# Exploring the Effectiveness and Drop-out of an ACT-based Aftercare Intervention for Individuals with a Substance Use Disorder: A Mixed Methods Study

*Master Thesis*

---

A.M. (Anne Maureen) Brands
Faculty of Behavioural Management and Social Sciences, University of Twente

201600169: Master thesis Health Psychology & Technology

Dr. M.E. Pieterse and Dr. L. L. Kramer

17 July 2023

## Abstract

**Objective.** This mixed method study aimed to investigate the effectiveness of the aftercare programme 'Living to the Full' for people with a SUD in improving refusal self-efficacy, wellbeing, psychological flexibility, and maintenance of the abstinence/reduced use. In addition, this study aimed to identify the factors that are associated with the drop-out of participants. Lastly, this study aimed to investigate the overall experiences of the participants with Living to the Full. **Method.** A total of 38 participants was recruited via convenience sampling and participated in the intervention. Quantitative data were gathered via an online questionnaire during pre- and post-intervention. Measures were substance use, refusal self-efficacy, wellbeing, psychological flexibility, and client satisfaction. These variables were analysed via different t-tests. Qualitative data were collected via semi-structured post-intervention interviews and were analysed via thematic based analysis. **Results.** Of all the completers, 53.3% of the participants stayed abstinent. However, the results showed that the intervention did not significantly improved refusal self-efficacy, wellbeing, and psychological flexibility. That being said, participants reported that they noticed results, such as reduced cravings or feeling calmer. Factors that influenced drop-out included falling behind or experiencing feelings of confrontation. On the other hand, refusal self-efficacy, wellbeing, and psychological flexibility at baseline did not explain drop-out. Lastly, participants were satisfied with Living to the Full. The intervention got an average score of 7.8. The participants found it to be fitting for their needs. **Conclusion.** Living to the Full has potential to serve as such an aftercare programme. Although the findings of this study only demonstrate a possible positive impact on staying abstinent or maintaining substance use at a controlled level, participants did report a positive experience with the intervention. Future research should further investigate the effectiveness of Living to the Full and which types of people will benefit most from Living to the Full. That being said, it is important to note that the dropout rate was considerable, with less than 50% of the participants completing the intervention. More research is needed to understand the causes of drop-out and decrease the drop-out rate.

## Introduction

Substance use disorder (SUD) can be defined as a chronic disorder (Uhl et al., 2019). However, this does not imply that no treatment is possible. SUDs can be successfully managed with the right treatment (NIDA, 2022; Witkiewitz et al., 2020). Furthermore, it is important that SUD treatments are being tailored to the needs and problems of the individual. This means that treatment goals also differ between individuals. Individuals indicated daytime activities, abstinence or reduction of use, and lowering psychological distress as most important treatment goals (Joosten et al., 2011). The treatment can consist of behavioural therapy, medication, or a combination of the two. The type of behavioural therapy that is mostly used is cognitive-behavioural therapy (CBT; NIDA, 2022). This therapy focuses on the connections between thought, feeling, and behaviour. It aims to get people to recognise, avoid, and cope with the situations in which they are most likely to use drugs (An et al., 2017). Furthermore, a novel approach for SUD treatment is the utilisation of third-wave behavioural therapies.

The third-wave therapies focus more on the context and function of the unpleasant internal events, while previous CBTs focus more on the content of the unpleasant internal events (Stotts & Northrup, 2015). One example of these third-wave therapies is Acceptance and Commitment Therapy (ACT; Hayes et al., 2006). The main goal of ACT is to increase psychological flexibility. According to Hayes and Levin (2012), psychological flexibility can be described as the ability to approach one's present experience with openness and awareness, including the negative aspects, and to change behaviour in accordance with their personal values. Psychological flexibility can be seen as a determinant of behaviour. ACT tries to target psychological flexibility with six different core processes: acceptance, cognitive defusion, being present, self as context, values, and committed action (Hayes et al., 2006). ACT-based interventions were found to be promising interventions for individuals with a SUD (Gloster et al., 2020; Ii et al., 2019; Öst, 2014). Gloster et al. (2020) even suggested that ACT is equally effective as regular CBT.

Nevertheless, relapse after following treatment is still very common. 40% to 60% of individuals treated for their addiction relapse within one year of finishing their treatment (McLellan et al., 2000). Therefore, it is important that SUD treatments adopt a chronic care perspective, with continuing care after the initial treatment (Lenaerts et al., 2014). Continuing care can also be referred to as 'aftercare'. Following an aftercare programme can have positive effects on managing a SUD (Blodgett et al., 2014; McKay, 2021). The goal of aftercare is to sustain the positive effects that participants achieved in the initial treatment (McKay, 2009). Research showed a significant short- and long-term abstinence effect for individuals that

followed aftercare programmes (Godley et al., 2007; McKay, 2021). In addition, aftercare also tends to slow the expected relapse process for alcohol use (Kaminer et al., 2008). However, even though the current effects found for the effectiveness of aftercare are promising, they are also limited (Blodgett et al., 2014). Most research only found small effects (Blodgett et al., 2014; Lenaerts et al., 2014). However, it could be argued that even small improvements in outcome could be important for the individual patient or society (Lenaerts et al., 2014). Nevertheless, more research needs to be done into the effectiveness of aftercare.

Aftercare does not come in one form. Aftercare can be offered in different forms, from individual counselling to group treatments. However, there seems to be a lack of consensus about the effective components and length of the aftercare (Blodgett et al., 2014). As a result, it is not clear yet which aftercare form is most beneficial or effective for people with a SUD. Some research suggests that active interventions, such as providing coping skills and/or increasing motivation, have better outcomes than the usual aftercare, such as supportive counselling (Lenaerts et al., 2014; McKay, 2021). Blodgett et al. (2014) suggests that CBT-based aftercare had generally better outcomes than their comparison conditions, such as general supportive counselling or a no-treatment control condition. However, research did point out that higher participation in aftercare may lead to higher abstinence rates (Bergman et al., 2015; McKay, 2021). Therefore, it is important that people are being stimulated to participate in the aftercare programmes.

One important limitation of the current aftercare programmes is their high drop-out rates. Drop-out of treatment is very common in addiction care (Brorson et al., 2013). The average drop-out rate in general addiction treatment ranges between 10% to 30% (McKellar et al., 2006), with some research suggesting it might reach 50% (Brorson et al., 2013; McHugh et al., 2013). In this study, drop-out is defined as not completing the planned treatment and, thus, quitting early (Andersson et al., 2018). According to research, one major risk factor for drop-out is young age (Brorson et al., 2013; McHugh et al., 2013; McKellar et al., 2006; Şimşek et al., 2019). This means that younger participants are more likely to discontinue their addiction treatment. In addition, severe substance desire or more frequent drug involvement were also found as risk factors for drop-out (McKellar et al., 2006; Şimşek et al., 2019). On the other hand, McKellar et al. (2006) also found that people who had less severe alcohol dependence were also more likely to drop-out. This could be because these people have a lower perceived treatment need (Lappan et al., 2020), which influence their decision to stop because they feel like they do not need the help. Brorson et al. (2013) found that low alliance, which is defined as a complex transaction between therapist and patient, also led to increased drop-out. Next,

Ghouchani et al. (2022) concluded that a lack of self-efficacy could also lead to drop-out. They found two different categories in regard to self-efficacy: low self-confidence and low refusal self-efficacy. Ghouchani et al. (2022) did not specify which category had a bigger impact. It should be noted that these risk factors were found for drop-out of treatment in general, not specifically for drop-out of aftercare. To the researcher's knowledge, there is little to no literature on the specific drop-out risks for aftercare programmes.

There are also some factors that might reduce the risk of drop-out. Research found that the feeling of support is positively related to finishing the treatment (McKellar et al., 2006). Furthermore, as mentioned previously, if participants have a greater perceived treatment need, they are also more likely to finish the treatment (Lappan et al., 2020; McKellar et al., 2006). Similarly to the drop-out risks, these factors are not specific for aftercare programmes, but rather for addiction treatment in general. There seems to be no literature on drop-out prevention specifically for addiction aftercare programmes.

As mentioned earlier, third wave therapies are upcoming, with ACT as one of the most promising techniques. However, ACT has not yet been studied as an aftercare programme, but rather as an alternative addiction treatment. To date, there is no literature regarding the effectiveness of ACT-based aftercare programmes. To gain more insight, this study will focus on the effectiveness of one ACT-based aftercare in particular. This aftercare programme is called 'Living to the Full' (translated from Dutch: 'Voluit Leven') and is designed by Bohlmeijer and Hulsbergen (2009). Living to the Full combines ACT with mindfulness, with the goal of increasing psychological flexibility. As mentioned before, psychological flexibility focuses on approaching all experiences with openness and awareness and changing behaviour in accordance with personal values. Therefore, the programme wants to teach the participants how to live their life according to their values. Moreover, the programme aims to teach the participants how to handle their emotions and unhelpful thoughts.

Living to the Full is not specifically made for individuals with a SUD, but for anyone who wants to live to the full (Bohlmeijer & Hulsbergen, 2009). However, one aspect of psychological flexibility, namely experiential avoidance, is particularly apparent in substance use. Additionally, similar constructs such as distress intolerance and thought suppression are also know predictors of substance abuse. This makes sense since drugs and alcohol are often used to control or suppress unwanted thoughts, feelings, or experiences (Luoma et al., 2011). Therefore, Living to the Full can be relevant to people with a SUD. If people with a SUD have higher levels of psychological flexibility, they will have a greater ability to deal with the unwanted thoughts, feelings, or experiences, without escaping or avoiding them, and to stay

motivated to change. Theoretically, this greater ability will lead to reductions in substance use (Ii et al., 2019). However, there seems to be little research on the actual influence of psychological flexibility on substance use. That being said, Ii et al. (2019) did suggest that interventions based on changing psychological flexibility appear to be effective when compared to other forms of therapy, such as traditional counselling.

