers, Deeg, & Beekman, 2007). Therefore, an effective intervention in this phase would foreclose further progression and prevent the above mentioned consequences for the individual and society. One of these preventive interventions is an expressive writing course based on the work of Pennebaker (1997). This method will be examined in detail in the next paragraph.

The aim of this study is to examine the underlying processes causing positive changes in symptoms of depression and mental health through a modified expressive writing intervention in a population of 40+ Dutch individuals with mild to moderate symptoms of depression. Which characteristics can cause a decrease depressive symptoms and increase in mental health? In order to answer this question, getting an overview about the underlying theory is crucial. The following section gives more information about expressive writing, its effectiveness, as well as the underlying processes causing its effectiveness. Finally, the term positive mental health will be defined and its link to psychopathology (i.e. depression) will be examined.

1.2 Expressive Writing- The Original

According to Pennebaker (2010, p.1) the original instructions of expressive writing were:

> *"For the next four days, your task is to write about the most traumatic or upsetting experience you have ever had. Really let go and explore your very deepest emotions and thoughts. As you write, you might tie the event to other aspects of your life. For example, how might it be related to your childhood, your parents, your relationship with others in your life, your school or work. You might link it to who you want to be in the future, who you have been in the past, or who you are now. You can write about the same trauma on all four days or you can write about something different each day. In fact, many people haven't had traumas but all of us have had major conflicts or stressors and you can write about them as well. But whatever you choose to write about, really explore your deepest emotions and thoughts."*

Pennebaker (2010) highlighted some important facts about his method. It is suggested to write continuously for a minimum of 15 minutes on three occasions weekly. Participants should both have the freedom and should be motivated to write about individually important and stressful experiences without concern for what others might regard as important. If they do not have different topics to write about, they have to be encouraged to write about a topic they already mentioned. It is important to note that grammar and spelling are dispensable. Additionally there are some suggestions for feedback in clinical settings. According to Pennebaker (2010), it is important that the written experiences are exclusively for the participant and not shared during individual or group therapy. The essays should be kept in private. If participants have the wish to share their experiences with the therapist they should report them orally rather than showing the essays. It is crucial to wait with writing about emotional issues and thus not suggested to write directly after a traumatic or stressful experience, because it might be possible that the upcoming emotions are overwhelming.

The current intervention is an extended version of the original Pennebaker (1997) method. Researchers of the University of Twente (2011) not only wanted to emphasize writing about negative experiences and emotions, but also dealing with positive emotions. Moreover, they added psycho-education about emotions and aspects of other interventions, such as attention for daily routine (mindfulness), effective communication, identifying maladaptive patterns of behavior and cognitive restructuring (CBT). Additionally, there were weekly optional extra tasks, mostly focusing on the given psycho-education in order to bring the theory into practice (Bohlmeijer, Westerhof, Lamers, & Korte, 2011).

1.3 Effectiveness of Expressive Writing

Although, recent studies mainly focused on the effects or working mechanisms of the original method by Pennebaker (1997), they might as well be of interest for the current intervention. The following section deals with the effectiveness of the expressive writing method on different health outcomes.

Expressive writing has a variety of different positive outcomes. According to Baikie and Wilhelm (2005) there are many long- and short-term benefits of the expressive writing method. In general, it can be stated that the effects concerning physical health improvements are more robust and consistent in comparison with those for mental health outcomes. According to Frisina, Borod and Lepore (2004) there was no effect for mental health, whereas other studies found moderate effects for physical and mental health (Smyth, 1998; Pennebaker & Beall, 1986).

Expressive writing influences mental health (McAdams, 1996; Pennebaker, 1993), but other studies also showed an impact on the immune function (Pennebaker & Chung, in press), grades (Pennebaker & Francis, 1996), reduction of consultations (Pennebaker & Beall, 1986), higher rates of re-employment (Spera, Buhrfeind, & Pennebaker, 1994) and adjustment of students and a variety of health complaints (Pennebaker, 2010). This variety of positive outcomes was found among different cultures, age groups and experimental conditions (review Lepore & Smith, 2002)

Baikie and Wilhelm (2005) tried to give an overview about all positive effects of expressive writing. The following table (Table 1) will summarize the long-term behavioral and emotional outcomes of expressive writing.

Table 1

The long-term benefits of expressive writing (based on: Baikie & Wilhelm, 2005)

Improvement in physical health outcomes
• illness related visits to the doctor • Blood pressure • Liver- and lung functioning • Number of days in hospital • Immune system functioning

Improvements in mental health

- Mood
- Work-absenteeism and (faster) re-employment
- Grades
- Sporting achievement
- Interaction with others (Social and linguistic behavior)
- Working-memory
- Psychological well-being
- Depressive symptoms before exams
- Post-traumatic intrusions and avoidance

Now that the effects of the method have been pointed out, it is necessary to introduce the outcomes of interest in this study. With the results we will try to link the (changes in) linguistic indicators to whether respondents improved in depressive symptoms and mental health or not. Therefore, the next section gives the theoretical framework for the underlying working mechanisms.

1.4 Underlying Working Mechanisms

It remains questionable how expressive writing can cause beneficial changes in health outcomes on emotional and physical level. In order to answer this question, linguistic indicators are useful measures. Therefore, the following section will introduce our outcomes: the linguistic indicators. Their relationship with health will be shown, the most important theories about the working ingredients of expressive writing will be summarized and a link between them and the mentioned linguistic indicators will be created. The results are solely based on the original method of Pennebaker (1997), but might as well be of interest for our extended intervention based on his method.

1.4.1 Linguistic Indicators

After reading about the intervention itself, another question arises: How to measure or identify changes? How to know whether individuals expressing emotions gain more profit of the intervention or not? According to Pennebaker and King (1999) word use has good psychometric properties and good internal consistency among different writing contexts as well. Many studies used linguistic indicators as marker for states or changes in mental and physical health. The following paragraph will give an overview.

Several authors found that depressive individuals use more first person pronouns than never or formerly depressed individuals (Rude, Gortner & Pennebaker, 2004; Weintraub, 1981). The same trend emerged in a study by Stirman and Pennebaker (2001), analyzing the poems

of writers who committed suicide in comparison with non suicidal poets. Referring to the findings of Rude, Wenzlaff, Gibbs, Vane and Whitney (2002), using a sample of currently depressed students, the increased occurrence of first person pronouns is only apparent for the word "I" and not for "me" or "my".

According to Chung and Pennebaker (2007) the pronouns in general were better indicators for depression than negative emotion words. It is also known that first person pronouns are linked to more self related advertence. Thus, these results suggest that the use of "I" is associated with depressive characteristics. Other studies stated that healthy people use more third person pronouns. The individuals' flexibility of using pronouns could be another indicator of improvements in health. Campbell and Pennebaker (2003) found bigger physical health improvements in individuals changing flexible from first person writing style to other personal pronouns during the expressive writing intervention. Like formerly mentioned, a change in pronouns seems beneficial. However, what about the tense? With logical reasoning it might be assumed that individuals using more past tense compared to present or future tense might gain less profit by the intervention. Why is this logical? At the beginning, individuals might focus on past experiences in order to process and accept them, as well as integrate them into their lives. After putting these experiences behind, a shift from a past oriented writing style towards a more present and future oriented point of view might take place. On the other hand, solely the adequate preoccupation with past experiences might cause health benefits. Implying elevated use of past tense is beneficial, though.

Referring to the statement of Pennebanker and Chung (2007), if pronouns are better indicators than negative emotion words, what about expressing positive emotions? Positive emotion words are linearly related to health outcomes. This was also assumed for negative emotions. However, negative emotion words have a curvilinear (reversed-U) relationship with health (Pennebaker, Mehl, & Niederhoffer, 2003). The found relationship between negative emotions and health are congruent with maladaptive coping strategies, in terms of repressing and not expressing negative emotions (Jamner, Schwartz, & Leigh, 1988). All the mentioned linguistic indicators are in the scope of this research.

The current study focused on the first person pronoun "I", positive and negative emotion words, as well as the tense people use in their stories (past, present, future).

1.4.2 Theories

Expressive writing is no narrative intervention but a method based on the work of Pennebaker (1997). However, *narrative psychology* could serve as explanation for the effectiveness of the method. Narrative Psychology is based on the assumption that people set up their identity by telling stories about their life-events. According to the narrative psychology people try to create sense and meaning in their lives by expressing experiences as stories or narrations (Westerhof & Bohlmeijer, 2010). Mainly the structuring of highly emotional events are said to have a healing function. Narrative psychology also deals with characteristics of life stories and their relationship to behavior and mental health. Pennebaker and Chung (in press) believe that expressive writing is effective because it acts like a life course correction. Everyone struggles in life and has to deal with major and minor life issues. Mostly, we have not enough time to either think about these experiences, or to ascertain the consequences they might have for us and others. The authors state that it might be beneficial to reflect and examine our lives (Pennebaker & Chung, in press). A shift of perspective and seeing oneself loosely from the surroundings is necessary. "There are times when we are forced to stop and look back at our lives and evaluate what issues and events have shaped who we are, what we are doing, and why" (Pennebaker & Chung, in press, p. 22). If we are right in the middle of a highly emotional experience it is almost impossible to make a life course adjustment. Although this idea of working mechanism of expressive writing is not empirically proven, it is in accordance with McAdams' (2001) life story approach. To point out the importance of linguistic indicators in the context of the explanation approach of narrative psychology, the above mentioned definition of a life story by McAdams (2009) might be helpful. According to McAdams (2009), "a life story is an internalized and evolving narrative of the self that incorporates the reconstructed past, perceived present, and anticipated future in order to provide a life with a sense of unity and purpose" (p.10). People create meaning in their life through the telling of stories about the experiences they made. Those experiences get connected, are assigned with meaning and get a place in their personal deployment (Angus & McLeod, 2004). By telling stories not only the experiences get connected, but also different traits of themselves are integrated and connected in their stories. Through this, a kind of identity will be created (McAdams, 2009). This, again, is in congruence with McAdams' (2001) life story approach. So speaking in terms of linguistic indicators in this narrative explanation approach an intense preoccupation with the past, present and future might help in the process towards a meaningful, coherent life with a created identity, and now and then, life course corrections. According to this, it is assumed that changes in tense people use in their

stories might be an indicator for beneficial health outcomes. A shift from a more present oriented way of storytelling, towards a more present and future oriented point of view might indicate the above mentioned identity forming with all its underlying steps in conjunction with life experiences.

Some scientists argue that the *characteristic depressive schemes*, which also evoke the typical negative way of thinking and perceiving, are underlying and triggered by negative or stressful experiences (Rude et al., 2004). This cognitive theory is supported by the fact that once depressed individuals have negative processing biases, which are predictive for upcoming episodes (Gortner, Rude & Pennebaker, 2006). A change in this maladaptive processing through cognitive restructuring during expressive writing might decrease the risk for (further) depressive episodes. This cognitive restructuring might be indicated by changes in the use of negative and positive emotion words. Individuals benefiting from expressive writing might shift from a more negative way of writing towards a more positive one, indicated by the frequencies of those words.

