Universiteit Leiden

Psychologie
Faculteit der Sociale Wetenschappen

Positive writing, happiness, savouring and rumination.

Expansion of the positive psychology model and
empirical validation of a simple positive
psychological exercise via internet

ROEL HOGERVORST

Bachelorthesis Psychologie
Faculty of Social Sciences - Universiteit Leiden
juni 2011
Bachelorproject: 43
Studentnummer: 0865974
Supervisor: Dr. Jos Brosschot
Section: Clinical, Health and Neuro Psychology

Abstract

Positive psychology has added a new element to the growing body of scientific knowledge in the field of clinical psychology. It has already shown the value of joy and creativity in stress and coping. Nevertheless, until recently it was unclear whether and how positive interventions work. In this article, a new integrative stress model is explained and tested that includes positive emotions and savouring. Savouring is viewed as the opposite of rumination: it is “dwelling in the positive”. Our study also tested a specific positive psychological intervention, namely positive writing. We have tried to test this intervention by replicating a seminal study about the enhancing effects of positive writing on wellbeing published by Seligman et al. (2005). We used two control conditions for the act of writing and the emotional valence of the writing topic. Participants have written down their experiences for one week and were followed for a month afterwards. Although we were unable to replicate the findings of Seligman et al. (2005), we did find out that positive writing increased savouring and reduced rumination. Specifically, we found that the positive writing worked better than negative writing or writing about the past. Our findings suggest that the positive valence of the intervention is the most effective part of the treatment. Our study also suggests that the questionnaire used to measure wellbeing, the Authentic Happiness Index might not function well, and might need to be optimized.

Table of Contents

Abstract.....	2
Introduction.....	4
An integrated stress-model.....	6
Emperical Research.....	8
Hypotheses.....	12
Method.....	14
Results.....	19
Discussion.....	35
Literature.....	46
Attachments.....	51

A new day and age

Much has happened since clinical psychology switched its view from only negative to positive and negative factors in unison. Clinical psychology used to focus on the problems of people and factors that can make someone ill or increase their chances of getting ill. However, a growing number of researchers have become interested in factors that improve people, factors that somehow influence people to overcome problems and to flourish. This has become the positive psychology movement. Researchers in positive psychology have now published in top journals, organized congresses and created many associations. Positive psychology has earned its rank in mainstream psychology. Positive psychology aims at positive psychological virtues, traits and concepts. It aims at increasing peoples positive cognitions and feelings by means of enhancing those and not by means of decreasing negative factors, what traditional psychology would have done.

This thesis is about the effects of an intervention based on positive psychological principles.

Accepted Stress and Coping models

Older stress-models (Lazarus & Folkman, 1984) describe how threatening situations (stressors) are being evaluated and a reaction is formed. This reaction is called “coping”. The result of this reaction can lead to stress responses, which influence the situation and consequential evaluations.

Coping badly with situations leads to stress responses, negative emotions and eventually to health-problems, like depression or physical diseases. An important predictor of these problems is this non-functional reaction: a person keeps on mentally repeating the situation, thereby keeping a cognitive representation alive. This has been called perseverative cognition (PC; Brosschot, Gerin & Thayer, 2006). While PC describes a broad spectrum of worrying, some authors have described more specific forms of worrying called

rumination. Nolen-Hoeksema, Wisco and Lyubomirsky (2008) describe rumination as: “dwelling in the negative”, getting stuck in or ruminating about the negative experience.

Positive addition

Positive psychology adds new and essential parts to these models. For example, researchers found that the amount of PC is dependent on different factors like age or personality, including positive characteristics. In addition, people do not develop negative stress when they successfully solve their problems. The older, 'negative' stress-models also failed to notice that solving problems is a source of joy for people. They tend to become more happy during problem solving and afterwards. Furthermore, positive moods increase creativity, for example in problem solving. This increased creativity breeds more success in future challenges (Fredrickson, 2004). The Broaden and Build-theory described by Fredrickson (2004) explains how the choice of strategy is being influenced by emotions. The amount of strategy choices is reduced or increased by emotions. Negative emotions reduce choices, whereas positive emotions increase choices in strategy. Positive emotions increase creativity and negative emotions decrease creativity.

An introduction to ruminating and savouring

If you think of the Nolen-Hoeksema et al. (2008) description of ruminating as: “dwelling in the negative”. Then logically, a positive opposite is possible, namely: “dwelling in the positive”. We propose to call it *savouring*. Ruminating is mentally repeating a negative situation, thereby creating negative emotions. Savouring is mentally repeating a positive situation, thereby creating positive emotions. Bryant (1989) was one of the first to describe savouring, in his four factors of perceived control on a stressor: avoiding, coping, obtaining and

savouring. However, our model of savouring is stricter and only includes ‘dwelling in the positive’.

Towards an integrated stress-model

The additions made by positive psychology can be integrated in the ‘negative’ models, thereby creating a more complete stress model. Folkman (2008) attempted to create a more complete stress-model including positive emotions.

Fredrickson (2004) describes how emotions influence choice, and Nolen-Hoeksema, Wisco and Lyobomirsky (2008) describe rumination.

‘Adding up’ these theories, we have developed a new integrative stress-model (see figure 1.). This model shows many characteristics as seen in Folkman (1997; 2008). However, our model is not solely based on coping but attempts to broaden the definition of coping and include other behavioural aspects such as PC and emotions.

Fig.1 integrative stress-model.

The grey route is equal to Folkman (2008; Lazerus & Folkman, 1984).

However, we have included the Fredrickson (2004) findings about emotions.

Our additions to the model are displayed in white.

In our model, a certain ‘objective’ event is appraised as threat or opportunity.

Thereafter a strategy is chosen, which leads to the outcome and this is evaluated.

Our addition is the influence of emotion on appraisal and strategy choice. This model has two feedback loops of which one is by positive emotions and the other by negative emotions. Various ‘negative psychology’ authors have extensively described the negative feedback loop. Our positive feedback loop is new compared to the older, ‘negative’ models.

By broadening the coping theory and calling coping ‘strategy’, we are able to include reactions to positive events too. This was previously not possible because coping, by definition, always describes negative events.

A person, or organism¹, can choose from a variety of options in response to a certain event. Which option he or she will choose depends on appraisal of the situation, possible and known strategies and emotions, because negative emotions, such as fear or sadness, reduce the strategy options, and positive emotions increase those options. Let it be clear that these choices are not to be understood as conscious choices, but are mostly implicit.

One could say that choices lie on a continuum from very non-beneficial until beneficial. Crucially, we suggest that in general, the worst choice is rumination and the best choice is savouring. We believe that savouring is so beneficial that, when applied, it will improve happiness in people over time.

Personality and Coping

One could think of the aforementioned analysis that people make of potential stress situations and of the choice of the appropriate strategies as being represented by different neural networks in the brain. People differ in their strategy, and some are more easily threatened by a situation than others are. It is plausible that some people see something as a threat while others see it as an opportunity. They perceive one and the same situation differently. Read et al. (2010) describe a structural and dynamic neural model of personality, with an

¹ We do not believe this model applies only to humans but can be applied on all primates and perhaps all mammals.

avoiding and an approaching network. Avoidance is associated with negative emotions and approach with positive emotions.

These networks are not the same in every person, because the settings are different. Read et al. (2010) claim that these differences exist because of differences in basic neural settings in the avoidance and approaching networks. These differences are called traits.

Many researchers have studied traits strenuously, but not many of them have looked for positive traits. However, Peterson and Seligman (2004) did so, and described six personality strengths, which are regarded as positive traits across all cultures and worldwide. These strengths are courage, justice, transcendence/spirituality, wisdom, humanity and temperance. Of these strengths, we are especially interested in the influence of transcendence on happiness and savouring, because we expect that particularly people who score high on transcendence will also score higher on savouring and happiness.

Empirical research

Positive psychological interventions have been around for some time now, but they are not as extensively studied as 'negative' interventions. Various authors did study the effectiveness of positive psychological interventions though; interventions aiming at for example reinforcing and/or training of positive factors such as mood, cognitions or attitudes. The empirical study of these interventions has shown promising results.

Mitchell, Stanimirovic, Klein and Vella-Brodrick (2009) made their participants focus on their strengths and use them more. This increased well-being among the participants. Papousek and Schulter (2008) found lower levels of stress and increased psychological well-being in their participants, who had learned to couple positive emotions onto adverse events. Thereby decreasing the emotional impact of these adverse events on life. Pressman and Cohen (2005) found a

positive relation between positive affect and health. Seligman, Steen, Park and Peterson (2005) found three interventions that increased happiness and decreased depressive symptoms. A recent meta-analysis by Sin and Lyobimorski (2009) over 51 studies measuring the effect of positive psychological interventions on well-being and depressive symptoms found promising results. Although not all of the results reached statistical significance, 96 per cent of these studies showed a positive effect on well-being and 80 % showed a depressive symptom reducing effect.

They also found important factors influencing the effectiveness of interventions, that is, depression status and age. Participants who were more depressed in the study demonstrated greater gains in effectiveness. In addition, older people tend to become happier.

Research goals

The abovementioned publications show that positive psychological interventions generally increase well-being and reduce depression. However, we lack a proper scientific theory on the workings of these interventions. Why do they work, and how do they work? Our expansion of the stress models gives us interesting possibilities: Perhaps people become happier because they savour more after the positive interventions. Alternatively, is it because people ruminate less? Or perhaps people will ruminate less because they savour more? In the current study, we have attempted to test these possibilities.