To make Living to the Full more fitted for SUDs, Schokker (2021) made a few adaptations, such as adding exercises focused on having cravings. Besides increasing psychological flexibility, the adjusted programme of Schokker (2021) also aims to increase refusal self-efficacy and wellbeing. Refusal self-efficacy can be defined as someone's beliefs in their ability to refuse or resist a drink or other substance in different situations (Gómez Plata et al., 2022). Research shows that people with lower refusal self-efficacy drink more frequently, drink in higher quantity, have more frequent episodes of binge drinking, and experience more alcohol-related problems (Buyucek et al., 2019; Gómez Plata et al., 2022). Therefore, refusal self-efficacy can be seen as a determinant of behaviour (Chavarria et al., 2012). Research also found that higher levels of self-efficacy lower the likelihood of substance relapse (Chavarria et al., 2012). Theoretically, people with higher levels of refusal self-efficacy are better capable of turning down a drink or other substance. This could mean that these people are better in coping with their substance use in social situations.

If Living to the Full is effective, it is expected that following the programme will increase the levels of psychological flexibility, refusal self-efficacy, and wellbeing within an individual. Theoretically, this increase will lead to the participant being more able to cope with their substance use. Because this study is interested in the change in levels of psychological flexibility, refusal self-efficacy, and wellbeing, this study will refer to those variables as outcome variables.

One limitation is that there is no literature on the effectiveness of Living to the Full for SUDs. Nevertheless, Living to the Full did show promising effects when adapted to other specific psychopathology, like anxiety (Witlox et al., 2021), or depression (Bohlmeijer et al., 2011; Fledderus et al., 2012). Given that SUDs can also be seen as (partly) mental problems (NIDA, 2022) and considering the promising effect of Living to the Full on other mental problems, it is expected that this programme might help people with a SUD too.

This current study is a follow-up study for the study of Kattenberg (2022). That study aimed to investigate the effectiveness and acceptability of Living to the Full. They used a mixed method approach and combined data from online surveys and interviews. They found that Living to the Full showed a promising potential to be an effective and acceptable aftercare

programme in the context of SUD. Even though, they used a small sample (*n* = 4), they found a potential promising effect for increasing refusal self-efficacy, wellbeing, and psychological flexibility in participants. In addition, they also found that participants were overall positive about the intervention. However, the programme did have a high drop-out rate, namely 60%. Kattenberg (2022) reported that the main reasons for drop-out were relapse and inconvenient timing. This current study builds on the study of Kattenberg (2022) in three ways. First, this study will do more research into the effectiveness of the programme. More participants will be used than Kattenberg (2022) used in their study. Second, because of the high drop-out rate found in Kattenberg (2022), this study will look into factors that can better explain this drop-out. Lastly, this study will also explore the experiences of the participants. These experiences will help to better understand the drop-out and adherence. In addition to the three aims, three research questions were formulated:

1) Is the intervention effective for people with a SUD; i.e. does the intervention improve self-efficacy, wellbeing, psychological flexibility, and the maintenance of the abstinence/reduced use in people with a SUD?
2) Which factors can explain drop-out of treatment?
3) How did the participants experience Living to the Full, and what can be adjusted to improve the intervention?

To study the three aims of this study, a mixed method approach was chosen. By combining the quantitative and qualitative data, this study can give a more comprehensive understanding regarding the aims. Moreover, the quantitative data can support the findings of the qualitative data, and vice versa.

# Method

## Design

This current study used a mixed-methods design. A mixed-methods approach was chosen, because this allows the study to elaborate on both the experiences of the participants and the effectiveness of the intervention. In addition, this study also used an experimental design. The intervention was tested in a longitudinal single group. Participants were recruited via convenience sampling. Participants were asked to participate in the study, so the data was collected on voluntary basis. The quantitative data was collected pre- (t=0) and post-intervention (t=1) via an online survey among the participants. The qualitative data was collected via semi-structured interviews with the participants after they finished the intervention. The intervention itself took place face-to-face at different locations of Tactus and lasted around 9 weeks. This study got ethical permission from both the Research Ethics Committee at Radboud University Medical Centre (2021-8338) and the Ethics Committee BMS at the University of Twente (211318).

## Participants

A form of non-probability sampling was used in this study. The participants were recruited via the convenience sampling method. Participants either asked to participate in the intervention or they were asked to participate by a therapist. The inclusion criteria were:

- having finished a treatment focused on their substance use;
- having stability in comorbid diagnosis;
- being abstinent or having control over substance use;
- being eighteen years or older;
- and being fluent in Dutch.

When these inclusion criteria were applicable, people could participate in the intervention if they wanted one or more of these following benefits:

- gain more insight into how to deal with critical and judgmental thoughts;
- have guidance on how to deal with busyness in their heads, overthinking and/or worrying;
- become kinder to themselves;
- develop a more accepting attitude towards themselves and their live;
- or investigate what is important to them in their lives and how to give direction to their lives.

Individuals who were not abstinent, had no control over substance use, or were already undergoing another treatment were excluded from participating in the intervention. However, in some cases, this last criterion was not consistently upheld, such as when filling up a group.

In total, 39 participants filled in the pre-intervention questionnaire. These participants were spread over seven groups at different locations within Tactus. Of these 39 participants, one participant did not fill in their research number, which is used to connect individuals' pre- and post-intervention questionnaires and was therefore excluded from this study. This means that a total of 38 participants were included in this study. Of these participants, 21 were male and 17 were female. The participants' age ranged between 20 and 64 years old (M = 44.1, SD = 12.5). See Table 1 for the baseline characteristics.

In total, ten participants agreed to participate in an interview. Of these ten participants, six were male and four were female. Eight participants followed the whole intervention. One participant completed the intervention and continued on an individual level with the intervention. One participant stopped the group intervention but continued with the intervention on an individual level. One participant dropped out of the intervention.

**Table 1**

*Baseline characteristics of the participants*

| Baseline characteristics | N | % |
|---|---|---|
| Gender | | |
| Male | 21 | 55.3 |
| Female | 17 | 44.7 |
| Age | | |
| 18-30 | 8 | 21.1 |
| 31-40 | 4 | 10.5 |
| 41-50 | 13 | 34.2 |
| 51-65 | 11 | 28.9 |
| Highest educational level | | |
| VMBO | 5 | 13.2 |
| MAVO | 1 | 2.6 |
| HAVO | 3 | 7.9 |
| MBO | 13 | 34.2 |
| HBO | 13 | 34.2 |

| | | |
|---|---|---|
| University | 2 | 5.3 |
| Other | 1 | 2.6 |
| Previous treatment | | |
| Ambulant | 20 | 52.6 |
| Clinical | 9 | 23.7 |
| Addiction/trauma treatment | 1 | 2.6 |
| Combination of ambulant/clinical | 2 | 5.2 |
| Currently following treatment | 2 | 5.2 |
| None | 2 | 5.2 |
| Other | 2 | 5.2 |
| Time finished since regular treatment | | |
| Currently following treatment | 5 | 13.2 |
| 0 – 6 months | 14 | 36.8 |
| 6 months – 1 year | 9 | 23.7 |
| More than 1 year | 7 | 18.4 |
| No answer | 3 | 7.9 |
| Primary substance [a] | | |
| Alcohol | 22 | 57.9 |
| Binge-eating | 1 | 2.6 |
| Cannabis | 4 | 10.5 |
| Cocaine | 4 | 10.5 |
| Designer drugs | 1 | 2.6 |
| Gambling | 3 | 7.9 |
| Gaming | 2 | 5.3 |
| None | 1 | 2.6 |

*Note.* [a] Gambling and binge-eating were considered substances.

**Intervention**

The intervention Living to the Full aims to increase the refusal self-efficacy, wellbeing, and psychological flexibility of the participants. As mentioned in the introduction, Living to the Full is based on ACT in combination with Mindfulness Based Cognitive Therapy (MBCT).

The intervention consists of nine weekly group sessions. These sessions are usually two hours long and are given by two therapists, who followed the extra 'Living to the Full' training. At the beginning of the intervention, the participants received a copy of the book 'Voluit Leven'

(Bohlmeijer & Hulsbergen, 2009). The nine sessions are dived into three parts. Each part contains three sessions and focus on a different theme. The first part introduced Living to the Full to the participants. They examine how they deal with psychological distress at this moment. This part also aims at changing their perception to this psychological distress. The second part aims to learn the participants how to give up their resistance to psychological distress, how to deal with thoughts, and teach other resources. The last part is focused on finding values that are most important to the participants and how they want to live based on these values. During the whole intervention, the participants are trained to noticing what is going on inside themselves without judging these feelings or thoughts. Every session the participants also practice with mindfulness exercises, such as the body scan, or breathing exercises. Some sessions also require the participants to do homework, or read in their book, or practice exercises in their daily life, for example doing things with their full attention.

Living to the Full was not designed to be specifically for addiction care. Therefore, this study used the adaption of Living to the Full for the addiction care as described by Schokker (2021). In general, these adaptions entail a greater focus on addiction. So, more information or explanation will be given regarding the substance use of the participants. Specific adaptions are made to sessions 1, 2, 3, and 7. The first adaptation is that session 1 starts with an introduction, so the group gets to know each other and feels more comfortable. The second adaptation is that in session 2 an extra exercise from Bowen et al. (2011) focused on urge surfing will be added. Session 3 emphasises addiction behaviour and its acceptation. Lastly, in session 4 extra information is given about the phases of acceptance as described by (Germer, 2012).

## Measures

The qualitative data was collected only post-intervention via a semi-structured interview. The quantitative data was collected pre- and post-intervention via an online questionnaire.

