



Shorter communication

Flourishing in people with depressive symptomatology increases with Acceptance and Commitment Therapy. Post-hoc analyses of a randomized controlled trial

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ARTICLE INFO

Article history:

Received 29 August 2014

Received in revised form

16 December 2014

Accepted 19 December 2014

Available online 27 December 2014

Keywords:

Acceptance and Commitment Therapy

Flourishing

Well-being

Randomized trial

ABSTRACT

Mental health is more than the absence of mental illness. Rather, both well-being (positive mental health) and mental illness are actually two related continua, with higher levels of well-being defined as “flourishing.” This two-continua model and existing studies about the impact of flourishing on psychopathology underscore the need for interventions that enhance flourishing and well-being. Acceptance and Commitment Therapy (ACT) is a model of cognitive behavioral therapy that aims not only to reduce psychopathology but also to promote flourishing as well. This is the first study to evaluate the impact of ACT on flourishing. A post-analysis was conducted on an earlier randomized controlled trial of a sample of adults with depressive symptomatology who participated in a guided self-help ACT intervention. This post-analysis showed a 5%–28% increase of flourishing by the participants. In addition, the effects on flourishing were maintained at the three-month follow-up. When compared to participants in a control group, the flourishing of the ACT-trained participants increased from 5% to about 14% after nine weeks. In addition to levels of positive mental health at baseline, an increase of psychological flexibility during the intervention was a significant predictor of flourishing at the three-month follow-up.

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Introduction

Recognition that mental health is more than simply the absence of mental illness has grown substantially in the last decade. The World Health Organization (WHO) defined mental health as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, 2004, p.12). Keyes (2005) developed the two-continua model of mental health that states that well-being (or positive mental health) is related to, but different from, mental illness. This specific model builds on earlier research underscoring the need to distinguish between positive and negative affect (e.g. Bradburn, 1969; Huppert & Whittington, 2003) and has been corroborated in many studies across different countries

and cultures (e.g. Keyes et al., 2008; Lamers, Westerhof, Bohlmeijer, Ten Klooster, & Keyes, 2010). In congruence with the WHO definition and based upon extensive reviews of psychological and sociological theories, well-being has been operationalized as emotional well-being, psychological well-being and social well-being (Diener, 1984; Keyes, 1998; Ryff, 1989). The Mental Health Continuum – Short Form (MHC-SF) was developed to measure these three main models of well-being: emotional, psychological, and social well-being (Keyes, 2002). Each of these models consist of several dimensions. The MHC-SF is a short questionnaire based a longer Mental Health Continuum, and reflects each theory-based dimension of well-being by one item. Emotional well-being consists of the dimensions positive affect, happiness, and satisfaction with life; Psychological well-being consists of the six dimensions of Ryff’s (1989) model, including one item on each of the dimensions of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance); and Social well-being consists of the five dimensions of Keyes’ (1998) model, including one item on each of dimensions of social acceptance, social actualization, social contribution, social coherence and social integration. This instrument allowed for developing a

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classification model of mental health (Keyes, 2007) that distinguishes between people who are flourishing, people with moderate mental health and people who are languishing. When individuals score high on at least one dimension of emotional well-being and at least six dimensions of psychological and social well-being, they are classified as “flourishing.” When individuals score low on at least one dimension of emotional well-being and at least six dimensions of psychological or social well-being, they are classified as “languishing.” People who do not fit the criteria for either flourishing or languishing are classified as “moderately mentally healthy.”

Some initial studies found that flourishing is not just a desired end state of itself, but possibly buffers against (mental) illness as well. Keyes, Dhingra, and Simoes (2011) showed that changes of levels or diagnoses of mental health between 1995 and 2005 strongly predicted the prevalence and incidence of mental illness in 2005. Using data from the Midlife in the United States study, Keyes and Simoes (2012) also found that the absence of flourishing increased the probability of all-cause mortality for adults, even after adjustment for known causes of death. Lamers et al. (under review) demonstrated that changes in mental health as measured with the MHC-SF explained 18% of the variance of psychopathology at the three-month follow-up in a large sample of representative Dutch adults, on top of initial levels of psychopathology. The absence of psychological well-being has also been found to be an important long-term risk factor for depression (Wood & Joseph, 2010).

