DETERMINANTS OF RELAPSE AFTER ACCEPTANCE AND COMMITMENT THERAPY

Presence of Determinants from the Relapse Prevention Model after an Acceptance and Commitment Therapy

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Abstract

This study analyzes which determinants from the Relapse Prevention Model are related to experiencing relapse in living to the fullest up to 2,5 years after following a class (Living to the Fullest (Bohlmeijer and Hulsbergen, 2009)) based on Acceptance and Commitment Therapy. One hundred and thirty one participants were included. The assessment included the Centre of Epidemiological Studies – Depression Scale (CES-D) (Radloff, 1977), the Hospital Anxiety and Depression Scale – Anxiety (HADS-A) (Zigmond & Snaith, 1983), the Acceptance and Action Questionnaire II (AAQ-II) (Bond et. al., 2011), questions based on determinants from the Relapse Prevention Model (Marlatt & Gordon, 1985), evaluative questions and questions about a follow-up class.

Results indicated that depressive symptoms increased after a period of no stimulation. Determinants related to behavioural relapse in living to the fullest were positive emotions, negative emotions and the Abstinence Violation Effect. Participants evaluated the course mostly positive, and they would appreciate a follow up course if professional guidance is guaranteed.

Keywords: Acceptance and Commitment Therapy, Mindfulness, Relapse Prevention Model, depression, anxiety, experiential avoidance, cross-sectional survey.

Introduction

In 2000, depression was the fourth leading contributor to the global burden of disease, and the prevalence of depression is increasing. Today depression affects about 121 million people worldwide, causing about 850 000 suicides every year (World Health Organisation, 2010). Depression is also associated with a high economic burden. The direct costs of recognizing, caring, treating, preventing and rehabilitating were estimated from several billions to tens of billions of dollars per year, only in the United States. The indirect costs of i.e. being unable to work, a decreased work-attendance and productivity, long-term disability and the decreased productivity of caring family-members are substantially greater (Baldwin, 2003).

Anxiety disorders are, beside depression, also widespread. The generalized anxiety disorder (GAD) is the most common anxiety disorder. GAD is mainly characterized by persistent (6 months or more) excessive worrying and anxiety about several life events, and somatic symptoms of anxiety (American Psychiatric Association, 2000). In patients suffering from GAD co morbidity is often seen with depression. Like depression, patients with GAD experience both work and social impairments. In combination with depression about 24% of the patients experience moderate to severe work impairments ranging from 11 to over 50% of productivity reductions (Wittchen, 2002). Also the economic burden of anxiety has been intensively studied, and encompasses both decreased work productivity and an increased health care utilization. The total costs are estimated at 42 to 47 billion dollars in the USA in 1990 (Greenberg et al., 1999; Rice and Miller, 1998; DuPont et al., 1996).

These individual and economic burdens of depressive- and anxiety disorders indicate that effective prevention methods are necessary. In particular, prevention appears to be promising for people who suffer from significant depressive and anxiety symptoms, but cannot be diagnosed with a clinical disorder (Mrazek & Haggerty, 1994). But for prevention to be

effective, knowledge of the risk factors and mechanisms in the development of depression and anxiety disorders is essential.

An important risk factor in the development of diverse clinical disorders appears to be experiential avoidance (EA) (Biglan, Hayes & Pistorello, 2008). EA is 'the tendency to try to alter the frequency, form or situational sensitivity of thoughts of feelings, even when doing so causes behavioural difficulties' (Hayes et al., 1999a). EA becomes a disordered pattern when a person spends an excessive amount of time in controlling unwanted experiences. Hayes, Luoma, Bond, Masuda & Lillis (2006) conducted a meta-analysis of 32 studies examining the relationship between EA and psychopathology, including anxiety and depression. They found a weighted effect size of r = .42 (95% confidence interval: .40- .44). Therefore, an effective prevention method needs to address experiential avoidance.

Acceptance and Commitment Therapy (ACT) is a therapy that focuses on decreasing EA and increasing value-based behaviour (Hayes, Strosahl & Wilson, 1999). It uses acceptance- and mindfulness strategies to increase psychological flexibility, i.e. "the ability to contact the present moment more fully as a conscious human being, and to change or persist in behaviour when doing so serves valued ends" (Hayes et al, 2006). It has been found that the presence of psychological flexibility predicts, among others, the absence of future disease (Bond & Bunce, 2003) and a higher quality of life (Butler & Ciarrochi, 2007).