### *Qualitative measures*

**Semi-structured interview.** The interview (see Appendix A) with the participants were held after they finished the intervention. The interview discussed 6 different topics. Each topic had pre-written questions for the interviewer to ask. The interview usually started with the overall experience of the participant, which was the first topic. Here a broad and open question was asked first. According to the answer, the interviewer would ask some more questions to get a clear overview of the participant's experience. The second topic is about the sessions and missed sessions. Here the experience of the different sessions and themes were discussed. The

third topic was the effectiveness of the intervention. The fourth topic was the reasons to participate or stop with the intervention. The fifth topic was the group dynamics and the therapists. And the last topic was the addition of technology to the intervention. Usually, the topics were discussed in this order. However, sometimes topics are swapped when it made more sense given the answers that the participant gave.

In order to create the interview scheme, a literature search on experiences of participants was done. Therefore, this interview scheme is mostly based on Patient Reported Outcome Measures (PROMs; Van Kessel et al., 2014) and the Consumer Quality Index (CQI; Van Wijngaarden et al., 2008). Subsequently, the research questions of Tactus were kept in mind. A draft of the interview scheme was made and checked by the supervisors of this study. After processing the feedback, the first interview with a participant was conducted. This interview was then examined, and the interview scheme got adjusted according to this first interview. This led to the final form of the interview scheme, which was used for the rest of the interviews.

***Quantitative measures***

Both the pre- and post-intervention questionnaires measured four different constructs, namely: substance use, refusal self-efficacy, wellbeing, and psychological flexibility. In addition, the pre-intervention questionnaire also measured the demographic data, while the questionnaire post-intervention also measured client satisfaction. The questionnaire is the same questionnaire as the one used in the study from Kattenberg (2022).

**Substance use.** The first module of the Measurement in the Addiction for Triage and Evaluations (MATE; Schippers et al., 2011) was used to measure the current substance use, and inherently possible relapse. The MATE measured the participants' substance use in the past 30 days. The participants had to score their substance usage on a seven-point scale, with 1 indicating *Never* to 7 indicating *Every day*. Behavioural addictions such as gaming and sex as well as the use of designer drugs were added to this questionnaire because they are common addictions.

**Refusal self-efficacy.** The Drinking Refusal Self-Efficacy Questionnaire-Revised (DRSEQ-R; Oei et al., 2005) was used to measure the refusal self-efficacy of the participants. This questionnaire had been generalised for all substances. The six-point Likert scale ranged from 1 *I am very certain that I can NOT refuse the substance* to 6 *I am verry certain that I can refuse the substance.* A higher score indicates higher levels of refusal self-efficacy. The refusal self-efficacy measured an individual's belief to resist alcohol on three different subscales: social pressure, opportunistic and emotional self-efficacy. The DRSEQ-R has proved a reliable and

valid measure for adolescents with a SUD (Young et al., 2007), and United States college students (Scully et al., 2018).

**Wellbeing.** The Dutch version of the Mental Health Continuum – Short Form (MHC-SF; Lamers et al., 2011) was used to measure the participants' wellbeing. This questionnaire contains fourteen items. The participants had to score the items on a six-point Likert scale based on how often they felt it in the past week. The scale ranged from 1 *Never* to 6 *(Almost) always*. A higher score indicates higher levels of wellbeing. The MHC-SF contained three different subscales: emotional wellbeing, social wellbeing, and psychological wellbeing. There seems to be no evidence of the validity and reliability for MHC-SF in specific SUD samples. However, it seems applicable in individuals with psychopathology (Franken et al., 2018).

**Psychological flexibility.** The Acceptance and Action Questionnaire for Substance Abuse (AAQ-SA; Luoma et al., 2011) was used to measure the participants' psychological flexibility. This questionnaire contained 18 items which can be dived into two subscales: values commitment and defused acceptance. There was a seven-point Likert scale, with 1 indicating *Never true* and 7 indicating *Always true*. Here a lower score indicates more psychological flexibility, whereas a higher score indicates less psychological flexibility. The AAQ-SA recently proved to be valid amongst Spanish individuals with a SUD (Sánchez-Millán et al., 2022).

**Client satisfaction.** The experiences of the participants were measured with seven questions based on the Client Satisfaction Scale (CSQ-8), translated to Dutch by De Brey (1983). Participants had to indicate if they got enough information prior to the intervention, if the trainer was clear, if their help needs were discussed, and if the intervention was fitted for their needs. Lastly, participants had to score the intervention on a scale from 1 to 10 based on their overall impression, and how likely that they recommend the intervention to others. As mentioned before, these questions were only added to the post-intervention questionnaire.

**Drop-out.** The drop-out was measured by asking the therapists that led the groups which participants dropped out. In addition, researcher numbers on the pre- and post-intervention survey were compared.

**Procedure**

The participants were recruited by the researcher at their first or second group session of the intervention. At the start of the session, participants were handed an informed consent. This informed consent explained the research goal, the execution of the research, what the participants had to do, data management, and contact details. This information was also

explained to the group by the researcher. After the participants gave their consent, they started their first online questionnaire (t0), either by scanning a QR-code or using the weblink. If participants had a question regarding the questionnaire, they could ask the researcher. Participants who were absent from the meeting were asked by the therapists to fill in the questionnaire at home. The post-intervention questionnaire (t1) was administered during the last group meeting. Participants again used a QR-code or the weblink to access the online questionnaire. The researcher was present to assist the participants or answer questions.

Most participants were asked to participate in an interview during their last group meeting. Due to the researcher's schedule, two participants were asked to participate in the interviews during their seventh meeting. Two other participants that had dropped out of the intervention were contacted via their therapist. Then, the therapist provided contact information, with the consent of the participant, so the researcher could ask them if they wanted to participate and scheduled an appointment. If a participant agreed to do the interview, a time and date were scheduled immediately. The interview was either held via Microsoft Teams, by telephone or face-to-face, according to the preference of the participant. The interviews lasted around 30 minutes. At the beginning of the interviews, the researcher asked if the participant agreed to the interview being recorded. When the participant gave their consent, the researcher started a recording on their phone. Only the audio was recorded in order to transcribe the interviews at a later moment.

## Analysis

### *Qualitative data analysis*

The interviews were recorded and transcribed. During the transcribing, private or sensitive data was anonymised. Then the transcripts were imported into the online coding software, ATLAS.ti 23.

For this study, a content analysis has been conducted. The content analysis mostly followed an inductive analysis. This means that the data was analysed individually, and that the codes were created based on the responses in the interview. However, because the interviews were semi-structured, those topics are also coded.

The process of coding was based on the six-phase model by Braun and Clarke (2006). However, these six phases were not followed identically to how they were described. The coding started with getting familiar with the data. This was done through transcribing the data and rereading the interviews. When the transcribing was done, the initial codes were transcribed. This was done by rereading the interviews and coding all the answers. If someone

mentioned more important things in one answer, for example liking the group but disliking the group therapist, these important things were coded separately from each other. If someone mentions the same thing twice in one answer, it was only coded once. When all the interviews were individually coded, all initial codes were revised. Codes that were similar were combined into one code. In addition, codes were also divided into possible themes. This initial code scheme was discussed with the supervisor of this study. After this discussion, the code scheme was modified. Some codes were combined, and other codes were added. An overview of the main codes can be found in Table 2. In total, 8 main codes and 24 subcodes were formulated. The total overview of the used codes can be found in Appendix B.

Via combing the found codes and the quantitative data combined, assumptions could made over the experiences of the participants. In addition, relationships between certain things could be established. Lastly, all the quotes were translated from Dutch to English to use in the results section.

**Table 2**

*An overview of the main codes of the used coding scheme.*

| Main code | Description |
|---|---|
| Overall impression | Participants' general impression of the programme, including positive and negative feedback. |
| Components of Living to the Full | Participants' comments and feedback on the components of Living to the Full. |
| Effectiveness | Participants' feedback on whether or not they found Living to the Full effective, and comments made about the effect of Living the Full on their addiction, daily life and/or mental wellbeing. |
| Completion of Living to the Full | Participants' comments on how much of Living to the Full they completed. |
| Drop-out risks | Participants' comments on any factors that could lead to dropping out of the intervention. |
| Reasons to participate | The reasons participants gave to participate in Living to the Full. |
| Group dynamics | Participants' feedback on the group and therapist. |

| | |
|---|---|
| Organisation | Participants' feedback on the organisation of Living to the Full, including the set-up of the sessions, invites, the individual programme, a follow-up treatment and the use of technology |

***Quantitative data analysis***

The data was analysed using IBM SPSS Statistics 28. First, the demographics were calculated. Next, the total scores of the refusal self-efficacy and psychological flexibility were calculated. Then the mean scores for emotional wellbeing, social wellbeing, psychological wellbeing and overall wellbeing were calculated. The statistical significance was set at p-value < .05. Then, the normality of the data was checked with the Shapiro-Wilks test, as the data set was small.

For the next step, the baseline scores on all outcome measures were compared to a literature reference group that also struggles with addiction. This comparison can later be used to see if the results accurately reflect the population and that any inferences or conclusions drawn from the analysis are valid and applicable to the broader population. Oei et al. (2005) was used as the reference group of refusal self-efficacy, Fledderus et al. (2012) was used for emotional, social, and psychological wellbeing, and Shorey et al. (2017) was used for psychological flexibility.

To test the effectiveness of the intervention, two different tests were performed. First, a binominal for a single proportion test was used to analyse whether the abstinence rate during the intervention was expected according to the literature. The H0 assumes that the observed abstinence rate is equal to the population abstinence rate after mindfulness treatment, which is 40% according to (Li et al., 2017). The H1 assumes that observed abstinence rate is different from the population abstinence rate. In addition, a paired samples t-test was used to investigate whether the variables self-efficacy, emotional wellbeing, and psychological wellbeing changed within the completers from pre- to post-intervention. A Wilcoxon Signed-Rank Test was used to investigate the variables social wellbeing, and psychological flexibility.

To identify factors that predict drop-out, an independent samples t-test was used to calculate if there was a difference in age and baseline scores of refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility between completers and dropouts. Lastly, the means for the data of the CSQ-8 questions were calculated and used to determine the participants' satisfaction of the programme.