The two-continua model and existing studies about the impact of flourishing underscore the need for interventions that enhance flourishing and mental health (Keyes, 2007). In the past, a cognitive-behavioral intervention for increasing psychological well-being (well-being therapy) has been developed and found to be effective in diverse populations such as people with generalized anxiety disorder (Fava et al., 2005) and affective disorders (Fava, Rafanelli, Cazzaro, Conti, & Grandi, 1998). Another therapeutic approach that fits well with a mental health promotion framework is Acceptance and Commitment Therapy (ACT). ACT has been defined as a distinctive model of behavioral and cognitive therapy with a strong focus on the context of behavior (Hayes, Levin, Plumb-Villardaga, Villatte, & Pistorello, 2013). It is based on a relational frame model that links behavioral principles to both pathology and flourishing (Ciarrochi & Kashdan, 2013; Hayes et al., 2013). “The aim of ACT is, quite simply, to maximize human potential for a rich, full and meaningful life” (Ciarrochi & Kashdan, p. 2). Experiential acceptance or mindfulness is a core process within ACT and has been found to relate to well-being (Brown & Ryan, 2003; Carmody & Baer, 2008). Additionally, promoting valued or engaged living is a primary focus of ACT. Commitment to choices and goals based upon intrinsic values and motivations has been found to predict well-being (Ryan & Deci, 2000; Sheldon & Elliot, 1999; Steger, Merriman, & Kashdan, 2013). The capacity to live mindfully or accept present experiences and to act in accordance with one’s core values has been defined as psychological flexibility (Ciarrochi & Kashdan, 2013; Hayes et al., 2013).

Randomized controlled trials have shown the efficacy of ACT as a treatment of distress (e.g. Bohlmeijer, Fledderus, Rokx, Pieterse, 2011; Kocovski, Fleming, Hawley, Huta, & Antony, 2013; Trompetter, Bohlmeijer, Veehof, Schreurs, 2015) and as an intervention that enhances well-being (Fledderus, Bohlmeijer, & Westerhof, 2011, Fledderus, Bohlmeijer, Pieterse, Schreurs, 2012; Fledderus, Oude Voshaar, ten Klooster, Bohlmeijer, 2012). However, the intriguing question whether ACT is indeed able to have an impact on flourishing (the ability to live a full, rich and meaningful life) as a distinct category of optimal mental health has yet to be answered. In order to evaluate the impact of ACT on flourishing, we conducted post-hoc analyses of a randomized controlled trial

(Fledderus, Bohlmeijer, et al., 2012; Fledderus, Oude Voshaar, et al., 2012) that evaluated the efficacy of a guided self-help ACT intervention on depressive symptomatology. In addition we explored whether an increase of psychological flexibility might predict flourishing as a successful treatment response.

Method

Procedure and participants

Participants of 18 years or older with mild to moderate depressive symptoms were recruited through advertisements in Dutch newspapers. People who were diagnosed as having a severe depression with the Mini International Neuropsychiatric Interview (Sheehan et al., 1998) were excluded. Other exclusion criteria were: (a) the absence of depressive symptoms, (b) receiving psychological or psychopharmacological treatment within the last 3 months, and (c) high suicide risk. A total of 625 people responded to the advertisements. After the screening procedure, 376 participants were randomly assigned to one of the following three conditions: (1) the ACT intervention with minimal email support (ACT-M; $n = 125$), (2) the same intervention with extensive email support (ACT-E; $n = 125$), or (3) a waiting list (W-L; $n = 126$). In the present study, we combined the ACT condition with extensive email support and the ACT condition with minimal email support into one ACT condition ($n = 250$), because the groups did not differ in effectiveness (Fledderus, Bohlmeijer, et al., 2012; Fledderus, Oude Voshaar, et al., 2012). The participants were on average 42 years old (range 18–73 years). The majority was female (70%) and highly educated (86%). For further details on the procedure, see Fledderus, Bohlmeijer, et al., 2012; Fledderus, Oude Voshaar, et al., 2012.

Intervention

Participants of the experimental condition received the self-help book *Voluit Leven (Living life to the full; Bohlmeijer & Hulsbergen, 2009)*. The book comprises nine modules. The modules are based on the core processes of ACT that together promote psychological flexibility. Each module uses informative texts, experiential exercises, metaphors and (10–15-min) mindfulness exercises. At the end of a week in which participants worked through a module, they were invited to send an email with a report of the progress and questions about the program. They would then receive feedback by email from a counselor. For further details on the program, see Fledderus, Bohlmeijer, et al. (2012) and Fledderus, Oude Voshaar, et al. (2012).