One of the ACT-strategies to increase psychological flexibility is mindfulness. Mindfulness is a concept rooted in Buddhist psychology, but it also shares ideas with certain Western and American philosophies (Brown, Ryan & Creswell, 2007). Mindfulness has been defined as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994), and consists of three core components or axioms (Shapiro, Carlson, Astin & Freedman, 2006). The components address the way of being aware of the present.

The first axiom concerns the intention(s) of being mindful. These intentions are not static, but appear to evolve along a continuum from self regulation to self-exploration and finally self-liberation (Shapiro, 1992). At the core of being mindful is the second axiom, or the practice of paying attention to all the contents of consciousness. This attention however should be non-judgemental. Each experience should be able to arise and pass away, whereby an individual experiences both pleasant and unpleasant experiences in an accepting, interested way. This non-judgemental, accepting manner of paying attention is the third axiom of mindfulness. These components of mindfulness have successfully been integrated in several health programs, including stress-reduction programmes (Kabat-Zinn et. al., 1992; and Kabat-Zinn et. al., 1998) and cognitive therapies (Teasdale et al., 2000).

In 2011 Bohlmeijer, Fledderus, Rokx and Pieterse conducted a study to the effects of a preventive therapy based on ACT and mindfulness called 'Living to the Fullest' (hereafter abbreviated as LttF). This therapy, based on acceptance-based behavioural therapy (ABBT) was meant for participants with low mental health and / or mild psychological distress. It aimed to increase the acceptance of negative thoughts and emotions for a more mindful and value-based life. The therapy consisted of eight two-hour group sessions guided by licensed psychologists. The participants learned to live according to 5 domains: 1) acceptance of negative emotions, 2) seeing thoughts as thoughts instead of reality, 3) noticing experiences in the present moment without judgement, 4) knowing ones values, and 5) living according to ones values. It appeared that the intervention group showed a statistically significant reduction in depressive symptomatology (Cohen's d= .69) compared to a waiting list. These effects were still present three months after the intervention had stopped (Cohen's d= .74). Beside the reductions in depressive symptomatology also significant reductions in anxiety (t= -3.06, p=.002) were observed at post-treatment, and three months after the therapy (t=-3.10, p= .002).

In another study of the same therapy Fledderus, Bohlmeijer, Smit & Westerhof (2010) investigated whether the therapy was successful in promoting positive mental health by enhancing psychological flexibility. The results indicated that participants indeed showed more improvement in mental health compared to the waiting-list (Cohen's *d* =.63 at post-treatment and .70 three months after the intervention.). The participants also showed a greater improvement in psychological flexibility compared to the waiting list group, with effect sizes of .71 at post-treatment and .73 at follow up.

Beside the group program also an individual but guided self-help program was executed (Fledderus, Bohlmeijer, Pieterse & Schreurs, 2010). The participants to the self-help variant were divided into three programs: a self-help group with extensive e-mail support (N=125), a self-help group with minimal e-mail support (N=125) and a waiting list control group (N=126). In the experimental conditions significant reductions in depression, anxiety, fatigue and experiential avoidance were found, as well as improvements in positive mental health and mindfulness compared to the waiting list (effect size Cohen's *d* = 0.51 – 1.00).

These studies measured the post-treatment effects and the effects three months after the LttF therapy. However, no studies have yet been done to the long-term effects. Nevertheless it is important to examine the long-term effects of the therapy. With knowledge of these effects the LttF training might be strengthened, and so the participants can be better helped.

Therefore this study examines the effects and deficiencies of the training, guided by the Relapse Prevention Model (Marlatt & Gordon, 1985; and Larimer, Palmer & Marlatt, 1999) (hereafter abbreviated as RPM). This model, originally developed for alcohol abuse maps the cognitive and behavioural influences on alcohol abstinence. It predicts what factors evoke an initial lapse (the initial use of alcohol after a period of abstinence), and what factors increase the risk of a total relapse (the continued use of alcohol after the initial lapse) (Larimer, Palmer & Marlatt, 1999). In this model, high-risk situations and the drinker's response to those

situations posit a central role. The determinants that influence a relapse in alcohol abuse are ordered into immediate determinants and covert antecedents of high- risk situations. The immediate determinants include high-risk situations, coping, outcome expectancies and the abstinence violation effect. The covert antecedents include lifestyle factors, and urges and cravings (Larimer, Palmer & Marlatt, 1999). Cognitive-behavioural approaches based on the RPM tend to reduce the frequency of relapse episodes, as well as the intensity of relapse (Irvin, Bowers, Dunn, & Wang, 1999). However, compared to other validated treatment approaches RPM based treatments are not associated with higher abstinence rates (Carroll, 1996; Irvin et al., 1999). Although the RPM has been applied to various other addictive behaviours, the effects are greatest in treatment of alcohol abuse and multiple drug use (Irvin et al., 1999).