Earlier studies focused on the *expression of emotions* during writing as the mechanism of action. Writing about emotional upheavals is more effective than just writing about the next holiday or something without emotional tension. But according to Pennebaker and Chung (in press) this is not the exclusive mechanism. Today, the translation of emotions into language is thought to be accountable for the effect of the intervention. Research states depression vulnerable individuals to *suppress* and *inhibit* negative *emotions* (Rude et al., 2002). Graybeal, Sexton and Pennebaker (2002) stated that the physiological work needed for the inhibition serves as long-term stressor. This stressor seems to be related to negative health outcomes (Pennebaker, 1989). Suppressing negative emotions and thoughts about traumatic events is related to higher risks of getting (mental) health problems (Gortner et al., 2006; Pennebaker et al., 2011). Vice versa it is assumed that encouraging the translation of feelings into words is related to health improvements (Pennebaker et al., 2011). Through cognitive activity during this translation process, a sense of understanding, structure and meaning will be created (Krantz & Pennebaker, 2007; Schwarz, 1990; Westerhof & Bohlmeijer, 2010). Findings of Pennebaker, Mayne and Francis in 1997 support this statement. According to them, the emotional expression facilitates the transfer of the experiences into language, leading to assimilation and understanding of those events. This process, in turn, leads to a reduction of negative emotions coming along with thinking about the experience (Pennebaker et al., 1997). In a nutshell, the expression of emotions stimulates the cognitive processing of the (traumatic) experiences, in turn causing emotional and physiological changes

(Pennebaker, 1989, 1993). By expressing more emotions in their stories, measurable by the amounts of emotion words used, individuals might gain more profit by an intervention such as expressive writing. Eventually, there are no differences in improvement whether people are writing about positive or negative experiences (e.g. Burton & King, 2004; King & Miner, 2000; Low, Stanton, & Danoff-Burg, 2006; Marlo & Wagner, 1999).

Habituation could be another possible explanation of the effects of expressive writing on health outcomes. Like in other behavioral therapies, confronting people with their emotions can help them to erase the classically conditioned relation between the experience and the reactions going along with. The representation and understanding seems to change, too (Foa & Kozak, 1986; Meadows & Foa, 1999). Arguing for the theory of habituation as working mechanism in expressive writing are the findings of Sloan, Marx and Epstein (2005): Repeatedly exposure to the same experience showed to have the biggest health improvements in comparison with confrontation to different traumatic events. So speaking in terms of linguistic markers, an elevated use of emotion words would, assumable, go along with improved health outcomes, as well as changes in the tense and pronouns people use in their stories. The stories people write about their lives and experiences might have the therapeutic effect of habituation, measurable by amounts and changes in their writing style.

Even though the list of theories is not complete, the most important ones, for this study, are mentioned. The question arises: Which one explains the effectiveness of the method? The answer is not clear yet, but it is assumed that a combination of theories is most likely.

1.5 Mental Health

The current study is both interested in the effects of linguistic changes in an expressive writing condition on depression symptoms, and on positive mental health. Therefore, it is crucial to take a closer look on the relationship between psychopathology and positive mental health. The terms positive mental health and well-being will be used interchangeably in this paper.

1.5.1 Positive Mental Health

The term well-being or positive mental health is broad and differentiated. In the literature, well-being is described as consisting of three subcategories. First of all, *emotional well-being* (also mentioned as subjective well-being, e.g., Diener, 1984) is defined as happiness, absence of negative and presence of positive affects, and an appraisal of the life satisfaction (Diener, 1984; Diener, Suh, Lucas, & Smith, 1999; Westerhof & Bohlmeijer, 2010). Thus, it is

composed of emotional and cognitional aspects. It seems that negative and positive emotions are independent variables. *Psychological well-being* is the second component of the broader term well-being, it equals the individuals' self-realization and is more normative than emotional well-being. It is stated that psychological basic needs have to be fulfilled in order to create intrinsic motivation, which, in turn, leads to individual accretion and development. Thus, basic needs shape the base for self-realization. The third, and last, component of well-being is *social well-being* which is congruent with societal integration. It expresses the quality of cohabitation.

It is assumed that levels of (emotional) well-being are robust, but can be altered in long-term view (e.g. after incisive experiences in life, Diener, Lucas, & Scollon, 2006; Heady & Wearing, 1989). Those findings are important for the current study, assuming that the intervention might cause changes in well-being which last longer, because of its robust character. Changes might be difficult to attain, but once altered robust factors might work in favor of long-time effects.

1.5.2 Psychopathology and Well-being: Opposites or Two Related but Distinct Continua?

This section tries to define the relationship between psychopathology and positive mental health according to the literature. As this study focuses on depression in particular, the term psychopathology will be specified as depression, although the following propositions are not exclusively true for depression. The traditional view describes the relationship of depression and positive mental health as two opposing ends of one continuum. This point of view implies that symptoms of depression cannot come along with high positive mental health. Keyes (2005) came up with a new model explaining the relationship: the *two-continua model*. The model implies depression and positive mental health as being two distinct, but moderately related and balanced continua. Contrary to the traditional view, the two-continua model provides the possibility that symptoms of depression and positive mental health could be present at the same time. So in practice it is possible that an individual is afflicted with a high number of depressive symptoms and nevertheless experiences comparatively high positive mental health and vice versa. However, the relation is not ideal but the model also implies that individuals suffering from a high number of symptoms would rather experience low positive mental health (Lamers, 2012). In line with the distinct but still moderately related continua, two longitudinal studies found a predictive relationship of positive mental health on depression. Wood and Joseph (2009) ascertained that low psychological well-being serves as

a risk factor for an upcoming depression later in life. The prevalence of a future major depression can be predicted by changes in the level of positive mental health (Keyes, Dhingra, & Simoes, 2010). Many studies validated the two-continua model using different populations (Keyes, 2006; Keyes, Wissing, Potgieter, Temane, Kruger, & van Rooy, 2008), measures and definitions of the concepts (Suldo & Shaffer, 2008; Westerhof & Keyes, 2010). So it can be stated: Positive mental health is not just the absence of a depression, but also the presence of well-being.

But why does this paper focus on both, symptoms of depression and positive mental health? According to the two continua model, the state of mental health is only apparent if an individual experiences low levels of symptoms and a relatively high level of positive mental health. Therefore, it is of great interest to know if the current intervention is able to induce changes among the depressive symptoms as well as positive mental health in order to increase the total mental health.

Since this section makes clear that the two health outcomes psychopathology and positive mental health are distinct but related continua, it is only logical that the underlying working elements do not have to be the same for both of them.

In the following section the current research and its research questions and hypotheses will be pointed out.

2. The Current Research: Questions and Hypotheses

As it seems, little is known about the underlying working mechanisms of expressive writing and a lot more research is needed. As mentioned above there are several theories trying to explain the underlying processes, but the literature cannot fully support one of them. All theories seem to add a little piece of the puzzle, but the whole picture seems to be incomplete. Thus, the current study was set up. We will take a closer look at the underlying working mechanisms of the expressive writing intervention and the influence on positive mental health and psychopathology

For the current study the original expressive writing method was extended with psycho education and aspects of mindfulness, detection of patterns and cognitive restructuring (known from CBT). Many of the above mentioned theories about the working mechanisms of the expressive writing method are integrated in this current intervention. It is expected that the course will be helpful through the expression of emotions, being more aware of them and the underlying processes, and by providing helpful advice about emotion regulation. The

participants are encouraged to write about positive and negative emotions to facilitate the expression and the translation of feelings into language. The writing instructions are formulated very clear in order to create a sense of structure for the participants. Due to the fact that it is suggested to write minimally three times a week the aspect of habituation is also taken into consideration. In order to increase the effectiveness of the course psycho education and extra tasks are added.

The focus concerning the underlying processes is on linguistic indicators. The use of pronouns, tense and negative/positive affects in general, as well as changes in the use during the sessions will be examined to identify the effects on the outcomes (i.e. well-being and symptoms of depression). This leads us to the general research question:

What are the working mechanisms of expressive writing? - Focusing on pronouns, tense, and negative and positive emotion words.

H1: Respondents improving more, in terms of depressive symptoms and positive mental health, use more positive emotion words **a)** in general **b)** in the progress of the course than respondents that improved less.

Using more positive emotion words is expected to be related to positive health outcomes. According to the literature positive emotion words are linear related with health (Pennebaker et al., 2003).

H2: Respondents improving more, in terms of depressive symptoms and positive mental health, use **a)** more negative emotion words in general **b)** less negative emotion words in the progress of the course than respondents that improved less.

Concerning the general relationship between negative emotion words and improvements in depressive symptoms and positive mental health, it is assumed that a higher amount of negative emotion words is related to improvements. Since the expression of emotions is one of the underlying working mechanisms of expressive writing, it is expected that higher frequencies in total come along with improvements (Pennebaker & Chung, in press).

On the contrary, using less negative emotion words in the progress of the course is expected to be related to beneficial health outcomes, since the literature stated that negative emotions are curvilinear related to positive health outcomes (Pennebaker et al., 2003).

H3: Respondents improving more, in terms of depressive symptoms and positive mental health, use less first person pronouns ("I") **a)** in general **b)** in the progress of the course than respondents that improved less.

Lower frequencies of the first person pronoun "I" are expected to be related to beneficial health changes, because the literature stated that a characteristic of depressive samples is an increased use of the first person pronoun and a more egocentric style of writing (Bucci, 1995; Rude et al., 2004; Weintraub 1981). So it is assumed that a change in this style of writing will cause beneficial changes in depressive symptoms and positive mental health.

H4: Respondents improving more, in terms of depressive symptoms and positive mental health, use more present- and future tense than past tense **a)** in general **b)** in the progress of the course than respondents that improved less.

This hypothesis has a more explanatory character. To our knowledge no earlier studies tried to examine the relationship between tense and beneficial health outcomes. By logical reasoning it can be assumed that participants are using more past tense at the beginning of the course, in order to handle the experiences. During this process they might create a sense of meaning and are able to integrate the described experiences and emotions into their life (Angus & McLeod, 2004; McAdams, 2009). After being preoccupied with their past, it is assumed that the attention of the respondents shifts from the past to the present and future.

3. Method

3.1 Design and Procedure

Primarily, the expressive writing intervention was the minimal intervention group of a longitudinal study to examine the effects of the autobiographical writing course "The Stories we Live by". The data in this study was collected by using only data of the first (t0; before intervention) and second (t1; directly after intervention) measurement of the three measuring points. Of course, only the data of the respondents assigned to the minimal intervention group (expressive writing) was used. The data of this study is cross-sectional and gathered at a defined time with a representative subset of Dutch-speaking adults, ranging from 42 to 71, with mild or moderate symptoms of depression.

Participants were gathered via open recruitment. Advertisements in newspapers, magazines, and web pages, tailored to the 40+ generation of the Dutch society, were spread to catch attention. For more information the advertisements referred to a webpage where interested

parties could receive more information by registering. After registering the potential respondents received information about the self-help course and an outline of the study, as well as an informed-consent. If respondents decided to take part in the study, they had to return the filled-in informed consent. Upon receipt a confirmation mail was sent to the respondents. The e-mail also contained a link to a webpage with screening questionnaires they had to fill in and some questions concerning the in- and exclusion criteria (for all criteria see Table 2). In order to verify if all in-and exclusion criteria were met, a diagnostic interview was conducted by phone. Those who met all the in- and exclusion criteria had to fill in more questionnaires via a link to a webpage. Afterwards the respondents were assigned to the different conditions based on a computerized-randomization procedure. They were informed of the results via email.