To do this, we made use of one of the best studies in this field, which was done by Seligman, Steen, Park & Peterson (2005); they found the best results in a form of positive self-writing. Initially, Seligman and colleagues searched the literature for all positive interventions they could find and distilled five promising and at the same time simple (applicable via internet) interventions from the 100 they found. The interventions were:

1. 'Gratitude visit'. Participants were given one week to write and then deliver a letter of gratitude in person to someone who had been especially kind to them but had never been properly thanked.
 2. 'Three good things in life'. Participants were asked to write down three things that went well each day and their causes every night for one week. They were also asked to provide a causal explanation for each good thing.
 3. 'You at your best'. Participants were asked to write about a time when they were at their best and then to reflect on the personal strengths displayed in the story. They were told to review their story once every day for a week and to reflect on the strengths they had identified.
 4. 'Using signature strengths in a new way'. Participants were asked to take a inventory of character strengths online at a website and to receive individualized feedback about their top five ("signature") strengths. They were then asked to use one of these top strengths in a new and different way every day for one week.
 5. 'Identifying signature strengths'. This exercise was a truncated version of the previous one, without the instruction to use signature strengths in new ways. Participants were asked to take the survey, to note their five highest strengths, and to use them more often during the next week. For placebo control they used an intervention called 'early memories', in which participants were asked to write about their early memories every night for one week (Seligman et al., 2005, pp 416, roughly cited from article).
- Seligman and his partners found that two of the interventions, compared to placebo control 'Early memories' namely 'three good things in life' and 'using signature strengths in a new way' made people significantly happier and less

depressed for at least six months. Because the ‘three good things in life’ intervention showed the clearest – and even continuously increasing – effect, we chose this one for our purposes.

First, we wanted to find out what the active part of this intervention was. Is it the focus on good things or is just the thinking about the day’s experiences enough? Does it also work if we ask people to reflect on *negative* experiences that day?

We have attempted to replicate the results of Seligman et al. (2005) ‘three good things’ intervention. We used the same control intervention: ‘early memories’. This acted as a control between writing especially about three good things and ‘just writing’ about one’s experiences. We also tested an intervention, which is in all aspects similar to ‘three good things’ but about things that went wrong that day. This explores if the *positive* aspect of the writing part is important. Finally, we have tested a ‘waiting list group’, which did not receive instructions but was tested as well. This was supposed to control the placebo effect, that is, mere expectation based on increased attention.

As mentioned above, we will also look at the possible mediating effects of rumination and savouring. Savouring will be tested with a questionnaire that is newly developed by our group: the LUSQ (Leiden University Savouring Questionnaire; Bachelorproject 43 Leiden University, 2011). Ruminating will be measured with the PSWQ (Penn State Worrying Questionnaire; Stöber, 1997)-questionnaire. Finally, we are interested in the effect of the trait ‘transcendence’ on outcome-variables, as measured by AHI (Authentic Happiness Index; Seligman et al, 2005). We expect a moderating effect of transcendence on outcome scores, that is, those scoring high on the trait transcendence are expected to show more improvement in happiness, savouring and less rumination. The trait transcendence will be measured with a Dutch translation of a part of the Brief Strengths Test.

We will be measuring happiness with 2 instruments; the AHI (Dutch translation by Van der Togt (master thesis Psychology, Leiden University, 2011) and a single question SRH (Self Rating of Happiness; Abdel-Khalek, 2006).

Hypotheses

The positive condition “3 good things” will have a bigger effect on happiness than the 'early memories' condition and the waitlist condition. The condition ‘3 good things’ will have a bigger effect than ‘three bad things’ and both will outperform the ‘waiting list’ condition.

We expect a moderating role of savouring in the effects of the intervention on happiness: when people in the ‘three good things’ condition savour more, they will become happier through the intervention.

We expect a moderating effect of the trait transcendence on the intervention’s effect on happiness; higher transcendence will be related to a higher increase in happiness.

Hypothesis 1:

Scores on the AHI will be higher in the ‘three good things’ condition than scores on the 'early memories' condition 1 week and 4 weeks after the intervention

Hypothesis 2:

Scores on the AHI will be higher in the ‘three good things’ condition than scores on the waitlist condition, 1 week and 4 weeks after the intervention.

Hypothesis 3:

Scores on these time moments will be higher in the ‘three good things’-condition than in ‘three bad things’-condition.

Hypothesis 4:

The effects described in hypotheses 1, 2 and 3 will be visible in savouring: higher scores on LUSQ-scores and reversed in rumination: lower scores on PSWQ-scores.

Hypothesis 5

The effects described in hypotheses 1-4 will also be visible as an increase in the SRH score.

Hypothesis 6

The effects found in hypothesis 1-3 are no longer significant when we take savouring into account but remain significant if we take rumination into account.

Hypothesis 7

Participants, who score high on the BST-transcendence factor, will have higher happiness as measured by AHI or SRH.

Method:

Participants

By means of email invitation, we acquired a group of 260 participants. Participants had to be Dutch speaking and should have an internet connection. All participants signed an informed consent. 246 from the original 260 participants completed demographic characteristics². 252 participants completed pre-test questionnaires (30 males and 135 females).

Participants were randomly added to one of the four conditions. 'three good things' 61 participants, 'three bad things' 58 participants, 'early memories' 70 participants and waitlist 63 participants. Except from waitlist all conditions had to do an exercise for one week and subsequently all four conditions were asked by email to fill in the post-test questionnaire. 136 participants completed this questionnaire. One week later, they were asked to complete their one-week follow-up questionnaire. 93 participants completed this follow-up. The final follow-up questionnaire took place one-month after finishing the intervention. A total of 67 participants completed this questionnaire, bringing the total dropout from invitation till follow-up to 73% (Table 1).

Questionnaires

* All questionnaires can be found as attachments at the end of the thesis.

Authentic Happiness Inventory (AHI)

Happiness was measured with the Authentic Happiness Inventory. This questionnaire has 24 items and measures three components of the happy life; the pleasant life, the engaged life and the meaningful life (Seligman, 2005; Dutch translation by Van der Togt (master thesis Psychology, Leiden University, 2011). According to Seligman (et al., 2005) scores on the AHI converge substantially with scores on other happiness measures ("r _ .79 with

² Due to technical failure demographic data from 90 (35,3%) participants is not available

Lyubomirsky & Lepper's General Happiness Scale, and $r = .74$ with Fordyce's Happiness Scale"). Internal validity is high with a Cronbach's alpha of .92 (Schiffrin & Nelson, 2008). The AHI has a design similar to the Beck Depression Inventory with 5 phrases in increasing magnitude of depression. Each item in the AHI has five phrases in increasing happiness; the participants have to choose the one that describes their feeling about the last week including that day in the best way. The answer possibilities range from A= negative to E=extremely positive. The AHI has been created to measure changes in happiness level.

Self Rating of Happiness (SRH)

Participants were asked: "voelt u zich over het algemeen gelukkig? (Dutch) ". This is a translation from the original English question: "do you feel happy, on average" by Abdel-Khalek (2006). Which participants answered on an 11 point scale ranging from 0(=not at all) till 10 (=extremely). Participants were asked to give a global assessment of their usual feeling. It is not an assessment of their feeling at the test moment. Measuring happiness or well-being like this, is considered valid and reliable according to the following measures. Correlation with 'Satisfaction with Life Scale' (Diener, Emmons, Larsen & Griffin, 1985) and the 'Oxford Happiness Inventory' (Argyle, Martin & Lu, 1995) is highly significant and positive. Convergent validity appears in positive significant correlation with optimism, positive affect, extraversion and self-evaluation with body and mental health. Divergent validity is shown in significant negative correlation with anxiety, pessimism, negative affect and sleeplessness (Abdel-Khalek, 2006)

Penn State Worry Questionnaire (PSWQ)

The PSWQ has 16 items about rumination and or worrying. Every item has a phrase and a five point likert-scale answer possibility. Participants answer how

typical they found the phrase to be. This original English questionnaire has a high reliability due to internal consistencies and test-retest correlations of at least .85 and Cronbach's alpha of .91. Convergent validity is seen in correlations of .55 between self report and peer-scores (Stöber, 1997). We will use a Dutch translation with similar high reliability and convergent validity (Rijsoort, Emmelkamp & Vervaeke, 1999)

Leiden University Savouring Questionnaire (LUSQ)

To measure savouring, we developed a new questionnaire based on the PSWQ. Just like the PSWQ-questionnaire, the LUSQ has 16 items with five point likert-scale answer possibilities. For every item on the PSWQ that measures rumination or 'continuously thinking about negative things in your own life' we have created a item on the LUSQ that measures savouring or 'continuously thinking about positive things in your own life'. This way we have an experimental questionnaire developed for the measure of savouring with convergent psychometric qualities as its counterpart, which measures rumination. Psychometric qualities of this test (e.g. reliability, validity) are going to be evaluated for the first time.

Incidentally our questionnaire has many similarities with the Savoring Beliefs Inventory (SBI; Bryant, 2003), a questionnaire with 24 items measuring savouring beliefs.

Personality-traits: Brief Strengths Test.

This test by Peterson (Peterson & Seligman, 2004) measures strengths of character and virtues. The original questionnaire uses 24 questions measuring 6 virtues. We have used a shortened and translated version measuring only two virtues: transcendence and courage. For this thesis, we will use the transcendence questions only. The test contained five items:

- *think of your everyday life. How frequently did you show zest or enthusiasm when it was possible to do so?*
- Think of actual situations in which someone else helped or benefited you. How frequently did you show gratitude or thankfulness?*
- Think of actual situations in which you experienced failure or a setback. How frequently did you show hope or optimism in these situations?*
- Think of your everyday life. How frequently did you show playfulness or humour when it was possible to do so? Think of your everyday life.*
- How frequently did you show religiousness or spirituality when it was possible to do so?*

Participants had to choose from: not applicable, never/rarely, occasionally, half the time, usually or always.

Reliability and validity have not been established yet.

Conditions

Participants were assigned to one of four conditions; 'three good things', 'three bad things', 'early memories' or waiting list. Each condition except the waiting list had an assignment that participants applied every evening for one week.

The '*three good things*' condition is based on a positive psychological intervention, participants were asked to write down every evening three good things that happened this day. They were also asked to give causal explanations for each of them (Seligman, et al., 2005).

This exercise has been shown to increase health and well-being (Burton & King, 2009; Wing, Schutte & Byrne, 2006)

The '*three bad things*' condition was designed to be an exact copy of the 'three good things' condition but in a negative sense. This is a mild version of the 'writing assignment' used by for instance Pennebaker (et al., 1993; Frattaroli,

2006). In the Pennebaker assignment, people were asked to write about their most stressful event in life. We asked the participants to write down three bad or unfortunate things that happened this day, every evening. And they were also to provide causal reasons for every one of them.