## Results

### Participants in the study

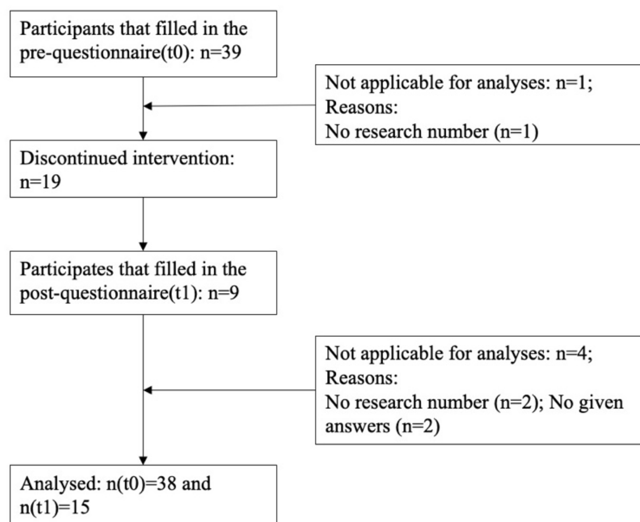
Figure 1 shows the participant flowchart. The pre-intervention questionnaire was completed by 39 participants. Among these 39 participants, one individual did not provide their research number and was consequently excluded from the study. Hence, a total of 38 participants were included in the baseline group at t0.

The post-intervention questionnaire was completed in by nineteen participants. Therefore, twenty participants discontinued the intervention. The dropout rate for this study is 51.3%. Out of the initial nineteen participants, two were excluded as they did not provide their research number. Furthermore, two participants were removed since they only answered the first question. Thus, a total of fifteen participants were included in the study at t1, forming the completers group.

Regarding the semi-structured interviews, twelve participants agreed to participate. However, two of them could not be reached, resulting in ten participants being interviewed and included in this study.

**Figure 1**

*Participant flowchart*




### Baseline reference sample analysis

The baseline values (n=38) of the five variables refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility were compared with means form similar populations to determine if the pre-treatment study sample

significantly differed from the population mean. In this case, the population are also people that have a SUD. First, the refusal self-efficacy was compared. The one-sample t-test showed that the mean of refusal self-efficacy ($n$ = 38, $M$ = 36.07, $SD$ = 7.5) was significantly lower than the reference population mean (47.49), $t(37) = -9.391$, $p < .001$. Next, wellbeing was analysed. The one-sample t-test showed that the mean of emotional wellbeing ($n$ = 38, $M$ = 3.8, $SD$ = 1.11) was significantly higher than the reference population mean (3.27), $t(37) = 2.917$, $p = .006$. The mean value of social wellbeing ($n$ = 38, $M$ = 4.28, $SD$ = 0.68) was also significantly higher than the reference population mean (2.79), $t(37) = 13.593$, $p < .001$. Then the mean value of psychological wellbeing was significantly higher than the reference population mean (3.2), $t(37) = 4.092$, $p < .001$. Lastly, the mean of psychological flexibility ($n$ = 38, $M$ = 61.39, $SD$ = 16.53) was compared to the reference population mean (81.74). The one-sample t-test showed that the research group scored significantly lower than the reference population, $t(37) = -7.585$, $p < .001$.

These results show that the study sample, compared to the reference population scores, scores significantly better on emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility. In contrast, the study sample scored significantly poorer on refusal self-efficacy.

**Possible effectiveness of the intervention**

***Substance use***

Of all the participants that finished the intervention (n=15), nine participants were not using at the start of the intervention. Six participants had used something at the start of the intervention. At the end of the intervention, eight participants were still not using. Seven participants had used at the end of the intervention. Of these seven participants, three participants kept stable in their usage, two participants lowered their usage, one participant used more, and one participant started using again (see Table 3). This means that 53.3% of the participants stayed abstinent.

**Table 3**

*Substance use (SU) of the completers in the last 30 days per participant (n=15)*

| Participants | Pre-intervention SU | Post-intervention SU |
|---|---|---|
| 1 – 8[a] | 0 times | 0 times |
| 9 | 3 or 4 times per week | 1 or 2 times per week |

| | | |
|---|---|---|
| 10 | 3 or 4 times per week | A few times |
| 11 | A few times | A few times |
| 12 | 1 or 2 times per week | 1 or 2 times per week |
| 13 | One time | One time |
| 14 | 0 times | A few times |
| 15 | 1 or 2 times per week | 3 or 4 times per week |

*Note.* [a] Participants 1 until 8 are combined, because they have the same SU pattern

Furthermore, the binominal test showed $p$ = .213 > α = .05. Therefore, the null hypothesis was not rejected. This means that the abstinence rate found within this intervention is expected when comparing it to literature (Li et al., 2017).

***Refusal self-efficacy***

The variable refusal self-efficacy demonstrated a normal distribution (W(15) = 0.915, $p$ = .159). A paired sample t-test was conducted to assess the impact of the intervention on refusal self-efficacy. The t-test results indicated no significant difference between the pre-intervention refusal self-efficacy score (M = 38.33) and the post-intervention score (M = 39.27), $p$ = .630 (see Table 4).

***Wellbeing***

For both emotional ($W$(15) = 0.916, $p$ = .170) and psychological well-being ($W$(15) = 0.921, $p$ = .201), the data were normally distributed. The first paired sample t-test showed that there is no significant difference in the score on emotional wellbeing between pre-intervention ($M$ = 4.26) and post-intervention ($M$ = 4.44), $p$ = .492. The second test showed that there is also no significant difference in the score on psychological wellbeing between pre-intervention ($M$ = 4.18) and post-intervention ($M$ = 4.46), $p$ = .239 (see Table 4).

The data of the variable social wellbeing was not normally distributed, $W$(15) = 0.807, $p$ = .005. Therefore, a Wilcoxon Signed-Rank Test was performed. This test showed that there is no significant difference in social wellbeing between pre-intervention ($M$ = 4.08) and post-intervention ($M$ = 4.31), $p$ = .530 (see Table 4).

***Psychological flexibility***

The data of the variable psychological flexibility was not normally distributed, $W$(15) = 0.857, $p$ = .022. Therefore, a Wilcoxon Signed-Rank Test was performed. This test showed that the intervention did not elicit a significant difference in psychological flexibility from pre-intervention ($M$ = 56.60) to post-intervention ($M$ = 50.53), $p$ = .267 (see Table 4). This means that participants did not improve their psychologically flexibility by the end of the intervention.

**Table 4**

*Tests of within-subject changes from pre- to post-intervention on the outcome measures (n=15)*

| *Variable* | *Measurement point* | *Mean* | *SD* | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| Refusal self-efficacy[a] | Pre-intervention | 38.33 | 6.79 | 14 | -0.493 | .630 |
| | Post-intervention | 39.27 | 7.71 | | | |
| Emotional wellbeing[a] | Pre-intervention | 4.26 | 0.99 | 14 | -0.706 | .492 |
| | Post-intervention | 4.44 | 0.98 | | | |
| Psychological wellbeing[a] | Pre-intervention | 4.18 | 0.91 | 14 | -1.230 | .239 |
| | Post-intervention | 4.46 | 0.84 | | | |
| *Variable* | *Measurement point* | *Mean* | *SD* | | *Z* | *p* |
| Social wellbeing[b] | Pre-intervention | 4.08 | 0.92 | | 0.628 | .530 |
| | Post-intervention | 4.31 | 0.81 | | | |
| Psychological flexibility[b] | Pre-intervention | 56.60 | 13.73 | | -1.109 | .267 |
| | Post-intervention | 50.53 | 14.25 | | | |

*Note.* [a] Tested with a paired sample t-test.

[b] Tested with Wilcoxon Signed-Rank Test.

## Predictive influence on drop-out

### *Drop-out of the intervention*

From the 38 participants that started the intervention, 20 participants dropped out. This means that the intervention had a drop-out rate of 51.3%. The drop-out reasons are unknown for most of the participants. One participant dropped out due to inconvenient timing. Another participant dropped out because they missed too many sessions when they were sick.

Of the participants that dropped out, 8 were male and 12 were female. Their average age was 43 years (SD = 11.77). Their main substances were alcohol (n = 11), cannabis (n = 4), cocaine (n = 2), and gambling (n = 3). Nine dropouts were abstinent at the start of the intervention. The other eleven were not abstinent at the start of the intervention.

### *Age*

The independent samples t-test showed that there is no significant difference in age between the dropouts (M = 43) and the completers (M = 46), $p = .484$ (see Table 5).

***Refusal self-efficacy***

The data of the variable refusal self-efficacy was also normally distributed in the baseline dataset ($W(43) = .95, p = .058$). Therefore, an independent sample t-test was conducted. The results showed no significant difference between dropouts (M = 34.69) and completers (M = 38.42) at baseline, $p = .141$. Therefore, the score on refusal self-efficacy did not predict dropout (see Table 5).

***Wellbeing***

Given the normal distribution of emotional (W(43) = 0.967, $p = .245$), social (W(43) = 0.97, p = .316), and psychological wellbeing (W(43) = 0.962, p = .168) in the baseline dataset, independent sample t-tests were conducted to examine their predictive ability for dropout. The results revealed no significant difference in emotional wellbeing between dropouts (M = 3.60) and completers (M = 4.14; $p = .149$), suggesting no predictive effect of baseline emotional wellbeing on dropout. Similarly, there was no significant difference in social wellbeing between dropouts (M = 4.20) and intervention completers (M = 4.43) at baseline ($p = 0.158$), indicating that there is also no predictive effect of baseline social wellbeing on dropout. Likewise, there was no significant difference in psychological wellbeing between dropouts (M = 3.65) and intervention completers (M = 4.06) at baseline ($p = .186$), indicating that psychological wellbeing did not predict dropout (see Table 5).

