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# Focusing on the whole person in continued care for SUD-patients

*The acceptability and possible impact on wellbeing of an ACT-based after-care intervention in people previously treated for substance use disorder*

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## Summary

**Purpose**. Although current addiction treatment has been shown to be effective, many patients relapse into substance use in the months after treatment has ended. To prevent relapse, an ACT-based after-care intervention was developed, in which patients were taught to cope with aversive thoughts and feelings and to explore their values. The purpose of this study was to explore the experiences of people previously treated for Substance Use Disorder (SUD) with the intervention 'Living to the Full' and to assess its possible impact on their wellbeing, depression symptoms and relapse into substance use.

**Method.** The respondents were 8 Dutch adults who had received previous psychological SUD-treatment at Tactus, an addiction care institute in The Netherlands. The intervention 'Living to the Full' consisted of 9 weekly sessions in which ACT-based concepts and exercises were practised. Respondents were interviewed post-intervention (*n*=6) and filled out a pre- and post-treatment test-battery (*n*=7), consisting of measures for wellbeing (MHC-SF), depression symptoms (DASS-21) and substance use. This study used a mixed-method design, in which the interview-data was analysed using Thematic Analysis and the quantitative data was analysed using paired-sample T-tests and Wilcoxon signed-rank tests.

**Results.** Results showed that the intervention was well accepted by the respondents and considered as proper after-care for SUD. The main reason for this was that the intervention focused on the person as a whole rather than solely focusing on substance use. Relapse was prevented in six out of seven respondents during the intervention. Respondents noticed changes in their coping with craving-related thoughts. Overall- social- and psychological wellbeing significantly improved, which was confirmed by respondents' experience. Finally, the change in depression symptoms showed a clear trend towards significance and respondents did report relieve of depression symptoms.

**Discussion.** The acceptability of 'Living to the Full' might be explained by the experienced need for after-care in SUD-patients. Consistent to the theory, ACT helped respondents to observe and accept thoughts, which is especially useful in coping with craving. The improvements in overall- and social wellbeing and depression symptoms are especially important to SUD-patients, as this has been linked to lower substance use and risk of relapse. The finding that relapse was prevented in most respondents is consistent to previous research that linked after-care to lower risk of relapse.

**Conclusion.** The ACT-based after-care intervention 'Living to the Full' seems to be promising after-care for SUD-patients as it was accepted well by the respondents, constituted significant change in their wellbeing and relieved depression symptoms. Nearly all respondents did not relapse during the after-care. Future research should be done to confirm the findings of this pilot-study.

## Samenvatting

**Doel.** Hoewel huidige verslavingsbehandelingen effectief zijn gebleken, vallen veel patiënten terug in middelengebruik in de maanden na de behandeling. Om terugval te voorkomen, is er een op ACT gebaseerde nazorg-interventie ontwikkeld waarin patiënten leren om te gaan met negatieve gedachten en gevoelens en om hun waarden te verkennen. Het doel van dit onderzoek was om de ervaringen van patiënten die voorheen behandeld zijn voor middelenafhankelijkheid met de interventie 'Voluit Leven' in kaart te brengen, net als de mogelijke impact van deze interventie op hun welbevinden, depressiesymptomen en terugval in middelengebruik.

**Methode.** De respondenten waren 8 Nederlandse volwassenen die voorheen reeds een psychologische behandeling hadden ontvangen tegen middelenafhankelijkheid. De interventie 'Voluit Leven' bestond uit 9 wekelijkse sessies waarin met op ACT gebaseerde concepten en oefeningen werd geoefend. Respondenten werden na de interventie geïnterviewd ($n$=6) en vulden voor en na de interventie een testbatterij in ($n$=7), met daarin vragenlijsten voor welbevinden (MHC-SF), depressiesymptomen (DASS-21) en middelengebruik. Dit onderzoek gebruikte een *mixed-method* design, waarin de interview-data werd geanalyseerd met *Thematic Analysis* en de kwalitatieve data werd geanalyseerd met gepaarde T-testen en Wilcoxon signed-rank testen.

**Resultaten.** Resultaten toonden dat de interventie geaccepteerd werd door de respondenten en dat het gezien werd als geschikte nazorg tegen middelenafhankelijkheid. De reden hiervoor was dat de interventie zich richtte op het individu als geheel in plaats van alleen op de middelenafhankelijkheid. Een terugval in middelengebruik werd tijdens de interventie voorkomen bij zes van de zeven respondenten. Respondenten merkten dat ze beter met trek-gerelateerde gedachten konden omgaan. Algemeen-, sociaal- en psychologisch welbevinden verbeterden significant wat bevestigd werd door de ervaring van respondenten. Tot slot veranderden depressiesymptomen bijna significant en merkten respondenten op dat ze minder depressiesymptomen ervoeren.

**Discussie.** De acceptatie van 'Voluit Leven' kan verklaard worden doordat patiënten met middelenafhankelijkheid zelf ervaren nazorg nodig te hebben. Dat ACT de respondenten leerde om hun gedachten te observeren en te accepteren is functioneel in het omgaan met trek in middelen en past bij de theorie. De verbeteringen in het algemeen- en sociaal welbevinden en in depressiesymptomen zijn specifiek van belang voor patiënten met middelenafhankelijkheid, omdat dit in verband is gebracht met minder middelengebruik en lager risico op terugval. Dat terugval werd voorkomen bij de meeste respondenten past bij voorgaand onderzoek dat nazorg in verband heeft gebracht met een kleinere kans op een terugval.

**Conclusie.** De op ACT gebaseerde nazorg-interventie 'Voluit Leven' lijkt een veelbelovende nazorg voor patiënten met middelenafhankelijkheid omdat het goed geaccepteerd werd door de respondenten, een significante verandering teweeg heeft gebracht in hun welbevinden en hun depressiesymptomen heeft verlicht. Zes van de zeven respondenten viel niet terug in middelengebruik tijdens de interventie. Toekomstig onderzoek zal de bevindingen van deze pilotstudie moeten bevestigen.

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## Introduction

Substance Use Disorders (SUDs) are known to cause much suffering. Considering the high burden of disease of SUD and the high risk of relapse after treatment, SUD-treatment is in constant need of improvement. Positive psychological interventions such as Acceptance and Commitment Therapy (ACT) as after-care might improve treatment outcomes. Acceptance and Commitment Therapy (ACT) focuses on the acceptance of negative thoughts and emotions and on living a mindful and value-based life (Bohlmeijer, Fledderus, Rokx & Pieterse, 2011). In this sense, it aims not only to reduce psychopathology, but also to promote flourishing (Bohlmeijer, Lamers and Fledderus, 2015). ACT applied to substance use disorders teaches clients to accept their thoughts and feelings, rather than turn to substance use, and motivates them to create meaningful activities that are not compatible with substance use (Lee , An, Levin & Twohig, 2015). ACT-based after-care might pose a useful addition to current SUD-treatment by having attention for and improving overall functioning of SUD-patients, who are often in need of developing knowledge and skills to live meaningful abstinent lives (Lee et al., 2015). ACT has already shown to be effective in reducing substance use in people suffering from SUDs, but has not been researched as after-care. Additionally, it has shown to be effective in enhancing wellbeing in other populations. Therefore, this study assesses the acceptability and possible impact on wellbeing of an ACT-based after-care intervention in people previously treated for SUD.

SUD is diagnosed when an individual meets at least two of the various criteria described in The Diagnostic and Statistical Manual for Mental Disorders (DSM-V), which includes continued substance use despite dysfunction in work- and social life, craving the substance, putting effort and time in getting it and tolerance (Malone & Hoffmann, 2016). The recurring abuse of drugs and/or alcohol that is typical for this disorder often leads to deep troubles in many areas of an individual's life, as well major societal costs (Calabria et al., 2010). According to the United Nations' World Drug Report (2016), 28 million people worldwide suffer form drug use disorder, resulting in an estimated 207,400 drug-related deaths in 2014. Further, SUDs are associated with a various range of health- and social problems, including cardiovascular diseases, mental disorders, criminal activities and suicide (Lee et al., 2015; Fleury et al., 2016). The risk of relapse after regular treatment is around 75% within 3- to 6- months after treatment (Appiah, Danquah, Nyarko, Ofori-Atta & Aziato, 2017), indicating the severity of SUD.

**Regular treatment of SUD – effects and acceptability**

The current treatment of SUDs often consists of a combination of psychological and psychopharmacological treatment. Several psychological interventions have shown to be effective in treating SUDs of different substances. Cognitive-Behavioral Therapy (CBT) has shown to be effective in reducing cocaine use (Farronato, Dursteler-MacFarland, Wiesbeck & Petitjean, 2013), in reducing alcohol use (Bottlender, Kohler & Soyka, 2006) and in reducing cannabis use (Gates, Sabioni, Copeland, Le Foll & Growing, 2016). Contingency Management (CM) was found to be effective in reducing cocaine use (Farronato et al., 2013). Motivational Interviewing (MI) has been found to be effective in reducing the use of alcohol (Bottlender et al., 2006) and the use of cannabis (Gates et al., 2016).

To the author's knowledge, no scientific reviews were published on the effects of ACT in people suffering from SUD, though some research was done. For instance, Lee and colleagues (2015) conducted a meta-analysis of 10 RCTs, reporting a small to medium effect size on substance use abstinence favouring ACT compared to CBT, calling it a promising intervention for substance use disorders. Further, Hermann, Meijer, Schnurr, Batten and Walser (2016) created a manual for ACT in patients suffering from both PTSD and substance use disorder and pilot-tested the treatment in 21 patients who were currently not involved in any other psychological treatment. They found that indeed, the intervention resulted in reduced substance-use. Other studies reported similar results (Smout et al., 2010; Menéndez, García, Lamelas & Lanza, 2014; Hayes et al., 2004; Stotts et al., 2012). Strongly related to ACT, mindfulness-based interventions have been shown to be effective in reducing substance use in SUD-patients (Chiesa & Serretti, 2014; Skanavi, Laqueille & Aubin, 2011).

The acceptability of CBT as regular treatment for SUD seems to be sufficient. For instance, an integrated CBT-treatment for SUD and depression was highly accepted and rated applicable to multiple areas of life by clients from an in-depth case study of seven respondents by Osilla, Hepner, Munoz, Woo and Watkins (2009). Additionally, a clinical study of Brewer and colleagues (2009) showed that CBT treatment for SUD was rated as highly agreeable and satisfactory. Less is known about patients' acceptability of MI- and CM-treatment. However, Aletraris, Shelton and Roman (2015) found that counsellors rated CM as the least acceptable treatment for SUD, compared to MI and CBT. Previous research has rarely assessed the experience of SUD-patients undergoing ACT-treatment, with the exception of Brewer and colleagues (2009) who showed that mindfulness was highly accepted by SUD-patients in their sample. Additionally, ACT was found to be acceptable in people with psychosis (Johns et al., 2016). Further, people with symptoms of depression and anxiety rated the ACT-based

intervention used in this study as good and useful (Fledderus, Bohlmeijer, Pieterse & Schreurs, 2012).