Table 2
Inclusion- and exclusion criteria

Inclusion criteria
- Age of 40 or older
- Mild to moderate symptoms of depression
Exclusion criteria
- Severe symptoms of depression or anxiety
- Moderate or high suicidal risk
- No symptoms of depression
- Recently started pharmacotherapy (<3 months ago)
- Actual psychological (self-help) therapy
- No time to complete the course
- Non-sufficient language skills (Dutch)
- No access to an email-address

3.2 Participants

In total the data of 58 participants was collected, of which 20 were excluded because of not submitting all seven assignments, and five because of not attending in the second measurement of the Mental Health Continuum- Short Form (MHC-SF) and the Center for Epidemiologic Studies Depression Scale (CES-D) (detailed information about the scales in section 3.4.1 and 3.4.2; for an overview of the drop-outs see Table 3). Respondents who completed the course did not differ from those who did not complete the course in age ($F(1,57) < 1$, $p > .05$), gender ($\chi^2(1,N=58) = .788$, $p > .05$), education ($\chi^2(6,N=58) = 3.388$, $p > .05$) the score on the CES-D (t0; $F(1,57)=3.081$, $p > .05$), and differed only slightly in the

scores at the MHC-SF (t0; $F(1,57)= 4.239$, $p < .05$). So in total the data of 33 respondents (N=33) was used for further analysis. For an overview of the samples' means see Table 4. The majority of the participants were female (81.8%), whereas only 18.2% of the sample were male. The age of the participants was ranging from 42 up to and including 71 years, with 57 (SD=6.65) years on average. About 9% of the participants had a low educational level (primary education), 42.5 % completed secondary education and the majority of 48.4% had tertiary educational level.

The mean score on the measure for positive mental health (MHC-SF) was 3.52 (SD= 0.81) at the baseline (t0) and 3.78 (SD= 0.80) at follow-up (t1). In comparison with the general mean (M=3.98, SD= 0.85) of a representative Dutch sample (N=1662), the current sample scored slightly below this mean (at the first and second measurement), but in the range of the standard deviation. The mean of the CES-D in this sample at the baseline (t0) was 22.24 (SD=5.60) which is close to the mean of inpatients (M= 24.4, SD=13.51) and significantly higher than the mean of a control sample of the general community in the validation study of the CES-D by Radloff (1977). It is also noteworthy that the mean of the sample at the first measurement is above the cut-off point for "possible cases". Only 15% of the participants scored below the cut-off point of 16. The mean of our sample after the intervention (M=14.52, SD=8.54) was slightly below this cut-off point and more than half of the sample was below the cut-off point (66.5%).

Table 3

Overview about respondents and drop-outs per lesson (N=58)

Lesson	**N**	**Missing**
1	51	7
2	50	8
3	47	11
4	44	14
5	44	14
6	42	16
7	34	24

Table 4

Means and Standard deviations of different variables (N=33)

N=33	**N**	**%**
Gender		
Male	6	18.2
Female	27	81.8
Level of education		
Primary education	3	9
Secondary education	14	42.5
Tertiary education	16	48.4
	M	***SD***
Mean age	57	6.65
MHC-SF		
Before (t0)	3.52	0.81
After (t1)	3.78	0.80
CES-D		
Before (t0)	22.24	5.60
After (t1)	14.52	8.54

3.3 Intervention

The intervention used in this study is based on the expressive writing method of Pennebaker (1997) and extended by researchers of the University of Twente (Bohlmeijer et. al, 2011). The effectiveness of the intervention has already been examined in the context of depression (Linden van, 2012). The participants received weekly tasks from their personal counselor (a trained student) in order to support the process of writing and provide structure. The tasks varied in their focus; negative and positive emotions as well as e.g. detecting underlying processes in the extra tasks. Participants had to deliver an essay of maximum one page, a short description of the writing process of the week (e.g. upheavals or positive experiences during writing) and questions they had, to their personal counselor, in order to receive individual feedback and answers to their questions.

First of all, the personal counselor introduced himself to the participant and vice versa. The first three lessons focused on writing about experiences with negative emotions. The first lesson included, besides the task, additional information about the function of expressive writing and an outline of the course. The task in the second lesson was expanded with information about basic emotions and their function. Additionally, an extra task was added, participants had to name nuances of emotions. Additional information in the third lesson was about the importance of expressing emotions and tips about effective communication. The latter were meant to implement during the extra task.

The task of the fourth lesson was to make an interim balance sheet. Participants had to identify individual patterns of dealing with situations and emotions. Information about assignment of emotions to situations, central ideas and emotion regulation was added. The extra task in this lesson was to imagine a calming motto.

The fifth and sixth lesson focused on writing about experiences with positive emotions. Besides the task concerning the focus of the lesson, additional information about positive emotions and the reinforcement of them through mindfulness was given. The extra task was to create a sense of mindfulness, paying attention on daily routine. In the sixth lesson, information about the origin of feelings and their function was given. The extra task was to create a balance between "must and want" to get an overview about intrinsic and extrinsic rewarding activities.

In the seventh and last lesson the participants were asked to write a letter to a valued or loved person with a kind of evaluation including the experiences, the process and helpful elements of the course. It was suggested to keep on writing and a summary of the most important aspects of expressive writing was given for the future.

The course took minimally seven weeks and maximal ten weeks, depending on whether participants needed more than one week for one or two of the assignments they received. It was suggested to write minimally three times a week for about 15 minutes. To provide an overview of the intervention Table 5 represents the course outline.

Table 5

Course outline of the intervention

Lesson	**Tasks**	**Additional Information (Psycho-education)**	**Extra Task**
-	**I**ntroduction to counselor	-	-
1	**W**riting about experiences with negative emotions	**I**nformation about function of EW and outline of the course	-
2	**W**riting about experiences with negative emotions	**I**nformation about basic emotions and function of emotions	**N**aming nuances of emotions
3	**W**riting about experiences with negative emotions: situations you try to avoid	**I**nformation about importance of expression of emotions; Tips about effective communication	**C**ommunicate effective
4	**I**nterim balance sheet: identifying patterns of dealing with situations and emotions	**I**nformation about assignment of meaning to situations, central ideas and emotion regulation	**I**magine a calming motto

5	**W**riting about experiences with positive emotions (in detail)	**I**nformation about positive emotions and reinforcement of them through mindfulness	**M**indfulness: attention for routine
6	**W**riting about experiences with positive emotions (different focus than in lesson 5)	**I**nformation about why individuals experience emotions, function of them	**B**alance between "must and want": extrinsic and intrinsic rewarded activities
7	**W**riting a letter to a loved person: describing (learning) experiences, process and helpful elements of the course	**K**eep on writing	**S**ummary of most important aspects of expressive writing for future

3.4 Measures

3.4.1 MHC-SF

Positive mental health will be measured with the MHC-SF (α=.89; Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011). The original Mental Health Continuum (MHC) consists of 40 items covering all three aspects of positive mental health and is validated in different populations (Lamers et al., 2012). Due to the fact that a shorter questionnaire was needed the MHC-SF was developed. It is a self-report questionnaire with 14 items also covering all aspects of positive mental health with subscales for emotional (3 items), psychological (6 items), and social well-being (5 items). The questionnaire has good psychometric properties (Keyes, 2002), also demonstrated in the Dutch population (Westerhof & Keyes, 2008). The items refer to the presence of the named feelings during the past month. An example is "How often did you experience happiness?" The optional answers are: "Never", "Once or twice", "Approximately once a week", "Two or three times a week", "Almost every day" and "Every day" (Korte, Bohlmeijer, & Smit, 2009).

The respondents had to fill in the MHC-SF before (t0) and directly after (t1) the expressive writing intervention, in order to monitor the changes in positive mental health. To analyze the underlying working mechanisms, the sample had to be separated into two groups: the improved and not improved group. To split the sample a difference score of the first and second measurement point of the MHC-SF was calculated (t1-t0; positive score indicating

increasing of positive mental health). The participants were selected by the median (.14) of the difference score. Participants scoring below the median were assigned to the not improved group (N=16, 51.5%) and a score above and including .14 was the inclusion criteria for the improved group (N=17, 48.5%).

3.4.2 CES-D

The CES-D (Bouma, Ranchor, Sanderman & van Sonderen, 2012) is a valid and reliable self-report questionnaire and used to detect symptoms of depression in the population (α=.576). The items refer to the past week and are not meant to diagnose a clinical depression in individuals. Moreover, the scale is designed to identify high-risk groups. The CES-D consists of 20 short items based on well known and feasible scale, such as the Zung Depression Scale, the Beck Depression Inventory (BDI), parts of the Minnesota Multiphasic Personality Inventory (MMPI), the Raskin self- Depression Scale and the Gardner Symptom Checklist (Bouma et al., 2012).

The items describe a state or condition as for example “During the last week I felt depressed”, “During the last week I felt anxious” or “ During the last week I supposed my life to be a failure”, with the following optional answers: never/seldom (< 1 day; score: 0), sparse/sometimes (1-2 days; score: 1), frequent (3-4 days; score: 2), and mostly/all the time (5-7 days; score: 3).

The respondents had to fill in the CES-D before (t0) and directly after (t1) following the expressive writing intervention in order to monitor the changes in symptoms of depression.

As already mentioned above, in order to analyze the underlying working mechanisms the sample had to be separated into two groups: the improved and not improved group. This was not only necessary for positive mental health, but also for depressive symptoms to analyze differences between those two outcomes (see section 1.4). To split the sample a difference score of the first and second measurement point of the CES-D was calculated (t1-t0; negative score indicating decreasing of symptoms of depression). The participants were selected by the median (-8.00) of the difference score. Participants scoring above the median were assigned to the not improved group (N=14, 42.4%) and a score below and including -8.00 was the inclusion criteria for the improved group (N=19, 57.6%).

3.4.3. LIWC

The Linguistic Inquiry and Word Count (LIWC) is a text analysis computer software designed by Pennebaker, Booth, & Francis (2007). It can analyze how often individuals use different

categories of words in their texts. In this study the Dutch version of the LIWC was used. According to Zijlstra, van Meerveld, van Middendorp, Pennebaker, & Greenen (2004) the LIWC is valid for the Dutch language. The output contains percentages of the words uses by the individuals, e.g. number of positive (happy, lucky) or negative emotion words (sad, angry), pronouns (I, you, we) and tense (past, present, future). Only the just named examples will be used in this paper in order to examine if they are related to possible changes in positive mental health and symptoms of depression after the intervention.

3.5 Statistical Analysis

Data analyses in this study will be intended to examine the relationships between the dependent linguistic indicators (within-subject factors) and the independent variables, namely the improved and not improved groups of positive mental health and depressive symptoms (between-subject factors). The text analysis software LIWC was used to count the words written in the tasks, the output showed the percentages. This data was merged with the data of the first (t0 before intervention) and second (t1 after intervention) measurement of the MHC-SF and the CES-D. The IBM Statistical Package for the Social Sciences 20 was used to analyze the data.