The *waiting list condition* consisted of people who were told that their assignment was about to start in five weeks. They were asked to fill in questionnaires like the other participants. People in the 'early memories' condition were asked to write down a childhood memory every evening. The Seligman et al. study (2005) uses this condition as control.

Statistical analysis.

Using repeated measures analysis of variances (RMA) followed by planned contrasts, we compared the scores of participants across the following time points: pre-test, immediate post-test (after doing their exercise for one week), one week after the post-test, one month after the post-test. This is an exact replication of Seligman et al. (2005). Planned contrast were defined as (1) 'three good things' against 'early memories'. (2) 'three good things' against 'three bad things'.

Possible mediation effects by rumination or savouring (hypothesis 4) were explored by using changes in PSWQ and LUSQ as covariates in analyses. When the effects expected under hypotheses 1-3 become less significant or disappear after entering these scales as covariates, savouring or ruminating are argued to have caused these effects.

Results

Descriptive statistics

Participant dropout rate is displayed in table 1. The study started with 252 participants, at post-test 136 (54%), at follow up on one week 93 (37%) and at follow-up one month we had 67 (27%) participants left. Participant age ranged from 18 till 72, median age was 40.5 and mean age was calculated at 39.35. From all participants 3 (1,2%) were single, 26 (10,2%) had a relation, 24 (9,4%) were living together, 69 (27,1%) were married, 3 (1,2%) were widow and 10 (3,9%) were divorced. Education³ was 2 (0,8%) lower school, 10 (3,9%) VMBO, 12 (4,7%) HAVO, 27 (10,6%) VWO, 22 (8,6%) MBO, 52 (20,4%) HBO and 40 (15,7%) WO. From all participants 86 (33,7%) had children and 79 (31%) was childless.

Table 1: participants in total and by condition

	Total	3 good things	3 bad things	Early memories	Waiting list
Pre-test	252	61	58	70	63
Post-test 1	136 (54%)	38 (62%)	32 (55%)	43 (61%)	23 (37%)
Follow up 1w	93 (37%)	21 (34%)	23 (40%)	30 (43%)	19 (30%)
Follow up 1 month	67 (27%)	16 (26%)	17 (29%)	21 (30%)	13 (21%)

** Numbers equal participants left. Percentages of total per condition rounded at nearest whole number.*

** Total drop-out rate was 73% over one month period.*

Drop-out participants were no different from included participants in Gender, relationship, education, children, AHI baseline or SRH baseline.

Baseline tests

At pre-test the baseline score for the AHI ($M=76.21$, $SD=11.14$) was similar to the original Seligman et al. (2005) study, namely ($M=57.5$ $SD=unknown$)⁴.

³ Education level is displayed in the Dutch schooling system. MBO roughly equals community college, and WO equals University.

⁴ The name has changed from (Steen happiness index) SHI to (Authentic Happiness Index) AHI. Average score was determined by averaging all 6 conditions baseline scores, because baseline scores were not published in the original article.

Compared with Rijsoort, Emmelkamp and Vervaeke(1999) study on PSWQ data($M=43.14$ $SD=12.06$) our PSWQ scores were alike ($M=45.74$, $SD=10.79$). Abdelkader (2006) gives the following values ($M=6.78$ $SD=2.24$)⁵ for SRH data, which makes our scores ($M=4.06$, $SD=.88$) rather low. Our baseline for the LUSQ data ($M=57.03$, $SD=9.66$) has no reference, because we invented this questionnaire. Skewness and kurtosis were within acceptable limits for every test except for the PSWQ data (Kolmogorov-Smirnov Z $p=.10$). Correlations can be found in table 2.

Table 2, correlation matrix

	AHI	PSWQ	LUSQ	SRH	Age	Gender
AHI	1	-,463**	,548**	,667**	,083	,129
PSWQ	-,463**	1	-,342**	-,446**	-,241**	,011
LUSQ	,548**	-,342**	1	,454**	,050	,242**
SRH	,667**	-,446**	,454**	1	,111	,075
Age	,083	-,241**	,050	,111	1	,141
Gender	,129	,011	,242**	,075	,141	1

**, Correlation (Pearson) is significant at the 0.01 level (2-tailed).

Hypotheses testing

Results are displayed in order of hypotheses.

All calculations were performed using SPSS 17.

We used one tailed p-values in RMA (Repeated measures Analysis of variances) because the direction of effect was made very specific in our hypotheses, when two-tailed p-values are used this is made explicit.

Hypotheses 1, 2, 3: Replication of Seligman et al. (2005) and extension with two other control groups

A RMA (Repeated measures Analysis of variances) with a 4 by 4 design was performed on the data. Within subjects levels: (AHI-pre-test, AHI post-test,

⁵ These values have been calculated from pooled data out of the Abdel-Khalek (2006) study. We omitted the secondary school student data. In addition, this data comes with a caveat; it is unknown how Kuwait data applies to Dutch data.

AHI- one week follow-up & AHI one month follow-up). Between subject-levels: ('three good things', 'three bad things', 'early memories' & waiting list) Contrasts were defined as (1) 'three good things' vs. 'early memories' and (2) 'three good things' vs. 'three bad things'.

Mauchly's test indicated that the assumption of sphericity had been violated ($\chi^2(5)=28.60$, $p=.00$) therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity. The results show no effect of time $F(2.345,138.38)=2.003$, $p=.057$ and no effect on the interaction time-condition $F(7.04,138.38)=.642$, $p=.38$. Further analyses were not applied due to non-significant time-condition effect. The Seligman et al. (2005) study found a significant effect one month after the intervention and beyond (one month $\lambda^2=.21$; Seligman et al., 2005) Table 3 shows average means and graph 1 shows means over time.

Table 3, means.

	Condition				
	Negative condition	Positive condition	Early memories	Waitlist	Total
Pre-test	73,94 (10,00)	76,96 (8,74)	72,49 (12,48)	76,99 (10,10)	74,85 (10,50)
Post-test	74,62 (10,44)	79,00 (10,78)	73,53 (10,64)	76,00 (14,44)	75,62 (11,41)
Follow-up week	75,13 (11,74)	79,93 (12,93)	74,68 (10,72)	78,77 (16,98)	76,89 (12,87)
Follow-up month	74,00 (9,25)	80,60 (12,00)	75,32 (10,21)	75,92 (12,61)	76,37 (10,97)

Graph 1, means over time

Hypothesis 4: effects of the interventions on savouring (LUSQ) and rumination (PSWQ) scores

-Savouring

A RMA was performed on LUSQ data. Within subject levels were defined as LUSQ-scores at pre-test, post-test, follow-up one week and follow-up one month. Between subject-levels were the four conditions: ('three good things', 'three bad things', 'early memories' & waiting list)

Contrasts were defined as (1) 'three good things' vs. 'early memories' and (2) 'three good things' vs. 'three bad things'.

Mauchly's test indicates a violation of sphericity ($\chi^2(5) = 32.23, p = .00$) therefore a Greenhouse-Geisser correction was applied on the data. Results show a time-effect $F(2.13, 121.46) = 10.55, p = .00$ and a time-condition effect $F(6.39, 121.46) = 5.45, p = .00$. Results were significant at the $p = .001$ level. Contrast 'three good things' versus 'early memories' (1) was significant

$p=.04$. Meaning ‘three good things’ scored higher than ‘early memories’.
 Contrast ‘three good things’ versus ‘three bad things’ (2) was significant as well $p=.01$. Meaning ‘three good things’ scored higher than ‘three bad things’.

Table 4, savouring scores

	Condition				
	Negative condition	Positive condition	Early memories	Wait list	Total
Pre-test	55,00 (11,03)	61,51 (7,19)	49,49 (4,29)	60,61 (9,30)	56,06 (9,42)
Post-test	54,88 (11,24)	63,93 (6,89)	59,39 (9,44)	62,92 (9,29)	60,00 (9,85)
Follow-up week	57,19 (11,50)	64,36 (7,86)	59,72 (9,29)	62,23 (12,64)	60,66 (10,49)
Follow-up month	54,63 (10,90)	62,21 (8,62)	61,44 (10,18)	61,00 (11,23)	59,74 (10,49)

Graph 2, savouring

Clearly there must be something wrong with the ‘early memories’ baseline. This is confirmed in a box plot (graph 3) and subsequent Analysis of Variance

$F(3,63)=8.372$, $p=.00$ with significant contrasts between “positive writing” and “early memories” (1) $t(63)=4.537$, $p=.00$ but also between “positive writing” and “negative writing” (2) $t(63)=2.060$, $p=.02$.

Graph 3, Box plot savouring baseline.

Therefore, a different analysis was performed using change in comparison with baseline scores. The difference between post and pre-test, the difference between follow-up week and pre-test and the difference between follow-up month and pre-test were calculated. These scores were used as within subject factor in a RMA with conditions as between subject variables and pre-test savouring scores as covariate.

Table 5, means

	Condition				
	Negative condition	Positive condition	Early memories	Wait list	Total
Post- vs. Pre-test	-,12(5,21)	2,42 (5,70)	9,90 (9,47)	2,31 (4,85)	3,94 (7,75)
Follow-up week vs. Pre-test	2,18 (8,19)	2,85 (6,69)	10,24 (9,61)	1,62 (7,01)	4,59 (8,73)
Follow-up month vs. Pre-test	-,38(6,46)	,71 (6,68)	11,96 (10,13)	,39 (6,43)	3,67 (9,32)

Graph 4, adjusted savouring scores

Covariates appearing in the model are evaluated at the following values: LUSQtot_0 = 56.06

Results show no violation of sphericity and a non-significant time $F(2,112)=.127$, $p=.44$ and time-condition interaction effect $F(6,112)=1.738$, $p=.06$. However there is a significant contrast (1) between “three good things” and “early memories” $p=.01$. Meaning that positive writing increases savouring more than writing about the past.

-PSWQ scores

A RMA was performed on PSWQ scores, within subjects levels were PSWQ-scores at pre-test, post-test, follow-up one week and follow-up one month. Between subject-levels were: (‘three good things’, ‘three bad things’, ‘early memories’ & waiting list). Contrasts were defined as (1) ‘three good things’ vs. ‘early memories’ and (2) ‘three good things’ vs. ‘three bad things’.