**After-care treatment of SUD – effects and acceptability**

Considering the high risk of relapse into substance use after regular treatment, SUD-patients are often advised to attend some form of continuous care (McKay, 2001). Mostly, after-care for SUD consists of less frequent continuation of regular treatment, provided by the original or a different health care organization. After-care interventions are often flexible and differ in length and frequency (Vanderplasschen, Bloor & McKeganey, 2010). The beneficial effects of after-care in SUD-patients include increased abstinence rates (Schaefer, Harris, Cronkite & Turrubiartes, 2008; Smyth et al., 2005), longer days to relapse (Sannibale et al., 2003), reduced probability of relapse (Jason, Davis & Ferrari, 2007; Frydrych, Greene, Blondell & Purdy, 2009; Burleson, Kaminer & Burke, 2012) and decreased substance use (Chong & Herman-Stahl, 2003). For instance, Vanderplasschen, and colleagues (2010) conducted a study in which they assessed the long-term effects of attending after-care for SUD-patients. They found that patients who participated in after-care were twice as likely to stay abstinent from drugs 8 months later. To the author's knowledge, no ACT-based after-care intervention in SUD-patients has yet been researched. However, a mindfulness-based relapse-prevention programme was assessed by Witkiewitz and colleagues (2014), who reported less drug use for substance involved offenders at 15 weeks follow-up for a mindfulness-based relapse-prevention programme compared to regular relapse-prevention.

Little research has been conducted on the acceptability of after-care interventions in SUD-patients. However, a text-message based after-care programme in alcohol outpatients has shown to be well accepted (Haug, Lucht, John, Mayer & Schaub, 2015). In this interactive after-care program, alcohol outpatients monitored their drinking goals, received motivational text messages and received phone calls by counsellors when they needed support. Additionally, a phone-intervention in which adolescents with alcohol use disorder received regular brief therapeutic phone calls was also found to be acceptable (Burleson & Kaminer, 2007). Finally, a mindfulness-based relapse-prevention program was found to be highly satisfactory to a group of female SUD-patients (Amaro, Spear, Vallejo, Conron & Black, 2014). The program consisted of nine sessions that focused on meditation techniques as well as self-regulation strategies to manage stress and difficult emotions.

The after-care interventions for SUD that have been researched to date were mostly based on continuation of regular, CBT-based psychological care or solely on mindfulness.

Therefore, the current study will fill up this literature-gap by examining ACT-based after-care. Further, most studies that assessed the effects of psychological treatment of SUD focused on substance use and did not include any measures of wellbeing, even though enhancing wellbeing might be especially important in treating SUD as patients are often in need of improvement of overall functioning. Earlier research has shown that ACT-interventions improve wellbeing in people with depression symptoms (Bohlmeijer et al., 2011; Fledderus et al., 2012; Pots et al., 2015; Lappalainen et al., 2014; Lappalainen, Langrial, Oinas-Kukkonen, Tolvanen, & Lappalainen 2015). Therefore, this study aims to assess the possible impact of ACT-based after-care on the wellbeing of SUD-patients. Additionally, the impact on depression symptoms and relapse into substance use will be assessed. In addition to the literature gaps, another reason to conduct this study is that Tactus, the addiction care institute in the Netherlands where the intervention was carried out, has requested this study because ACT-based after-care fits their work ethic of recovery-focused therapy that increases clients' individual control over their mental health.

**Research question and hypotheses**

As the goal of this pilot-study is to describe the respondents' experience with the ACT-based after-care intervention and its possible impact on wellbeing, depression symptoms and relapse into substance use, this study aims to answer the following questions:
1. What is the acceptability of an ACT-based after-care intervention in SUD-patients?
2. What is the possible impact of an ACT-based after-care intervention on the wellbeing, depression symptoms and relapse into substance use in SUD-patients?

It is expected that the ACT-based after-care intervention will be well accepted by SUD-patients and rated as useful. Further, it is expected that the ACT-based after-care intervention increases wellbeing and reduces depression symptoms of SUD-patients. Finally, it is expected that the intervention prevents patients from relapsing into substance use.

## Method

### Design

The current study uses a mixed-method study design, in which data is collected pre-treatment (t=0) and post-treatment (t=1) as part of the regular Routine Outcome Monitoring (ROM). Quantitative data was collected using a test-battery of measures of substance use, wellbeing (MHC-SF) and depression symptoms (DASS-21) pre- and post-treatment. Qualitative data was collected post-treatment using the method of semi-structured interviews, both as an evaluation of the intervention as well as a deepening of understanding on the impact of the intervention. This mixed-method design was chosen because the goal of this study is both to investigate the respondents' experience with as well as the possible impact of the intervention. Semi-structured interviews are suitable to extensively assess respondents' experiences. Quantitative analyses are needed to indicate the possible impact of the intervention.

### Respondents

The respondents of the study were 11 Dutch adult SUD-patients, who had recently received regular, Cognitive Behavioral Therapy (CBT)-based SUD-treatment at the Dutch addiction treatment institute Tactus. Eight of them formed one group at one Tactus-location and three of them participated in a group at another Tactus location. Psychologists that were in charge of previous treatment recruited the respondents by inviting them to participate in the ACT-based after-care group-intervention after their usual treatment. Also, they asked them to participate in an evaluation of the intervention for research purposes. All respondents mastered the Dutch language, as this was the language in which the intervention was offered. The respondents for the interviews were recruited by asking the respondents whether they would be interested to participate in an interview after the treatment had ended.

### Intervention

The intervention 'Living to the Full' ('Voluit Leven') consisted of nine group sessions of two hours that were led by a psychologist and an ACT- trainer. The intervention aims at teaching patients to live satisfactory lives, despite their sensitivity to SUD and other psychological sensitivities; hence the name 'Living to the Full'. The respondents received the book 'Living to the Full' at the start of the intervention.

Four parts can be distinguished within the intervention. In the first session, respondents are introduced to ACT and asked to reflect on their goals and desires in life. Then, in sessions 2 and 3, respondents look back on their attempts to control their complaints and the effect of this strategy. The third part, session 4, 5 and 6, emphasizes current experiences and teaches respondents how to accept thoughts and sensations. The three final sessions evolve around exploring personal values and how to live according to those values. Throughout the intervention, mindfulness-exercises are practiced (Bohlmeijer et al., 2011). During every session, the content of one chapter from the book was briefly discussed, after which exercises were clarified and practiced. After every session the respondents were asked to do homework during the week, which consisted of reading the book and various mindfulness- and reflection exercises.

'Living to the Full' is based on six core-processes of ACT, described by Hayes, Luoma, Bond, Masuda and Lillis (2006): acceptance, cognitive defusion, contact with the present moment, self as context, choosing values in different life domains, and commitment to make choices based on these values. These processes all evolve around accepting thoughts and sensations, even though they might be aversive, and living life according to personal values.

**Measures**

To assess respondents' experience with the intervention, an evaluation form was created (see Appendix A). The first eight questions were derived from the Client Satisfaction Questionnaire (CSQ-8), a questionnaire that was designed in order to assess clients' satisfaction with treatment. The CSQ-8 was found to have high internal consistency and concurrent validity in a sample of Dutch SUD-patients (De Wilde & Hendriks, 2005). The remaining questions were added to evaluate specific parts of the current intervention. Respondents' answers to the questions on the evaluation form were used to personalize the post-intervention semi-structured interviews.

After the intervention, semi-structured interviews were conducted with the respondents. The main goal of these interviews was to gain a deeper understanding of the patients' experiences with the intervention and the possible impact of the intervention on wellbeing, depression symptoms and substance use. A semi-structured interview allows for a rich understanding of a phenomenon. An advantage of this method is that the interviewer is able to improvise according to respondents' answers, allowing for more individual variation than a structured interview would (Robert Wood Johnson Foundation,

2008). However, as the researcher designs the interview guide, selects respondents and interprets the results, a semi-structured interview might be subsequent to biases (Diefenbach, 2009). The author used a recently published framework for the development of a semi-structured interview guide, consisting of five phases based on ten methodological papers on this topic (Kallio, Pietilä, Johnson and Kangasniemi, 2016). The first phase in this framework is to evaluate whether using the method of semi-structured interview is suitable for the current research question. As the main goal of the current research is to assess the respondents' experiences with the intervention, the method of semi-structured interview was found suitable. The second phase is to retrieve and use previous knowledge, which the author did by conducting a literature review on the topic of SUD and by using their experience working with SUD-patients. In the next phase, the preliminary semi-structured interview guide is formulated, which is pilot tested in the fourth phase, resulting in the complete semi-structured interview guide in the final phase. Experts from the field added comments to the interview guide in the fourth phase. Further, the author pilot tested the preliminary semi-structured interview during the interview with the first respondent. After this test, the interview guide was adjusted accordingly. The semi-structured interview-guide in English and Dutch can be found in Appendix B and C.

The semi-structured interview guide consisted of two parts. Part A consisted of questions on the experiences with the intervention. Part B consisted of questions on how the intervention might have affected respondents' wellbeing, depression symptoms and substance use. On every topic, an open question was initially asked, after which sub-topics were discussed depending on the answer of the respondent. Also, the focus in the semi-structured interview might be adjusted depending on the values respondents filled out in the questionnaires. For example, if a respondent filled out a relatively high score on having a hard time to relax in the depression questionnaire, then the interviewer might zoom into that topic. This was done because it was assumed that higher or lower scores on a particular topic mean that this topic was more or less relevant to an individual.

Several constructs were measured pre- and post-treatment, including wellbeing (MHC-SF-21), depression symptoms (DASS-21) and substance use. Wellbeing was measured using the Mental Health Continuum Short Form (MHC-SF). This 14-item measure consists of three subscales: emotional- (3 items), social- (5 items) and psychological wellbeing (6 items; Lamers, Westerhof, Bohlmeijer, ten Klooster & Keyes, 2011). Each of the items consists of the following question: "In the past month, how often have you experienced…" followed by, for example: "feeling happy?" (0 = never; 1 = once

or twice; 2 = once a week; 3 = 2 or 3 times a week; 4 = almost every day; 5 = every day). The scores for overall wellbeing were calculated by taking the mean of the sum of all 14 items. Additionally, scores for emotional- social- and psychological wellbeing were calculated by taking the mean of the total scores on those particular items. The MHC-SF was reported to have high internal reliability (Cronbach's α = .89) and good convergent validity in a Dutch sample (Lamers et al., 2011; Lamers, Glas, Westerhof, & Bohlmeijer, 2012) and high reliability (Cronbach's α = .91) in another one (Fledderus, Bohlmeijer, Smit & Westerhof, 2010). In four South-African communities, high internal consistency (Cronbach's α = .74) and good criterion validity were found (Keyes, 2008). Similarly, the MHC-SF was found to be a reliable and valid measure in Argentinian samples (Perugini, de la Iglesia, Solano & Keyes, 2017), Italian samples (Petrillo, Capone, Caso & Keyes, 2015), Polish samples (Karas, Cieciuch & Keyes, 2014) and Chinese samples (Guo et al., 2015).