Before analyzing the data, the respondents were assigned to improved and not improved groups separately for the distinct aspects of mental health, depressive symptoms and positive mental health (for more information about this procedure, see section 3.4.1 and 3.4.2)

To get a general overview of the data and the underlying relations descriptive statistics and correlations were calculated. In order to answer the hypotheses several MANOVAs with repeated measures were implemented. To examine the first part of the hypotheses (H1a, H2a, H3a, and H4a), concerning the general relationship between the linguistic indicators and the different groups (between-subjects), we used the results of the between-subject analyses. Those results showed, if there was a relationship, between the linguistic indicator and the different groups (between-subjects), without differentiating between the lessons. In order to answer the second, and more detailed, part of the hypotheses (H1b, H2b, H3b, & H4b) the within-subject analyses results were used. The within-subject results showed, if there was a change during the course, implying differences between the lessons. If there were significant differences, they were described in detail by taking a closer look at the LSD confidence intervals. The results concerning the interaction effect were answering the question, if the linguistic changes during the course were different for the improved and not improved groups. If an interaction effect was found, the LSD confidence intervals were split and described per

group in order to point out the differences. MANOVA analyses were conducted separately with each of the linguistic indicator and the different groups (between-subjects).

4. Results

4.1 Descriptives

The score, at the first measurement of the CES-D (t0; $F(1,31)<1$, $p>.05$) and MHC-SF (t0; $F(1,31)<1$, $p>.05$) was not different for respondents who improved in depressive symptoms (CES-D: M=22.37, SD=5.88; MHC-SF: M=3.59, SD=.83) and those who did not improve (CES-D: M=22.07, SD=5.41; MHC-SF: M=3.42, SD=.80). In contrast, those who improved in positive mental health (CES-D: M=25.65, SD=3.48; MHC-SF: M=3.20, SD=.73) and those who did not (CES-D: M=18.63, SD=5.19; MHC-SF: M=3.85, SD=.77), differed in their scores of the CES-D (t0; $F(1,31)=21.082$, $p<.001$) and the MHC-SF (t0;$F(1,31)=6.286$, $p<.05$) For a clearer overview of the mean scores on at the first measurement see Table 6.

By comparing the samples spreading over the groups in a cross-tab (see Table 7 for an overview) it can be seen that respondents who improved in positive mental health, also improved in their depressive symptoms (N=12, 63.2%). Vice versa, respondents who did not improve in one of the health variables mostly did not improve in the other (N=9, 64.3%).

Table 6

Mean scores of the different groups at first measurement (N=33)

M (SD)	**Improved**	**Not improved**
	CES-D	
CES-D t0	22.37 (5.88)	22.07 (5.41)
MHC-SF t0	3.59 (0.83)	3.42 (0.80)
	MHC-SF	
CES-D t0	25.65 (3.48)	18.63 (5.19)
MHC-SF t0	3.20 (0.73)	3.85 (0.77)

Table 7

Cross-Tab: spreading among the improved and not improved groups (N=33)

	CES-D		
MHC-SF	**Improved N (%)**	**Not improved N (%)**	**Total N (%)**
Improved	12 (63.2)	5 (35.7)	17 (51.5)
Not improved	7 (36.8)	9 (64.3)	16 (48.5)
Total	**19 (100)**	**14 (100)**	**33 (100)**

The overview of the descriptives (see Table 8) shows that the total amount of words, written by the respondents during the whole course, was decreasing. In the beginning participants

used about 705.94 (SD=385.71) words on average, constantly declining until lesson 4. Here participants reached the lowest point with 447.24 (SD=212.86) words on average. Until lesson 7 the total word count increased a little, but resided under the amounts of the first 3 lessons. Respondents used positive emotion words less frequent in the lessons 1 to 4, in comparison with the later lessons 5, 6 and 7. The opposite was found for negative emotion words. Respondents used more negative emotion words during the first lessons (1 to 4), in comparison with the later lessons 5, 6 and 7. For the linguistic indicator "I" no such pattern was found. The use of the first person pronoun was fluctuating during the seven lessons of the course. Respondents used more past tense at the beginning (M=6.65, SD=3.35) of the course than in the end (M=4.64, SD=2.19). The lowest point of use was in lesson 4 (M=3.23, SD=1.61). From lesson 5 frequencies increase again, but resided under the amounts of the first three lessons. The present tense was used more often in the last (M=13.15, SD=3.94) lesson of the course than at the beginning (M=10.75, SD=3.24), with a highpoint at lesson 4 (M=15.03, SD=2.19). The respondents used nearly the same amount of future tense at the beginning (M=0.78, SD=0.46) and the end (M=0.75, SD=0.57) of the course. Between the first and the last lesson the frequencies of the use of the future tense were fluctuating.

Table 8

Means and Standard deviations of the linguistic indicators per lesson (N=33)

Variable and *M (SD)*	**Lesson 1**	**Lesson 2**	**Lesson 3**	**Lesson 4**	**Lesson 5**	**Lesson 6**	**Lesson 7**
Word count	705.94 (385.71)	664.79 (266.69)	622.61 (365.38)	447.24 (212.86)	511.00 (202.50)	503.48 (203.49)	535.39 (289.20)
Positive Emotion words %	1.38 (0.69)	1.84 (0.90)	1.74 (0.60)	1.79 (0.92)	3.19 (1.35)	3.00 (1.17)	2.50 (1.09)
Negative emotion words %	2.25 (0.94)	2.59 (1.09)	2.51 (0.85)	2.66 (1.40)	1.05 (0.60)	1.08 (0.61)	1.43 (0.85)
Pronoun "I" %	7.83 (2.68)	8.60 (2.71)	8.64 (2.98)	8.97 (2.47)	7.59 (2.63)	8.76 (2.11)	7.97 (2.58)
Past %	6.65 (3.35)	5.74 (3.65)	5.03 (2.93)	3.23 (1.61)	4.88 (2.31)	4.94 (2.89)	4.64 (2.19)
Present %	10.75 (3.24)	12.03 (3.24)	13.41 (2.85)	15.03 (2.19)	11.75 (2.28)	12.34 (3.19)	13.15 (3.94)
Future %	0.78 (0.46)	0.85 (0.58)	0.87 (0.58)	0.77 (0.71)	0.60 (0.44)	0.61 (0.43)	0.75 (0.57)

4.2 Correlations

Table 9 presents a correlation matrix to give an overview of the found relationships. Education was negatively correlated with the total use of positive emotion words (r=-.353, p<.05). Thus, the higher the level of education, the lower the use of positive emotion words was. The score of the first measure of the MHC-SF (t0) was negatively correlated with the first measure (t0) of the CES-D (r= -.529, p<.001). Implying a higher score on the MHC-SF tended to go along with lower scores at the CES-D. This in turn means, respondents experiencing more positive mental health at the first measurement, also tended to experience less symptoms of depression. The score of the second measurement (t1) of the CES-D was negatively correlated with the first measurement (t0) of the MHC-SF (r= -.374, p<.05). Thus, the lower the positive mental health was at the first measurement, the higher the experienced symptoms of depression were directly after the intervention. Additionally, the second measurement (t1) of the MHC-SF was negatively correlated with the second measurement (t1) of the CES-D (r= -.480, p<.001). Hence, the higher respondents perceived their positive mental health, the less depressive symptoms they had.

The total use of future tense was positively correlated with the total amount of words respondents wrote (r= .391, p<.05). Thus, the more words respondents wrote in their essays, the higher the amount of future tense. The total use of present tense was negatively correlated with the total use of past (r= -684, p<.001), implying that the higher the amounts of present tense were, the less past tense the respondents used.

Table 9

Correlationmatrix of the variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Gender														
2. Age	-,29													
3.Education	,08	,31												
4. CES-D Total (t0)	,06	,15	,14											
5. MHC-SF Total (t0)	-,14	,04	-,32	-,53**										
6. CES-D Total (t1)	,35*	,14	,14	,58**	-,37*									
7. MHC-SF Total (t1)	-,45**	,08	-,32	-,19	,67**	-,48**								
8. Total Wordcount	,04	,04	-,14	,25	,18	-,05	,23							
9. Total "I"	-,01	-,28	-,09	,30	-,12	,07	-,10	,280						
10. Total Pos. Em.	-,28	-,09	-,35*	-,07	,32	-,15	,32	-,09	,07					
11. Total Neg. Em.	,30	-,27	,11	,02	-,01	-,01	,01	,18	-,06	,32				
12. Total Past	-,14	-,09	,00	,14	-,14	-,08	,09	,25	-,02	-,07	,08			
13. Total Present	,00	-,19	-,14	-,31	,07	-,14	-,17	-,19	,11	,10	-,10	-,68**		
14. Total Future	,09	,26	-,21	-,08	,27	-,01	,09	,39*	,06	-,08	-,22	-,19	,21	

NOTE: *Correlation significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.001 level (2-tailed)

4.3. MANOVAs with Repeated Measures

In the following section the results of the analyses will be presented per hypotheses. First of all, a table with descriptives will be given for each variable. Then the results concerning the general relationship (between-subject analyses) will be presented. After this, the results about the effects of progress during the course will be shown for each of the two groups separately (within-subject analyses).

4.3.1 Positive Emotion Words

The first hypothesis was: Respondents improving more, in terms of depressive symptoms and positive mental health, use more positive emotion words **a)** in general **b)** in the progress of the course than respondents that improved less.

Table 10

Means and standard deviations of the use of positive emotion words during the course in all groups

Variable and lesson	**Depression**		**Positive mental health**	
	Improved (N=19) *M (SD)*	Not improved (N=14) *M (SD)*	Improved (N=17) *M (SD)*	Not improved (N=16) *M (SD)*
Positive emotion words				
1	1.27 (0.60)	1.52 (0.79)	1.31 (0.68)	1.45 (0.70)
2	1.82 (0.85)	1.85 (1.00)	1.65 (0.84)	2.03 (0.95)
3	1.65 (0.58)	1.86 (0.62)	1.64 (0.52)	1.85 (0.66)
4	1.90 (0.64)	1.65 (1.22)	1.83 (0.98)	1.74 (0.88)
5	3.44 (1.33)	2.84 (1.34)	3.36 (1.58)	3.01 (1.07)
6	2.93 (1.22)	3.08 (1.14)	2.90 (1.14)	3.10 (1.23)
7	2.51 (1.25)	2.49 (0.87)	2.57 (1.10)	2.43 (1.10)

4.3.1.1 Depressive Symptoms

The results showed no main effect of the between subject factor "Improvement", speaking in terms of reducing depressive symptoms ($F(1,31)<1$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of positive emotion words.

The results of the within-subject analysis showed a main effect of positive emotion words in progress over time ($F(6,26)=17.677$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 1.). The confidence intervals showed significant differences in the use of positive emotion words between the lessons. The respondents used positive

emotion words significantly more often in their essays of lessons 5, 6 and 7 when comparing with lesson 1, 2, 3 and 4. In comparison with lesson 7, the respondents used positive emotion words more often in lesson 5. Participants of both groups used significantly more positive emotion words at the end of the course.

However, no interaction effect of the two variables was found ($F(6,26)=1.324$, $p>.05$). So it can be concluded that the found changes in use of positive emotion words were the same for both, the improved and not improved group.

4.3.1.2 Positive Mental Health

The results showed no main effect of the between subject factor "Improvement", speaking in terms of increasing positive mental health ($F(1,31)<1$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of positive emotion words.

The results of the within-subject analysis showed a main effect of positive emotion words in progress over time ($F(6,26)=18.251$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 2.). The confidence intervals showed significant differences in use of positive emotion words between the lessons. The respondents used positive emotion words significantly more often in their essays of lessons 5, 6 and 7 when comparing with lesson 1, 2, 3 and 4. In comparison with lesson 7, the respondents used positive emotion words more often in lesson 5. In lesson 1 the respondents used significantly less frequent positive emotion words than in all other lessons. Participants of both groups used significantly more positive emotion words at the end of the course.