***Psychological flexibility***

Lastly, the data of the variable psychological flexibility was normally distributed in the baseline dataset ($W(43) = .95$, $p = .058$). The baseline psychological flexibility did not significantly predict dropout (dropouts: $M = 63.71$, $SD = 17.78$; completers: $M = 57.43$, $SD = 13.85$; $p = .264$; see Table 5).

**Table 5**

*Predictive effects of baseline variables on drop-out (n=38)*

| *Variable* | *Group* | *n* | *Mean* | *SD* | *df* | *t* | *p* |
|---|---|---|---|---|---|---|---|
| Age | Dropouts | 24 | 43 | 11.77 | 36 | -0.708 | .484 |
| | Completers | 14 | 46 | 13.95 | | | |
| Refusal self-efficacy | Dropouts | 24 | 34.69 | 7.55 | 36 | -1.507 | .141 |
| | Completers | 14 | 38.42 | 7.04 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Emotional wellbeing | Dropouts | 24 | 3.60 | 1.20 | 36 | -1.476 | .149 |
| | Completers | 14 | 4.14 | 0.89 | | | |
| Social wellbeing | Dropouts | 24 | 4.20 | 0.72 | 36 | -1.018 | .158 |
| | Completers | 14 | 4.43 | 0.60 | | | |
| Psychological wellbeing | Dropouts | 24 | 3.65 | 0.94 | 36 | -1.347 | .186 |
| | Completers | 14 | 4.06 | 0.81 | | | |
| Psychological flexibility | Dropouts | 24 | 63.71 | 17.78 | 36 | 1.134 | .264 |
| | Completers | 14 | 57.43 | 13.85 | | | |

**Additional post hoc analyse**

***Time passed since regular treatment***

During the analysis of the data, it turned out that there were differences in the time between completing regular treatment and starting Living to the Full. For example, there were eight participants who had already started Living to the Full within six months, but there were also seven participants who only started six months or longer after their regular treatment. Therefore, it was decided to test whether the time between finishing a regular treatment and starting Living to the Full is a moderator of the outcomes of the intervention. The difference scored were compared for the two groups. However, no difference was found on refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility (see Table 6).

**Table 6**

*Tests of between-subject difference scores in time finished since regular treatment on the outcome measures (n=15)*

| *Variable* | *Time finished* | *n* | *Mean* | *SD* | *df* | *t* | *p* |
|---|---|---|---|---|---|---|---|
| Refusal self-efficacy | < 6 months | 8 | 2.00 | 7.58 | 13 | 0.588 | .567 |
| | > 6 months | 7 | -0.29 | 7.43 | | | |
| Emotional wellbeing | < 6 months | 8 | 0.29 | 1.23 | 13 | 0.470 | .646 |
| | > 6 months | 7 | 0.05 | 0.65 | | | |
| Social wellbeing | < 6 months | 8 | 0.45 | 0.99 | 13 | 1.109 | .288 |
| | > 6 months | 7 | -0.04 | 0.64 | | | |
| Psychological wellbeing | < 6 months | 8 | 0.53 | 1.11 | 13 | 1.165 | .265 |
| | > 6 months | 7 | 0.00 | 0.46 | | | |

| Psychological flexibility | < 6 months | 8 | -10.50 | 22.18 | 13 | -0.984 | .343 |
|---|---|---|---|---|---|---|---|
| | > 6 months | 7 | -1.00 | 13.39 | | | |

**Participants experience**

This part of the results section will look more into the experiences of the participants. Data from the questionnaire and from the interviews will be combined in order to form a complete image. As a result, the number of test subjects will also change based on where the data comes from. If the data comes from the questionnaire, the number of participants is fifteen. If the data comes from the interviews, then the number of participants is ten.

***Overall impression***

The overall impression of the participants is positive. The intervention gets a mean score of 7.8 (*SD* = 2.15) on a scale from 1 - 10 from the participants that filled in the questionnaire. Notable is that abstinent participants (*M* = 8.6, *SD* = 1.30) give the intervention a higher score than non-abstinent participants (*M* = 6.9, *SD* = 2.61). Thirteen of these participants would recommend the intervention to others (*M* = 7.8, *SD* = 2.15). Again, abstinent participants (*M* = 8.8, *SD* = 1.81) are more inclined to recommend this intervention to others than non-abstinent participants (*M* = 6.6, *SD* = 3.46).

Almost all participants from the interviews indicated that they were "*very satisfied*" about the intervention. In addition, they found the intervention "*educational*". However, one participant was not enthusiastic and indicated that "*It was more the people who were also there [that I found] to be more educational and interesting than the course itself.*" Another participant was satisfied with the intervention; however, they would have liked to have it earlier in their addiction treatment. They stated that they did most of the things that are discussed in the intervention already on their own. Therefore, not all themes were "*relevant*" to them. It is important to note that due to their viewpoints, the majority of critical remarks (though not all) are derived from these two participants.

There were two themes that were mostly named when asked which themes were important to the participants. The first one being *avoidance strategies*. Participants who mentioned this theme often explained that they recognised certain behavioural patterns when discussing avoidance strategies. It made them aware of these patterns. Furthermore, Living to the Full helped the participants to make changes in these avoidance patterns. The second theme that was mentioned often was *values and committed actions*. Participants reflected on what they considered important. Some participants found it clarifying to reflect on their values and what is important in life. They discovered things about themselves that they would not have done

without Living to the Full. Three participants even indicated that they performed actions that they were putting off, for example "*having a difficult talk with a friend*" or "*reconnecting with my family*". One of these participants quit their job and stated, *"... because of Voluit Leven, I managed to take that action [quitting their job]*".

In addition, participants also mentioned mindfulness as a positive thing from the intervention. Some participants were already familiar with mindfulness, for example because they did it in another intervention. Most participants benefitted from doing the mindfulness exercises. Some even indicated that they are going to use them more in their daily life. One participant found the mindfulness exercises irritating and not relaxed.

***Effectiveness***

From the fifteen participants that filled in the questionnaire, twelve participants found the intervention the right approach for their complaints and that their assistance needs were covered. One participant found that it was the right approach for their complaints, but not all their assistance needs were covered. One participant found that the intervention covered their assistance needs, but it was not the right approach for their complaints. Another participant found the intervention not fitted for their complaints and that their assistance needs were not covered. These last three participants were all not abstinent.

In general, the participants in the interviews had the opinion that the intervention suited their complaints. One participant explained that:

> *I think it's another building block. It's not the solution for me, ..., it's another piece of the foundation you can stand on, ... that helps me get through the day without substances [use]. So, it strengthens me, it gives me something to hold on to.*

However, one participant indicated that they found the intervention not fitted for their behavioural addiction, stating: "*What I noticed with Voluit Leven is that it is very much focused on addiction with use, so an alcohol addiction or a drug addiction".*

Six participants from the interviews indicate that after the intervention they have less cravings. Of these six participants, five were not abstinent during the intervention. The other four participants did not mention effects on their addiction. One participant explained the influence on their addiction as follows:

> *It is often the decision to use is often a split second with me. ... And if you manage to control yourself in that moment, and just get through those few minutes by making the right choice, where I made the wrong choice in the past, not thinking about the consequences of the hours after or the day after ... And by taking those rest moments and landing well again, I can prevent it much more often.*

Participants also indicated that they had new insights after following Living to the Full. One participant stated that they "*developed a different way of coping*" through Living to the Full. Another participant stated, "*I have become more aware of my patterns that I am in, more aware of my pitfalls and, yes, for me a very large part of that starts with me first having insight into them*."

In addition, participants also noticed changes in their mental health. Participants explained that they can better handle their thoughts. One participant stated that they got more grip on their ongoing thoughts and that they can "*apply things from Living to the Full*". Other participants stated that they feel calmer. One participant also stated they felt "*less busy when doing Living to the Full*". In particular, one participant explained that via Living to the Full they started to see the positive things again, instead of focusing on their depressive symptoms.

The biggest effect the intervention had was on the daily life of the participants. Many participants try to implement the things that they learned in Living to the Full into their daily life in different ways. For example, some participants use the mindfulness exercises when they feel stressed or have a lot of thoughts. On the other hand, other participants try to use the things that they learned in the intervention to "*keep themselves balanced*" and live according to what they consider important. In addition, two participants mentioned trying to be more present in the moment and "*doing things more aware*". It should be noted that most participants indicated that they are still learning how to really implement Living to the Full in their daily life. One participant explained it like:

> *… what I use a lot more is: 'yes I can think, but I do not have to do anything with it', you know. That you let it [the thought] pass. And that is just very valuable. But [it is] not that easy. I still need a lot of practice with it … but the consciousness is there.*

***Participation in Living to the Full***

Generally speaking, the participant thought that doing their homework benefitted them during the intervention. They found it educational, and it helped them felt prepared for the next session. One participant even stated:

> *Since I think sitting there outside of Tuesday evenings, …, you are going to have to apply it [things learned in the intervention] and be aware of it in your daily life. And I think homework helps with that.*

Some participants would do their homework at the last possible minute. A few participants did state that doing the homework "*did increase the workload of the intervention*" and that it was "*hard sometimes to do the homework when you are busy in your daily life*".

All the participants in the interviews were satisfied with the book. They found it a useful addition to the intervention. Some even called it a "*steppingstone*" to understanding the intervention better. Most participants found it nicely written and not too hard to understand. A few participants even indicated that they would keep using it even when they are done with the intervention. However, there was one participant that indicated that even though they were overall satisfied with the book, they did find that the book was not fitting with their assistance needs. It should be noted that this participant was not satisfied with the intervention overall. In addition, another participant was also satisfied with the book, but also thought it was not fitted for their situation. They found it harder to relate to the book at some points because they were further along in their progress than the book. In addition, this participant was already abstinent and finished their regular treatment one year and a half before starting Living to the Full.