The RPM measures relapse in a behavioural way. In this study we use the RPM to measure behavioural aspects that are related to relapse in living to the fullest (for clarity, the lifestyle will be normally written, whereas the therapy will be abbreviated to LttF). These behavioural aspects are based on the determinants of a relapse as stated in the RPM. So, the model we use is as follows: in the therapy participants learned several behaviours to reduce depressive- and anxiety symptoms. If a participant keeps practicing the behaviours after the therapy stops, the depressive- and anxiety symptoms remain low. If a participant lessens or stops the practicing of the behaviours, the symptoms come back. We tested whether several determinants from the RPM are related to a relapse in living to the fullest. In this study we will only use the term ‘relapse’, because we do not distinguish between the initial lapse and the total relapse.

We define ‘living to the fullest’ as [1] being conscious of the emotions someone experiences, while not resisting against these emotions, [2] experiencing thoughts as thoughts instead of reality, [3] having conscious knowledge of someone’s values, and making decisions based on these values even when these decisions bring along uncertainty or tension. This study

investigates whether a relapse can be seen up to two years after the LttF therapy, and the relation between certain factors (token from the RPM) and relapse in living to the fullest. More specific, we wanted to answer the following questions:

1. To what extend did the anxiety- and depressive symptoms in- or decrease?
2. To what extend did the amount of experiential avoidance in- or decrease?
3. How many participants keep living to the fullest up to 2,5 years after the class?
4. What factors from the RPM relate to a relapse in living to the fullest?
5. How did the participants evaluate the LttF class, and (how) would they appreciate a follow up LttF class?

With this information advice will be given about possible follow-up programs for the participants.

Method

Participants

We questioned participants who followed the therapy in the period between September 1, 2008 and December 31, 2010. The participants of the group variant (Bohlmeijer, Fledderus, Rokx and Pieterse, 2010) as well as the participants of the self-help variant (Fledderus, Bohlmeijer, Pieterse & Schreurs, 2010) were questioned. The participants of the group variant received a paper-and-pencil questionnaire via their mental health organizations (Mediant and GGNet). The self-help group received the same questionnaire via e-mail. We received 91 questionnaires from the self-help group and 47 from the group course participants. After excluding 7 questionnaires because they were marginally filled out, we analyzed the data.

Measures

The questionnaire was ordered into four components: a general or demographic part, a part with three questionnaires to measure the presence of several mental complaints, questions about the LttF course, and a chapter containing questions about a possible follow-up course. First some demographic variables were asked, like age, gender, job and when the course was followed.

The following three questionnaires were taken to measure some aspects of mental health. First the Centre of Epidemiological Studies – Depression Scale (CES-D) (Rudolf, 1977) to measure depressive symptomatology. The questionnaire contains 20 items, and is scored between 0-60, where higher scores mean more depressive symptoms. The second questionnaire was the Hospital Anxiety and Depression Scale – Anxiety (HADS-A) (Zigmond & Snaith, 1983) to measure anxiety symptomatology (7 items, score 0-21, where higher scores mean more anxiety symptoms). Third the Acceptance and Action Questionnaire II (AAQ-II) (Bond et. al., 2011) was taken to measure the amount of experiential avoidance (10 items, score 1-70, where higher scores mean lower levels of experiential avoidance).

The questions about the LttF therapy are based on the RPM. We reformulated determinants from the RPM to measure whether the determinants that are responsible for relapse in alcohol abuse also relate to relapse in living to the fullest. The answering options for these questions were arranged in 5-point Likert-scales, ranging from ‘easy’ to ‘hard’ or from ‘totally agree’ to ‘totally disagree’. In Table 1 the questions as stated in the questionnaire can be found, and where relevant, the RPM-determinants to which they refer.