However, no interaction effect between the two variables was found ($F(6,26)=<1$, $p>.05$). So it can be concluded that the found changes in the use of positive emotion words were the same for both, the improved and not improved group.

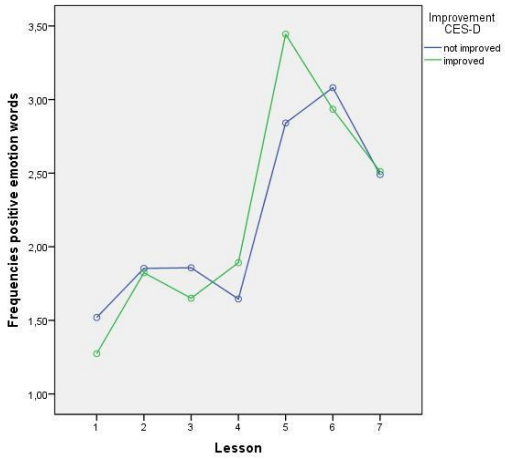

Figure 1. Positive emotion words (depression)

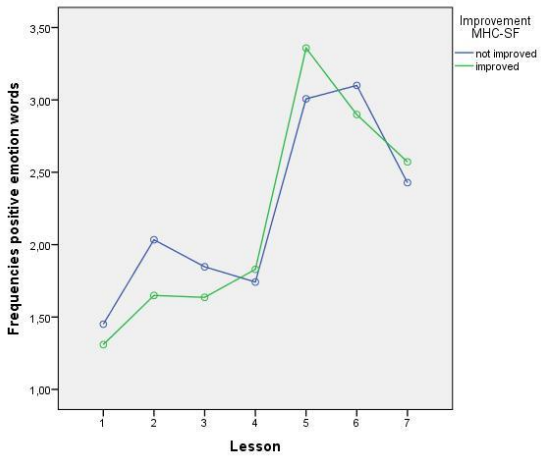

Figure 2. Positive emotion words (positive mental health)

Even if the respondents changed their style of writing during the course, a relationship between the use of positive emotion words and the between-subject factors could not be shown. Therefore, the first hypothesis is fully rejected.

4.3.2 Negative Emotion Words

The second hypothesis was: Respondents improving more, in terms of depressive symptoms and positive mental health, use **a)** more negative emotion words in general **b)** less negative emotion words in the progress of the course than respondents that improved less.

Table 11

Means and standard deviations of the use of negative emotion words during the course in all groups

Variable and lesson	**Depression**		**Positive mental health**	
	Improved (N=19) *M (SD)*	Not improved (N=14) *M (SD)*	Improved (N=17) *M (SD)*	Not improved (N=16) *M (SD)*
Negative emotion words				
1	2.35 (1.05)	2.11 (.78)	2.27 (1.08)	2.24 (.79)
2	2.56 (1.10)	2.63 (1.11)	2.66 (1.07)	2.51 (1.14)
3	2.65 (.84)	2.32 (.86)	2.52 (.92)	2.49 (.08)
4	2.57 (1.22)	2.77 (1.65)	2.89 (1.48)	2.41 (1.30)
5	1.03 (.57)	1.06 (.67)	1.04 (.62)	1.05 (.60)
6	1.11 (.63)	1.06 (.60)	1.13 (.53)	1.04 (.70)
7	1.40 (.79)	1.46 (.96)	1.71 (.84)	1.12 (.77)

4.3.2.1 Depressive Symptoms

The results showed no main effect of the between subject factor "Improvement", speaking in terms of reducing depressive symptoms ($F(1,31)<1$, $p>.05$), implying that there were no

significant differences between the improved and not improved group in the total use of negative emotion words.

The results of the within-subject analysis showed a main effect of negative emotion words in progress over time ($F(6,26)=20.601$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 3.). The confidence intervals showed significant differences in the use of negative emotion words between the lessons. The respondents used negative emotion words significantly more often in their essays of lesson 1, 2, 3 and 4 when comparing with lesson 5, 6 and 7. In comparison with lesson 5, the respondents used negative emotion words more often in lesson 7. Participants of both groups used significantly more negative emotion words at the beginning of the course.

However, no interaction effect of the two variables was found ($F(6,26)=<1$, $p>.05$). So it can be concluded that the found changes in the use of positive emotion words were the same for both, the improved and not improved group.

4.3.2.2 Positive Mental Health

The results showed no main effect of the between subject factor "Improvement", speaking in terms of increasing positive mental health ($F(1,31)=2.019$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of negative emotion words.

The results of the within-subject analysis showed a main effect of negative emotion words in progress over time ($F(6,26)=21.225$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 4.). The confidence intervals showed significant differences in the use of negative emotion words between the lessons. The respondents used negative emotion words significantly more often in their essays of lesson 1, 2, 3 and 4 when comparing with lesson 5, 6 and 7. In comparison with lesson 5, the respondents used negative emotion words more often in lesson 7. Participants of both groups used significantly more negative emotion words at the beginning of the course.

However, no interaction effect of the two variables was found ($F(6,26)<1$, $p>.05$). So it can be concluded that the found changes in the use of negative emotion words were the same for both, the improved and not improved group.

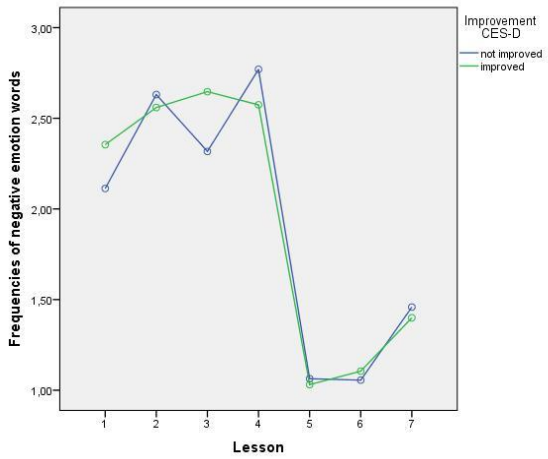

Figure 3. Negative emotion words (depression)

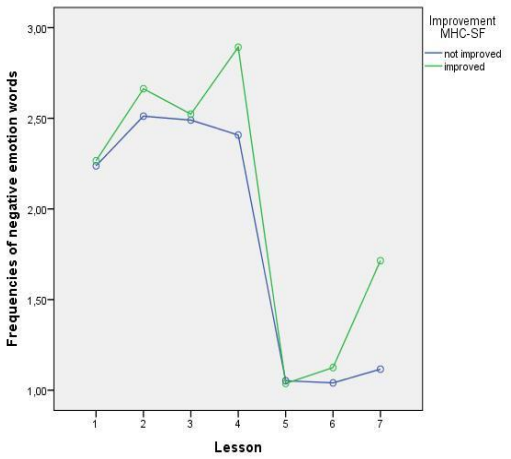

Figure 4. Negative emotion words (positive mental health)

Even if the respondents changed their style of writing during the course, a relationship between the use of negative emotion words and the between-subject factors could not be shown. Therefore, the second hypothesis is fully rejected.

4.3.3 First Person Pronoun "I"

The third hypothesis was: Respondents improving more, in terms of depressive symptoms and positive mental health, use less first person pronouns ("I") **a)** in general **b)** in the progress of the course than respondents that improved less.

Table 12

Means and standard deviations of the use of the first person pronoun "I" during the course in all groups

Variable and lesson	**Depression**		**Positive mental health**	
	Improved (N=19) *M (SD)*	Not improved (N=14) *M (SD)*	Improved (N=17) *M (SD)*	Not improved (N=16) *M (SD)*
First person pronoun "I"				
1	7.75 (2.86)	7.93 (2.52)	7.72 (2.82)	7.95 (2.62)
2	8.26 (2.55)	9.07 (2.94)	8.53 (2.89)	8.68 (2.60)
3	8.41 (2.94)	8.95 (3.13)	7.77 (3.12)	9.57 (2.61)
4	8.80 (2.66)	9.18 (2.25)	8.81 (2.33)	9.13 (2.67)
5	7.82 (2.66)	7.26 (2.64)	7.81 (2.50)	7.35 (2.82)
6	9.04 (1.94)	8.38 (2.34)	8.95 (2.37)	8.56 (1.84)
7	7.71 (2.70)	8.32 (2.47)	8.06 (1.86)	7.87 (3.24)

4.3.3.1 Depressive Symptoms

The results showed no main effect of the between subject factor "Improvement", speaking in terms of reducing depressive symptoms ($F(1,31)<1$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of the first person pronoun "I".

The results of the within-subject analysis showed no main effect of the first person pronoun "I" in progress over time ($F(6,26)=1.514$, $p>.05$). Thus, respondents did not change in their style of writing during the course (see Figure 5.).

Additionally, no interaction effect of the two variables was found ($F(6,26)<1$, $p>.05$). So it can be concluded that the insignificant changes in the use of the first person pronoun "I" were the same for both, the improved and not improved group.

4.3.3.2 Positive Mental Health

The results showed no main effect of the between subject factor "Improvement", speaking in terms of increasing positive mental health ($F(1,31)<1$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of the first person pronoun "I".

The results of the within-subject analysis showed no main effect of the use of the first person pronoun "I" in progress over time ($F(6,26)<1$, $p>.05$). Thus, respondents did not change in their style of writing during the course (see Figure 6.).

Additionally, no interaction effect of the two variables was found ($F(6,26)<1$, $p>.05$). So it can be concluded that the insignificant changes in the use of the first person pronoun "I" were the same for both, the improved and not improved group.

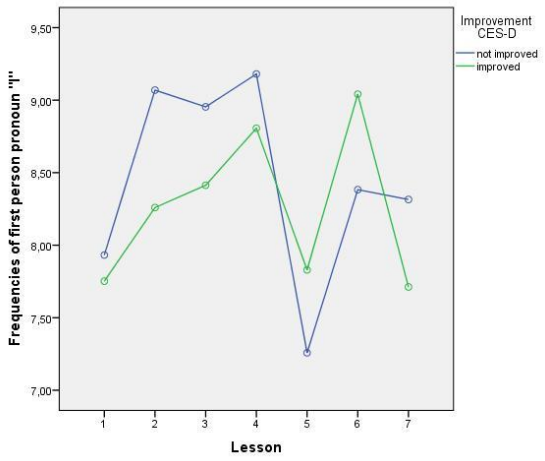

Figure 5. First person pronoun „I" (depression)

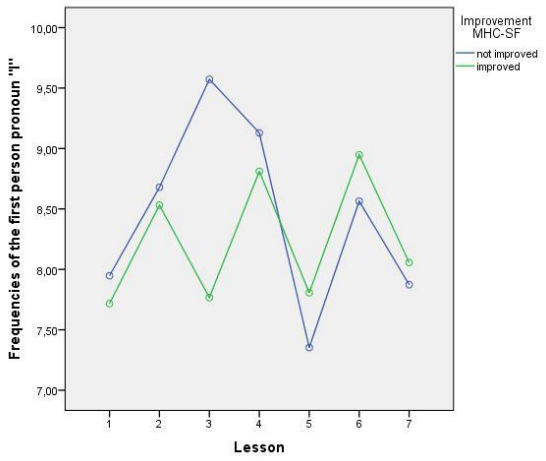

Figure 6. First person pronoun „I" (positive mental health)

The respondents did not change their style of writing during the course, a relationship between the use of the first person pronoun "I" and the between-subject factors could not be shown. Therefore, the third hypothesis is fully rejected.