Measures

Flourishing was measured with the Mental Health Continuum-Short Form (MHC-SF) questionnaire (Keyes et al., 2008; Lamers, Westerhof, Bohlmeijer, Ten Klooster, & Keyes, 2011) which measures positive mental health by 14 items on emotional (3 items), psychological (6 items), and social well-being (5 items). Participants were asked to rate how often they had experienced feelings of well-being in the past month on a scale ranging from 1 (never) to 6 (everyday). The MHC-SF has shown good psychometric properties in the Dutch population (Lamers et al., 2011) as well as stability of the item parameters over time and across demographical characteristics (Lamers, Glas, Westerhof, & Bohlmeijer, 2012). In the present study, the positive mental health scores were categorized in accordance with the method described by Keyes (2009). To categorize participants into flourishing and not-flourishing, Keyes’ categorical diagnosis was used (Keyes, 2009). The diagnosis of flourishing was made if a participant rated at least one of the three

hedonic (i.e., emotional) well-being items “every day” (6) or “almost every day” (5), and at least six of the eleven eudemonic (i.e., psychological and social) well-being items “every day” (6) or “almost every day” (5). Other participants were categorized as “not-flourishing,” as we were primarily interested in flourishing versus not-flourishing as the treatment outcome. *Depression symptoms* were measured by the CES-D questionnaire (Radloff, 1977), consisting of 20 items on a 4-point Likert scale from 0 to 3. Higher scores (range 0–60) indicated more depression symptoms. The Acceptance and Action Questionnaire-II (AAQ-II) was used to measure *psychological flexibility*. This questionnaire consists of ten items (scale from 1 to 7) that measure the ability to accept aversive internal experiences and to pursue values in the presence of these experiences. Higher scores (range 10–70) indicates more psychological flexibility (Bond et al., 2011; Fledderus, Bohlmeijer, et al., 2012; Fledderus, Oude Voshaar, et al., 2012; Jacobs, Kleen, De Groot, & A-Tjak, 2008).

The participants in the ACT and WL conditions completed measures at baseline (T0) and at post-intervention at nine weeks (T1; directly after the intervention). The ACT condition additionally completed the measures at the three-month follow-up (T2; five months after baseline).

Statistical analyses

First, to examine the effect of ACT on flourishing, the percentages of flourishing and not-flourishing, and changes in these percentages between baseline (T0) and nine weeks after baseline (T1) were computed. Cross-classification analyses with Fisher's exact test to correct for small expected cell counts, were conducted to detect statistically significant differences between the ACT and WL condition. At follow-up (T2), data were only available for the ACT condition. Secondly, to investigate the predictors of flourishing in the ACT condition, a logistic regression analysis was conducted to investigate the association of flourishing at follow up with age, gender, baseline levels of positive mental health, psychological flexibility, depression symptoms, and changes in psychological flexibility and depression symptoms during the intervention (T2). For the baseline levels of positive mental health, the continuous MHC-SF scores were used. The logistic regression analysis indicates to what extent the predictors can accurately predict who is and who is not flourishing. The B and exponentiated B (e^b) coefficients will be reported. The e^b shows the odds to be flourishing. For example, if variable X has an e^b of 5, this indicates that the odds to be flourishing is 5 times as large when variable X is raised by one unit.

Results

First, we investigated the numbers and percentages of flourishing and not-flourishing participants in the ACT and WL condition as shown in Table 1. At baseline (T0), no significant differences

Table 1
Percentages of flourishing and not-flourishing at T0, T1 and T2 in the ACT (n = 250) and waiting list (n = 126) condition.

	T0		T1**		T2	
	F n (%)	NF n (%)	F n (%)	NF n (%)	F n (%)	NF n (%)
ACT	13 (5.2)	237 (94.8)	70 (28.0)	180 (72.0)	71 (28.4)	179 (71.6)
WL	8 (6.3)	118 (93.7)	18 (14.3)	108 (85.7)		

Note. F=Flourishing; NF=Not-Flourishing; ACT = Acceptance and Commitment Therapy; WL=Waiting List.

**Fisher's exact test is significant at $p < .01$.

between the two conditions were found. At post-intervention (T1), significantly more participants were flourishing in the ACT than in the WL condition ($p < .01$). In the ACT condition, almost 30% of the participants were flourishing, whereas this percentage was about 14% for participants on the WL. In the ACT condition, percentages of flourishing and not-flourishing were similar at follow-up (T2).

Second, we evaluated the changes in flourishing and not-flourishing over time in both conditions (Table 2). From baseline (T0) to post-intervention (T1), 24% of the participants improved from not-flourishing to flourishing in the ACT condition, as compared to 10.3% in the WL condition. Moreover, a larger number of participants remained not-flourishing in the WL than in the ACT condition, that is, 83.3% and 70.8%, respectively. The differences between the two conditions were significant ($p < .01$).