Table 1. *List of questions as stated in the questionnaire that are used in the analysis. The questions are ordered by the relevant determinants from the RPM.*

Construct (Function in the RPM)	Question
Negative Emotions (High-risk situation)	How easy or hard is it for you to live to the fullest when you feel
	angry
	anxious
	low
	frustrated
	agitated or nervous
	bored
Positive emotion (High-risk situation)	How easy or hard is it for you to live to the fullest when you are very happy
Conflict (High-risk situation)	How easy or hard is it for you to live to the fullest when you have a conflict with someone else
Social pressure (High-risk situation)	How easy or hard is it for you to live to the fullest when you feel pressure from others to do something you do not want to do
Stress (Lifestyle factors)	I often experience stress in my life

Construct (Function in the RPM)	Question
	I experience very heavy stress in my life
Voluntary activities (Lifestyle factors)	I only do things that I *want to* do
Obligatory activities (Lifestyle factors)	I only do things that I *have to* do
Abstinence violation effect (Abstinence Violation Effect)	When I fail in living to the fullest, I feel
	Able to try again next time
	Incapable
	Guilty
	Very bad
	Not bad
	I try to avoid this situation next time
Tendency towards avoidance (Outcome expectancies)	I often experience something that makes me want to avoid again
Tendency to discontinue LttF (Outcome expectancies)	I sometimes want to stop living to the fullest, because my old lifestyle feels attractive to me

In the same part of the questionnaire we also included two variables to measure the amount of living to the fullest. ‘Living to the fullest’ was defined as [1] being conscious of the emotions someone experiences, while not resisting against these emotions, [2] experiencing thoughts as thoughts instead of reality, [3] having conscious knowledge of someone’s values, and making decisions based on these values even when these decisions bring along uncertainty or tension. The living to the fullest measure contained two questions. The first one was: “How often do you currently succeed in living to the fullest?” with the following answering options: “never”, “seldom”, “sometimes”, “often” and “always”. We defined this question as ‘Behaviour’. The second question was: “Do you intend to (keep) practicing living to the fullest for the next 6 months?” with answering options: “certainly not”, “probably not”, “maybe”, “probably” and “certainly”. We defined this question as ‘Intention’. Hereby we defined the answering options “often” or “always”, and “probably” or “certainly” as a continuing of living to the fullest, and the other options as a relapse in living to the fullest. With the living to the fullest measures we also included a question about the 5 domains of the LttF course. These domains are defined in the Introduction. We asked how easy or hard it is to live according to each domain. The scores ranged from 0-4, whereas a high score means an easy accomplishment of the domain, and a low score means difficulty in accomplishing the domain.

Process evaluation

The final part of the questionnaire consisted of several questions about the LttF therapy. This part contained some evaluative questions about the LttF class. The answering possibilities were arranged in 5 point Likert-scales and dichotomous yes / no scales. We also asked some questions about a follow-up. Here questions about difficulties in continuing to live to the fullest as well as questions about whether and how a follow-up course would be appreciated were asked. The relevant questions about a follow up course can be found in Table 2.

Table 2. *Evaluative questions about the LttF class and follow-up. The answering possibilities from the Likert scales are shown. The other answering possibilities are yes / no scales.*

Question	Answering possibility in 5 point Likert scale	
I think the LttF class was	Good	Bad
	Pleasant	Unpleasant
	Useful	Meaningless
	Effective	Non-effective
The LttF class provoked a lot in my life		
Would you appreciate a follow-up book?		
Do you need a follow-up?		
One of the possibilities is to meet other participants, share experiences and support each other. If such a meeting would be organized, would you participate?		
Would you also participate in a group without professional support, but with a script?		

Data analysis

The statistical analyses were done using SPSS 16.0. First, we used exploratory statistics to list the means and standard deviations of the general questions, the CES-D, HADS-A and AAQ-II, and the living to the fullest-construct. Next we formed constructs with Cronbach's α. When variables correlated high enough (Cronbachs $\alpha > .70$) we aggregated them into a construct. Hereby the constructs as stated in the RPM were used as a starting-point. In Table 3 the constructs and Cronbach's α are listed.

Table 3. *Cronbach's alpha (a) (where relevant), Pearsons correlation coefficient with the dependent variables 'Behaviour' ($r_{behaviour}$) and 'Intention' ($r_{intention}$), and significance of the correlation coefficients (p) per construct.*

Construct	*a*	$r_{behaviour}$	*p*	$r_{intention}$	*p*
Negative Emotions	.816	.525	.000	.299	.001
Positive emotion		.332	.000	.275	.002
Conflict		.343	.000	.159	.072
Social pressure		.405	.000	.221	.011
Stress	.766	.370	.000	.152	.085
Voluntary activities		.336	.000	.171	.053
Obligatory activities		.191	.031	.221	.012
Abstinence violation effect	.806	.456	.000	.372	.000
Tendency towards avoidance		.204	.020	.234	.007
Tendency to discontinue LttF		.228	.009	.207	.018

Furthermore we examined the correlation between constructs based on the RPM and the living to the fullest-measure. Here fore we used Pearson's correlation coefficient. All constructs that had significance levels of $p < .10$ were selected for regression analysis. See Table 3 for correlation coefficients and significance levels of the constructs.