Depression symptoms were measured using the Depression Anxiety Stress Scales short form (DASS-21), a self-report questionnaire that measures depression-related symptoms. It is a shorter form of the DASS-42, which was developed to indicate the severity of psychiatric comorbidity, but is also used to evaluate changes in symptomatology over time (Lovibond & Lovibond, 1995). The DASS-21 consists of three clusters of 7 items measuring depression, anxiety and overall stress, respectively (Weiss et al., 2015). The 21 items consist of statements that can be rated on a 4-level scale of applicability (0 = not applicable; 1 = a bit applicable; 2 = reasonably applicable; 3 = very applicable). An example of a statement is: "I found it difficult to calm myself down." Depression scores were calculated by adding up the scores on each of the 21 items, in which higher scores indicated more depression symptoms. In a sample of SUD-patients, the DASS-21 was found to be a reliable measure to screen for PTSD (Kok, de Haan, van der Meer, Najavits & de Jong, 2015). In a sample of medical patients seeking treatment for worrying, the DASS-21 was reported to have strong discriminative validity and internal consistency (Cronbach's α = .87; Gloster et al., 2008). In a sample of psychiatric patients, Weiss and colleagues (2015) found good internal consistency (Cronbach's α = .94), strong convergent validity and high sensitivity to changes in depression symptoms over treatment. Similarly, the DASS-21 was reported to be a reliable and valid measure in a sample of pain patients (Wood, Nicholas, Blyth, Asghari & Gibson, 2010) and psychiatric in-patients (Ng et al., 2007). The DASS-21 was translated in Dutch and reported to have similar reliability scores as the original version (De Beurs, 2010).

To measure possible relapse into substance use, Module 1 from the Measurements in the Addictions for Triage and Evaluation (MATE) was used. The MATE is a test-battery composed of ten instruments meant to measure relevant concepts in SUD-patients (Schippers, Broekman, Buchholz, Koeter & van den Brink, 2010). Substance use was measured using Module 1 of the MATE. This module includes questions on all substances from the Composite International Diagnostic Interview (CIDI) from the World Health Organization. This structural interview consists of questions on what substances the respondent has used during their lifetime and the amount of these substances they have used in the past 30 days (Schippers et al., 2010). The scores for substance use were calculated by looking at the frequency of main problem substance use in the past 30 days (0 = none; 1 = once; 2 = a few times; 3 = once or twice a week; 4 = three or four times a week; 5 = five or six times a week; 6 = every day). For example, a respondent who would have used alcohol once or twice a week would receive a score of 3.

All measures were taken pre- and post-treatment, using pen and paper, in the presence of a trainer. As the current study was part of a larger one, it must be noted that other constructs were also measured at these particular moments.

**Procedures**

Before the start of the intervention, the research proposal was approved by the Scientific Committee of Tactus. The respondents then attended 9 sessions during 9 weeks. The respondents were not involved in any other psychological SUD-treatment during the intervention. Wellbeing, depression symptoms and substance use were measured pre- and post-treatment. Also, respondents were asked whether they were interested in participating in an additional interview. Respondents who were interested were contacted through telephone at the end of the intervention to make an appointment for the interview. They were asked to fill out the evaluation form digitally and return it by e-mail. Respondents were given the choice to conduct the interview through telephone or in real life. Five interviews were conducted in real-life at the same location as the intervention; one interview was conducted through telephone. The interviews each lasted 30 to 45 minutes.

**Analysis**

The qualitative data from the interviews was analysed according to Thematic Analysis, which is a method for identifying themes or patterned responses within data (Braun & Clarke, 2006). This method was chosen as the current specific research question and semi-

structured interview questions ask for a theory-driven or deductive approach, whilst the individual variation that results from semi-structured interviews ask for a data-driven or inductive approach with no pre-existing coding scheme. Thematic Analysis combines these two means of analysis (Braun & Clarke, 2006). Thematic analysis requires a cycle of reading the data, identifying themes and returning to the data. Therefore, the current research uses the six phases described by Braun and Clarke (2006) in the data analysis. The verbatim transcription of the recorded interviews formed the first phase of analysis by familiarization with the data. Then, all transcripts were read once. In the second phase, the initial codes were generated with the research questions in mind, by going through the data and identifying any potentially interesting topic. Phase three consisted of sorting the codes among several potential themes. This process resulted in potential main themes, which were sometimes similar to interview questions. In the next phase, the themes were reviewed and refined by reading through the data once more to see if the data fit the themes and to identify any missed codes. At this point, the themes and their codes were compared to ones found by another researcher and adjusted according to compromises. In the final two phases, the themes were named and a coherent analysis was written of the whole data. Quotes were added and an answer to the research question was formulated. The coding scheme that emerged from this process can be found in appendix D.

SPSS-software was used to assess whether the mean scores on wellbeing and depression symptoms changed significantly. First, Shapiro-Wilk tests were conducted in order to check the normality of the data. The Shapiro-Wilk statistic tests the null-hypothesis that the sample comes from a normally distributed population. If the *p*-value is smaller than the chosen alpha, the null-hypothesis is rejected which suggests that the data is not normally distributed. In the case of normally distributed data, paired-sample T-tests were conducted to compare the mean scores. The paired-sample T-test assesses whether the difference between a pair of two related means is zero. This null-hypothesis is rejected when the *p*-value is smaller than the chosen alpha, indicating that the difference between the two means is not zero. In the case of non-normality, the Wilcoxon signed-rank test was used as an alternative test because as a non-parametric test, it does not require normality of the data. As the goal of this study is get a rough understanding of the possible impact of the intervention based on a small sample size, an alpha of 0.10 was chosen for both statistical tests. To determine whether patients had relapsed into substance use, individual pre- and post-treatment main-problem substance use scores were compared.

# Results

## Respondents

The total number of respondents who participated in the intervention was eleven (*n*=11). Seven out of eleven respondents finished the intervention as well as the pre- and post-intervention test-battery (*n*=7). Six respondents were interviewed (*n*=6) (see table 1). Reasons for dropout included non-matching expectations (respondent 11), occupation with private issues (respondent 9) and a serious traffic accident (respondent 10). Respondent 9 later continued the intervention individually. Respondent 11 was not willing to participate in the interview, although he did tell the author through telephone that after one session, he did not feel the need to continue because he felt like he had recovered sufficiently after regular treatment. He added that the intervention also felt too 'woolly' for him to continue.

*Table 1. Overview of sample*

| Resp. | Group | Completed intervention? | Interviewed? | Sex | Age | Substance |
|---|---|---|---|---|---|---|
| 1 | Kampen | Yes | Yes | F | 43 | Cannabis |
| 2 | Kampen | Yes | Yes | M | 56 | Alcohol |
| 3 | Kampen | Yes | No | M | 41 | Alcohol |
| 4 | Zwolle | Yes | Yes | F | 41 | Alcohol |
| 5 | Zwolle | Yes | Yes | M | 54 | Alcohol |
| 6 | Zwolle | Yes | Yes | M | 61 | Alcohol |
| 7 | Zwolle | Yes | No | M | 58 | Gambling |
| 8 | Zwolle | No | Yes | M | 26 | Gaming |
| 9 | Zwolle | No | No | F | 43 | Alcohol |
| 10 | Zwolle | No | No | M | 58 | Alcohol |
| 11 | Zwolle | No | No | M | 43 | Alcohol |

**Experiences with the intervention**

General impression

All respondents that were interviewed (*n*=6) were generally satisfied with the intervention and said that they would recommend it to a friend. The mean score that was assigned to the intervention by five respondents was 9 out of 10 (*n*=5). For example, respondent 4 said: "*The general impression is good, positive. It helps people to get through harder parts of life, which is really important. It helps in becoming aware of what you are doing and what makes you happy*." Further, respondent 6 shared: "*It was an exiting experience. I received some tools, which I can use from now on."* Respondent 4 said: "*I think it's a wonderful construction, to combine psychology and mindfulness. It makes the intervention accessible; there is a connection between the head and the heart."*

Four respondents thought that the intervention came across a bit 'woolly' sometimes, meaning that they associated it with spirituality with negative connotation. This made them a bit sceptical at the onset of the intervention. For example, respondent 2 said: "*At the start of the intervention, for around four sessions, I felt a bit confused. I thought to myself: 'what is this for Buddha thing they're doing here?' I did not know where they were heading.*" Respondent 8 explained that he experienced this 'woolliness' because the intervention stayed somewhat vague; it was sometimes difficult for him to concretize the content of the sessions. This finding raises the question whether the respondents were properly informed before the intervention. Respondent 8 did suggest being more clear about the intervention's content when recruiting respondents: "*I received an information pamphlet through e-mail but maybe the intake could be more extensive. You could for example show the book to the interested person*."

Added value after regular addiction care

Two respondents stated that the added value of 'Living to the Full' as an after-care intervention was that it focused more on the whole person, rather than on the addiction problem itself. Respondent 1: "*The focus was all about way of life. It did not have anything to do with substance use*." Respondent 2 thought that this focus made it a better intervention for people struggling with addiction than regular treatment: "*The regular treatment is only prevention of substance use. But this intervention is meant to work on you, which is an even better prevention."* Another two respondents felt that 'Living to the

Full' was a good after-care intervention because it focused not only on how to deal with substance use, but also on the underlying causes and the consequences.