Mauchly’s test indicated that the assumption of sphericity was violated $\chi^2(5)=31.31$, $p=.00$ therefore a Greenhouse-Geisser correction was applied to the data. Table 6 shows means per condition. The results showed a time effect

$F(2.16, 123.19)=4.215, p=.01$ and a time-condition interaction effect $F(6.48, 123.19)=2.12, p=.03$. The contrast ‘three good things’ versus ‘early memories’ (1) showed a non-significant effect $p=.19$. The contrast ‘three good things’ versus ‘three bad things’ (2) showed a significant effect $p=.02$, meaning participants in the ‘three bad things’ condition ruminated more than participants in the ‘three good things’ condition.

Looking at the graph (graph 5) we see a steady linear decline of rumination in the negative condition and a more of a curve in the decline of rumination in the positive condition, ending up much lower than the negative condition, however baseline rumination in the positive condition was also lower. A separate one-way ANOVA (analysis of variances) at baseline ($F(3,63)=1.374, p=.13$) shows that the differences in baseline rumination between the conditions are not significant. Separate RMA’s on the different conditions show different behaviour within each group. Polynomial contrasts show a linear effect in the positive ($p=.01$) and negative ($p=.01$) condition, but also show a quadratic effect in the positive condition ($p=.02$) and the wait list condition ($p=.03$). There is no effect whatsoever in the ‘early memories’ condition. Although it looks as if there is an increase in the ‘early memories’ condition, statistics show that that is not true. The positive condition starts with a steep decline but this decline lessens over time. People in the wait list condition start with a decline in rumination but they gradually come back to their previous level of rumination.

Graph 5, rumination over time

Table 6, Rumination

	Condition				
	Negative condition	Positive condition	Early memories	Wait list	Total
Pre-test	50,00(12,35)	43,52 (8,13)	42,07 (9,52)	47,49 (11,14)	45,64 (10,66)
Post-test	48,75 (11,74)	39,64 (9,03)	43,33 (10,38)	43,62 (12,78)	43,97 (11,22)
Follow-up week	47,56 (12,36)	38,50 (9,36)	44,06 (11,04)	43,23 (12,84)	43,53 (11,62)
Follow-up month	46,19 (11,07)	38,64 (10,09)	43,94 (11,56)	44,69 (12,39)	43,48 (11,36)

Hypothesis 5: SRH

A RMA was performed on SRH data. Within subject levels were defined as SRH-scores at pre-test, post-test, follow-up one week and follow-up one month. Between were subject-levels: ('three good things', 'three bad things', 'early memories' & waiting list)

Contrasts were defined as (1) 'three good things' vs. 'early memories' and (2) 'three good things' vs. 'three bad things'.

Maughly's test indicated that the sphericity assumption was not violated. The results show no effect on time $F(3,174)=1.266$, $p=.14$ but do show an effect on the time-condition interaction $F(9,174)=2.084$, $p=.01$. Contrast 'three good things' versus 'early memories' (1) was not significant $p=.13$. Contrast between 'three good things' and 'three bad things' (2) was not significant either $p=.12$. Separate one-way analysis of variances on all four time points (pre-, post-test, follow-up week, follow-up month) did not find any differences either. Similar to the PSWQ data, we checked the assumption of equal baselines with a one-way ANOVA ($F(3,63)=1.500$, $p=.22$) which showed no differences between conditions. We also did separate RMA tests on all conditions. Results showed an effect on the "early memories" condition only $F(3,51)=5.562$, $p=.00$. Polynomial contrasts showed a linear effect ($p=.00$), a quadratic effect ($p=.03$) and a cubic effect ($p=.02$) on the "early memories" condition and a linear effect ($p=.03$) on the wait list.

Table 7, SRH, means

	Condition				
	Negative condition	Positive condition	Early Memories	Wait list	Total
Pre-test	3,94 (,77)	4,16 (,95)	3,61 (1,09)	4,03 (1,30)	3,91 (1,04)
Post-test	3,75 (,78)	4,36 (1,15)	4,11 (,90)	3,86 (1,46)	4,02 (1,08)
Follow-up week	4,06 (,85)	4,43 (,76)	4,00 (1,03)	3,92 (1,49)	4,10 (1,05)
Follow-up month	3,94 (,57)	4,36 (,84)	4,11 (,68)	3,64 (1,39)	4,02 (,914)

Graph 6, SRH

Hypothesis 6, mediating effects of savouring and rumination

Effects on AHI-scores.

Maughly's test indicated that the sphericity assumption was violated in all analysis, therefore a Greenhouse-Geisser correction was applied to all data. Neither a time effect $F(2.35, 138.38) = 2.003$, $p = .07$ nor a time-condition interaction $F(7.04, 138.38) = .645$, $p = .36$ can be found in the normal AHI data.

When taking savouring into account there is also no significant time $F(2.3, 133.59) = 1.00$, $p = .19$ nor time-condition interaction $F(6.91, 133.59) = .88$, $p = .21$. Taking rumination in account changes the time effect to $F(2.34, 135.84) = .211$, $p = .43$ and the interaction $F(7.03, 135.84) = .713$, $p = .33$.

Using both savouring and rumination we found no time effect $F(2.29, 130.77) = .764$, $p = .24$ and neither a time-condition interaction $F(6.88, 130.77) = .721$, $p = .33$. Although no significant time and time-condition interactions could be found, we can see a general direction in probability. When we correct for baseline rumination, the time-condition interaction becomes more probable and the contrast between "positive writing" and "writing about past" (1) almost reaches the significance threshold as can be seen in table 8.

Table 8, changes in contrasts

Contrast	One-tailed p-values				
	AHI	AHI with LUSQ covariate	AHI with PSWQ covariate	AHI with LUSQ/PSWQ covariate	AHI with Transcendence
"Positive writing against "writing about past"	.09	.17	.06	.24	.84
"Positive writing" against "negative writing"	.11	.45	.33	.34	.93

Hypothesis 7

As mentioned before, neither a time effect $F(2.35, 138.38) = 2.003$, $p = .07$ nor a time-condition interaction $F(7.04, 138.38) = .645$, $p = .36$ can be found in the normal AHI data. When using transcendence as covariate there is a change in the time effect $F(2.516, 130.847) = .681$, $p = .27$ and time-condition interaction $F(7.549, 130.847) = .978$, $p = .23$. Contrasts became non-significant (table 8) after transcendence was used as covariate. Separate analyses of conditions showed a polynomial contrast effect in the waitlist condition only (linear: $p = .03$). Graph 7 shows random fluctuations in AHI scores after applying transcendence correction.

Graph 7, AHI scores with transcendence correction

Covariates appearing in the model are evaluated at the following values:
Transcendence = 20,4386

Using transcendence as covariate in the SRH data changed the time effect from $F(3, 174) = 1.266$, $p = .29$ to $F(3, 153) = .829$, $p = .48$.

The time-condition interaction changed from $F(9,174)=2.084, p=.03$ to $F(9,153)=2.504, p=.01$. Contrasts were non-significant. Further analyses on separate conditions did not show any effects or significant polynomial contrasts. Graph 8 shows a decrease in wait list, and an increase in early memories happiness. However, these differences are not significant. The combination of random fluctuations in the conditions might create a significant time-interaction effect in the RMA.

Graph 8, SRH scores with transcendence correction.

Covariates appearing in the model are evaluated at the following values: Trancedence = 20,3393

Exploratory analyses:

Exploring AHI scores with different covariates.

In this exploration, we have tried different covariates in the RMA analyses. We used 2 tailed p-values to reduce the risk on false positives (type I error).

We performed a RMA on AHI data. Within subject levels were defined as AHI-scores at pre-test, post-test, follow-up one week and follow-up one month.

Between subject-levels were: ('three good things', 'three bad things', 'early memories' & waiting list)

Separate analyses were performed using covariates age and amount of execution.

None of these analyses came up with a significant result. We also did an analysis with only low-scoring participants for they are expected to benefit more from the intervention. No significant results were found.

Exploring SRH with different covariates

A RMA was performed on SRH data. Within subject levels were defined as SRH-scores at pre-test, post-test, follow-up one week and follow-up one month.

Between subject-levels were: ('three good things', 'three bad things', 'early memories' & waiting list). Separate analyses were performed using covariates, age, baseline PSWQ, baseline LUSQ, and amount of execution.

Analysis with covariate age did not show significant results. An analysis with only low-scoring participants showed no significant results. Analysis with PSWQ baseline score showed a sign time-interaction effect $F(9,171)=2.29$, $p=.019$ (2 tailed) but no significant contrasts. Separate analyses showed no results either. Graph 9 shows a lower baseline for the early memories condition.

A separate ANOVA at pre-test confirms a difference at baseline

$F(4,247)=16.089$, $p=.00$. Analysis with LUSQ baseline score showed a time-condition interaction $F(9,171)=2.008$, $p=.04$. Subsequent analyses found a significant difference between the wait list and early memories condition ($p=.03$) which is visible in graph 10. Analysis with covariate amount of execution did show a significant time-condition effect $F(9,171)=1.668$, $p=.10$, (graph 11) but showed no significant contrasts. Separate analyses showed an effect in negative condition $F(3,42)=3.169$, $p=.03$. with a cubic polynomial contrast ($p=.01$).

Graph 9, SRH scores with covariate PSWQ baseline

Covariates appearing in the model are evaluated at the following values:
PSWQtot_0 = 45,74

Graph 10, SRH scores with covariate LUSQ baseline

Covariates appearing in the model are evaluated at the following values: LUSQtot_0 = 55,93

Graph 11, SRH data with covariate amount of execution

Covariates appearing in the model are evaluated at the following values:
 Uitvoering_1 = 4,31

Discussion

We hypothesized that scores on the AHI would be higher in the positive writing condition than scores on the ‘writing about the past’ condition, 1 week and 4 weeks after the intervention. We also hypothesized that scores on the AHI would be higher in the positive writing condition than scores on the waitlist condition, 1 week and 4 weeks after the intervention. We further hypothesized that scores on the AHI would be higher in the positive writing condition than in negative writing condition.