Two participants indicated that they kept coming back to the intervention mostly because of the peer support that they experienced. Because they recognised themselves in the others, they found it helpful to come back. One of these two participants also kept coming back, because they did not want to deal with the consequences of stopping. In general, participants did share the feeling of recognising themselves in others and finding comfort in it. However, not all participants mentioned it.

***Drop-out risks***

If participants missed session, they usually only missed one. The reason for missing these sessions varied from personal events to being sick to not being invited. Most participants did not experience any consequences from missing one session. However, one participant that missed more sessions did state that they started falling behind. They started doubting what they were still doing at the intervention because they were so behind. However, they realised that they did find "*it helpful just to attend the sessions*" and therefore decided to stay.

One participant dropped out of the intervention because of a family situation which they could not combine with the intervention. Another participant dropped out of the intervention because they had missed too many sessions due to sickness. However, they continued the intervention individually and found this helpful. Especially, because they were busy and with the individual programme, they could schedule the sessions when it was convenient.

One factor that could lead to drop-out is the intervention being too confronting. One participant stated:

> *... I got doubts of what is the use of it [the intervention] and stuff. Anyway, that is also the avoidance again, which then comes into play again. Because you are confronted with all kinds of things that you do not want to be confronted with.*

However, another participant stated that even though some exercises were confronting, doing them made them realise that "*it can be so much easier*". The three participants that mentioned the intervention to be confronting were all not abstinent.

In general, most participants from the interviews did not think about dropping out of Living to the Full. They noticed a benefit from participating in the intervention.

***Group dynamics***

All participants from the interviews were satisfied with the therapists leading the intervention. They found the therapists knowledgeable. Furthermore, they also experienced support and felt listened to. The results of the questionnaire indicated that thirteen participants indicated that the therapists frequently or always explained everything clearly. One participant indicated that the therapist sometimes explained things clearly, and one participant indicated that the therapist never explained things clearly. Both participants were non-abstinent and from the same group.

All participants from the interviews experienced support from their group. They felt like the group listened to them. In addition, they also felt that the group was a safe environment to share their thoughts. However, one complaint that was shared by several participants was that the group was too small. This complaint usually occurred when the group consisted of four participants or fewer. Participants stated that they missed group discussions and that it was harder to find people they clicked with in these small groups. One participant did mention that the benefit of a small group was that they "*could not hide behind others*" and therefore they would be "*pushed outside their comfort zone*" to answer the questions asked.

***Organisation***

Most participants were asked by their therapist to participate in the intervention. The others asked their therapists to participate in the intervention, because they either saw a poster or had gotten a flyer about the intervention. One participant did mention that it was very difficult to participate in the intervention on their own initiative. They indicated that they were put on a waiting list and had to ask multiple times for updates. Moreover, three participants got a really late invite to participate, just a day or two before the start of the intervention, or even one week after the intervention already started.

The answers from the questionnaire indicated that eleven participants thought they got enough information about Living to the Full prior to starting. Three participants got a little information about Living to the Full prior to starting. However, one participant did not get enough information before starting Living to the Full. From these last four participants, two were from the same location, while the other two were from different locations.

Almost all participants were satisfied with the organisation of the intervention. However, most participants indicated that they wished there would be more sessions. Many things had to be discussed in one session, which would not always fit and sometimes felt rushed. One participant even decided to continue the intervention individually, stating: " *... I noticed for myself that it was all a bit deeper with me, ... that it could not be done in 12 weeks, ... So it was nice that you could continue individually afterwards*." Some participants also wanted more time per session, but others said that they liked the time and just wanted more sessions. One participant mentioned that they found the sessions of two hours too long and would prefer one and a half hour-long sessions.

One participant stated that they wanted a follow-up treatment. Another participant that followed the individual treatment after the group treatment mentioned that the individual treatment is a good follow-up on the group treatment. The other participants did not mention anything about a follow-up treatment.

The two participants who received the intervention on an individual basis were satisfied with the programme. They found it less scary to share their thoughts and they could focus on things that they considered important. Both did not follow the programme as described in the book, but discussed things that were important to them. However, both also thought having peers was a nice extra, and therefore could not decide between the individual or group programme.

The last thing that was discussed with the participants was the use of technology as addition to the intervention. The responses to this varied greatly. Some were enthusiastic, with someone stating, "*…an app would be helpful because the phone is easily accessible.*". Others were sceptical, mostly because they were not handy with technology in general. One participant stated that the use of technology would interfere with their addiction, because they had a screen addiction.

# Discussion

This study used a mixed methods design to investigate the Living to the Full aftercare programme for individuals with a SUD. Living to the Full is an aftercare programme based on ACT and MBCT. Through online surveys and interviews, this study explored three different aims. The first aim was to investigate the effectiveness of Living to the Full in improving refusal self-efficacy, wellbeing, psychological flexibility, and maintenance of the abstinence/reduced use for people with a SUD. The second aim was to identify the factors that are associated with the drop-out rate of participants of the Living to the Full programme. The third and last aim was to investigate the experience of the participants, to assess client satisfaction and find points for improvement.

In summary, this study found three main findings. The first main finding is that Living to the Full might be effective for staying abstinent or maintaining substance use at a controlled level. However, the intervention did not significantly impact refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility. It should be noticed that these results are based on only the data of the completers. The second main finding is that falling behind or being too confronted were most likely to explain drop-out, while the scores on refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility did not explain drop-out. Lastly, the third main finding is that participants were satisfied with Living to the Full, however, the organisation can be improved.

## Main findings

### *Possible effectiveness*

The first main finding is that of all the completers, 86.7% were successful in either staying abstinent or maintaining a controlled level. In addition, multiple participants stated that Living to the Full helped with their cravings. This could indicate that Living to the Full might be effective for staying abstinent or maintaining substance use at a controlled level. These findings are in line with other studies examining ACT-based programmes which also found that ACT shows promising results in successful reducing substance use (Ii et al., 2019; Öst, 2014). A possible explanation for this finding might be mindfulness, which is known to help reduce cravings (Roos et al., 2019). However, it should be noted that the finding in this study is based solely on the completers. If an intention-to-treat analyse would have been performed and the dropouts were added as relapses, the success rate would have been much lower. That said, not

all dropouts were relapses. However, the data on the reasons for drop-out is incomplete. It may therefore be too conservative to perform an intention-to-treat analysis (Gupta, 2011).

On the other hand, the current study did not find significant improvements on refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility. One remarkable finding is that refusal self-efficacy did not improve, especially because refusal self-efficacy was relatively low in the study sample. Therefore, it was expected that refusal self-efficacy would have changed. Research suggested that refusal self-efficacy can be used to prevent relapse in substance use (Chavarria et al., 2012). One explanation might be that Living to the Full does not targeted refusal self-efficacy enough to change it in nine weeks. That being said, there is limited evidence on the effects of ACT on refusal self-efficacy. It might be the case that ACT does not influence refusal self-efficacy, however, this claim should be further researched.

It is also remarkable that wellbeing and psychological flexibility did not improve. This might be because both were already relatively high at the beginning of the programme. However, it should be noted that participants did increase their psychological flexibility, but this increase was not significant. Previous research found significant differences in psychological flexibility after following an ACT-based programme in people with a SUD (Petersen & Zettle, 2009; Stotts et al., 2012). Thus, psychological flexibility can change in people with a SUD when they are treated with ACT-based programmes. Even wellbeing can be improved via an ACT-based programme, however, this was done in people with depression (Fledderus et al., 2012). One explanation might be that because this study sample was already satisfied with their wellbeing, they focus on other aspects of Living to the Full instead of increasing their wellbeing.

These results contradict the findings of Kattenberg (2022) which showed significant improvements in refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility. The difference in analytical approaches may explain this disparity: Kattenberg (2022) employed an N=1 analysis, whereas this current study utilized a group-level analysis. The adoption of a group-level analysis can be seen as a more rigorous and comprehensive approach. It is important to note that the individuals included in the research sample of Kattenberg (2022) are also part of this study's sample. Therefore, there are individuals in this research sample who have shown significant improvement, however, the overall group did not exhibit these statistically significant changes. This might indicate that Living to the Full can work for some people, but not for everyone. For example, there could be a difference between abstinent and non-abstinent people. However, this study found that the time between

finishing initial treatment and starting Living to the Full did not affect the intervention outcomes, indicating that this time does not affect the results of the participant.

***Possible drop-out risks***

Similar to the study of Kattenberg (2022), this study also had a high drop-out rate. The second main finding is that most given reasons for drop-out of Living to the Full were private reasons, such as inconvenient timing, or sickness, which caused participants to fall behind. These reasons for drop-out are in line with the reasons found in Kattenberg (2022). These risks are likely to show up every time, however, they could be managed. To avoid someone falling behind, there are three options a therapist has. They can give the participant more homework to try to keep up, or they can continue with the participant on an individual level, or they can motivate the participant to keep coming back and participate as best they can. However, there were two other reasons that might cause drop-out. The second reason is that the intervention is too confronting. This would mean that participants are scared to come back, because they have too much unresolved problems. The therapist should be observant and try to intervene if they suspect a participant is having a hard time.

Relapse is also a big issue in addiction treatment and is a known drop-out risk (King & Canada, 2004), also in aftercare (McKellar et al., 2006; Şimşek et al., 2019). However, it is not known whether the substance use is a reason for participants to drop out of Living to the Full. Approximately 55% of the dropouts were not abstinent at baseline. And while this is a high percentage, not all these dropouts can be classified as severe users. Because their substance use was only measured at the begin of the intervention, it is impossible to tell if their substance use was their main reason to drop-out.

The baseline levels of refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility of the participants did not predict drop-out. However, there is consistent tendency. All these variables, refusal self-efficacy, emotional wellbeing, social wellbeing, psychological wellbeing, and psychological flexibility, have the same pattern. If the participant had better scores at baseline, they were less likely to drop-out. Previous research pointed out that low self-efficacy might be a predictor for drop-out (Ghouchani et al., 2022), even though, this current study did not find a significant effect. This lack of significance might be due to the fact that both the dropouts and completers already showed a relatively low refusal self-efficacy. This could explain that the difference of self-efficacy between both groups did not show significance.