Mindfulness

Four respondents mentioned that mindfulness helped them retain some peace of mind, mainly due to observation, acceptance and reflection on thoughts. For example, respondent 1 explained that mindfulness helped her structure her chaotic thoughts: "*Taking 20 minutes of mindfulness helped me categorising my thoughts and find solutions. Just because you step out of your thoughts for a moment, stop running and stand still for a bit.*" Similarly, respondent 5 explained: "*I learned that it is OK to allow thoughts into your mind. The thoughts pass and then I have the chance to control them, to change them*." Further, respondent 6 shared that he felt as though he was now able to control his thoughts by paying attention to them. It helps him worry less: "*I learned that I should only worry about things that you can do something about.*"

Three respondents mentioned that mindfulness was helpful in relation to substance dependence. For instance, respondent 2 shared: "*I used to be really scared for relapsing, but now I feel I have more control over that because of mindfulness thinking. I have this voice in my head saying that I don't want to drink and am not allowed to.*" According to respondent 5, becoming more aware also helps with reducing substance use: "*Becoming more aware of small things has helped me drinking moderately. Now, I only drink when I really want to enjoy the taste.*"

Many respondents also talked about accepting themselves and their mistakes. Respondent 1 shared that she had learned to accept herself: "*I accept myself with my up- and downsides. I stopped telling myself I am doing it wrong all the time*." Respondents felt that acceptance of self could help them reduce substance use. For instance, respondent 1 shared that feelings of guilt had often made her use more substances. Similarly, respondent 5 explained that accepting one's flaws is essential in continuing after relapse: "*If you drink too much one day, you will have to start over the next day, and think: 'well, I drank too much yesterday, and that was not what I promised myself', accept it and just keep going.*"

Group and trainer

All respondents found it helpful to go through the intervention in a group setting, mostly because of support, sharing experiences and to have some reference to relate to. For

example, respondent 4 explains: "*Going through this intervention in a group provides energy, dynamics and acknowledgement. If one person shares something, someone else might grow from it, too.*" As for the group size, three respondents mentioned that a group of around six people would be ideal. For instance, respondent 4, who was in the group of four in Zwolle said: "*The group should not be too large, considering that people have to really open up about their lives, which is not easy considering their intense addiction.*" Further, respondent 4 shared that she valued starting and finishing the intervention with the same group. Respondent 5 valued homogeneity of ages and problem substances in the group: "*Mostly because they will be going through lots of similar things, which makes it easier to talk to each other*."

Five respondents mentioned that they were satisfied with the trainers. This was mostly because of good advice and a warm and empathic way of counselling. Two respondents noticed that their trainer was good at leading them back to the topic if someone was wandering off to make sure that all participants were involved. Respondent 4: "*This is especially useful, as some people tend to keep quiet if the rest talks so much. Now everybody had a chance to share their stories.*"

Treatment content

Besides the mindfulness exercises, two specific parts of the intervention were described as important by the respondents: exploration of one's own values and engaging in reflection. For instance, respondent 4 now keeps her personal values in mind to remind her of what makes her happy in case she is going through a tough time. About engaging in reflection, respondent 6 said: "*At the start of the intervention, we did an analysis of where you are now, and what you want to achieve in the coming weeks. That is when I discovered the reasons for my drinking habit.*" Specific exercises or metaphors that respondents mentioned included: the backpack exercise, which focuses on accepting your mental baggage; the mountain meditation, which focuses on self-confidence; the waterfall metaphor, which is about observing thoughts; the different layers of thoughts; the bus role-play, which is about objection to change; and some visualisation exercises. For example, respondent 1 said: "*The mountain meditation made me feel powerful. I still I think back sometimes to that meditation and try to relive that feeling of strength*." Respondent 2 explained: "*The metaphor of the waterfall helped me to control my thoughts. Just seeing your thoughts stream like a waterfall helps you focus on other things*."

Homework

Generally, respondents thought that the amount of homework was fine, although some found it difficult to keep up with. Two respondents noticed that the homework was not always being discussed. For instance, respondent 1 said that a reminder of the homework might have been useful for her. Additionally, three respondents stated that the book 'Living to the Full' was rather difficult to understand, although the trainers did include some explanation of concepts in the sessions. For instance, respondent 2 explained: "*The text in the book includes concepts that you are unfamiliar with if you're not working in the field. More explanation of these concepts would have been useful. Sometimes, I looked them up on the internet to understand what they meant*."

Time investment

Three respondents thought that the intervention could have been somewhat longer. For respondent 5, the end of the intervention was a bit sudden: "*It would have been nice if there was another session after 14 days, just to check everything is going well. It allows for some closing time. I was afraid that I would relapse immediately.*" Three respondents thought that the length of the intervention was fine.

Thus, the intervention was well accepted by the respondents as a proper after-care for SUD. Mindfulness was experienced as calming as well as helpful in relation to substance use. The support and guidance from group and trainers were experienced positively, as well as several exercises and reflection on values. Points of improvement were on the group size, the discussion of homework, the length of the intervention and the explanation of difficult terminology. The next section considers the question whether the intervention has had a possible extended impact on the wellbeing, depression symptoms and substance use of respondents after their regular treatment.

**Possible impact of the intervention on substance use, wellbeing and depression symptoms**

Possible impact on wellbeing

*Group change in wellbeing*

The mean scores for overall-, emotional-, social- and psychological wellbeing in the total sample, in Kampen and in Zwolle increased after the intervention. Two-tailed paired-

sample T-tests showed that this increase was statistically significant in the case of overall-, social and psychological wellbeing in the total sample, and of social wellbeing in the group in Zwolle *(see table 2a)*.

*Table 2a: Two-tailed paired-sample T-tests comparing mean pre- and post-intervention scores on wellbeing in the total sample, Kampen and Zwolle.*

| | | | Total sample | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Wellbeing | | *n* | M | *Min* | *Max* | *SD* | *t* | *df* | *p* |
| Overall | Pre-intervention | 7 | 28.76 | 6.00 | 61.36 | 22.74 | -2.341 | 6 | .058 |
| | Post-intervention | 7 | 40.57 | 30.36 | 57.36 | 10.46 | | | |
| Emotional | Pre-intervention | 7 | 4.76 | 1.00 | 11.33 | 4.38 | -1.582 | 6 | .165 |
| | Post-intervention | 7 | 7.24 | 5.33 | 9.33 | 1.46 | | | |
| Social | Pre-intervention | 7 | 7.66 | 0.00 | 19.80 | 7.23 | -2.509 | 6 | .046 |
| | Post-intervention | 7 | 11.23 | 4.60 | 17.00 | 4.07 | | | |
| Psychological | Pre-intervention | 7 | 13.86 | 3.00 | 25.83 | 9.38 | 2.022 | 6 | .090 |
| | Post-intervention | 7 | 17.95 | 11.83 | 24.83 | 5.47 | | | |
| | | | Kampen | | | | | | |
| Wellbeing | | *n* | M | *Min* | *Max* | *SD* | *t* | *df* | *p* |
| Overall | Pre-intervention | 3 | 34.19 | 6.00 | 61.36 | 27.69 | -.977 | 2 | .431 |
| | Post-intervention | 3 | 43.64 | 34.21 | 57.36 | 12.15 | | | |
| Emotional | Pre-intervention | 3 | 6.44 | 1.00 | 11.33 | 5.19 | -.397 | 2 | .729 |
| | Post-intervention | 3 | 7.44 | 6.00 | 9.33 | 1.71 | | | |
| Social | Pre-intervention | 3 | 9.93 | 2.00 | 19.80 | 9.06 | -.828 | 2 | .495 |
| | Post-intervention | 3 | 12.20 | 8.60 | 17.00 | 4.33 | | | |
| Psychological | Pre-intervention | 3 | 15.44 | 3.00 | 24.83 | 11.23 | 1.314 | 2 | .319 |
| | Post-intervention | 3 | 20.06 | 14.50 | 24.83 | 5.21 | | | |
| | | | Zwolle | | | | | | |

| Wellbeing | | *n* | M | *Min* | *Maxi* | *SD* | *t* | *df* | *p* |
|---|---|---|---|---|---|---|---|---|---|
| Overall | Pre-intervention | 4 | 24.68 | 7.00 | 56.36 | 21.71 | -2.149 | 3 | .121 |
| | Post-intervention | 4 | 38.27 | 30.36 | 52.36 | 10.19 | | | |
| Emotional | Pre-intervention | 4 | 3.50 | 1.00 | 9.33 | 3.93 | Z = -1.461 | - | .144 |
| | Post-intervention | 4 | 7.08 | 5.33 | 9.00 | 1.50 | | | |
| Social | Pre-intervention | 4 | 5.95 | 0.00 | 15.00 | 6.38 | -2.824 | 3 | .067 |
| | Post-intervention | 4 | 10.50 | 4.60 | 15.00 | 4.35 | | | |
| Psychological | Pre-intervention | 4 | 12.67 | 4.00 | 25.83 | 9.36 | 1.304 | 3 | .283 |
| | Post-intervention | 4 | 16.38 | 11.83 | 24.83 | 5.84 | | | |

*Individual change in wellbeing*

Table 2b shows the wellbeing scores of individual respondents. Even though for respondents 2 and 4, overall wellbeing scores somewhat decreased, they did not mention noticing that in their daily life. Respondent 4 said that she learned to be milder for herself and her mistakes and that the intervention had made her calmer: "*Going through life in a relaxed way makes you much happier*." Respondent 2 shared that his feelings of happiness and had increased during the intervention, that he became more active in the community and that his view on the future and on other people had broadened: "*Before the intervention, I was very busy with myself, and now I can see others again*." Similarly, respondent 5 said that he had improved in his social contacts and that he became more cheerful and rested. Respondent 1 had learned to be milder to herself: "*I learned to accept myself with my up- and downsides. I used to feel really guilty for using cannabis. Now I have accepted that I sometimes need to use it. It feels good to value yourself as a good person*." Respondent 6 said that he had regained hope for the future and worries less.

*Table 2b. Respondents' overall-, emotional-, social-, and psychological wellbeing scores pre- and post-intervention*

| Respondent | | Wellbeing | | | |
|---|---|---|---|---|---|
| | **Overall increase** | overall - | emotional- | social- | psychological- |
| 1 | Pre-intervention scores | 38 | 9 | 8 | 21 |
| | Post-intervention scores | 44 | 8 | 11 | 25 |
| 3 | Pre-intervention scores | 6 | 1 | 2 | 3 |
| | Post-intervention scores | 37 | 9 | 11 | 17 |
| 5 | Pre-intervention scores | 7 | 3 | 0 | 4 |
| | Post-intervention scores | 34 | 9 | 7 | 18 |
| 6 | Pre-intervention scores | 18 | 2 | 7 | 9 |
| | Post-intervention scores | 41 | 11 | 15 | 15 |
| 7 | Pre-intervention scores | 22 | 1 | 5 | 16 |
| | Post-intervention scores | 35 | 6 | 13 | 16 |
| | **Overall decrease** | | | | |
| 2 | Pre-intervention scores | 66 | 14 | 23 | 29 |
| | Post-intervention scores | 62 | 12 | 21 | 29 |
| 4 | Pre-intervention scores | 61 | 12 | 19 | 30 |
| | Post-intervention scores | 58 | 10 | 19 | 29 |

## Possible impact on depression symptoms

### *Group change in depression*

The mean scores for depression in the total sample, in Kampen and in Zwolle decreased. Two-tailed paired-sample T-tests showed that this decrease was statistically insignificant (see table 3a). However, it needs to be noted that the decrease of mean depression score in the whole sample approached significance.