Afterwards we executed two multiple regression analyses with 'Behaviour' and 'Intention' as dependent variables. Because R^2 of the models appeared to be significant as can be seen in Table 6 and 7 in the Results section, we interpreted the results as significant if $p_{beta} < .05$.

Results

The sample (N=131) consisted mainly of high-educated females, and most of them had a paid job. The exact data of the general questions are listed in Table 4. Some of the questions listed in the table are also asked by Fledderus, Bohlmeijer, Pieterse & Schreurs (2010). The data from the ACT-E group (Fledderus et al., 2010) are also listed in Table 4. The means of the general questions correspond roughly with our data, which suggests at least for these questions an approximately equal sample.

Table 4. *Means (M) and standard deviations (SD) of the general variables, depression scale (CES-D), anxiety scale (HADS-A), experiential avoidance measure (AAQ-II) and 'Living to the Fullest' variables.*

Variable	N	%	M	SD	% / M*
Age			46.28	11.63	
Gender					
Male	37	28.2			30.4*
Female	94	71.8			69.6*
Education					
Low	2	1.5			1.0*
Moderate	36	27.7			9.6*
High	92	70.8			89.6*

Variable	N	%	M	SD	% / M*
Occupation					
Paid job	86	66.20			72.8*
Unemployed	44	33.80			26.4*
Year of the course					
2008	8	6.30			
2009	77	61.10			
2010	39	31.00			
Others	2	1.60			
First month of the course					
Jan – Mar	17	18.90			
Apr – Jun	16	17.80			
Jul – Sep	23	25.60			
Oct – Dec	34	37.80			
Course variant					
Group	46	35.10			
Self-help	85	64.90			
CES-D			17.34	7.84	13.84*
HADS-A			5.85	3.61	6.22*
AAQ-II			51.71	10.98	48.95*

* = data from Fledderus, Bohlmeijer, Pieterse & Schreurs, 2010.

The first question asked in the Introduction was how much the depressive- and anxiety symptoms changed. In Table 4 the mean scores on the CES-D (measures depressive symptoms) and the HADS-A (measures anxiety symptoms) are listed. Also the scores from Fledderus, Bohlmeijer, Pieterse and Schreurs (2010) are listed. As can be seen, the recent scores on the CES-D are a little bit higher than the scores from Fledderus et al. (2010), which suggests a slight increase of depressive symptoms. The scores on the HADS-A did not change substantially, which suggests that the amount of anxiety symptoms remained the same as the scores from Fledderus et al.. Furthermore it was questioned whether the scores on experiential avoidance did in- or decrease. As can be seen in Table 4, the scores on experiential avoidance did not change substantially.

The third question asked was how many people continued to live to the fullest. In Table 5 the distributions of the living to the fullest measures are listed, as well as the means and standard deviations from the five domains from LttF. As defined in the 'Method' section, a relapse is defined as the answering categories 'sometimes', 'seldom' or 'never', and 'maybe', 'probably not' or 'certainly not'. A continuing of living to the fullest is defined as one of the other answering options. As can be seen in the table, about 60% of the participants still succeed in living to the fullest, and almost 75% of the participants have the intention to (keep) living to the fullest. The scores on the behavioural domains of LttF range from 0-4, whereas a low score means difficulty in accomplishing the domain, and a high score means no difficulty in accomplishing the domain. Noticing ones experiences in the present moment without judgement appears to be the most difficult domain according to the low score of 2.08. Also the small standard deviation ($\sigma = 0.98$) suggest a high agreement between the participants about the difficulty of this domain. The easiest value to accomplish appears to be 'knowing ones values' ($\mu = 2.60$). However, living according to ones values appears to be more difficult ($\mu = 2.16$).