Previous research identified young age as a major risk factor for drop-out (Brorson et al., 2013; McHugh et al., 2013; McKellar et al., 2006; Şimşek et al., 2019). However, this

research did not find a significant predictive effect for age on drop-out. One explanation might be that the average age of the participants in this study sample was already higher than the young age found in other research. Another explanation might be that ACT based programmes are actually suitable for older ages (Petkus & Wetherell, 2013). This would mean that more older adults sign up for such an intervention instead of young adults.

There were two factors identified that could lower drop-out. The first factor is the group dynamics. Some participants came back because of the peer support they experienced. This result is in line with the study of McKellar et al. (2006), who found that with high feelings of support, people are more likely to finish the treatment. In order to get this feeling of support, groups should not be too small. The second factor is adding in an active element. Participants indicated that they found the exercises helpful. These exercises got the participants actively thinking about their situation. This finding is in line with the study from Bergman et al. (2015), which stated that adding active element to an aftercare treatment would increase adherence.

***Participants experiences and possible improvements***

In general, participants were satisfied with the intervention and indicated that the intervention fitted their needs. It is noticeable that abstinent participants gave higher scores than the non-abstinent participants. One explanation might be that Living to the Full does not fit all the needs of non-abstinent participants. Living to the Full has as main goal to increase psychological flexibility (Bohlmeijer & Hulsbergen, 2009), even in the adjusted programme of Schokker (2021). This goal, for example, might not fit the goals of a non-abstinent person. Another explanation might be that non-abstinent people are still too preoccupied with substances, and therefore, they are not in the right mindset to learn new skills like mindfulness. However, it should be noted that ACT-based programmes have been proven effective for non-abstinent people (Gloster et al., 2020; Ii et al., 2019; Öst, 2014). Theoretically, it might be that Living to the Full could be effective for non-abstinent, but that these people are not ready for aftercare yet.

There were two points of improvement that can be made to the programme. The first one is the organisation. Send invitations on time and make sure that the participants receive enough information before starting. The second improvement that could be made is to offer extra individual support to participants that need or want this.

## Limitations

This study, like all studies, has certain limitations which could influence the scope and generalisability of the study. The limitations of this study include the high drop-out of the

intervention, generalisation of the test sample, unknown treatment goals of participants, limited supervision on dropouts, and no follow-up.

The most important limitation is that most of the data is based on solely the completers. This means that all dropouts are not included in the effect analyses. The reason for this decision is because it is known that not all dropouts are relapses. Counting all the dropouts as relapses would be too drastic. In addition, adding all the dropouts to the analysis, would indicate very little about the efficacy of the treatment. However, without adding the dropouts, the chance of a type I error in this study is higher (Gupta, 2011). Future research could replicate this study and choose for an intention-to-treat analysis to see if the effects would be different.

Another limitation is that the research sample group was significantly different than the literature reference group. This means that the research group had a lower refusal self-efficacy than the literature reference group (Oei et al., 2005). Furthermore, the research group scored better on emotional, social, and psychological wellbeing than the literature group (Fledderus et al., 2012). Lastly, the research group was more psychological flexible than the literature group (Shorey et al., 2017). This could mean that the results are distorted. Therefore, the results found in this research might not be generalisable to a greater addiction population. However, this difference between the reference group and sample group might be because the sample group is more in recovery than the reference group. To avoid this problem, future research should include a control group that is in the same phase as the test group and study the differences between the two groups.

Furthermore, most treatment goals of the participants were unknown. As mentioned in the introduction, participants can have multiple treatment goals. Moreover, Living to the Full focuses more on improving psychological flexibility and refusal self-efficacy instead of helping the participants in being abstinent. Therefore, it is difficult to say if the intervention is more effective in reducing substance use or maintaining abstinence. Future research should focus on getting to know the treatment goals of the participants by asking them their goals at the beginning of the intervention. At the end of the treatment, participants should be asked if they think they accomplished their goal.

Moreover, the study had trouble with retaining participants that dropped out of the intervention in the study. After a participant dropped out, contact was nearly impossible. In addition, no intervention dropouts filled in the post-intervention questionnaire. Future research could incorporate additional measures to track and collect data from the dropouts, for example weekly check-ins with the therapists about the participants or sending an email to the dropouts.

This data could be used to do more research into the differences between dropouts and completers.

Lastly, this study only measured the participants at the start and the end of Living to the Full. Therefore, this study cannot state anything about the long-term effects of the intervention. Future research could incorporate additional measures to collect follow-up data from the participants, for example three months after the intervention ended.

### Future research

As mentioned in the introduction, it is important to adopt a chronic care perspective (Lenaerts et al., 2014), i.e. offering aftercare. Living to the Full might be promising to be offered as aftercare, however, it is still unknown which types of people benefit the most. Therefore, future research could investigate which types of people are most fitted to follow Living to the Full. One aspect that could be further investigated is the difference between abstinent and non-abstinent participants, since this study found some differences between them. Moreover, this study did a remarkable finding related to self-efficacy. This study found that participants started with low refusal self-efficacy, however, did not significantly improve their refusal self-efficacy. Future research could further investigate the effect of ACT on refusal self-efficacy. Lastly, this study had a very high drop-out. Future research could further study the reasons for drop-out and find solutions to these risk in order the decrease the drop-out.

## Conclusion

Previous research has suggested that offering aftercare to individuals with a SUD could lead to improved outcomes. Living to the Full has potential to serve as such an aftercare programme. Although the main findings of this study only demonstrate a possible positive impact on staying abstinent or maintaining substance use at a controlled level, participants did report a positive experience with the intervention. Participants noticed multiple results such as new coping strategies for cravings or simply feeling calmer. Moreover, participants found the programme educational and fitting for their complaints.

However, it is important to note that the dropout rate was considerable, with less than 50% of the participants completing the intervention. This study identified several factors associated with drop-out, including falling behind, or being too confronted with their feelings. Future research could investigate more drop-out reasons with the goal to decrease drop-out even more. In addition, more research is needed to determine how effective Living to the Full is for people with a SUD.

## Reference list

An, H., He, R.-H., Zheng, Y.-R., & Tao, R. (2017). Cognitive-Behavioral Therapy. In X. Zhang, J. Shi, & R. Tao (Eds.), *Substance and Non-substance Addiction* (pp. 321-329). Springer Singapore. https://doi.org/10.1007/978-981-10-5562-1_16

Andersson, H. W., Steinsbekk, A., Walderhaug, E., Otterholt, E., & Nordfjærn, T. (2018). Predictors of Dropout From Inpatient Substance Use Treatment: A Prospective Cohort Study. *Substance Abuse: Research and Treatment, 12*, 1178221818760551. https://doi.org/10.1177/1178221818760551

Bergman, B. G., Hoeppner, B. B., Nelson, L. M., Slaymaker, V., & Kelly, J. F. (2015, 2015/08/01/). The effects of continuing care on emerging adult outcomes following residential addiction treatment. *Drug and Alcohol Dependence, 153*, 207-214. https://doi.org/https://doi.org/10.1016/j.drugalcdep.2015.05.017

Blodgett, J. C., Maisel, N. C., Fuh, I. L., Wilbourne, P. L., & Finney, J. W. (2014, 2014/02/01/). How effective is continuing care for substance use disorders? A meta-analytic review. *Journal of Substance Abuse Treatment, 46*(2), 87-97. https://doi.org/https://doi.org/10.1016/j.jsat.2013.08.022

Bohlmeijer, E. T., Fledderus, M., Rokx, T. A. J. J., & Pieterse, M. E. (2011, 2011/01/01/). Efficacy of an early intervention based on acceptance and commitment therapy for adults with depressive symptomatology: Evaluation in a randomized controlled trial. *Behaviour Research and Therapy, 49*(1), 62-67. https://doi.org/https://doi.org/10.1016/j.brat.2010.10.003

Bohlmeijer, E. T., & Hulsbergen, M. (2009). *Voluit leven*. Boom.

Bowen, S., Chawla, N., & Marlatt, G. A. (2011). *Mindfulness-based relapse prevention for addictive behaviors: A clinician's guide*. Guilford Press.

Braun, V., & Clarke, V. (2006, 2006/01/01). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brorson, H. H., Ajo Arnevik, E., Rand-Hendriksen, K., & Duckert, F. (2013, 2013/12/01/). Drop-out from addiction treatment: A systematic review of risk factors. *Clinical Psychology Review, 33*(8), 1010-1024. https://doi.org/https://doi.org/10.1016/j.cpr.2013.07.007

Buyucek, N., Knox, K., & Rundle-Thiele, S. (2019). A Positive Behavioral Approach: Identifying Theoretical Factors Influencing Moderate Drinking Practices. *Social Marketing Quarterly, 25*(2), 107-122. https://doi.org/10.1177/1524500419830442

Chavarria, J., Stevens, E. B., Jason, L. A., & Ferrari, J. R. (2012, 2012/10/01). The Effects of Self-Regulation and Self-Efficacy on Substance Use Abstinence. *Alcoholism Treatment Quarterly, 30*(4), 422-432. https://doi.org/10.1080/07347324.2012.718960

De Brey, H. (1983, 1983/01/01/). A cross-national validation of the Client Satisfaction Questionnaire: The Dutch experience. *Evaluation and Program Planning, 6*(3), 395-400. https://doi.org/https://doi.org/10.1016/0149-7189(83)90018-6

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*(3), 485-495. https://doi.org/10.1017/S0033291711001206

Franken, K., Lamers, S. M. A., Ten Klooster, P. M., Bohlmeijer, E. T., & Westerhof, G. J. (2018). Validation of the Mental Health Continuum-Short Form and the dual continua model of well-being and psychopathology in an adult mental health setting. *Journal of Clinical Psychology, 74*(12), 2187-2202. https://doi.org/https://doi.org/10.1002/jclp.22659

Germer, C. (2012). *Mindfulness en zelfcompassie. Verlos jezelf van destructieve gedachten en emoties.* Nieuwezijds.