In the ACT condition, the changes in flourishing and not-flourishing from post-intervention (T1) to follow-up (T2) showed similar results (see Table 2). Of the participants, 20.0% remained flourishing and 63.6% remained not-flourishing in the ACT condition. About 15% of the participants changed with regard to their flourishing: 8.0% changed from flourishing to not-flourishing and 8.4% improved from not-flourishing to flourishing.

Third, a logistic regression analysis was performed to predict the dichotomous outcome of being flourishing or not-flourishing at follow-up (T2) in the participants that received the ACT-intervention. Age, gender, baseline levels of positive mental health, depression symptoms, psychological flexibility, and changes in depression symptoms and psychological flexibility during the intervention were added as predictors of flourishing. Before adding the predictors, the accuracy was 71.6%. That is, by predicting whether a person is flourishing or not-flourishing at follow-up, 71.6% would be correctly categorized as flourishing or not-flourishing, based on chance only. The next step investigated whether adding predictors increased the accuracy of the prediction. After adding the predictors, the accuracy increased to 85.6%, in which a successful prediction was higher for not-flourishing (91.6%) than for flourishing (60.6%). A test of the full model against a model without any predictors was statistically significant, indicating that, as a set, the predictors reliably distinguished between flourishers and not-flourishers ($\chi^2 = 100.5$, $p < .001$ with $df = 7$). The explained variance is 48% (Nagelkerke's R^2). The following factors significantly contributed to the prediction of flourishing: a higher level of positive mental health at baseline, a lower level of depressive symptoms at baseline along with a larger decrease in depressive symptoms during the intervention, and larger increases in psychological flexibility during the intervention. Higher levels of baseline positive mental health and positive change in psychological flexibility were the strongest predictors. (Table 3)

Discussion

To the best of our knowledge, this is the first study to examine a core assumption of ACT, namely that ACT enables people to flourish (Ciarrochi & Kashdan, 2013). Post-hoc analyses of an earlier conducted randomized controlled trial showed an increase of 5% flourishing to 28% flourishing within a sample of adults with depressive symptomatology who participated in a guided self-help ACT intervention. The effects on flourishing were maintained at the three-month follow-up. In comparison, among participants in a control group, flourishing increased from 5% to about 14% after nine weeks. The operationalization of flourishing that was used in this study comprises both hedonic and eudemonic happiness (Ryan & Deci, 2000). The hedonic tradition focuses on feelings of happiness and satisfaction with life, whereas the eudemonic tradition focuses on optimal functioning and personal growth. Though we must note that the validity of the distinction between hedonic and

Table 2

Change in percentages of flourishing and not-flourishing from T0 to T1 and T1 to T2 in the ACT and waiting list condition (N = 376).

	T0 to T1**				T1 to T2			
	Stable NF	Stable F	F to NF	NF to F	Stable NF	Stable F	F to NF	NF to F
ACT n (%)	177 (70.8)	10 (4.0)	3 (1.2)	60 (24.0)	159 (63.6)	50 (20.0)	20 (8.0)	21 (8.4)
WL n (%)	105 (83.3)	5 (4.0)	3 (2.4)	13 (10.3)				

Note. F=Flourishing; NF=Not-Flourishing; ACT = Acceptance and Commitment Therapy; WL=Waiting List.

**Fisher's exact test is significant at $p < .01$.

eudemonic happiness is debated (e.g. Kashdan, Biswas-Diener, & King, 2008). The finding that 5% of the sample of adults with depressive symptomatology are flourishing is in line with earlier studies where people scored high on measures of both psychopathology and well-being (Lamers et al., 2011). Overall these results suggest that the guided self-help ACT intervention not only reduced distress (Fledderus, Bohlmeijer, et al., 2012; Fledderus, Oude Voshaar, et al., 2012) for adults with mild and moderate depressive symptomatology but also enabled about 28% to live a pleasant, meaningful and engaged life. In comparison it has been found that 35% of the Dutch population is flourishing (Westerhof & Keyes, 2008). So the number of people flourishing post-intervention is approaching the average number of people in the Dutch population, which is remarkable as all participants had mild to moderate levels of depressive symptomatology and only 5% percent of the participants were flourishing before the intervention. In theory the change of non-flourishing to flourishing could be induced by an average endorsement of one more item of well-being, which would limit the clinical significance of the results. This is similar for classifications of mental illnesses where one item can make the difference between the presence of absence of a mental illness. However for emotional, psychological and social well-being as continuous measures moderate to large effect sizes were found, indicating substantial clinical relevance (Fledderus, Bohlmeijer, et al., 2012; Fledderus, Oude Voshaar, et al., 2012). We also found that, in addition to initial levels of positive mental health, an increase of psychological flexibility during the intervention was a significant predictor of flourishing and a slightly stronger predictor than decreases of depressive symptomatology. This finding is in line with the theory underlying ACT that proposes psychological flexibility as a prerequisite for flourishing (Fledderus, Bohlmeijer, Fox, Schreurs, & Spinhoven, 2013; Hayes et al., 2013). The results of this study suggest that one possible pathway for transforming depressive symptomatology to flourishing is that the participants who are able to observe their emotions (e.g. feelings of sadness) with more openness and curiosity have the possibility to develop a