Table 5. *Distributions of the living to the fullest variables divided into 'relapse' and 'no relapse' as well as the mean scores and standard deviations of the (behavioural) domains of living to the fullest. The scores on the domains of LttF range from 0 to 4, whereas low scores mean difficulty in accomplishing the domain, and high scores mean no difficulty in accomplishing the domain.*

Variables	N	%	M	SD
Intention				
Relapse	33	25.1		
No relapse	98	74.8		
Behaviour				
Relapse	51	39.2		
No relapse	79	60.8		
Domains of LttF				
Acceptance of negative emotions			2.25	1.05
Seeing thoughts as thoughts instead of reality			2.16	1.05
Noticing experiences in the present moment without judgement			2.08	0.98
Knowing ones values			2.60	1.07
Living according to ones values			2.16	1.06

The fourth question stated in the Introduction asked which factors from the RPM relate to relapse in living to the fullest. Regression analyses with 'behaviour' as dependent variable

showed a trend of two variables that are significant at $p < .10$ (Table 6: 'Negative emotions' ($B = .20$, $p = .066$) and 'Abstinence Violation Effect' ($B = .17$, $p = .094$). Furthermore, 'Positive emotion' ($B = .16$, $p = .051$) is significant at the $p < .05$ level.

Table 6. *Results of regression analyses with 'behaviour' and 'intention' as dependent variables. Also the values of R^2 are displayed.*

	Behaviour		Intention	
Predictors	Beta	P	Beta	P
Negative emotions	.20	.066#	.14	.251
Positive emotion	.16	.051*	.17	.076#
Conflict	.01	.914	-.07	.524
Social pressure	.13	.162	.05	.665
Stress	.13	.177	-.08	.450
Voluntarily activities	.10	.244	.05	.584
Obligatory activities	.01	.878	.07	.447
Abstinence violation effect	.17	.094#	.18	.089#
Tendency towards avoidance	-.06	.543	.16	.125
Tendency to discontinue LttF	.09	.322	.02	.886

* Significant at the $p < 0.10$ level

Significant at the $p < 0.05$ level

	Behaviour	Intention
R^2	.384	.222
	F (df) = 6.81 (10,109)	F (df) = 3.14 (10,110)
	P = .000	P = .001

Regression analyses with 'Intention' as dependent variable showed roughly the same results. A trend can be seen in the variables 'Positive emotion' (B = .17, p = .076) and 'Abstinence Violation Effect' (B = .18, p = .089).

The final question to be answered was how the participants evaluated the LttF class, and whether and how they would appreciate a follow up LttF class. In table 7 the mean scores on the evaluative questions are listed. Most participants think positive about the LttF course, and would appreciate a follow-up course (64,6%). However, very few persons (28.7%) would participate in a group with only a script.

Table 7. *Percentages (%) of the evaluative questions and the follow-up questions. The dashed lines are not further specified. The lines represent a gradual passage from i.e. 'good' to 'bad', and 'pleasant' to 'unpleasant', etc.*

Variable	%
I think the LttF class was	
Good	56.2

Variable	%
------	34.4
------	6.2
------	3.1
Bad	0.0
Pleasant	52.3
------	34.6
------	10.0
------	3.1
Unpleasant	0.0
Useful	68.0
------	22.7
------	4.7
------	3.9
Meaningless	0.8
Effective	32.0
------	38.3
------	19.5
------	8.6
Non-effective	1.6

Variable	%
The LttF class provoked a lot in my life	
Agree	24.8
------	39.5
------	20.9
------	10.1
Disagree	4.7
Would you appreciate a follow-up book	
Yes	85.4
No	14.6
Do you need a follow-up	
Yes	64.6
No	35.4
Would you participate in a meeting with other ex-participants	
Certainly	12.3
Probably	25.4
Maybe yes / maybe no	23.1
Probably not	26.9
Certainly not	12.3
Would you participate in a group with only a script	
Yes	28.7
No	71.3

Discussion

Main findings

In 2010 Bohlmeijer, Fledderus, Rokx and Pieterse developed a preventive therapy, 'Living to the Fullest', based on ACT and mindfulness. The therapy aimed to reduce the amount of experiential avoidance, and with that the amount of depressive- and anxiety symptoms. In this study we evaluated the therapy up to 2,5 years after the course.

First, we examined how much the depressive- and anxiety symptoms did in- or decrease compared to the results from Fledderus et al., token directly after the intervention. The depressive symptoms did increase somewhat. Furthermore, the anxiety symptoms and the amount of experiential avoidance did not change substantially.

Thirdly we questioned how many participants succeeded in living to the fullest, and how many experienced a relapse. It appeared that about 75% had the intention to live to the fullest, and about 60% also succeeded in continued living to the fullest. Most troublesome in living to the fullest is noticing ones experiences in the present moment without judgement. Participants experience the least trouble in knowing ones own values, but living according to those values appears to be harder.