*Table 3a: Two-tailed paired-sample T-tests comparing mean pre- and post-intervention depression scores in the total sample, Kampen and Zwolle.*

| | | Total sample | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Depression | *N* | M | *Min* | *Max* | *SD* | *t* | *df* | *p* |
| Pre-intervention | 7 | 23.86 | 3 | 47 | 16.61 | 1.874 | 6 | .110 |
| Post-intervention | 7 | 16.43 | 1 | 29 | 12.03 | | | |
| | | Kampen | | | | | | |
| Depression | *N* | M | *Min* | *Max* | *SD* | *t* | *df* | *p* |
| Pre-intervention | 3 | 22.33 | 5 | 47 | 21.94 | .895 | 2 | .465 |
| Post-intervention | 3 | 14.67 | 1 | 23 | 11.93 | | | |
| | | Zwolle | | | | | | |
| Depression | *N* | M | *Min* | *Max* | *SD* | *T* | *df* | *p* |
| Pre-intervention | 4 | 25.00 | 3 | 37 | 15.06 | 1.698 | 3 | .188 |
| Post-intervention | 4 | 17.75 | 1 | 29 | 13.75 | | | |

*Individual change in respondents*

Table 3b shows the individual change in depression scores. Respondent 5 shared that he became calmer and more cheerful through the intervention, and that he sleeps better. Although respondent 1's depression scores increased, she explained that the intervention had not changed her depression symptoms: "*Those symptoms come and go; sometimes I wake up with this dark cloud in my head, feeling sad, tired and not able to do anything. Now, I just accept that this dark cloud is sometimes there. This might explain my higher scores on depression, but it does not feel like that.*" Further, even though respondent 2's score before the intervention was quite low, he explained that he did feel depressed. The intervention had helped him falling and staying asleep at night, as well as feel less depressed in general: "*Struggle with addiction often goes hand in hand with depression. The intervention helped coping with that.*"

*Table 3b. Respondents' depression scores pre- and post-intervention*

| | Respondent | DASS pre-score | DASS post-score |
|---|---|---|---|
| Increase | | | |
| | 1 | 15 | 20 |
| Decrease | | | |
| | 2 | 5 | 1 |
| | 3 | 47 | 23 |
| | 5 | 31 | 12 |
| | 4 | 3 | 1 |
| | 7 | 37 | 29 |
| Remained the same | | | |
| | 6 | 29 | 29 |

## Possible impact of the intervention on relapse into substance use

Table 4 shows the main problem substance use scores of individual respondents showing that six out of seven respondents did not relapse into substance use during the intervention. Respondent 6 increased in alcohol use a few times (2) to alcohol use once or twice a week (3). He shared that during the intervention, he started drinking again, though he does not feel that the intervention had anything to do with that: "*Rather, it was the hot weather, which is hard for me to bear. The intervention was a moment on which it was not possible to drink, so in that sense, it even helped*." Respondents 2 and 4 were abstinent from alcohol already before the intervention and were still abstinent after the intervention. They stated that the intervention helped them fight craving better. For instance, respondent 4 explained: "*When I feel craving, I just accept the shitty feeling and let it come over me.*" Respondent 5 still uses alcohol every now and then and explained how he gained more control over his drinking through the intervention: "*I still like to have my beer in the weekend, but only if I feel like I'm in control of the situation. I manage to control my thoughts now, thinking: why do I want to stop drinking, will it be worth it to drink a beer?*" Respondent 1 used cannabis 5 to 6 times a week before and after the intervention, but her view on using cannabis has changed: "*I learned to accept it. I still use cannabis*

*sometimes, but it bothers me less. The main issue with substance use is not the substance use itself, but the way you feel about that. I used to feel really guilty about using. So that absolutely improved.*"

*Table 4. Respondents' scores on main problem substance use pre- and post-intervention*

| | Respondent | Pre-intervention substance use score | Post-intervention substance use score |
|---|---|---|---|
| Increase | | | |
| | 6 | Alcohol a few times<br>2 | Alcohol once or twice a week<br>3 |
| Decrease | | | |
| | 7 | Gambling once<br>1 | No gambling<br>0 |
| Remained the same | | | |
| | 1 | Cannabis 5-6 times a week<br>5 | Cannabis 5-6 times a week<br>5 |
| | 2 | No alcohol<br>0 | No alcohol<br>0 |
| | 3 | No alcohol<br>0 | No alcohol<br>0 |
| | 4 | No alcohol<br>0 | No alcohol<br>0 |
| | 5 | Alcohol a few times<br>2 | Alcohol a few times<br>2 |

Thus, it appeared that overall-, psychological and social wellbeing had statistically significantly improved in respondents. Indeed, respondents shared that they felt happier, less worried, more sociable, hopeful, calm and milder towards themselves. No statistically significant change was observed in emotional wellbeing. The decrease in depression scores showed a clear trend towards statistical significance. Respondents did share that they generally felt less depressed. Finally, relapse was prevented in six out of seven participants.

## Discussion

The goal of this pilot-study was to describe the experience of previously treated SUD-patients with an ACT-based after-care intervention and its possible extended impact on their wellbeing, depression symptoms and relapse into substance use. It appeared that the intervention was well accepted by the respondents and considered proper after-care for SUD. Relapse was prevented in six out of seven respondents during the intervention. Overall- social and psychological wellbeing significantly improved and the reduction in depression symptoms showed a clear trend towards significance. Respondents' experience supported these results.

### Acceptability of the intervention

As expected, the respondents accepted the intervention well and experienced it as useful. This finding might be explained by the desire for after-care in SUD patients, illustrated by the research of Tuten, Jones, Lertch and Stitzer (2007) who reported that 98% of SUD-patients enrolled in a residential detoxification program wished to have some form of after-care. This apparent need for after-care was also confirmed in the interviews, in which respondents shared that they would have preferred that the intervention was somewhat longer and did not have a sudden ending to it. The high acceptability found in this study is consistent with the study of Amaro and colleagues (2014) who reported high acceptability of a mindfulness-based relapse-prevention program by SUD-patients. Further, principles of ACT were accepted well by other patient groups in regular treatments (Johns et al., 2016; Fledderus et al., 2012) and SUD-patients accepted other forms of after-care well (Haug et al., 2015; Burleson & Kaminer, 2007).

Respondents found the intervention suitable as after-care because it focused on the individual as a whole rather than solely focusing on the SUD. This finding fits the theoretical goal of ACT to not solely focus on the disease but rather on the development of general skills that allow for personal development (Fledderus et al., 2012). This extended focus provided respondents the support they needed in their current post-treatment phase of sustaining behaviour change and integrating it into daily life. Further, this finding indicated that the intervention was complementary to the regular treatment, rather than a repetition of (parts of) the treatment. The mindfulness exercises were eventually experienced as beneficial to all respondents that were interviewed. This finding is consistent with the study of Brewer and colleagues (2009) who reported that mindfulness

treatment was rated as highly satisfactory by SUD-patients, as well as the finding that a mindfulness-based relapse-prevention program was highly accepted by SUD-patients (Amaro et al., 2014). In the current study, mindfulness helped respondents relax, being milder and more accepting towards the self and fight craving-related thoughts. This finding is consistent to ACT-theory, in which acceptance and cognitive defusion are two core-processes (Hayes et al., 2006). The finding that mindfulness helped SUD-patients to cope with craving-related thoughts was also found by Skanavi and colleagues (2011) who reported significant decrease in avoidance thoughts in SUD-patients after mindfulness-based treatment.

An interesting finding was that SUD-patients seemed to appreciate social support and guidance: the guiding, warm and empathic role of the trainers and being in an intimate, stable group setting was experienced positively. This finding raises the question whether the intervention would have been as well accepted if it were provided individually. The apparent need and appreciation for social support and guidance might be explained by reduced self-efficacy in SUD-patients, which means that they have reduced belief in their ability to reach a desired goal (Taylor & Williams-Salisbury, 2015). As studies have found that enhanced self-efficacy improves treatment outcomes in SUD-patients (Kadden & Litt, 2011) and reduces the risk of relapse (Tate et al., 2008; Ilgen & McKellar, 2005), SUD-patients might especially benefit from the support and guidance of this ACT-based after-care. One could wonder however, whether an after-care intervention without ACT-components, focusing on social support alone would be sufficient to gain similar results.

Respondents emphasized that reading the book and keeping up with homework was sometimes challenging, which indicates that they could have used more guidance on that matter. For example, homework could be discussed extensively as well as difficult concepts and metaphors. Also, respondents eventually thought that the intervention came across somewhat ‘woolly’, which they had not expected. This indicates the need for a clear introduction before the start of the intervention, in which, for example, the respondents are told that, although mindfulness is associated to Buddhism, it does not necessarily carry any religious connotations.

**Possible impact on wellbeing and depression symptoms**

It was also expected that the intervention would improve wellbeing and reduce depression in SUD-patients. Indeed, overall-, social- and psychological wellbeing changed statistically significantly, which is an interesting and promising finding considering the small *n* of this study. Respondents shared that they got milder towards their flaws, felt calmer, worried less, were motivated to participate in the community, improved in their relationships and felt hopeful about the future. This finding is consistent with studies that reported improved wellbeing after participating in an ACT-intervention in people with depression symptoms (Bohlmeijer et al., 2011; Fledderus et al., 2012; Pots et al., 2015; Lappalainen et al., 2014; 2015). The importance of enhanced wellbeing in SUD-patients is illustrated by studies that have shown that increased wellbeing is associated with decreased (risk of) substance use (Poudel, Sharma, Gautam & Poudel, 2016; Stevens, Jasons, Ram & Light, 2015; Pidd, Roche & Fisher, 2015).

Additionally, social wellbeing improved statistically significantly, which again is an interesting finding considering the small *n* of this study. It was measured by questions on whether respondents felt part of the community and had a positive attitude towards society and other people. As such, this finding is consistent with Vanderplasschen and colleagues (2010), who found that SUD-patients who participated in after-care increased in number of contacts with family members. The importance of increased social wellbeing is illustrated by a study of Stevens and colleagues (2015), who showed that social support is linked to abstinence-specific self-efficacy. Apparently, feeling socially capable and supported helps people with SUD to believe in their capabilities to stay abstinent. The importance of social wellbeing for SUD-patients is further illustrated by studies that have linked low social support to substance use (Tsai & Thompson, 2013; Dorard, Bungener & Berthoz, 2013) and to lower quality of life of SUD-patients (Brown, Jun, Min & Tracy, 2013). Other studies have linked higher social support to reduced likelihood of relapse (Ellis, Bernichon, Yu, Roberts & Herrell, 2004) and longer abstinence (Laudet, Cleland, Magura, Vogel & Knight, 2004). Even though social support is not similar to social wellbeing, SUD-patients who increase in social wellbeing might be better able to maintain and mobilize social support and benefit from it.

Further, the reduction in depression symptoms showed a trend towards statistical significance. Most respondents experienced this change in their daily life. They noticed that depression symptoms such as feeling down, having troubles sleeping, worrying and

feeling anxious decreased, partly because they could accept these feelings more. The increased capability of accepting aversive feelings fits one of the core-processes of ACT: acceptance (Hayes et al., 2006). The importance of reduced depression symptoms in SUD-patients is illustrated by studies that have reported a relationship between negative affect and substance use (Kelly, Stout, Magill, Tonigan & Pagano, 2011; Abayomi, Onifade, Adelufosi & Akinhanmi, 2013). For instance, Lo and colleagues (2015) researched whether the diagnosis of depression lead to substance use in a longitudinal study, reporting that depression and substance use often co-occurred.