We have been unable to replicate the Seligman et al. (2005) findings; there were no differences to be found between our four experimental conditions.

We had expected not only that the AHI scores would increase significantly but also that results would be visible in savouring and rumination. We had expected higher scores on LUSQ-questionnaire and lower scores on PSWQ-questionnaire over time in the positive condition. We found that all participants savoured more, but participants in the positive writing condition savoured significantly more than our control group, who wrote about their past.

We found that rumination decreased over time in all participants, including the wait list condition. We also found a greater decrease in rumination in the positive writing condition compared to negative writing condition. However, there was a clear linear decline in rumination in the negative writing condition but the decline of rumination in the positive writing condition was a more quadratic decline. There is no difference in rumination for the positive condition at 1 or 4 weeks.

We further hypothesized that the increase in happiness could be seen in AHI but also as an increase in the SRH score. We found a significant difference between the four conditions. We could not find a difference between positive writing and writing about the past, and we could not find a difference between positive and negative writing as well. Further analyses showed that only writing about the past was different between conditions. The other conditions remained more or less the same and did not change over time.

We believed that the effects, described in hypotheses 1-3, would be no longer significant when we took savouring into account but would remain significant if we took rumination into account. Overall, the effect of savouring and rumination on authentic happiness was small and not beneficial. When correcting for baseline rumination, we found a small increase in probability for the effect of conditions, but this still did not reach significance. A small increase was also found in the specific difference between positive writing and writing about the past. However, this effect did also not reach significance.

Finally, we also expected that participants, who scored high on the BST-transcendence factor, would have higher happiness as measured by AHI or SRH. Transcendence did not improve our findings in AHI data. Transcendence increased probability a bit but the results did not reach significance. Also, both the contrast between positive writing and writing about the past and the contrast between positive and negative writing, became highly non-significant. The effect on SRH data was equally non-beneficial; the interaction effect increases somewhat but the contrasts remain non-significant.

Summary.

Our study has not been able to replicate findings of the Seligman (2005) study. We found that people who engaged in positive writing ruminate significantly less than people engaged in negative writing or writing about their past. However, the effect of positive writing seems to stall at a certain point. People who use positive writing also gain in savouring. We cannot conclude if people really have been getting happier over time because our measurements of happiness are showing no increases or decreases in happiness. We found positive effects of the interventions, but could not find a increased happiness.

Secondary results and exploration.

Exploring the AHI-data further by controlling for age, and treatment adherence, we found no significant effects.

Exploring the SRH in a same way, we found an effect for rumination at baseline. However, this effect was explained by differences in the control group and not due to positive or negative writing.

We could not find any results with the AHI- questionnaire, even when controlling for many factors. This is inconvenient, but also peculiar. See the limitations for some provisional explanations.

Using our single question for happiness self rating, we found interactions with rumination and amount of execution. Apparently rumination is an important factor in self-rated happiness.

During our research, we encountered the following problems and alterations.

Alterations and irregularities

We changed exercise amount to zero at all participants in the waiting list condition.

We removed duplicate email addresses with only pre-test scores from the study. For participants who had scores on post-test and beyond but not on pre-test, we substituted the mean of their group (approximately 8 participants per condition). A group of participants became no longer anonymous due to a human error in email sending. This happened only one time. These participants were send an excuse.

The first instructions were being send later than protocol.

Other problems

The software we used for the questionnaires was not sufficient for goal. Participants could not be tracked adequately and process and signal control was impossible. Also communication with participants was limited. Furthermore some participants had to fill in questionnaires twice because of bugs in the program. Many participants considered the total questionnaire as too long (20 min). The exercise ‘early memories’ was not clear to all participants (every day the same or different event from past). It was not clear to everyone that they had to do one exercise only. For participants it was not clear enough how much time they had to invest in the study. One participant in the ‘early memories’ condition did not want to continue because he felt bad about his past and did not want to

relieve it. Group size was not exactly the same because of random assignment and because not everyone started at the same time.

Limitations

Our study has some limitations that could influence our results.

Minor limitations; limitations that we think will not influence the results much.

There could be a cultural difference between our study and the original (Seligman et al., 2005), perhaps Dutch people are not as happy as American people, or Dutch people respond less to our intervention. However, according to happiness research the Netherlands is placed 17th and the U.S.A. 21st on the world happiness ranking (Veenman, 2011). Citizens of both countries are measured as happier than most of the world; furthermore, Dutch citizens are considering themselves to be happier than Americans. Therefore we would expect equal or stronger effects. Dutch people are in many ways equal to the average American, both come from a highly industrialized and wealthy country. We do not expect any differences in response to an intervention.

It could be that our sample was happier at the start. According to our data this was not the case, our average AHI score was roughly equal to the original study data. Perhaps our control condition was not good enough. When comparing control with the waiting list condition, there was no significant difference between them. Perhaps the exercise just does not work? This is highly unlikely, because several authors (Burton & King, 2009; Wing, Schutte & Byrne, 2006) found results, using similar exercises.

Perhaps our translation was not good enough. Of course this could have been the case, but the translation of the AHI questionnaire was done thoroughly with retranslating items back and forth. We believe the questionnaire was an accurate translation (Van der Togt, master thesis Psychology, Leiden University, 2011). It could be that the AHI is not sensitive enough for changes in one month,

however, the Seligman et al. (2005) study did find a result at one month, so we expected a similar result. Perhaps our group was older? When we corrected for age there was still no significant effect. Also, according to Sin & Lyobimorski (2009) older people become happier more easily, so we would expect a greater effect. Many participants complained about the length of the questionnaires. It took them approximately 20-30 minutes to complete a questionnaire, and they had to do these questionnaires 4 times. So perhaps participants got bored and started to pick answers randomly instead of really answering them. However, the AHI-questionnaires were at the beginning of the questionnaire. Participants answered this questionnaire first and it seems unlikely that they pick random answers from the start. Furthermore, the AHI-scores did not change much over time and variability was low. Perhaps our study was too short? The best results are seen at the 6 months follow -up. However, we do not see even a small effect at the one month period.

Major limitations; limitations that might influence our results more.

A big limitation is the number of participants, due to high dropout rate (73%) we were left with 71 participants. The Seligman et al. (2005) study started with 577 participants and ended up with 411 participants (29% dropout). Analysis of our dropped out participants showed no significant difference on any indicator. However, a smaller pool of participants decreases the power of analyses, and increases the influence of outliers in data. Another major limitation is formed by the unequal group sizes. Although we started with nearly equal groups, in the end we were left 16 (positive condition), 17 (negative condition), 21 (early memories) and 13(wait list) participants. Especially the early memories group was larger than the others. Perhaps this explains the strange behaviour of this group on several analyses.

We also acquired our participants in a different way than Seligman and colleagues (2005) did; they used a website dedicated to happiness and we used our own network of email contacts. How much this influences results is hard to tell. The authors of the Seligman et al. (2005) study expected to have a biased sample towards people wanting to become happier, while we tried to replicate these conditions in approach and contact, we did not have the same resources. We used a convenience sample that included many relatives and friends of the researchers. This makes our participants probably more dedicated to the study, but we do not know how this will influence their level of happiness, or seeking of happiness.

Further remarks

Our results show no increase in happiness, while the original study does. Of course our sample of questions from the original Brief Strengths test are not validated nor reliable. However, they do give an indication of the personality strength known as transcendence. The influence of transcendence on AHI scores was very low. In addition, a growing body of evidence shows that the original Virtues in action and the Brief strengths test, which are related to each other, need to be revised. (Macdonald, Bore & Munro, 2008; Shryack et al., 2009; Park & Peterson, 2006).

Notwithstanding the shortcomings of our study, it has been six years since Seligman et al. published their results, up until now there has not been a replication. It seems odd that a simple and yet so potent exercise has not been used more. We consider it highly unlikely that we are the first to try such a thing. We fear that many studies have been tried but not published, a so-called file-drawer problem. Perhaps The Seligman et al. (2005) study was a coincidental finding?

On a different but not unconnected note, the AHI questionnaire does not function as promised: it has to be revised. Changes in happiness are not visible and perhaps the whole idea of authentic happiness must be revised. Peterson (2011) explained that the AHI is at this moment under revision.

Summary /conclusions

Our study was unable to replicate the Seligman et al. (2005) study. We used multiple ways to control for placebo effects, history effects and other influences from outside. Even when controlling for age, rumination or amount of execution we found no results on the AHI- questionnaire. We did find that people tend to ruminate less over time and that people who use positive self writing (e.g. ‘Three good things’ condition) ruminate less than people who use negative self writing (e.g. ‘Three bad things’ condition). People who start to ruminate less become happier. People who use positive self-writing savoured more than people who wrote about their past. They also savoured more than people who use negative self-writing. Thus, the positive intervention had at the expected effects on the two types of ‘cognitive perseveration’, negative as well as positive.

FINAL STATEMENT

With the aforementioned limitations in mind, we can conclude that we were unable to replicate the Seligman (2005) study. However, we also found positive results, which can be added to the growing knowledge of positive psychology. We found out that the positive part of the intervention is in fact the working part. Rumination is more reduced with positive writing than with negative writing. According to other research (Nolen-Hoeksema, Wisco & Lyubomirsky, 2008; McLaughlin & Nolen-Hoeksema, 2011) rumination is a good predictor for length and severity of depression and anxiety. Therefore, because we reduce the

amount of rumination, we reduce the risk of severe disability. Also our savouring concept, though not thoroughly tested, was visible in participants. We believe that the influence of savouring constitutes to a good life, a life in which people enjoy things. With current number of participants, we were unable to thoroughly test our model. We could therefore not specify if people get happier because of reduced rumination, increased savouring, or a combination. We have seen a decrease in rumination and an increase in savouring, but the exact workings will be something for future research. It seems both positive as well as negative self-writing improve mental well-being in terms of rumination and savouring.

Implications for the future

Future research must find out what makes a good positive psychological intervention. But also what other interventions, tested by the Seligman et al. (2005) study can do and how they work. Perhaps a combination of new interventions will interact and create a bigger effect. The interventions should also be tested in specific psychiatric groups, and in other cultures as well. We also suggest tweaks in valence, time investment, and administering of interventions. It would be great to use different instruments, however be wary for long lists.