growing awareness of personal values. As Hayes (2013, p. 309) notes, the “so-called negative emotions contain the seeds of positive values.” Accordingly, feelings of sadness about a partner's betrayal can become an expression of an important value like loyalty. More research (e.g. interviews with participants) would be needed, however, to explore these pathways.

Limitations

We recognize some important limitations in this study. First, the majority of the participants were middle-aged, higher-educated women, so we cannot generalize the findings from this study to all adults. Second, a waiting-list condition as a control group is sub-optimal because it does not allow researchers to untangle the contribution of specific treatment components and more generic factors, such as attention. Third, the items of the AAQ-2 focus more on experiential acceptance than on value-based behavior. Recently the engaged living scale (Trompetter et al., 2013) has been developed to measure processes related to engaged living. In future studies, such instruments measuring relevant processes would benefit the analyses.

Finally, we employed an operationalization that was based on a model developed by Keyes while other operationalizations may lead to different results. However in a recent paper, Hone et al. (2014) directly compared the prevalence rates of flourishing in a large sample of New Zealander adults based upon four different operationalizations of flourishing (Diener et al., 2010; Huppert & So, 2013; Keyes, 2002; Seligman, 2011). In their study, Hone et al. found a moderate to strong agreement between the four operationalizations. The prevalence rate bases on Keyes' model (39%) was higher than the prevalence rate based Huppert and So's model (24%) but lower than the rates based upon Diener's model (41%) and Seligman's model (47%). Because Keyes' model is based upon extensive review of theories on psychological and social functioning, and the prevalence rates show moderate to strong agreement to other operationalizations, we expect that the findings in the present study are accurate. Future research on the impact of interventions could evaluate whether similar results might be found with different instruments.

Implications and future directions

Based on the two-continua model and research conducted under the umbrella of positive psychology, there is growing recognition that mental health care should not only aim at reducing psychopathology but also enhance positive emotions and positive functioning (Slade, 2010). Positive emotions have numerous short-term and long-term effects on human physical and psychological functioning (Fredrickson, 2001). Psychological well-being contributes strongly to the resilience of people, such as the ability to bounce back and possibly grow as a person after negative or traumatic life-events (Ryff, 2014). Positive interventions can be integrated within behavioral and other treatments (e.g. Rashid, 2009; Santos, Paes, Pereira, Nardi, & Machado, 2013). Well-being

Table 3

Summary of logistic regression analysis for variables predicting flourishing (N = 250).

Predictor	B	SE B	e ^b
Age	-.01	.02	.99
Gender	-.09	.41	.91
Positive mental health baseline (T0)	1.62	***	.31
Depression symptoms (T0)	-.17	**	.05
Change in depression symptoms during intervention (T1–T0)	-.17	***	.05
Psychological flexibility (T0)	.01	.03	1.01
Change in psychological flexibility during intervention (T1–T0)	.07	*	.03
Constant	-4.86	*	2.21
χ ²	100.52	***	
df	8		
Nagelkerke R ²	.48		

Note. e^b = exponentiated B.

* $p < .05$; ** $p < .01$; *** $p < .001$.

interventions could also be offered as complementary treatments (Fava et al., 1998). ACT is an example of a treatment modality that targets both underlying factors of psychopathology (e.g. experiential avoidance, rumination) and factors promoting well-being and flourishing (e.g. value clarification and goal-setting). This study is the first study that gives evidence that ACT is effective in enhancing flourishing. However, more studies, with different populations and varied instruments, as well as, longer follow-up measurements are needed.

Conflict of interest

None declared.

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