The fourth question asked which factors relate to relapse in living to the fullest. A trend can be seen in the variables negative emotions and the Abstinence Violation Effect. Furthermore, positive emotion appears to relate to relapse in the behavioural amount of living to the fullest. Roughly the same results apply to the intention to live to the fullest. A trend can be seen in the relation between the Abstinence Violation Effect and the intention to live to the fullest, and in the relation between positive emotion and the intention to live to the fullest.

Finally we questioned how the participants evaluated the LttF course, and whether and how they would appreciate a follow up LttF course. Most participants were positive about the class. Furthermore, most participants would appreciate a follow up course, but they would not participate without professional accompaniment.

In this study we used the RPM to predict which factors relate to a relapse in living to the fullest. Despite the behavioural focus of the model, it appeared to be a promising instrument for research in more cognitive subjects. Several determinants from the RPM were related to relapse in living to the fullest. Nevertheless, because of the behavioural focus of the model, the cognitive aspects that relate to relapse in living to the fullest may be overlooked. Here fore more research is needed to further explore the predictive value of the RPM to living to the fullest.

Limitations

In this study we related determinants from the RPM to the amount of living to the fullest. However, statements about the causal nature of these relations are beyond the scope of this study. Further investigation is needed to determine i.e. whether emotions evoke a lapse, or whether a lapse in living to the fullest causes people to experience strong emotions (like sadness, anger and anxiousness). It also might appear that a third variable influences both a lapse in living to the fullest and experience of strong emotions.

Furthermore, the results of this study may be biased, because we do not know whether the sample is representative for the population of participants that followed the LttF class. The few means from Fledderus et al. are not sufficient to insure a representative sample. Here fore, generalizations about this study need to be made with care.

Conclusion and recommendations

Conclusively it can be said that about 40% of the participants experience relapse in living to the fullest. Factors from the RPM can be related to this relapse. Also the relapse accompanies with an increase of depressive symptoms.

With these conclusions several advises can be given about a follow-up LttF course. A follow-up training might be an effective way to reduce the lapse in living to the fullest, because it provides stimulation to continue living to the fullest. However, it can be expected that as soon as the follow-up training ends the decline in living to the fullest starts again. In this study we identified factors that are related to decline in living to the fullest. In a follow-up training special attention to these factors might help to prevent (re)lapse in living to the fullest. However, further experimental research needs to be done to identify the causes of relapse in living to the fullest.

Another way to stabilize the amount of living to the fullest might be to regularly organize meetings for participants. Participants were moderately positive about such meetings. However, guidance from a professional therapist is advised *at least* occasionally. Most participants would not participate in a group without professional guidance, so regular attendance of a therapist is advised.

Furthermore, participants were positive about a follow-up book. Such a book could be an accessible instrument to continue in living to the fullest if it would address, among other things, the determinants of relapse found in this study.

References

American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition (DSM-IV-TR).* Washington DC: American Psychiatric Association.

Baldwin, D. (2003, January 16). Social and economic costs of depression. Paper presented at the 2003 Symposium on Depression: *Emerging research and treatment approaches, Paris, France.* Abstract retrieved November 4, 2010, from http://www.pasteur.fr/applications/euroconf/depression/baldwin.pdf.

Biglan, A., Hayes, S.C., & Pistorello, J. (2008). Acceptance and Commitment: implications for prevention science. *Prevention Science Journal, 9,* 139-152.

Bohlmeijer, E.T., Fledderus, M., Rokx, T.A.J.J., & Pieterse, M.E. (2011). Efficacy of an early intervention based on Acceptance and Commitment Therapy for adults with depressive symptomatology: Evaluation in a randomized controlled trial. *Behaviour Research and Therapy*, 49, 62-67.

Bond, F.W., & Bunce, D. (2003). The role of acceptance and job control in mental health, Job satisfaction and work performance. *Journal of Applied Psychology, 88(6),* 1057-1067.

Bond, F.W., Hayes, S.C., Baer, R.A., Carpenter, K.C., Guenole, N., Orcutt, H.K., Waltz, T., & Zettle, R.D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire – II: A revised measure of psychological flexibility and acceptance. *Behavior Therapy,* 1-38.

Brown, K.W., Ryan, R.M., & Creswell, J.D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18(4),* 211-237.

Butler, J., & Ciarrochi, J. (2007). Psychological acceptance and quality of life in the elderly.

Quality of Life Research, 16, 607-615.