Future research should also elaborate on our integrative Stress-model and find out how big the influence of savouring is on the model. We suggest that interventions aimed at increased savouring will have a tremendous effect on happiness and rumination.

We would also like future research to validate our savouring concept further.

Our study was another example of effective use of internet-based interventions. We believe that the future of research is to be found largely online. It is much cheaper and less time consuming. We have had a huge dropout rate, which is perhaps a risk in internet-based research, conversely it is much easier to find lots of participants. With internet-based health services (E-Health) it is much easier to create a tailor made package of therapies, based on participant characteristics and preference. Because everything online is automatically recorded, research will be easier and can be made more sophisticated.

We have shown that a simple 10 minute exercise can influence deep, almost unconscious, habits, namely rumination in an exercise no longer than a week time. With a set of such simple exercises, we could be people more healthy in cheap and in very cost-effective ways.

Message to the future

It seems to be a fact that we are fitted with a brain that is hardwired to look for, and anticipate to (possible) trouble. While this was definitely a good thing in the past, in today's world this causes a lot trouble. There is just too much information and too many possible threats. We have to train our brains to cope with the world, or we will have to change the world. However, we had better start with ourselves. Recent changes in psychology caused us to learn of the benefits of mindfulness and we suggest that savouring is also a very important skill to teach Brain training is the way of the future; we will have to train ourselves and our future generations to become expertly happy, and to cope with the world as it is. We have shown that a simple exercise can make people enjoy life more and worry less. Enjoying and worriess people have more creativity and less depression. Less depression will create less disability in the world. The

reduction in disability and improvement in creativity will allow more productivity, and a better life. Of course, there will be many problems with this idealistic worldview but it is our sincere hope that in the future everybody will be happy.

Literature:

Abdel-Khalek, A. (2006). Measuring happiness with a single-item scale. *Social Behavior and Personality*, 34; 2, 139-150.

Argyle, M., Martin, M. and Lu, L., 1995. Testing for stress and happiness: The role of social and cognitive factors. In: Spielberger, C.D. and Sarason, I.G., Editors, 1995. *Stress and emotion* Vol. 15, Taylor & Francis, Washington, D.C., 173–187.

Bachelorproject 43. Bachelors theses on happiness. (2011) supervision by Brosschot, J.F. Leiden University. (unpublished)

Brosschot, J. F. & van der Doef, M. (2006) Daily worrying and somatic health complaints: Testing the effectiveness of a simple worry reduction intervention *Psychology and Health* 21, 19-31

Brosschot, J.F., Gerin, W., & Thayer J.F. (2006) The perseverative cognition hypothesis: A review of worry, prolonged stress-related physiological activation, and health. *Journal of Psychosomatic Research*, 60, 113-124.

Brosschot, J., Verkuil, B., & Thayer, J. (2010), Conscious and unconscious perseverative cognition: is a large part of prolonged physiological activity due to unconscious stress? *Journal of Psychosomatic Research* (In prep.)

Bryant F. B. (1989) A four-factor model of perceived control: avoiding, coping, obtaining and savouring. *Journal of personality*, 57, 773-797

Bryant F.B. (2003) Savoring Beliefs Inventory (SBI): a scale for measuring beliefs about savouring. *Journal of mental health* 12, 175-196

Burton, C.M., King, L. (2009) The health benefits of writing about positive experiences: the role of broadened cognition. *Psychology & Health*, 24, 867-879

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale.. *Journal of Personality Assessment*, 49, 71–75.

Eriksen, H.R., Ihlebaek, C. & Ursin, H. (1999). A scoring system for subjective health complaints (SHC). *Scandinavian Journal of Public Health*, 1, 63-72.

Folkman, S. (1997) Positive psychological states and coping with severe stress. *Social science & medicine*, 45, 1207-1221

Folkman, S. (1984) Personal control and stress and coping processes: a theoretical analysis. *Journal of personality and social psychology* 46, 839-852

Folkman, S (2008) The case for positive emotions in the stress process. *Anxiety stress and coping*, 21, 3-14

Fredrickson, B. L. (2004) The broaden-and-build theory of positive emotions. *Phil Trans. R. Soc. Lond. B* 359, 1367-1377

Frattaroli, J. (2006) Experimental Disclosure and Its Moderators: A Meta-Analysis. *Psychological Bulletin*, 132(6), 823–865

Fredrickson, B. (2001). The role of positive emotions in positive psychology: the broaden and build theory of positive emotions, *American Psychologist*, 56, 218-226

Lazarus, R. & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer

Macdonald, C., Bore, M., & Munro, D. (2008) Values in action scale and the Big 5: an empirical indication of structure. *Journal of Research in Personality*, 42, 787-799

McLaughlin, K.A., Nolen-Hoeksema, S.(2011) Rumination as a transdiagnostic factor in depression and anxiety. *Behavior Research and Therapy* 49, 186-193

Mitchell, J., Stanimirovic, R., Klein, B., Vella-Brodrick, D. (2009) A randomized controlled trial of a self-guided internet intervention promoting well-being. *Computers in Human Behavior* 25, 749-760

Nolen-Hoeksema, S. (2004) The response styles theory. In C. Papageorgiou & A.Wells (Eds.), *Depressive rumination: Nature, theory, and treatment* (pp. 107–124). New York: Wiley.

Nolen-Hoeksema, S., Wisco, B.E., Lyubomirsky, S. (2008) Rethinking Rumination. *Perspectives on Psychological Science* 3, 400-424

Norrish, J., & Vella-Brodrick, D., (2009). Positive psychology and adolescents: where are we now? Where to from here?, *Australian Psychologist*, 44, 270-278

Papousek, I., & Schuler, G. (2008) Effects of a mood-enhancing intervention on subjective well-being and cardiovascular parameters. *International journal of behavior medicine* 15, 293-302

Park, N., & Peterson, C. (2006) Moral competence and character strengths among adolescents: the development and validation of the values in action inventory of strengths for youth. *Journal of Adolescence*, 29, 891-909

Pennebaker, J.W. (1993) Putting Stress into words: health, linguistic, and therapeutic implications. *Behavioral Research and therapy*, 31, 539-548

Peterson, C., & Seligman, M.E.P. (2004) *Character strengths and virtues: a handbook and classification*. Washington, DC: American Psychological Association.

Peterson, C. (2011) Personal email communication about the Authentic Happiness Inventory 12th April 2011.

Pressman, S.D., & Cohen, S. (2005) Does Positive affect influence health? *Psychological Bulletin* 131, 925-971

Read, S.J., Monroe, B.M., Brownstein, A.L., Yang, Y., Chopra, G., & Miller, L.C. (2010) A neural network model of the structure and dynamics of human personality. *Psychological Review* 117, 61-92

Rijsoort, S. Van, Emmelkamp, P. & Vervaeke, G. (1999) The penn state worry questionnaire and the worry domains questionnaire: structure, reliability and validity. *Clinical psychology and psychotherapy*, 6, 297-307

Schreffrin, H.H. & Nelson, S.K. (2010). Stressed and Happy? Investigating the Relationship Between Happiness and Perceived Stress. *J Happiness Stud*, 11, 33-39

Seligman, M. (1975). *Helplessness: on depression, development, and death*. San Francisco: Freeman

Seligman, M. (2002). *Authentic happiness*. New York: Free Press

Seligman, M., & Csikzentmihalyi, M. (2000). Positive psychology, *American Psychologist*, 55, 5-14

Seligman, M.A.P., Steen, T.A., Park, N., & Peterson, C. (2005) Positive psychology Progress: Emperical validation of interventions. *American Psychologist* 60, 410-421

Seligman, M., Steen, T., Park, N., & Peterson, C., (2005). Positive psychology progress, *American Psychologist*, 60, 410-421

Shryack, J., Steger M.F., Krueger, R.F., Kallie, C.S. (2009) The structure of virtue: An empirical investigation of the dimensionality of the virtues in action inventory of strengths. *Personality and individual differences*, 48, 714-719.

Sin, N.L., & Lyubomirsky, S. (2009) Enhancing Well-being and alleviating depressive symptoms with positive psychology interventions: a practice-friendly meta-analysis. *Journal of clinical psychology in session* 65, 467-487

Stöber, J. (1997). Reliability and validity of two widely-used worry questionnaires: self-report and self-peer convergence. *Personality and Individual Differences*, 24; 887-890.

van der Tocht, Masterthesis 2011

Veenhoven. R.. *Average happiness in 149 nations 2000-2009*. World Database of Happiness. Rank report Average Happiness. Internet:
worlddatabaseofhappiness.eur.nl/hap_nat/findingreports/RankReport_AverageHappiness.php

Wing, J.F., Schutte, N.S., & Byrne, B. (2006) The effect of positive writing on emotional intelligence and life satisfaction. *Journal of clinical psychology*, 62, 1291-1302

Attachments:

Email invite with exercise: “Three bad things”

Beste deelnemer,

In deze e-mail vindt u een kopie van de instructie die bij uw oefening hoort. Zo kunt u deze rustig nogmaals doorlezen.

“Drie onplezierige gebeurtenissen”

In het leven maken we veel mee: zowel leuke als nare gebeurtenissen komen op ons pad. Soms is het nuttig de onplezierige gebeurtenissen te analyseren zodat we er van kunnen leren en ze in de toekomst kunnen voorkomen. De oefening is erop gericht deze vaardigheid verder te ontwikkelen.

De opdracht is als volgt:

Vanaf vandaag vragen wij u een week lang elke avond 10 minuten de tijd te nemen voor de opdracht. Doe dit bijvoorbeeld op een vast tijdstip voor het slapen gaan. Tijdens deze 10 minuten vragen wij u drie dingen op te schrijven die deze dag niet goed zijn gegaan en de reden dat ze niet goed zijn gegaan. U kunt hiervoor een blocnote of computer gebruiken. Het is wel belangrijk de gebeurtenissen daadwerkelijk op te schrijven. Alleen over de gebeurtenissen nadenken is niet voldoende.