**Possible impact on relapse into substance use**

It was expected that the after-care intervention would prevent relapse into substance use. Indeed, relapse was prevented in six out of seven respondents. This finding is consistent with previous studies that reported reduced probability of relapse in SUD-patients attending after-care (Jason et al., 2007; Frydrych et al., 2009; Burleson et al., 2012). Respondents noticed that the intervention was helpful in relation to substance use. Firstly, because becoming more self-accepting could help continuing abstinence after relapse and secondly, because observing and controlling thoughts was found to be helpful in dealing with craving-related thoughts.

**Strengths and limitations**

To date, to our best knowledge no research on this topic has been conducted on SUD-patients in The Netherlands, which is the case in this study. Also, the experience of SUD-patients with this ACT-based after-care intervention is assessed well by this study, as the extensive semi-structured interviews have allowed for a deep understanding of this.

However, the results of this study are not very generalizable, considering the small *n*. Additionally, only eight out of eleven patients that participated in the intervention were included in the study. Three out of four patients that dropped out were not interviewed, which might have led to possible bias in the results. Further, no follow-up measurement had been conducted, while it could have been useful to assess the possible longer-term impact of the after-care intervention on wellbeing, depression symptoms and relapse into substance use. Finally, considering the small *n* of this study, the Shapiro-Wilk tests that were used to check for normality of the data were not reliable. This means that the choice of statistical test used on the data might have been incorrect.

**Recommendations**

As ‘Living to the Full’ seems to be a promising after-care intervention for SUD-patients according to this pilot-study, further research should be considered. This research could assess the acceptability and the impact of the intervention more clearly by using a larger *n* or using follow-up data to assess the longer-term impact. If positive results are found here, a larger-scale Randomized Controlled Trial (RCT) could be conducted, in which the effects of this intervention are to be assessed more reliably. As ‘Living to the Full’ was shown to be accepted well and to have benefited this specific sample, the intervention could be implemented on a small scale within Tactus. In the case of implementation or further research, one should improve the information given to participants before the start of the intervention so that participants know what to expect from it. Also, trainers are recommended to emphasize homework and explanation of terminology during the sessions. The group is recommended to consist of around six people, who start and finish the intervention together. Finally, more generalizable results from larger-*n*-studies are recommended before the intervention is implemented on a broader scale.

## Conclusion

The ACT-based after-care intervention ‘Living to the Full’ seems to be a suitable after-care intervention for SUD-patients. Not only was it accepted well by the respondents, it constituted significant change in their wellbeing. Considering the small *n* of this study, this finding indicates the possibly large impact of this intervention on the wellbeing of SUD-patients. Relapse into substance use was prevented in six out of seven respondents, which is a promising finding considering the high risk of relapse in SUD. Depression symptoms changed nearly significantly and respondents reported to feel less depressed. As wellbeing and depression are linked to substance use by previous research, improvement on these constructs in SUD-patients are of utter importance. Future research is needed to further confirm the findings of this pilot study.

## References

Abayomi, O., Onifade, P.O., Adelufosi, A.O., & Akinhanmi, A.O. (2013). Psychosocial correlates of hazardous alcohol use among undergraduates in southwestern Nigeria. General *Hospital Psychiatry, 35*(3), 320-324.

Aletraris, L., Shelton, J.S., & Roman, P.M. (2015). Counselor attitudes toward contingency management for substance use disorder: effectiveness, acceptability, and endorsement of incentives for treatment attendance and abstinence. *Journal of Substance Abuse Treatment, 57*, 41-48.

Amaro, H., Spear, S., Vallejo, Z., Conron, K., & Black, D.S. (2014). Feasibility, acceptability, and preliminary outcomes of a mindfulness-based relapse prevention intervention for culturally-diverse, low-income women in substance use disorder treatment. *Substance Use & Misuse, 49(*5), 547-559.

Appiah, R., Danguah, S.A., Nyarko, K., Ofori-Atta, A.L., & Aziato, L. (2017). Precipitants of substance abuse relapse in Ghana: a qualitative exploration. *Journal of Drug Issues, 47*(1), 104-115.

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 depression symptomatology: evaluation in a randomized controlled trial. *Behavioral Research and Therapy,* 49, 62-67.

Bohlmeijer, E.T., Lamers, S.M.A., & Fledderus, M. (2015). Flourishing in people with depression symptomatology increases with Acceptance and Commitment Therapy. Post-hoc analyses of a randomized controlled trial. *Behaviour Research and Therapy, 65*, 101-106.

Bottlender, M., Kohler, J., & Soyka, M. (2006). The effectiveness of psychosocial treatment approaches for alcohol dependence. A review. *Fortschritte der Neurologie-Psychiatrie, 74*, 19-3.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Brewer, J.A., Sinha, R., Chen, J.A., Michalsen, R.N., Babuscio, T.A., Nich, C., Grier, A., Berguist, K., Reis, D., Potenza, M., Carroll, K., & Rounsaville, B.J. (2009), Mindfulness Training and Stress Reactivity in Substance Abuse: Results from a randominzed, controlled stage I pilot study. *Substance Abuse, 30*(4), 306-317.

Brown, S., Jun, M.K., Min, M.O., & Tracy, E.M. (2013). Impact of dual disorders, trauma, and social support on quality of life among women in treatment for substance dependence. (2013). *Journal of Dual Diagnosis, 9*(1), 61-71.

Burleson, J.A., Kaminer, Y., & Burke, R.H. (2012). Twelve-month follow-up of after-care for adolescents with alcohol use disorders. *Journal of Substance Abuse Treatment, 42*(1), 78-86.

Burleson, J.A., & Kaminer, Y. (2007). After-care for adolescent alcohol use disorder: feasibility and acceptability of a phone intervention. *American Journal on Addictions, 16*(3), 202-205.

Calabria, B., Degenhardt, L., Briegleb, C., Vos, T., Hall, W., Lynskey, M., Callaghan, B., Rana, U., & McLaren, J. (2010). Systematic review of prospective studies investigating remission from amphetamine, cannabis, cocaine or opioid dependence. *Addictive Behaviors, 35*, 741-749.

Chiesa, A., & Serretti, A. (2014). Are mindfulness-based interventions effective for substance use disorders? A systematic review of the evidence. *Substance Use & Misuse, 49(*5), 492-512.

De Beurs (2010). Nederlandse vertaling. Revised Dutch translation of the DASS21.

Retrieved April 28, 2017 from http://www2.psy.unsw.edu.au/groups/dass/Dutch/Dutch.htm.

De Wilde, E.F., & Hendriks, V.M. (2005). The client satisfaction questionnaire: psychometric properties in a Dutch addict population. *European Addiction Research, 11*(4), 157- 162.

Diefenbach, T. (2009). Are case studies more than sophisticated storytelling?: methodological problems of qualitative empirical research mainly based on semi-structured interviews. *Quality & Quantity, 43*(6), 875-894).

Dorard, G., Bungener, C., & Berthoz, S. (2013). Self-esteem, perceived social support, coping style and psychoactive substance use during adolescence. *Psychologie Francaise, 58*(2), 107-121.

Farronato, N.S., Dursteler-MacFarland, K.M., Wiesbeck, G.A., & Petitjean, S.A. (2013). A systematic review comparing Cognitive-Behavioral Therapy and Contingency Management for cocaine dependence. *Journal of Addictive Diseases, 32*(3), 274-287.

Fledderus, M., Bohlmeijer, E.T., Pieterse, M.E., & Schreurs, K.M.G. (2012). Acceptance and commitment therapy as guided self-help for psychological distress and positive mental health: a randomized controlled trial. *Psychological Medicine, 42*, 485-495.

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, 100*(12), 2372-2378.

Fleury, M.J., Djouini, A., Huynh, C., Tremblay, J., Ferland, F., Ménard, J.M., & Belleville, G. (2016). Remission from substance use disorders: A systematic review and meta-analysis. *Drug and alcohol dependence, 168*(1), 293-306.

Gates, P.J., Sabioni, P., Copeland, J., Le Foll, B., & Gowing, L. (2016). Psychosocial interventions for cannabis use disorder. *Cochrane Database of Systematic Reviews*, DOI: 10.1002/14651858.CD005336.pub4

Gloster, A. T., Rhoades, H. M., Novy, D., Klotsche, J., Senior, A., Kunik, M., & Stanley, M. A. (2008). Psychometric properties of the depression anxiety and stress scale-21 in older primary care patients. *Journal of Affective Disorders, 110*(3), 248–259.

Guo, C., Tomson, G., Guo, J.Z., Li, X.Y., Keller, C., & Sodergvist, F. (2015). Psychometric evaluation of the Mental Health Continuum-Short Form (MHC-SF) in Chinese adolescents – a methodological study. *Health and Quality of Life outcomes, 13*(198), DOI: 10.1186/s12955-015-0394-2.

Chong, J., & Herman-Stahl, M. (2003). Substance abuse treatment outcomes among American Indians in the telephone after-care project. *Journal of Psychoactive Drugs, 35*(1), 71-77.

Ellis, B., Bernichon, T., Yu, P., Roberts, T., & Herrell, J.M. (2004). Effect of social support on substance abuse relapse in a residential treatment setting for women. *Evaluation and Program Planning, 27*(2), 213-221.

Frydrych, L.M., Greene, B.J., Blondell, R.D., & Purdy, C.H. (2009). Self-help program components and linkage to after-care following inpatient detoxification. *Journal of Addictive Diseases, 28*(1), 21-27.

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

Hayes, S.C., Wilson, K.G., Gifford, E.V., Bissett, R., Piasecki, M., Batten, S.V., Byrd, M.,

& Gregg, J. (2004). A Preliminary Trial of Twelve-Step Facilitation and Acceptance and Commitment Therapy With Polysubstance-Abusing Methadone-Maintained Opiate Addicts. *Behavior Therapy, 35*, 667-688.

Hermann, B.A., Meijer, E.C., Schnurr, P.P., Batten, S.V., & Walser, R.D. (2016). Acceptance and commitment therapy for co-occurring PTSD and substance use: A manual development study. *Journal of Contextual Behavioral Science, 5*(4), 225-234.

Haug, S., Lucht, M.J., John, U., Meijer, C., & Schaub, M.P. (2015). A pilot study on the feasibility and acceptability of a text message-based after-care treatment programme among alcohol outpatients. *Alcohol and Alcoholism, 50*(2), 188-194.

Ilgen, M., & McKellar, J. (2005). Abstinence self-efficacy and abstinence 1 year after substance use disorder treatment. *Journal of Consulting and Clinical Psychology, 73*(6), 1175-1180.