4.3.4 Tense

The fourth hypothesis was: Respondents improving more, in terms of depressive symptoms and positive mental health, use more present- and future tense than past tense **a)** in general **b)** in the progress of the course than respondents that improved less.

4.3.4. Present Tense

Table 13

Means and standard deviations of the use of the present tense during the course in all groups

Variable and lesson	**Depression**		**Positive mental health**	
	Improved (N=19) *M (SD)*	Not improved (N=14) *M (SD)*	Improved (N=17) *M (SD)*	Not improved (N=16) *M (SD)*
Present tense				
1	10.72 (3.19)	10.79 (3.43)	9.97 (2.53)	11.58 (3.76)
2	12.45 (3.23)	11.46 (3.30)	11.14 (2.62)	12.97 (3.65)
3	13.64 (3.19)	13.10 (2.39)	12.28 (2.79)	14.61 (2.45)
4	15.29 (2.64)	14.67 (1.41)	15.19 (2.43)	14.86 (1.98)
5	12.13 (2.54)	11.24 (1.83)	11.83 (2.01)	11.67 (2.60)
6	12.58 (3.20)	12.00 (3.28)	11.40 (2.89)	13.33 (3.29)
7	13.01 (4.84)	13.33 (2.40)	11.64 (2.76)	14.75 (4.44)

4.3.4.1.1 Depressive Symptoms

The results showed no main effect of the between-subject factor "Improvement", speaking in terms of reducing depressive symptoms ($F(1,31<1, p>.05)$, implying that there were no significant differences between the improved and not improved group in the total use of the present tense.

The results of the within-subject analysis showed a main effect of the present tense in progress over time ($F(6,26)=9.096, p<.001$). Thus, respondents changed their style of writing during the course (see Figure 7.). The confidence intervals showed significant differences in the use of the present tense between the lessons. The respondents used the present tense significantly more often in their essays of lesson 4 in comparison with all other lessons. In comparison with lesson 1, the respondents used the present tense more often in lesson 7. In the lessons 1, 2 and 5 the use of present tense was significantly lower than in lesson 3.

However, no interaction effect of the two variables was found ($F(6,26)<1, p>.05$). So it can be concluded that the found changes in the use of the present tense were the same for both, the improved and not improved group.

4.3.4.1.2 Positive Mental Health

The results showed a main effect of the between-subject factor "Improvement", speaking in terms of increasing positive mental health ($F(6,26)=9.578$, $p<.001$), implying that there were significant differences between the improved and not improved group in the total use of the present tense. Respondents who improved used significantly less present tense during the course, than those who did not improve in positive mental health.

The results of the within-subject analysis showed a main effect of the present tense in progress over time ($F(6,26)=9.578$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 8.). The confidence intervals showed significant differences in the use of the present tense between the lessons. The respondents who improved used the present tense significantly more often in lesson 4 in comparison with all other lessons. In lesson 1, present tense was used significantly more often than in lesson 3 and 5. The respondents who did not improve used the present tense significantly more often in lesson 3, 4 and 7 in comparison with lesson 1. In lesson 5 those respondents used the present tense significantly less often than in the lessons 3, 4 and 6.

Additionally, an interaction effect of the two variables was found ($F(6,26)=2.766$, $p<.05$). So it can be concluded that the found changes in the use of the present tense were different for the improved and not improved group. When taking a closer look at Figure 8 it appears that the non-profit group had a slightly higher use of present tense at the beginning of the course. Until lesson 5 both groups proceed synchronously, increasing use of present tense until lesson 4 and a radical decrease between lesson 4 and 5. Whereas the respondents with increased positive mental health stayed on the lower level of present tense, the not improved groups started to use more present tense again.

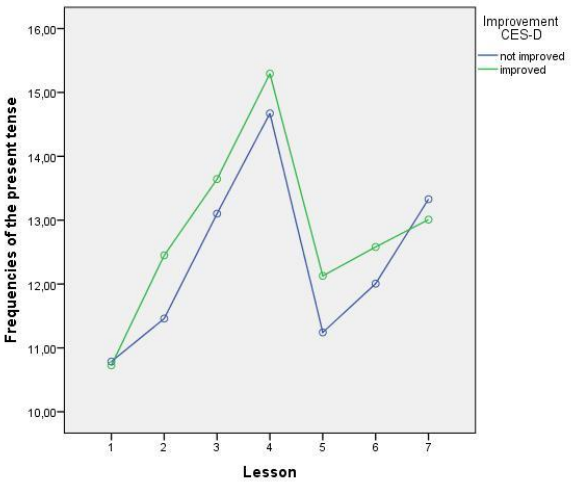

Figure 7. Present tense (depression)

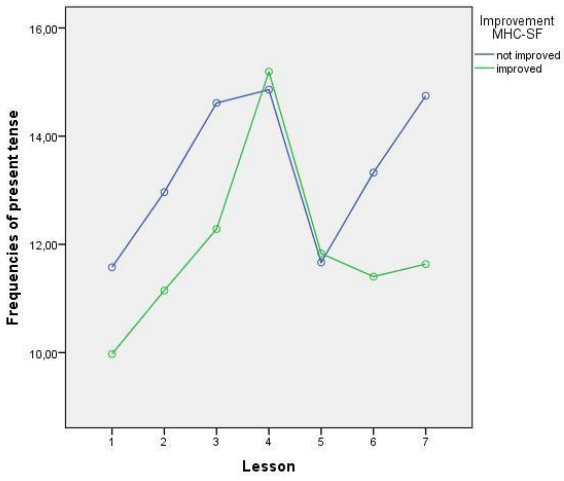

Figure 8. Present tense (positive mental health)

Even if the respondents changed their style of writing during the course, a relationship between the use of the present tense and the between-subject factors could only be shown for positive mental health. Although the not improved respondents used, against our expectations, more present tense than those who improved in mental health. Therefore, the fourth hypothesis, concerning the present tense, is fully rejected.

4.3.4.2 Past Tense

Table 14
Means and standard deviations of the use of the past tense during the course in all groups

Variable and lesson	**Depression**		**Positive mental health**	
	Improved (N=19) *M (SD)*	Not improved (N=14) *M (SD)*	Improved (N=17) *M (SD)*	Not improved (N=16) *M (SD)*
Past tense				
1	6.44 (3.71)	6.94 (2.89)	7.44 (3.08)	5.81 (3.51)
2	5.16 (3.43)	6.51 (3.91)	6.34 (3.73)	5.10 (3.56)
3	4.98 (3.20)	5.09 (2.63)	6.14 (3.20)	3.84 (2.11)
4	3.53 (1.77)	2.83 (1.31)	3.26 (1.94)	3.20 (1.23)
5	4.99 (2.18)	4.73 (2.55)	4.63 (1.94)	5.14 (2.68)
6	4.68 (2.74)	5.29 (3.14)	5.52 (2.43)	4.32 (3.27)
7	4.72 (2.54)	4.52 (1.69)	5.52 (1.96)	3.70 (2.07)

4.3.4.2.1 Depressive Symptoms

The results showed no main effect of the between-subject factor “Improvement”, speaking in terms of reducing depressive symptoms ($F(1,31)<1$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of the past tense.

The results of the within-subject analysis showed a main effect of the past tense in progress over time ($F(6,26)=8.180$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 9.). The confidence intervals showed significant differences in the use of past tense between the lessons. The respondents used the past tense significantly less frequent in their essays of lesson 4 in comparison with all other lessons. In comparison with lesson 1, the respondents used the past tense more often in the lessons 3, 4, 5, 6 and 7. Participants of both groups used significantly more past tense at the beginning of the course.

However, no interaction effect of the two variables was found ($F(6,26)<1$, $p>.05$). So it can be concluded that the found changes in the use of the past tense were the same for both, the improved and not improved group.

4.3.4.2.2 Positive Mental Health

The results showed a main effect of the between-subject factor "Improvement", speaking in terms of increasing positive mental health ($F(1,31)=4.670$, $p<.05$), implying that there were significant differences between the improved and not improved group in the total use of the past tense. Respondents who improved in positive mental health used the past tense significantly more often than those who did not improve.

The results of the within-subject analysis showed a main effect of the past tense in progress over time ($F(6,26)=8.305$, $p<.001$). Thus, respondents changed their style of writing during the course (see Figure 10.). The confidence intervals showed significant differences in the use of past tense between the lessons. The respondents used the past tense significantly less frequent in their essays of lesson 4 in comparison with all other lessons. In comparison with lesson 1, the respondents used the past tense less often in the lessons 3, 4, 5, 6 and 7. Respondents used the past tense significantly more often at the beginning of the course.

However, no interaction effect of the two variables was found ($F(6,26)=1.666$, $p>.05$). So it can be concluded that the found changes in the use of the past tense did not differ for the improved and not improved group.

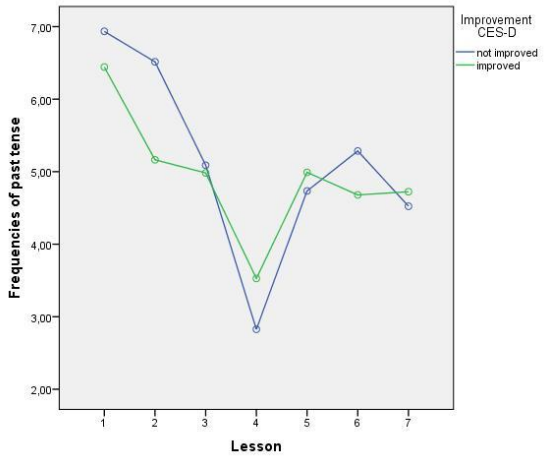

Figure 9. Past tense (depression)

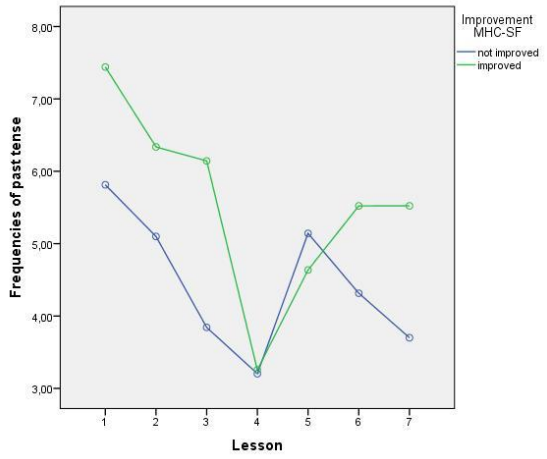

Figure 10. Past tense (positive mental health)

Even if the respondents changed their style of writing during the course, a relationship between the progress in the use of the past tense and the between-subject factors could not be shown. Although the total amount of past tense used was significantly different between the improved and not improved group for positive mental health. However, the improved group used, against our expectations, significantly more past tense than did those who did not

improve in positive mental health. Therefore, the fourth hypothesis, concerning the past tense, is fully rejected.