De drie beschreven dingen die onplezierig zijn verlopen, kunnen relatief van weinig belang zijn (‘Ik kwam vijf minuten te laat op mijn afspraak’) of van relatief groot belang (‘Mijn zus heeft vandaag een miskraam gehad’). Naast elke beschreven gebeurtenis die niet goed is gegaan, beantwoordt u de vraag: ‘Waarom heeft deze gebeurtenis plaatsgevonden?’ Iemand kan bijvoorbeeld opschrijven dat ze vijf minuten te laat was ‘omdat mijn band lek was’ of ‘omdat ik te laat was weggegaan’. Gevraagd naar de reden waarom haar zus een miskraam heeft gehad kan iemand bijvoorbeeld schrijven ‘omdat het lot haar niet gunstig gezind was’ of ‘omdat dat in Gods handen is’.

Het schrijven over het waarom van de onplezierige gebeurtenis, voelt misschien in eerste instantie vreemd aan, maar probeer het toch de hele week vol te houden. Het wordt vanzelf makkelijker.

Veel succes met uw oefening.

Onderzoeksgroep 'Geluk en welbevinden'
Instituut Psychologie
Universiteit Leiden

Beste deelnemer,

In deze e-mail vindt u een kopie van de instructie die bij uw oefening hoort. Zo kunt u deze rustig nogmaals doorlezen.

"Jeugdherinneringen"

Denk een moment aan uw vroegste herinneringen. Van alle ervaringen uit ons leven, onthouden we er een aantal uit onze vroege jeugd. Wanneer we goed nadenken over onze vroegste herinneringen, begrijpen we misschien beter wie we nu zijn.

De opdracht is als volgt:

Vanaf vandaag vragen wij u een week lang elke avond 10 minuten de tijd te nemen voor de opdracht. Doe dit bijvoorbeeld op een vast tijdstip voor het slapen gaan. Tijdens deze 10 minuten denkt u na over een jeugdherinnering. Daarna schrijft u deze herinnering zo gedetailleerd mogelijk op. Probeer u te herinneren wat u aan het doen was, wat u voelde, en welke mensen bij u waren. Het is geen probleem als u zich sommige details niet meer kunt herinneren. Schrijf gewoon op wat u zich wel herinnert. U kunt hiervoor een blocnote of computer gebruiken. Het is wel belangrijk de herinneringen daadwerkelijk op te schrijven. Er alleen over nadenken is niet voldoende.

Na zeven avonden vragen wij u eens terug te kijken naar uw verzameling herinneringen. Merkt u overeenkomsten of patronen op in uw herinneringen?

Veel succes met uw oefening.

Onderzoeksgroep 'Geluk en welbevinden'
Instituut Psychologie
Universiteit Leiden

Beste deelnemer,

In deze e-mail vindt u een kopie van de instructie die bij uw oefening hoort. Zo kunt u deze rustig nogmaals doorlezen.

“Drie plezierige gebeurtenissen”

We staan (te) vaak stil bij wat er mis gaat in het leven en te weinig bij wat er goed gaat. Het is soms nuttig om nare gebeurtenissen te analyseren zodat we er van kunnen leren en ze in de toekomst kunnen voorkomen. Deze neiging is echter niet altijd zinvol en kan zelfs leiden tot angst en depressie. Een manier om dit te voorkomen is het ontwikkelen van de vaardigheid om over de plezierige dingen in het leven na te denken. Wanneer u zich beter kunt richten op de goede dingen in het leven, is de kans groot dat u dankbaarder wordt voor wat u heeft en hoopvoller bent over de toekomst.

De opdracht is als volgt:

Vanaf vandaag vragen wij u een week lang elke avond 10 minuten de tijd te nemen voor de opdracht. Doe dit bijvoorbeeld op een vast tijdstip voor het slapen gaan. Tijdens deze 10 minuten schrijft u drie dingen op die deze dag erg goed zijn gegaan en waarom ze goed zijn gegaan. U kunt hiervoor een blocnote of computer gebruiken. Het is wel belangrijk de gebeurtenissen daadwerkelijk op te schrijven. Er alleen over nadenken is niet voldoende.

De drie plezierige dingen die u beschrijft, kunnen relatief van weinig belang zijn (‘Mijn partner bracht vandaag op de weg van werk naar huis mijn favoriete merk chocola mee’) of van relatief groot belang (‘Mijn zus is vandaag bevallen van een gezonde baby’). Naast elke plezierige gebeurtenis op uw lijstje, beantwoordt u de vraag: ‘Waarom heeft deze plezierige gebeurtenis plaats gevonden?’ Iemand kan bijvoorbeeld opschrijven dat haar partner haar favoriete chocola mee bracht ‘omdat hij soms erg attent is’ of ‘omdat ik eraan heb gedacht hem te bellen om hem er aan te herinneren onderweg naar huis bij de supermarkt te stoppen.’ Gevraagd naar de reden waarom haar zus bevallen is van een gezonde baby kan iemand bijvoorbeeld schrijven ‘omdat het lot haar gunstig gezind was’ of ‘omdat God haar gunstig gezind was’.

Het schrijven over de reden van de plezierige gebeurtenis voelt misschien in eerste instantie vreemd aan, maar probeer het toch de hele week vol te houden. Het wordt vanzelf makkelijker.

Veel succes met uw oefening.

Onderzoeksgroep 'Geluk en welbevinden'
Instituut Psychologie
Universiteit Leiden

Authentic Happiness Index

Elke vraag bestaat uit vijf beweringen. Lees deze goed door. Kies één van de vijf beweringen die het beste beschrijft hoe u zich de afgelopen week voelde, inclusief vandaag. Zorg ervoor dat u alle beweringen gelezen hebt voordat u een keuze maakt.

1

- ☐ A. Ik voel me een mislukkeling.
- ☐ B. Ik voel me geen winnaar.
- ☐ C. Ik heb het idee dat ik succesvoller ben dan de meeste mensen.
- ☐ D. Als ik terug kijk op mijn leven, dan zie ik alleen successen.
- ☐ E. Ik voel me buitengewoon succesvol.

2

- ☐ A. Ik ben meestal in een slechte stemming.
- ☐ B. Ik ben meestal in een neutrale stemming.
- ☐ C. Ik ben meestal in een goede stemming.
- ☐ D. Ik ben meestal in een uitstekende stemming.
- ☐ E. Ik ben meestal in een ongelooflijk goede stemming.

3

- ☐ A. Als ik aan het werk ben, besteed ik meer aandacht aan wat er om me heen gebeurt dan aan wat ik aan het doen ben.
- ☐ B. Als ik aan het werk ben, besteed ik evenveel aandacht aan wat er om me heen gebeurt dan aan wat ik aan het doen ben.
- ☐ C. Als ik aan het werk ben, besteed ik meer aandacht aan wat ik aan het doen ben dan aan wat er om me heen gebeurt.
- ☐ D. Als ik aan het werk ben, merk ik zelden op wat er om me heen gebeurt.
- ☐ E. Als ik aan het werk ben, besteed ik zoveel aandacht aan wat ik aan het doen ben dat de wereld daaromheen praktisch ophoudt te bestaan.

4

- ☐ A. Mijn leven heeft geen enkel doel of betekenis.

- ☐ B. Ik weet niet wat het doel of de betekenis van mijn leven is.
- ☐ C. Ik heb enigszins een idee over het doel of de betekenis van mijn leven.
- ☐ D. Ik heb een behoorlijk goed idee over het doel of de betekenis van mijn leven.
- ☐ E. Ik heb een zeer helder idee over het doel of de betekenis van mijn leven.

5

- ☐ A. Ik krijg zelden wat ik wil.
- ☐ B. Soms krijg ik wat ik wil, soms niet.
- ☐ C. Ik krijg vaker wel dan niet wat ik wil.
- ☐ D. Ik krijg meestal wel wat ik wil.
- ☐ E. Ik krijg altijd wat ik wil.

6

- ☐ A. Ik heb verdriet in mijn leven.
- ☐ B. Ik heb noch verdriet noch vreugde in mijn leven.
- ☐ C. Ik heb meer vreugde dan verdriet in mijn leven.
- ☐ D. Ik heb veel meer vreugde dan verdriet in mijn leven.
- ☐ E. Mijn leven is vol van vreugde.

7

- ☐ A. Meestal voel ik me verveeld.
- ☐ B. Meestal voel ik me noch verveeld noch geïnteresseerd in wat ik aan het doen ben.
- ☐ C. Meestal voel ik me geïnteresseerd in wat ik aan het doen ben.
- ☐ D. Meestal voel ik me tamelijk geïnteresseerd in wat ik aan het doen ben.
- ☐ E. Meestal voel ik me gefascineerd door wat ik aan het doen ben.

8

- ☐ A. Ik voel me afgesloten van anderen mensen.
- ☐ B. Ik voel me niet met andere mensen verbonden noch afgesloten van hen.
- ☐ C. Ik voel me verbonden met vrienden en familieleden.

- ☐ D. Ik voel me verbonden met de meeste mensen, zelfs wanneer ik ze niet goed ken.
- ☐ E. Ik voel me verbonden met iedereen in de wereld.

9

- ☐ A. Objectief gezien gaat het slecht met me.
- ☐ B. Objectief gezien gaat het noch goed noch slecht met me.
- ☐ C. Objectief gezien gaat het redelijk goed met me.
- ☐ D. Objectief gezien gaat het behoorlijk goed met me.
- ☐ E. Objectief gezien gaat het verbazingwekkend goed met me.

10

- ☐ A. Ik schaam me voor mezelf.
- ☐ B. Ik schaam me niet voor mezelf.
- ☐ C. Ik ben trots op mezelf.
- ☐ D. Ik ben erg trots op mezelf.
- ☐ E. Ik ben buitengewoon trots op mezelf.

11

- ☐ A. De tijd gaat langzaam bij de meeste van mijn bezigheden.
- ☐ B. De tijd gaat snel gedurende sommige van mijn bezigheden en langzaam gedurende andere bezigheden.
- ☐ C. De tijd gaat snel gedurende de meeste van mijn bezigheden.
- ☐ D. De tijd gaat snel gedurende al mijn bezigheden.
- ☐ E. De tijd gaat zo snel gedurende al mijn bezigheden dat ik het niet eens in de gaten heb.