Jason, L.A., David. M.I., & Ferrari, J.R. (2007). The need for substance abuse after-care: longitudinal analysis of Oxford House. *Addictive Behaviors, 32*(4), 803-818.

Johns, L.C., Oliver, J.E., Khondokter, M., Byrne, M., Jolley, S., Wykes, T., … Morris, J. (2016). The feasibility and acceptability of a brief Acceptance and Commitment Therapy (ACT) group intervention for people with psychosis: the 'ACT for life' study. *Journal of Behavior Therapy and Experimental Psychiatry, 50*, 257-263.

Kadden, R.M., & Litt, M.D. (2011). The role of self-efficacy in the treatment of substance use disorders. *Addictive Behaviors, 36*(12), 1120-1126.

Kallio, H., Pietilä, A.M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing, 72*(12), 2954-2965.

Karas, D., Cieciuch, J., & Keyes, C.L.M. (2014). The Polish adaptation of the Mental Health Continuum-Short Form (MHC-SF). *Personality and Individual Differences, 69*, 104-109.

Kelly, J.F., Stout, R.L., Magill, M., Tonigan, J.S., & Pagano, M.E. (2011). Mechanisms of behavior change in alcoholics anonymous: does Alcoholics Anonymous lead to better alcohol use outcomes by reducing depression symptoms? *Addiction, 105*(4), 626-636.

Keyes, C.L.M., Wissing, M., Potgieter, J.P., Temane, M., Kruger, A., & van Rooy, S. (2008).Evaluation of the mental health continuum-short form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology & Psychotherapy*, 15(3), 181–192.

Kok, T., de Haan, H.A., van der Meer, M., Najavits, L.M., & de Jong, C.A.J. (2015). Screening of current Post-Traumatic Stress Disorder in patients with Substance Use Disorder using the Depression, Anxiety and Stress Scale (DASS-21): a reliable and convenient measure. *European Addiction Research, 21*(2), 71-77.

Lamers, S.M.A., Glas, C.W., Westerhof, G.J., & Bohlmeijer, E.T. (2012). Longitudinal Evaluation of the Mental Health Continuum-Short Form (MHC-SF): Measurement Invariance Across Demographics, Physical Illness, and Mental Illness. *European Journal of Psychological Assessment, 28(*4), 290-296.

Lamers, S.M.A., Westerhof, G.J., Bohlmeijer, E.T., ten Klooster, P.M., & Keyes, C.L.M. (2011). Evaluating the Psychometric Properties of the Mental Health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology, 67*(1), 99-110.

Lanza, P.V., Garcia, P.F., Lamelas, F.R., & Gonzalez-Menendez, A. (2014). Acceptance and Commitment Therapy Versus Cognitive Behavioral Therapy in the Treatment of Substance Use Disorder With Incarcerated Women. J*ournal of Clinical*

*Psychology, 70*(7), 644-657.

Lappalainen, P., Granlund, A., Siltanen, S., Ahonen, S., Vitikainen, M., Tolvanen, A., & Lappalainen, R. (2014). ACT Internet-based vs face-to-face? A randomized controlled trial of two ways to deliver Acceptance and Commitment Therapy for depression symptoms: An 18-month follow-up. *Behavior Research and Therapy, 61*, 43-54.

Lappalainen, P., Langrial, S., Oinas-Kukkonen, H., Tolvanen, A., & Lappalainen, R. (2015). Web-Based Acceptance and Commitment Therapy for Depression Symptoms With Minimal Support: A Randomized Controlled Trial. *Behavior Modification, 39*(6), 805-834.

Laudet, A.B., Cleland, C.M., Magura, S., Vogel, H.S., & Knight, E.L. (2004). Social support mediates the effects of dual-focus mutual aid groups on abstinence from substance use. *American Journal of Community Psychology, 34*(3-4), 175-185.

Lee, E.B., An, W., Levin, M.E., & Twohig, M.P. (2015). An initial meta-analysis of Acceptance and Commitment Therapy for treating substance use disorders. *Drug and Alcohol Dependence, 155*, 1-7.

Lovibond & Lovibond, 1995. The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behavior Research and Therapy, 33*, 335-343.

Malone, M. & Hoffmann, N. (2016). A comparison of DMS-IV versus DSM-5 Substance Use Disorder diagnoses in adolescent populations. *Journal of Child & Adolescent Substance Use, 25*(5), 399-408.

McKay, J.R. (2001). Effectiveness of continuing care interventions for substance users. *Sage Journals, 25*(2), 211-232.

Menéndez, A.G., García, P.F., Lamelas, F.R., & Lanza, P.V. (2014). Long-term outcomes of Acceptance and Commitment Therapy in drug-dependent female I nmates: A randomized controlled trial. *International Journal of Clinical and Health Psychology, 14*, 18-27.

Ng, F., Trauer, T., Dodd, S., Callaly, T., Campbell, S., & Berk, M. (2007). The validity of the 21-item version of the depression anxiety stress scales as a routine clinical outcome measure. *Acta Neuropsychiatrica, 19*(5), 304–310.

Osilla, K.C., Hepner, K.A., Munoz, R.F., Woo, S., & Watkins, K. (2009). Developing an integrated treatment for substance use and depression using cognitive-behavioral therapy. *Journal of Substance Abuse Treatment, 37*(4), 412-420.

Perugini, M.L.L., de la Iglesia, G., Solano, A.C., & Keyes, C.L.M. (2017). The Mental Health Continuum-Short Form (MHC-SF) in the Argentinean context: confirmatory factor analysis and measurement invariance. *Europes Journal of Psychology, 13*(1), 93-108.

Petrillo, G., Capone, V., Caso, D., & Keyes, C.L.M. (2015). The Mental Health Continuum-Short Form (MHC-SF) as a measure of well-being in the Italian context. *Social Indicators Research, 121*(1), 291-312.

Pidd, K., Roche, A., & Fischer, J. (2015). A recipe for good mental health: A pilot randomised controlled trial of a psychological wellbeing and substance use intervention targeting young chefs. *Drugs-education prevention and policy, 22*(4), 352-361.

Pots, W.T.M., Fledderus, M., Meulenbeek, P.A.M., Klooster, P.M. ten, Schreurs, K.M.G., & Bohlmeijer, E.T. (2015). Acceptance and commitment therapy as a web-based intervention for depression symptomatology: results of a randomized controlled trial. *British Journal of Psychiatry*, Aug 2015, DOI: 10.1192/bjp.bp.114.146068.

Robert Wood Johnson Foundation. (2008). Semi-structured interviews. Retrieved June 5, 2016 from: http://www.qualres.org/HomeSemi-3629.html.
Sannibale, C., Hurkett, P., van den Bossche, E., O'Connor, D., Zador, D., Capus, C., Gregory, K., & McKenzie, M. (2003). After-care attendance and post-treatment functioning of severely substance dependent residential treatment clients. *Drug Alcohol Review, 22*(2), 181-190.
Schaefer, J.A., Harris, A.H., Cronkite, R.C., & Turrubiartes, P. (2008). Treatments staff's continuity of care practicalities, patients' engagement in continuing care, and abstinence following outpatient substance-use disorder treatment. *Journal of Studies on Alcohol and Drugs, 69*(5), 747-756.
Schippers, G., Broekman, T.G., Buchholz, A., Koeter, M.W.J., & van den Brink, W. (2010). Measurements in the Addictions for Triage and Evaluation (MATE): an instrument based on the World Health Organization family of international classifications. *Addiction, 105*(5), 862-871.
Skanavi, S., Lauqueille, X., & Aubin, H.J. (2011). Mindfulness based interventions for addictive disorders: a review. *L'Encephale, 37*(5), 379-387.
Smout, M.F., Longo, M., Harrison, S., Minniti, R., Wickes, W., & White, J.M. (2010). Psychosocial treatment for methamphetamine use disorders: a preliminary randomized controlled trial of cognitive behavior therapy and acceptance and commitment therapy. *Substance Abuse, 31*, 98-107
Smyth, B.P., Barry, J., Lane, A., Cotter, M., O'Neill, M., Quinn, C., & Keenan, E. (2005). In-patient treatment of opiate dependence: medium-term follow-up outcomes. *The British Journal of Psychiatry, 187*, 360-365.
Stevens, E., Jason, L.A., Ram, D., & Light, J. (2015). Investigating Social Support and Network Relationships in Substance Use Disorder Recovery. *Substance abuse, 36*(4), 396-399.
Stotts, A.L., Green, C., Masuda, A., Grabowski, J., Wilson, K., Northrup, T.F., Moeller, F.G., & Schmitz, J.M. (2012). A stage I pilot study of acceptance and commitment therapy for methadone detoxification. *Drug and alcohol dependence, 125*, 215-222.
Tate, S.R., Wu, J., McQuaid, J.R., Cummins, K., Shriver, C., Krenek, M., & Brown, S.A. (2008). Comorbidity of substance dependence and depression: role of life stress and self-efficacy in sustaining abstinence. *Psychology of Addictive Behaviors, 22*(1), 47-57.
Taylor, O.D., & Williams-Salisbury, E. (2015). Coping skills and the self-efficacy of substance-using women versus non-substance-using women. *Journal of Human Behavior in the Social Environment, 25*(4), 351-359.
Tuten, M., Jones, H.E., Lertch, E.W., & Stitzer, M.L. (2007). After-care plans of inpatients undergoing detoxification. *American Journal of Drug and Alcohol Abuse, 33*(4), 547-555.
Tsai, J.H.C., & Thompson, E.A. (2013). Impact of social discrimination, job concerns and social support on Filipino immigrant worker mental health and substance use. *American Journal of Industrial Medicine, 56*(9), 1082-1094.
United Nations Office on Drugs and Crime (2016). World Drug Report 2016. Retrieved June 3, 2017 from http://www.unodc.org/doc/wdr2016/WORLD_DRUG_REPORT_2016_web.pdf.
Vanderplasschen, W., Bloor, M., & McKeganey, N. (2010). Long-term outcomes of after-care participation following various forms of drug abuse treatment in Scotland. *Journal of Drug Issues, 40*(3), 703-728.
Witkiewitz, K., Warner, K., Sully, B., Barricks, A., Stauffer, C., Thompson, B.L., &

Luoma, J.B. (2014). Randomized trial comparing mindfulness-based relapse prevention with relapse prevention for women offenders at a residential addiction treatment center. *Substance Use & Misuse, 49*(5), 536-546.

Wood, B. M., Nicholas, M. K., Blyth, F., Asghari, A., & Gibson, S. (2010). The utility of the short version of the depression anxiety stress scales (DASS-21) in elderly patients with persistent pain: does age make a difference? *Pain Medicine, 11*(12), 1780–1790.