4.3.4.3 Future Tense

Table 15

Means and standard deviations of the use of the future tense during the course in all groups

Variable and lesson	**Depression**		**Positive mental health**	
	Improved (N=19) *M (SD)*	Not improved (N=14) *M (SD)*	Improved (N=17) *M (SD)*	Not improved (N=16) *M (SD)*
Future tense				
1	0.83 (0.51)	0.71 (0.39)	0.80 (0.49)	0.76 (0.44)
2	1.11 (0.59)	0.49 (0.31)	0.88 (0.60)	0.80 (0.56)
3	0.76 (0.48)	1.02 (0.68)	0.63 (0.45)	1.13 (0.60)
4	0.60 (0.52)	1.00 (0.86)	0.44 (0.39)	1.11 (0.80)
5	0.64 (0.46)	0.54 (0.42)	0.53 (0.51)	0.66 (0.35)
6	0.56 (0.46)	0.67 (0.40)	0.48 (0.43)	0.75 (0.40)
7	0.69 (0.57)	0.82 (0.58)	0.67 (0.53)	0.83 (0.62)

4.3.4.3.1 Depressive Symptoms

The results showed no main effect of the between-subject factor “Improvement”, speaking in terms of reducing depressive symptoms ($F(1,31)<1$, $p>.05$), implying that there were no significant differences between the improved and not improved group in the total use of the future tense.

The results of the within-subject analysis showed no main effect of the past tense in progress over time ($F(6,26)=2.254$, $p>.05$). Thus, respondents did not change their style of writing during the course (see Figure 11.).

However, an interaction effect of the two variables was found ($F(6,26)=2.652$, $p<.05$). So it can be concluded that the found changes in the use of the past tense were different for the improved and not improved group. The confidence intervals showed significant differences in the use of future tense between the lessons. The respondents who improved, used the future tense significantly more often in the second lesson than in the lessons 4 to 7. Respondents who did not improve used the future tense more often in the lessons 3, 4 and 7 in comparison with lesson 5. In lesson 3 the frequencies of the future tense were significantly higher than in the lessons 2 and 6.

4.3.4.3.2 Positive Mental Health

The results showed a main effect of the between-subject factor "Improvement", speaking in terms of increasing positive mental health ($F(1,31)=2.997$, $p<.05$), implying that there were significant differences between the improved and not improved group in the total use of the future tense. Respondents who did not improve in positive mental health used the future tense significantly more often than those who did improve.

The results of the within-subject analysis showed no main effect of the future tense in progress over time ($F(6,26)=2.467$, $p>.05$). Thus, respondents did not change in their style of writing during the course (see Figure 12.). Additionally, no interaction effect of the two variables was found ($F(6,26)=2.076$, $p>.05$). So it can be concluded that the found changes in the use of the future tense did not differ for the improved and not improved group. Both groups used almost the same amount of future words at the beginning of the course. The frequency of the non-profit group rose, whereas the profit group amounts decreased. Towards the end the frequencies approximated again, but the non-profit group still used more future tense.

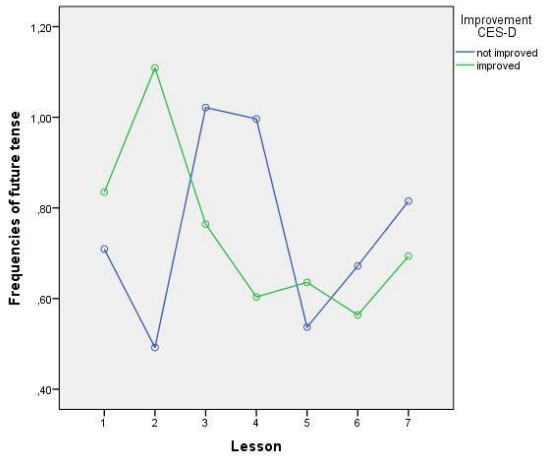

Figure 11. Future tense (depression)

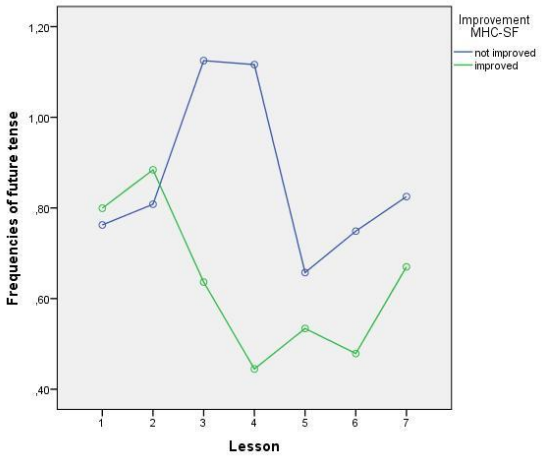

Figure 12. Future tense (positive mental health)

A relationship between the total amount of future tense used and the between-subject factors, could be shown for positive mental health. However, the not improved respondents used, against our expectation, more future tense than those who improved in positive mental health. Even if the respondents did not change their style of writing during the course, an interaction effect between the use of the future tense and the between-subject factors could be shown for depressive symptoms. Although the not improved respondents used, against our expectations,

more future tense than those who improved in depressive symptoms. Therefore, the fourth hypothesis, concerning the future tense, is fully rejected.

5. Discussion

This study was conducted to examine the underlying working mechanisms of expressive writing by focusing on the linguistic indicators (first person pronoun "I", positive and negative emotion words, and tense). Since the literature stated mental health is more than the absence of symptoms of a depression and also includes increased levels of positive mental health (Lamers, 2012), both outcomes were in the scope of this research in order to assess total mental health. The results will be discussed in the following sections. To represent the discussion clearly, the first section will be about what happened during the course. After that, the found differences as well as the differences in writing style between the improved and not improved groups will be discussed. Subsequently, the strengths and limitations of this study will be pointed out. Suggestions for further research and the practice will be given and, ultimately, the conclusion will be drawn.

5.1 General Discussion

5.1.1 What Happened during the Intervention?

Although there were no specific hypotheses about it, a lot of changes in writing style could be found during the course. The use of positive- and negative emotion words, as well as the use of the present and past tense, changed over time. Positive emotion words were used more often at the end than at the beginning of the course. Due to the fact that the respondents had to write about experiences with positive emotions at the end of the course it seems only logical that the use of positive emotion words increased at this point. Contrary results were found for negative emotion words. As could be expected, respondents used them more often at the beginning of the course, where they had to write about experiences with negative emotions. It might be an indicator for the appropriate implementation of the tasks by all respondents. According to the results we might infer that respondents dealt with their emotions and tried to put them into words. Thus, respondents were cognitively active to translate emotions into words, in order to create a sense of meaning, understanding and structure of the described events and the accompanied emotions (Schwarz, 1990; Krantz & Pennebaker, 2007; Westerhof & Bohlmeijer, 2010). Additionally, the cognitive activity during this process led to integration of the experienced events into the respondents' life, causing the reduction of

negative emotions coming along with thinking about the experience (Pennebaker et al., 1997). The literature states that depression vulnerable individuals tend to inhibit and suppress their emotions (Rude et al., 2002) and that this is also related to a higher risk of getting mental health problems (Gortner et al., 2006; Pennebaker et al., 2011). Through expressing their emotions by means of the current intervention, the physiological work required for the inhibition of emotions was reduced. Since this physiological work served as long-term stressor (Graybeal et al., 2002), which might have caused the respondents' health problems (Pennebaker, 1989), the intervention might have reduced this stressor. In turn the depressive symptoms of the respondents decreased, whereas positive mental health increased.

Furthermore, it can be assumed that the expression of positive and negative emotions facilitated the process of habituation. While being continuously engaged in writing about e.g. negative experiences and the evoked emotions the conditioned link between those two could be identified and alleviated or even erased. The representation and understanding of the event are changing, too (Foa & Kozak, 1986; Meadows & Foa, 1999). However, the essays were not analyzed with regard to the content, in order to identify if respondents wrote frequently about one and the same event. So the underlying process of habituation is still an assumption rather than a reliable and underpinned conclusion.

A change in writing style could also be observed for present tense. As expected, all respondents used more present tense at the end of the course, with a climax at lesson four. Apparently, a shift towards more attention of the present took place. The high point in lesson 4 might also be due to the course outline. A report of the status quo and the things learned so far, allows higher frequencies of present tense. Additionally, changes in the use of the past tense were found among all respondents. In accordance with our expectations, all respondents used more past tense at the beginning of the course, with an almost continuous decrease. The lowest point of past tense use was reached at lesson four, which again can be explained by the task of this lesson. When taking the results concerning the present tense into consideration, it is observable that a shift from a more past centered- towards a more present oriented writing style, took place. Even though, the respondents already used more present tense in relation to past tense at the beginning of the course, this shift was conspicuous. These results are in favor of Pennebaker and Chung's (in press) tentative explanation that expressive writing serves as a life course correction. This course provided the respondents the opportunity "to stop and look back at [their] lives and evaluate what issues and events have shaped who [they] are, what [they] are doing and why" (Pennebaker & Chung, in press). A shift of perspective and reflecting the own life might have caused life course corrections in the respondents.

Additionally, the process of writing during this intervention did assumably facilitate the production of a good life story, requiring the reconstruction of the past, perception of the present and anticipation of the future (McAdams, 2009). By telling stories about experiences the respondents made, they created meaning in their life. Those experiences were connected, assigned with meaning and integrated in their personal development (Angus & McLeod, 2004). Furthermore, different traits of the respondents' self were integrated and connected within their stories. All of these processes might have supported their identity forming (McAdams, 2009). Even if it is not about the direct influence of all just mentioned underlying processes, it might be the case that they serve as mediator between the changes in writing style and the effectiveness of the course. Finally, no changes in writing style were found for the future tense and the use of the first person pronoun "I".

5.1.2 Differences between the Groups?

This section will deal with the differences found between the improved and not improved groups (separate for depression and positive mental health) concerning the total amounts of the separate linguistic indicators used during the course. Additionally, findings in respect of the two-continua model will be discussed. Even if the results yielded some surprises, the tense seemed to be related to the improvement in positive mental health somehow. Contrary to what we expected, respondents with improved positive mental health used, in total, more past tense, less present and future tense during the course, than those who did not improve.

It was anticipated that higher frequencies of present and future tense, and lower ones of past tense would be beneficial for the improvement of mental health. According to our findings, the tense, which respondents used might not be the most precise predictor. More important might be how respondents write about their past, present and future. Do they have a positive or negative view towards their past, present or future? Since depressive individuals have underlying schemes that cause the typical way of negative thinking and perceiving (Rude et al., 2004), it might be possible that respondents, who did not improve in positive mental health, indeed used more future and present tense, but had a more negative view on it. It is assumed that this, in turn, might have led to no improvement in positive mental health. The use of more past tense causing improvements in positive mental health might arise from an extensive preoccupation with their past and might cause a more promising view on the respondents present and future, but this is only an assumption. Furthermore, no differences between the improved and not improved groups were found when looking at the use of both, positive and negative emotions, as well as the first person pronoun "I".