Carroll, K.M. (1996). Relapse Prevention as a psychosocial treatment: A review of controlled clinical trials. *Experimental and Clinical Psychopharmacology, 4,* 46-54.

DuPont, R.L., Rice, D.P., Miller, L.S., Shiraki, S.S., Rowland, C.R., & Harwood, H.J. (1996). Economic costs of anxiety disorders. *Anxiety, 2, 167–172.*

Fledderus, M., Bohlmeijer, E.T., Pieterse, M.E., & Schreurs, K.M.G. (2010). Acceptance and Commitment Therapy as guided self-help for psychological distress and positive mental health: a randomized controlled trial. Manuscript submitted for publication, University of Twente, the Netherlands.

Fledderus, M., Bohlmeijer, E.T., Smit, F., & Westerhof, G.B. (2010). Mental health promotion as a new goal in public mental health care: A randomized controlled trial of an intervention enhancing psychological flexibility. *American Journal of Public Health*, published online on October 21, 2010.

Greenberg, P. E., Sisitsky, T., Kessler, R. C., Finkelstein, S. N., Berndt, E. R., Davidson, J. R., et al. (1999). The economic burden of anxiety disorders in the 1990s. *Journal of Clinical Psychiatry, 60,* 427–435.

Hayes, S.C., Bissett, R.T., Korn, Z., Zettle, R.D., Rosenfarb, I.S., Cooper, L.D., et al. (1999a). The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record, 49,* 33-47.

Hayes, S.C., Strosahl, K.D., & Wilson, K.G. (1999) *Acceptance and Commitment Therapy: An experiential approach to behaviour change.* New York: Guilford.

Hayes, S. C., Luoma, J., Bond, F., Masuda, A., & Lillis, J. (2006). Acceptance and Commitment Therapy: Model, processes, and outcomes. *Behaviour Research and Therapy, 44,* 1-25.

Irvin, J.E., Bowers, C.A., Dunn, M.E., & Wang, M.C. (1999). Efficacy of relapse prevention:

a meta-analytic review. *Journal of Consulting and Clinical Psychology, 67*, 563-570.

Kabat-Zinn, J. (1994). *Wherever you go, there you are: Mindfulness meditation for everyday life.* London: Little, Brown Book Group.

Kabat-Zinn, J., Massion, A.O., Kristeller, J., Peterson, L.G., Fletcher, K., Pbert, L., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149,* 936-943.

Kabat-Zinn, J., Wheeler, E., Light, T., Skillings, A., Scharf, M., Cropley, T.G., Hosmer, D., & Bernhard, J. (1998). Influence of a mindfulness-based stress reduction intervention on rates of skin clearing in patients with moderate to severe psoriasis undergoing phototherapy (UVB) and photochemotherapy (PUVA). *Psychosomatic Medicine, 60,* 625-632.

Larimer, M.E., Palmer, R.S., & Marlatt, G.A. (1999). Relapse prevention: An overview of Marlatt's cognitive-behavioral model. *Alcohol Research and Health, 23,* 2.

Marlatt, G.A., & Gordon, J.R. (1985). *Relapse Prevention: Maintenance Strategies in the Treatment of Addictive Behaviors.* New York, Guilford Press.

Mrazek, R.J., & Haggerty, P.J. (1994). Can we prevent mental illness? *Bulletin of the New York Academy of Medicine, 71,* 300-306.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement 1, 385-401.

Rice, D. P., & Miller, L. S. (1998). Health economics and cost implications of anxiety and other mental disorders in the United States. *British Journal of Psychiatry, 173,* 4–9.

Shapiro, D.H. (1992). A preliminary study of long term meditators: Goals, effects, religious orientation, cognitions. *Journal of Transpersonal Psychology, 24(1),* 23-39.

Shapiro, S. L., Carlson, L. E., Astin, J. A., & Freedman, B. (2006). Mechanisms of Mindfulness. *Journal of Clinical Psychology, 62(3),* 373-386.

Teasdale J. D., Segal Z. V., Williams J. M. G., Ridgeway, V. A., Soulsby, J. M., & Lau, M. A. (2000). Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *Journal of Consulting and Clinical Psychology. 68,* 615-623.

Wittchen, H. (2002). Generalized anxiety disorder: Prevalence, burden and cost to society. *Depression and Anxiety, 16, 162–171.*

World Health Organization (2010). *Depression.* Retrieved November 4, 2010, from http://www.who.int/mental_health/management/depression/definition/en/

Zigmond, A.S., & Snaith, R.P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67,* 361-370.