12

- ☐ A. Over het grote geheel genomen zal mijn bestaan de wereld schaden.
- ☐ B. Mijn bestaan helpt noch schaadt de wereld.
- ☐ C. Mijn bestaan heeft een klein maar positief effect op de wereld.
- ☐ D. Mijn bestaan draagt bij aan een betere wereld.
- ☐ E. Mijn bestaan heeft een blijvende, grote en positieve invloed op de wereld.

13

- ☐ A. Ik doe de meeste dingen niet erg goed.
- ☐ B. Ik doe de meeste dingen matig.
- ☐ C. Ik doe sommige dingen goed.
- ☐ D. Ik doe de meeste dingen goed.
- ☐ E. Ik doe alles wat ik doe echt heel goed.

14

- ☐ A. Ik heb weinig tot geen enthousiasme.
- ☐ B. Mijn enthousiasme niveau is noch hoog noch laag.
- ☐ C. Ik heb een goede dosis enthousiasme.
- ☐ D. Ik ben enthousiast over bijna alles wat ik doe.
- ☐ E. Ik ben zo enthousiast dat ik voel dat ik bijna alles kan.

15

- ☐ A. Ik houd niet van mijn werk (betaald of onbetaald).
- ☐ B. Ik voel me neutraal over mijn werk.
- ☐ C. Voor het grootste gedeelte vind ik mijn werk leuk.
- ☐ D. Ik vind mijn werk echt leuk.
- ☐ E. Ik houd ontzettend veel van mijn werk.

16

- ☐ A. Ik ben pessimistisch over de toekomst.
- ☐ B. Ik ben noch optimistisch noch pessimistisch over de toekomst.
- ☐ C. Ik ben een beetje optimistisch over de toekomst.
- ☐ D. Ik ben behoorlijk optimistisch over de toekomst.
- ☐ E. Ik ben buitengewoon optimistisch over de toekomst.

17

- ☐ A. Ik heb weinig in mijn leven bereikt.
- ☐ B. Ik heb niet meer bereikt in mijn leven dan andere mensen.

- ☐ C. Ik heb iets meer bereikt in mijn leven dan andere mensen.
- ☐ D. Ik heb meer bereikt in mijn leven dan andere mensen.
- ☐ E. Ik heb behoorlijk veel meer bereikt dan andere mensen.

18

- ☐ A. Ik ben ongelukkig met mezelf.
- ☐ B. Ik ben noch gelukkig noch ongelukkig met mezelf – ik ben neutraal.
- ☐ C. Ik ben gelukkig met mezelf.
- ☐ D. Ik ben erg gelukkig met mezelf.
- ☐ E. Ik zou niet gelukkiger met mezelf kunnen zijn.

19

- ☐ A. Mijn vaardigheden worden nooit uitgedaagd bij de situaties die ik meemaak.
- ☐ B. Mijn vaardigheden worden sporadisch uitgedaagd bij de situaties die ik meemaak.
- ☐ C. Mijn vaardigheden worden soms uitgedaagd bij de situaties die ik meemaak.
- ☐ D. Mijn vaardigheden worden vaak uitgedaagd bij de situaties die ik meemaak.
- ☐ E. Mijn vaardigheden worden altijd uitgedaagd bij de situaties die ik meemaak.

20

- ☐ A. Ik besteed al mijn tijd aan zaken die onbelangrijk zijn.
- ☐ B. Ik besteed veel tijd aan zaken die noch belangrijk noch onbelangrijk zijn.
- ☐ C. Ik besteed iedere dag een beetje van mijn tijd aan zaken die belangrijk zijn.
- ☐ D. Ik besteed iedere dag de meeste tijd aan zaken die belangrijk zijn.
- ☐ E. Ik besteed praktisch elk moment van de dag aan zaken die belangrijk zijn.

21

- ☐ A. Als ik de score bij zou houden in het leven, dan zou ik achter staan.
- ☐ B. Als ik de score bij zou houden in het leven, dan zou ik gelijk staan.
- ☐ C. Als ik de score bij zou houden in het leven, dan zou ik iets voorlopen.
- ☐ D. Als ik de score bij zou houden in het leven, dan zou ik voorstaan.

- ☐ E. Als ik de score bij zou houden in het leven, dan zou ik ruim voorstaan.

22

- ☐ A. Ik ervaar meer pijn dan plezier.
- ☐ B. Ik ervaar evenveel pijn als plezier.
- ☐ C. Ik ervaar meer plezier dan pijn.
- ☐ D. Ik ervaar veel meer plezier dan pijn.
- ☐ E. Mijn leven is vol met plezier.

23

- ☐ A. Ik heb geen plezier in mijn dagelijkse bezigheden.
- ☐ B. Ik voel me neutraal over mijn dagelijkse bezigheden.
- ☐ C. Ik vind mijn dagelijkse bezigheden leuk maar ik ben blij als ik er even aan kan ontsnappen.
- ☐ D. Ik vind mijn dagelijkse bezigheden zo leuk dat ik niet vaak een pauze neem.
- ☐ E. Ik vind mijn dagelijkse bezigheden zo leuk dat ik bijna nooit een pauze neem.

24

- ☐ A. Mijn leven is slecht.
- ☐ B. Mijn leven is OK.
- ☐ C. Mijn leven is goed.
- ☐ D. Mijn leven is erg goed.
- ☐ E. Mijn leven is prachtig.

PSWQ

Geef voor elk van de volgende uitspraken aan hoe kenmerkend die voor u is.

Invulinstructie:	1.= helemaal niet, 3.= enigzins, 5.=erg	1	2	3	4	5
Als ik niet genoeg tijd heb om alles te doen, maak ik mij daar geen zorgen over.						
Mijn zorgen overweldigen mij.						
Ik heb niet de neiging mij ergens zorgen over te maken.						
Veel situaties zijn voor mij een aanleiding om te gaan piekeren.						
Ik weet dat ik me niet zo'n zorgen zou moeten maken over dingen, maar ik kan er gewoon niets aan doen.						
Als ik onder druk sta, pieker ik teveel.						
Ik ben altijd wel ergens over aan het piekeren.						
Ik kan zorgelijke gedachten makkelijk van me afzetten.						
Zodra ik iets af heb, begin ik me zorgen te maken over al het andere dat ik nog moet doen.						
Ik maak me nooit ergens zorgen over.						
Als ik ergens niets meer aan kan doen, dan pieker ik er ook niet meer over.						
Ik ben mijn hele leven al een piekeraar geweest.						
Ik merk dat ik me zorgen maak over dingen.						
Als ik eenmaal begin te piekeren, kan ik er ook niet meer mee ophouden.						
Ik maak me voortdurend zorgen.						
Ik maak me zorgen over de dingen die ik nog moet doen, totdat ze af zijn.						

Geef voor elk van de volgende uitspraken aan hoe kenmerkend die voor u is.

Invulinstructie: 1.= helemaal niet, 3.= enigzins, 5.=erg	1	2	3	4	5
Als ik ruim de tijd heb om alles te doen, verheug ik me daar op.					
Ik geef me helemaal over aan mijn positieve gedachten.					
Ik heb niet de neiging mij ergens op te verheugen.					
Veel situaties zijn voor mij een aanleiding om me erop te verheugen.					
Ik weet dat ik me meer op dingen zou moeten verheugen, maar het lukt gewoon niet.					
Als ik het lekker druk heb, geniet ik daarvan.					
Ik heb altijd wel positieve gedachten.					
Ik kan positieve gedachten moeilijk vasthouden.					
Zodra ik iets af heb, verheug ik me alweer op al het andere dat ik van plan ben.					
Ik verheug me nooit ergens op.					
Als ik ergens onverwachts een oplossing voor vind, geniet ik daar echt van.					
Ik probeer mijn hele leven altijd van het positieve uit te gaan.					
Ik merk dat ik me niet erg verheug op dingen.					
Als ik me eenmaal ergens op verheug, is dit meestal van korte duur.					
Ik verheug me altijd wel ergens op.					
Ik geniet lang van de dingen die ik doe, ook als ze afgelopen zijn.					

Subjective Health Rating.

Hoe gezond bent u denkt u in vergelijking met uw leeftijdsgenoten?

Kies het antwoord dat op u van toepassing is

- ☐ A. minder gezond.
- ☐ B. even gezond.
- ☐ C. gezonder.

Subjective Rating of Happiness (SRH)

Voelt u zich over het algemeen gelukkig?

Kruis de positie die op u van toepassing is aan op deze schaal.

Invulinstructie: 1.=ongelukkig, 5= gelukkig	1	2	3	4	5
Kruis de positie die op u van toepassing is aan op deze schaal.					

Voor deze vragen moet u nadenken over bepaalde situaties van de afgelopen maand in het alledaagse leven. U wordt gevraagd hoe vaak u een bepaalde reactie had.

Geef aan wat op u van toepassing is.

Invulinstructie 1.=nooit, 2.=soms, 3.=de helft van de tijd, 4.=vaak, 5.=altijd, x.=niet van toepassing	1	2	3	4	5	x
1. Bedenk situaties waarbij u angst of bedreiging ervaarde. Hoe vaak toonde u moed?						
2. Bedenk situaties waarbij u geconfronteerd werd met een moeilijke en tijdrovende taak. Hoe vaak toonde u doorzettingsvermogen, ijver of volharding?						
3. Bedenk situaties waarbij het mogelijk was om een valse weergave te geven van uzelf en de situatie. Hoe vaak toonde u eerlijkheid of authenticiteit?						
4. Denk na over uw alledaagse leven. Hoe vaak toonde u interesse of enthousiasme?						
5. Denk na over uw alledaagse leven. Hoe vaak toonde u waardering en ontzag voor schoonheid of excellentie?						
6. Bedenk situaties waarbij iemand u heeft geholpen. Hoe vaak toonde u dankbaarheid?						
7. Bedenk situaties waarbij u faalde. Hoe vaak toonde u hoop en optimisme?						
8. Denk na over uw alledaagse leven. Hoe vaak toonde u speelsheid of humor?						
9. Denk na over uw alledaagse leven. Hoe vaak toonde u religieusheid of spiritualiteit?						