Additionally, no differences were found between the depression improved and not improved group when comparing the use of the tense. Although it was expected that the underlying working mechanisms might, in favor of the two continua model (Keyes, 2005), be different for improvements in depressive symptoms and positive mental health, it was assumed that the use of tense significantly differs in the improved and not improved group. Even if the found differences between the depression groups were not significant, the trend of improved respondents to use less past tense emerged. When comparing this trend with the results concerning positive mental health, opposed tendencies of writing style could be found for the improved and not improved group. This in turn supports the idea of the two continua model was found. By taking a closer look at the improved and not improved groups for both, depressive symptoms and positive mental health, no support for the two continua model could be found. The majority of the respondents who improved in depressive symptoms, also improved in their levels of positive mental health. Admittedly, this promotes the statement that they are not absolutely distinct, but moderately related (Lamers, 2012). The literature stated that the two continua model also implies that individuals suffering from a high number of symptoms would rather experience low positive mental health (Lamers, 2012). The just mentioned results are in accordance with this statement.

5.1.3 Different Changes in Writing Style for the Groups?

This section deals with the differences in change of writing style between the improved and not improved groups (depression and positive mental health). Differences in the use of present tense were only found between the positive mental health improved and not improved group. At the end of the course the use of present tense increased among the not improved group, whereas the frequencies of the not improved group remained stable. It is assumed that this difference might have something to do with the improvements, in positive mental health, respondents make during the course.

Additionally, different use of future tense was found among the depression improved and not improved respondents. Improved respondents used more future tense at the beginning of the course and declined during the course until the amount remained under the amount of the not improved group at the end. The progress of the not improved group was characterized by permanent ups and downs. The baseline level was lower and the amount of future tense at the end was higher than the improved group.

For positive and negative emotion words, as well as past tense, no differences in progress between the improved and not improved groups were found.

Additionally, no progress in the use of the first person "I" was observable. Several studies found higher rates of the word "I" in samples of depressed individuals (Bucci & Freedman, 1981; Weintraub 1981; Rude et. al, 2004). So it was only logical to assume that a change from higher to lower frequencies of the word "I" would go along with decrease of symptoms of depression. According to Weintraub (1981), depressed samples are not only characterized by higher "I" rates, but also by the lacking use of second and third person pronouns. Referring to the authors interpretation, an impairment in connection of the individuals to the surrounding others is the explanation. Pennebaker et al. (2011) stated that, respondents using pronouns flexibly in their essays gained the most profit of the expressive writing course. Respondents, who used pronouns in a consistent way, were less likely to show improvements in health. Since this study only focused on the first person pronoun "I", no such conclusion could be drawn for our results.

Although a lot of changes in writing style could be observed during the course, the link to the effectiveness of the course could only be shown for two linguistic indicators and even in those cases the explanation "how" remains unclear. The current findings might imply that a third and unknown variable or moderator might affect changes in positive mental health and depressive symptoms. According to Frattaroli (2006) writing alone, or with at least a highly private surrounding, could serve as moderator between expressive writing and positive health outcomes. Although the instructions told the respondents to keep their writings secret, they had to send them to the counselor who was a total stranger. Additionally, we do not know what really happened at home during the process of writing. The characteristics of the content of the respondents' essays might also have a moderating role; the effect might be influenced by the recency of the trauma, with a pronounced effect for older traumas due to their longer inhibition (Smyth, 1998).

5.2 Strengths and Limitations

Apparently, the current study has its strengths and limitations. Those will be discussed in this paragraph.

Since only 33 of the original 58 respondents were included in the study after those who did not accomplish all assignments or filled out both of the questionnaires (before and after the intervention) were excluded, one might think that a selection bias could have influenced the results. However, analyses to compare the completers and not completers showed that they did not differ in age, education, gender, in the scores of the first measurement of the CES-D and only slightly in the scores of the MHC-SF. Nevertheless, it can only be stated that the completers did not differ from the not completers in the mentioned variables and that those

did not affect the results. This does not imply that there was no other unknown variable or that the detailed analyses of the word use between those groups would not yield any differences, though. Maybe the essays of the drop-outs would have given insight into processes that are adversely for the effect of the expressive writing intervention.

Furthermore, the conclusions drawn based on the results might lack in both internal and external validity. By dropping out nearly half (N=25) of the original sample, important data might be left out of consideration. Almost one third of the rejected respondents only omitted the last lesson. This might be in the wake of a misunderstanding of the instructions ("You do not have to send the letter. You write it for yourself") or due to lack of time. An analysis per lesson might have been more advantageous to take the essays of all respondents into consideration.

Another disadvantage might be the assignment procedure to the improved and not improved groups. The respondents were split by the median into two groups. Therefore, those who scored slightly above or beneath the median were automatically assigned to one or the other group, even though the differences in the scores were marginal. A better control condition (here non improved groups) is needed to allow inferences about uniqueness of word use patterns. Thus, it would have been advantageous to split the groups with a little higher contrast or e.g. to select 6 respondents who improved the most and compare their essays with those 6 who improved the less. Additionally, by dividing the sample into qualitative (dichotomous) variables, information might have got lost. Another method to analyze the data would be by calculating correlations in order to examine the relationship between the CES-D, MHC-SF scores and the amounts of the linguistic indicators. We are not assuming that the results concerning the general part of our hypothesis would be any different, because we calculated them in the context of our descriptives, as well. In order to test the hypothesis concerning progress in writing style and beneficial changes in mental health, calculating deviation scores between e.g. the amounts of past tense used in the first and last lesson of the course would be helpful. By calculating the correlations between those deviation scores and the mental health measures the relationship could be examined. However, we think that this method also has its drawbacks. Similarly to our analyses, information might get lost if only the deviation between two lessons will be considered. Additionally, unreliable results might be the consequence of not paying attention to the course outline. Since e.g. the first lessons were about negative experiences and the last lessons about positive ones, this might influence the results.

Last but not least, the results highly depend on the essay the respondents sent to the counselor. The respondents were asked to write minimally three times a week for 15 minutes, but had to admit only one essay of maximal one page. This might have caused a selection bias by the respondents and, in turn, influenced the results. Additionally, we do not know whether the respondents actually wrote minimally three times a week or were just concerned with the tasks once a week, in order to write the essay that was submitted to the counselor. The same is true for other factors that possibly influenced the results without our knowledge. As already mentioned in the section before, e.g. privacy is a crucial moderating factor. The question arises whether submitting a private essay to an unknown counselor actually meets the requirement of privacy. Supplementary, there could be many more moderating factors we did not even think of.

Zijlstra and Colleagues (2004) stated that the computer program LIWC is valid to analyze e.g. the expressions of emotions in Dutch texts, which is advantageous for our results. Aside from the validity aspect it was also beneficial to analyze the respondents' essays by this computer program, because no biases through human rating could occur. However, the neutrality of the program might serve as disadvantage, too. The results showed that it sometimes would have been beneficial to take the content of the essays into consideration, in order to draw differentiated conclusions (as e.g. results concerning the tense).

Since the scope of this study is a widely unknown territory, it is of great interest for scientific research. Pennebaker, as a pioneer, and many other followers tried to examine the effectiveness and the underlying working mechanisms during the last two decades. However, to our knowledge we are one of the first, examining the effectiveness and (underlying) processes of the intervention this way. In the current study we tried to examine a direct link between the (changes in) word use during the course and positive health outcomes, by trying to identify differences between those who improved in depressive symptoms and positive mental health, and those who did not improve. Additionally, earlier studies did not take account of the two-continua model and therefore, did not focus on both, psychopathology and positive mental health, in order to capture both aspects of total mental health.

5.3 Suggestion for Future Research

Although the results of this study were not groundbreaking, some suggestions for future research can be made. The limitations of this study mentioned above should surely be taken into consideration by future researchers, but in addition there are other aspects that should be taken into account.

The literature states that a flexible use of pronouns (I, we, they…) is related to beneficial health outcomes, rather than a constant use of pronouns during writing (Pennebaker et al., 2011). It is therefore of great interest to focus not only on one pronoun as linguistic indicator, as in this study the first person pronoun "I", in order to draw meaningful conclusions. Additionally, the literature states that increased use of cognitive emotion words has a better effect size in predicting beneficial health outcomes, than emotion words (Pennebaker et al., 2011). Also, the "fingerprint" of linguistic indicators for beneficial changes, Pennebaker and Francis found in 1996, included information about amounts of emotion words, as well as cognitive words. So it is suggested for future research to not only focus on emotion words, but also on cognitive words, in order to get a complete puzzle and not only parts that do not fit to the whole picture. Future research should continue focusing on linguistic indicators, but should take other possible working mechanisms into consideration.

The analyses of the essays in this study were conducted by the neutral computer program LIWC. This neutrality of the program could have left important contextual details out of consideration. Future research should think about a qualitative way of analyzing the essays. Through qualitative analyses working elements as for example habituation could be identified by taking a closer look at the content. Another interesting topic for further research would be the perception of the respondents. What did they experience as helpful and working elements? A qualitative way of analyzing causes more workload, but it would allow us to take a closer look at the relations between the content and the linguistic indicators, and their influence on improvement by the course. Throughout this study we had the feeling that an important piece of the puzzle was missing to fully understand and explain what might cause changes in respondents' health outcomes: the content.

5.4 Suggestion for the Practice

Since the last section was about suggestions for future research with a focus on the linguistic indicators used in this study, this section will deal with the suggestions that can be made for the practice. The focus will be on improvement opportunities for the current intervention, certainly not without keeping an eye on the advantages of them for future research.

Although further research is needed, some suggestion for the practice can be made anyway. According to the results, respondents seemed to be compliant and did what was asked during the course. However, this might only be at first sight. As already mentioned in the section about strengths and limitations of the study (5.2), e.g. we do not know whether respondents wrote more than once a week and kept their essays in private. It could be helpful to provide this intervention as an online course, were a login is required and essays are written and

submitted via the webpage. Counselors could pursue how long respondents spent writing and how often they were concerned with the tasks. Everything written down at this page can be analyzed, even if counselors only provide feedback for one essay. Additionally, the essays are shielded from the respondents' surrounding and there will be no worries that they fall into the wrong hands.

Furthermore, we had the idea that the course was highly structured. The instructions of the original method of Pennebaker (1997) were loosely formulated. Even though respondents were asked to write about the most traumatic or upsetting experiences, or just about major conflicts or stressors, they had the possibility to choose what is important for them to write about. It was suggested to write about the deepest feelings and emotions regarding those events. Due to the high structure of the current course, the central idea behind the method of Pennebaker (1997) got adumbrated. Respondents were not entirely free to write about the events most important to them. Maybe respondents only wrote about the things they were asked to do and not what really matters to them. As a result of this, the writing style will be not genuine and could be a false predictor for success of the intervention. Thus, then it would be almost impossible to draw reliable conclusions based on the linguistic indicators.

However, with our structured intervention it is possible to make a statement about compliance of the respondents.

In a nutshell, it is suggested to reformulate the instructions in order to enhance the respondents' freedom of expression. It would be advisable to formulate the instructions more as suggestion so that respondents get food for thought, but are still free in their choice of the topic.

5.5 Conclusion

The findings of the current study pointed out that many relations between the linguistic indicators, depressive symptoms, and positive mental health could not be shown. Additionally, those relations found were not in accordance with what was expected and stated in the literature. They could not fully explain the gains or drawbacks in the two health outcomes. Unfortunately, the results of this study did not explain the underlying working mechanism of the expressive writing intervention to our full satisfaction. Nevertheless, this study gave us an overview about what happened with the writing style during the course. A lot of future research is needed to shed a light onto the underlying processes that cause beneficial health outcomes. Certainly, the influence of expressive writing on positive mental health remains also a nearly unexplored territory.

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