# Appendices

## Appendix A – Evaluation form in Dutch

## Evaluatie pilot Voluit Leven

Wij zijn benieuwd naar jouw ervaringen over de pilot Voluit Leven die je hebt gevolgd. Hieronder vind je een aantal vragen die gaan over de tevredenheid en de opzet van behandeling.

Zou je deze vragen willen beantwoorden? De resultaten worden gebruikt om de behandeling te verbeteren.

Jouw medewerking wordt zeer gewaardeerd. Je kunt de ingevulde vragenlijst terugsturen via de e-mail vóór het interview.

**Deel 1: Algemene evaluatie over de verslavingsbehandeling**
Hieronder staan vragen over de algemene indruk van de behandeling. Zou je het voor jou best passende antwoord willen aankruisen?

**1.** Wat vind je van de kwaliteit van de behandeling die je hebt ontvangen?
- o Uitstekend
- o Goed
- o Redelijk
- o Slecht

**2.** Heb je het soort behandeling ontvangen dat je hoopte te krijgen?
- o Nee, beslist niet
- o Nee, nauwelijks
- o Ja, in het algemeen wel
- o Ja, zeker

**3.** In hoeverre heeft de behandeling aan jouw wensen voldaan?
- o Aan al mijn wensen is voldaan
- o Aan de meeste van mijn wensen is voldaan
- o Aan slechts enkele van mijn wensen is voldaan
- o Aan geen van mijn wensen is voldaan

**4.** Stel dat een vriend(in) dezelfde hulp nodig zou hebben, zou je dan de behandeling aanbevelen?
- o Nee, beslist niet
- o Nee, ik denk van niet
- o Ja, ik denk van wel
- o Ja, zeker

**5.** Hoe tevreden ben je over de hoeveelheid hulp die je hebt ontvangen?
- o Zeer tevreden
- o Tamelijk tevreden
- o Tamelijk ontevreden
- o Zeer ontevreden

**6.** Heeft de behandeling je geholpen beter om te gaan met jouw klachten?
- o Ja, het heeft aanzienlijk geholpen
- o Ja, het heeft wel wat geholpen
- o Nee, het heeft eigenlijk niet geholpen
- o Nee, het heeft de zaak alleen maar verergerd

**7.** Hoe tevreden ben je over het geheel genomen met de behandeling die je hebt ontvangen?
- o Zeer tevreden
- o Tamelijk tevreden
- o Tamelijk ontevreden
- o Zeer ontevreden

8. Zou je de behandeling nog een keer doen, als je dat nodig zou hebben?
   - Beslist niet
   - Nee, ik denk van niet
   - Ja, ik denk van wel
   - Ja, zeker

**Deel 2: Evaluatie van onderdelen van de verslavingsbehandeling**

1. Hieronder staat een lijst met onderdelen van de behandeling. Zou je per onderdeel willen aankruisen wat je vond van de hoeveelheid?

| Hoeveelheid | Veel te weinig | Te weinig | Precies goed | Te veel | Veel te veel |
|---|---|---|---|---|---|
| **Het aantal sessies** | | | | | |
| **Hoeveelheid teksten** | | | | | |
| **Hoeveelheid huiswerk** | | | | | |
| **Hoeveelheid opdrachten tijdens de sessies** | | | | | |

2. Hieronder staat een lijst met onderdelen van de behandeling. Zou je willen aankruisen hoe zinvol je de onderdelen vond?

| Zinvolheid | Helemaal niet zinvol | Niet zinvol | Een beetje zinvol | Zinvol | Heel zinvol |
|---|---|---|---|---|---|
| **Mindfulness-oefeningen** | | | | | |
| **Bijhouden van pijnlijke momenten en gedachten** | | | | | |
| **Acceptatie van onprettige gevoelens** | | | | | |
| **Gedachten waarnemen (cognitieve defusie)** | | | | | |
| **Leven naar waarden** | | | | | |
| **Huiswerk maken** | | | | | |

**Deel 3: Evaluatie van de deelname aan de verslavingsbehandeling**

1. Wat vond je van de samenhang tussen de verschillende onderdelen (zoals tussen de mindfulness oefeningen, gedachten waarnemen en leven naar waarden)?

2. Kun je beschrijven aan welke bijeenkomsten je het meeste hebt gehad? Waarom heb je het meeste aan deze bijeenkomsten gehad?

3. Kun je beschrijven aan welke bijeenkomsten je het minste hebt gehad? Waarom heb je het minste aan deze bijeenkomsten gehad?

**4.** Welke aanbevelingen heb je voor verbetering van de behandeling?

| |
|---|
| |

**5.** Welke rapportcijfer geef in je zijn algemeenheid voor de behandeling? Omcirkel het cijfer.

1 2 3 4 5 6 7 8 9 10

Heel slecht Heel goed

**Hartelijk dank voor je medewerking!**

## Appendix B – Semi-structured interview guide in English

### Part A: Questions on the experiences with the intervention

1. In general, what were your experiences with the intervention?
   - What did you learn from it?
   - Was it different than usual treatment?
   - Was that good or bad?

2. Did you have experience with ACT interventions before?

3. Did the intervention meet your expectations?

4. If we take a look at the different parts of the intervention, what stayed with you the most? Can you describe why?

5. How have you experienced the mindfulness exercises? Did these benefit you?

6. How have you experienced the part in which you had to think about your values and live according to those? Did this benefit you?

7. Which session was specifically helpful to you? Why?
   - Which one was less helpful? Why?
   - Was there a specific assignment that was helpful? Why?
   - Was there a specific assignment that was less helpful? Why?
   - Did you think the sessions fit together? Why?

8. How have you experienced the workload?
   - What did you think of the amount of sessions?
   - What did you think of the amount of homework?

9. How have you experienced working in a group setting?
   - How was the support from group members?
   - How was the support from trainers?

10. How did the treatment help you to better deal with your complaints?

11. What do you think of the fact that the intervention was offered as after-care?
    - Did add value to the intervention? Why?
    - Did it have added value when it comes to addiction care?

12. What is a strong point and weak point of the treatment? Why?

13. Do you have any suggestions for improving the treatment?

**Part B: The impact of the intervention on wellbeing, depression symptoms and substance use**

1. Has the treatment reduced your complaints?
   - Which complaints changed?
   - In what way did they change?
   - What part of the intervention was helpful in this?

2. How has the intervention changed your substance use?
   - Which parts of the intervention contributed to that?

3. How has the intervention changed your depression symptoms?
   - Ability to relax
   - Mood
   - Physical complaints
   - Emotional reactions
   - Worrying
   - View on the future
   - Self-worth
   - Life-goal
   - Anxiousness

4. How has the intervention changed your wellbeing?
   - Feeling of happiness
   - Feeling of community

## Appendix C – Semi-structured interview guide in Dutch

### Deel A: Vragen over de ervaringen met de interventie

1. Wat is uw algemene ervaring met de interventie?
   - Wat heeft u ervan geleerd?
   - Was dit anders dan de algemene verslavingsbehandeling?
   - Was dat goed of slecht?

2. Had u al eerder ervaring opgedaan met een ACT-interventie?

3. Voldeed de interventie aan uw verwachtingen?

4. Als we kijken naar de verschillende onderdelen van de interventie, welke is u dan het meeste bijgebleven?

5. Hoe vond u de mindfulness-oefeningen? Denkt u dat die u hebben geholpen?

6. Hoe vond u het gedeelte waarin u nadacht over de waarden die belangrijk zijn in uw leven? Heeft dit u geholpen?

7. Welke sessie was vooral nuttig voor u? Waarom?
   - Welke was minder nuttig voor u? Waarom?
   - Was er een specifieke opdracht die u heel nuttig vond, en waarom?
   - Was er een specifieke opdracht die u minder nuttig vond, en waarom?
   - Vind u dat de sessies allemaal bij elkaar passen? Waarom?

8. Wat vond u van de hoeveelheid werk en tijd die u in de interventie moest steken?
   - Wat vond u van het aantal sessies?
   - Wat vond u van de hoeveelheid huiswerk?

9. Hoe heeft u het ervaren om de interventie in een groep te doorlopen?
   - Hoe was de steun van groepsgenoten?
   - Hoe was de steun van trainers?

10. Hoe heeft de interventie geholpen om met uw klachten om te gaan?

11. Wat vond u ervan dat de interventie als nazorg werd aangeboden?
    - Had dat een toegevoegde waarde? Waarom?
    - Wat was de toegevoegde waarde op het gebied van verslaving?

12. Wat is een sterk en een zwak punt van deze interventie? Waarom?

13. Heeft u suggesties om de interventie te verbeteren?

**Part B: De impact van de interventie op welbevinden, depressiesymptomen en middelengebruik.**

1. In hoeverre heeft deze interventie ervoor gezorgd dat uw klachten zijn veranderd?
   - Welke klachten zijn veranderd?
   - Hoe zijn ze veranderd?
   - Welk deel van de interventie heeft hier vooral in meegewerkt?

2. In hoeverre heeft de interventie uw middelengebruik veranderd?
   - Welk deel van de interventie heeft hier vooral in meegewerkt?

3. In hoeverre heeft de interventie uw depressieklachten veranderd?
   - Kunnen relaxen
   - Stemming
   - Lichamelijke klachten
   - Emotionele reacties
   - Piekeren
   - Toekomstperspectief
   - Eigenwaarde
   - Levensdoel
   - Angstigheid

4. In hoeverre heeft de interventie uw welbevinden veranderd?
   - Gevoelens van geluk
   - Verbondenheid met mensen

## Appendix D – coding scheme

<table>
<tr><td>General impression<br>- Positive/negative<br>- Recommend to others<br>- ‘Woolly’<br>- Tool<br>- Skeptical</td><td>Added value<br>- individual as a whole<br>- mindfulness<br>- underlying motivations</td><td>Mindfulness<br>- Focus on body<br>- Control breathing<br>- Awareness<br>- Reflection<br>- Observing thoughts</td></tr>
<tr><td>Acceptance<br>- Control thoughts<br>- Broader view<br>- Milder towards self<br>- Saying no<br>- Increased acceptance</td><td>Group and trainer<br>- Support group<br>- Support trainer<br>- Group size<br>- Similar substances<br>- Change in group</td><td>Separate parts and assignments<br>- Mountain meditation<br>- Waterfall metaphor<br>- Backpack<br>- Values<br>-Reflection<br>- Role-plays</td></tr>
<tr><td>Homework<br>- Discussion of homework<br>- Decent amount<br>- Difficult text<br>- Homework</td><td>Time investment<br>- Intervention length<br>- Sessions length<br>- Time investment</td><td>Wellbeing<br>- Feelings of happiness<br>- Calmness<br>- Connectedness<br>- Wellbeing</td></tr>
<tr><td>Depression<br>- Depression symptoms<br>- Sleep</td><td>Substance use<br>- Substance use</td><td>Craving<br>- Craving<br>- Fight craving<br>- Craving-related thoughts</td></tr>
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