Ghouchani, H. T., Armat, M. R., Akbari, H., Hojjat, S. K., Lashkardoost, H., Asghari, D., Gholizadeh, N., & Saadati, H. (2022, 2022/09/03). Perceived barriers to addiction

treatment: an inductive qualitative content analysis. *Journal of Substance Use, 27*(5), 550-555. https://doi.org/10.1080/14659891.2021.1967482

Gloster, A. T., Walder, N., Levin, M. E., Twohig, M. P., & Karekla, M. (2020, 2020/10/01/). The empirical status of acceptance and commitment therapy: A review of meta-analyses. *Journal of Contextual Behavioral Science, 18*, 181-192. https://doi.org/https://doi.org/10.1016/j.jcbs.2020.09.009

Godley, M. D., Godley, S. H., Dennis, M. L., Funk, R. R., & Passetti, L. L. (2007). The effect of assertive continuing care on continuing care linkage, adherence and abstinence following residential treatment for adolescents with substance use disorders. *Addiction, 102*(1), 81-93. https://doi.org/https://doi.org/10.1111/j.1360-0443.2006.01648.x

Gómez Plata, M., Laghi, F., Zammuto, M., & Pastorelli, C. (2022, 2022/11/16). Refusal self-efficacy and alcohol-related behaviours in community samples: a systematic review and meta-analysis. *Current Psychology*. https://doi.org/10.1007/s12144-022-03954-7

Gupta, S. K. (2011, Jul). Intention-to-treat concept: A review. *Perspect Clin Res, 2*(3), 109-112. https://doi.org/10.4103/2229-3485.83221

Hayes, S. C., & Levin, M. E. (2012). *Mindfulness and acceptance for addictive behaviors: Applying contextual CBT to substance abuse and behavioral addictions*. New Harbinger Publications.

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), 1-25. https://doi.org/https://doi.org/10.1016/j.brat.2005.06.006

Ii, T., Sato, H., Watanabe, N., Kondo, M., Masuda, A., Hayes, S. C., & Akechi, T. (2019, 2019/07/01/). Psychological flexibility-based interventions versus first-line psychosocial interventions for substance use disorders: Systematic review and meta-analyses of randomized controlled trials. *Journal of Contextual Behavioral Science, 13*, 109-120. https://doi.org/https://doi.org/10.1016/j.jcbs.2019.07.003

Joosten, E. A. G., De Weert-Van Oene, G. H., Sensky, T., Van Der Staak, C. P. F., & De Jong, C. A. J. (2011). Treatment Goals in Addiction Healthcare: the Perspectives of Patients and Clinicians. *International Journal of Social Psychiatry, 57*(3), 263-276. https://doi.org/10.1177/0020764009354835

Kaminer, Y., Burleson, J. A., & Burke, R. H. (2008, 2008/12/01/). Efficacy of Outpatient Aftercare for Adolescents With Alcohol Use Disorders: A Randomized Controlled Study. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*(12), 1405-1412. https://doi.org/https://doi.org/10.1097/CHI.0b013e318189147c

Kattenberg, S. F. (2022). *The impact and evaluation of an ACT-based aftercare intervention in addiction care: a mixed-method pilot study* [Master's Thesis, University of Twente].

King, A. C., & Canada, S. A. (2004, 2004/04/01/). Client-related predictors of early treatment drop-out in a substance abuse clinic exclusively employing individual therapy. *Journal of Substance Abuse Treatment, 26*(3), 189-195. https://doi.org/https://doi.org/10.1016/S0740-5472(03)00210-1

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. https://doi.org/https://doi.org/10.1002/jclp.20741

Lappan, S. N., Brown, A. W., & Hendricks, P. S. (2020). Dropout rates of in-person psychosocial substance use disorder treatments: a systematic review and meta-analysis. *Addiction, 115*(2), 201-217. https://doi.org/https://doi.org/10.1111/add.14793

Lenaerts, E., Matheï, C., Matthys, F., Zeeuws, D., Pas, L., Anderson, P., & Aertgeerts, B. (2014, 2014/02/01/). Continuing care for patients with alcohol use disorders: A systematic review. *Drug and Alcohol Dependence, 135*, 9-21. https://doi.org/https://doi.org/10.1016/j.drugalcdep.2013.10.030

Li, W., Howard, M. O., Garland, E. L., McGovern, P., & Lazar, M. (2017, 2017/04/01/). Mindfulness treatment for substance misuse: A systematic review and meta-analysis.

*Journal of Substance Abuse Treatment, 75*, 62-96. https://doi.org/https://doi.org/10.1016/j.jsat.2017.01.008

Luoma, J., Drake, C. E., Kohlenberg, B. S., & Hayes, S. C. (2011, 2011/02/01). Substance abuse and psychological flexibility: The development of a new measure. *Addiction Research & Theory, 19*(1), 3-13. https://doi.org/10.3109/16066359.2010.524956

McHugh, R. K., Murray, H. W., Hearon, B. A., Pratt, E. M., Pollack, M. H., Safren, S. A., & Otto, M. W. (2013). Predictors of Dropout from Psychosocial Treatment in Opioid-Dependent Outpatients. *The American Journal on Addictions, 22*(1), 18-22. https://doi.org/https://doi.org/10.1111/j.1521-0391.2013.00317.x

McKay, J. R. (2009, 2009/03/01/). Continuing care research: What we have learned and where we are going. *Journal of Substance Abuse Treatment, 36*(2), 131-145. https://doi.org/https://doi.org/10.1016/j.jsat.2008.10.004

McKay, J. R. (2021). Impact of Continuing Care on Recovery From Substance Use Disorder. *Alcohol Res, 41*(1), 01. https://doi.org/10.35946/arcr.v41.1.01

McKellar, J., Kelly, J., Harris, A., & Moos, R. (2006, 2006/03/01/). Pretreatment and during treatment risk factors for dropout among patients with substance use disorders. *Addictive Behaviors, 31*(3), 450-460. https://doi.org/https://doi.org/10.1016/j.addbeh.2005.05.024

McLellan, A. T., Lewis, D. C., O'Brien, C. P., & Kleber, H. D. (2000, Oct 4). Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. *Jama, 284*(13), 1689-1695. https://doi.org/10.1001/jama.284.13.1689

NIDA. (2022). *Treatment and Recovery*. National Institute on Drug Abuse. Retrieved 15/02/2023 from https://nida.nih.gov/publications/drugs-brains-behavior-science-addiction/treatment-recovery

Oei, T. P. S., Hasking, P. A., & Young, R. M. (2005, 2005/06/01/). Drinking refusal self-efficacy questionnaire-revised (DRSEQ-R): a new factor structure with confirmatory

factor analysis. *Drug and Alcohol Dependence, 78*(3), 297-307. https://doi.org/https://doi.org/10.1016/j.drugalcdep.2004.11.010

Öst, L.-G. (2014, 2014/10/01/). The efficacy of Acceptance and Commitment Therapy: An updated systematic review and meta-analysis. *Behaviour Research and Therapy, 61*, 105-121. https://doi.org/https://doi.org/10.1016/j.brat.2014.07.018

Petersen, C. L., & Zettle, R. D. (2009, 2009/10/01). Treating Inpatients With Comorbid Depression and Alcohol Use Disorders: A Comparison of Acceptance and Commitment Therapy Versus Treatment as Usual. *The Psychological Record, 59*(4), 521-536. https://doi.org/10.1007/BF03395679

Petkus, A. J., & Wetherell, J. L. (2013, 2013/02/01/). Acceptance and Commitment Therapy With Older Adults: Rationale and Considerations. *Cognitive and Behavioral Practice, 20*(1), 47-56. https://doi.org/https://doi.org/10.1016/j.cbpra.2011.07.004

Roos, C. R., Kirouac, M., Stein, E., Wilson, A. D., Bowen, S., & Witkiewitz, K. (2019). An open trial of rolling admission mindfulness-based relapse prevention (Rolling MBRP): feasibility, acceptability, dose-response relations, and mechanisms. *Mindfulness, 10*, 1062-1073.

Sánchez-Millán, H. A., Alicea-Cruz, A. J., & Pérez-Pedrogo, C. (2022, 2022/01/01/). Measuring psychological flexibility: The cultural adaptation and psychometric properties of the AAQ for substance abuse among Spanish speaking population in correctional and community settings. *Journal of Contextual Behavioral Science, 23*, 31-37. https://doi.org/https://doi.org/10.1016/j.jcbs.2021.11.002

Schippers, G. M., Broekman, T. G., & Buchholz, A. (2011). *MATE 2.1. Manual and Protocol.* English Edition: W. M. Cox. Nijmegen: Bêta Boeken.

Schokker, M. (2021). Voluit leven in de verslavingszorg In M. Hulsbergen & E. Bohlmeijer (Eds.), *Voluit Leven: Handleiding voor professionals* (pp. 76-93). Boom uitgevers.

Scully, K. A., Mohn, R. S., & Madson, M. B. (2018, 2018/10/01/). Psychometric evaluation of the drinking refusal self-efficacy scale - revised with college students in the United States. *Addictive Behaviors, 85*, 100-106. https://doi.org/https://doi.org/10.1016/j.addbeh.2018.05.032

Shorey, R. C., Elmquist, J., Gawrysiak, M. J., Strauss, C., Haynes, E., Anderson, S., & Stuart, G. L. (2017, 2017/09/19). A Randomized Controlled Trial of a Mindfulness and Acceptance Group Therapy for Residential Substance Use Patients. *Substance Use & Misuse, 52*(11), 1400-1410. https://doi.org/10.1080/10826084.2017.1284232

Şimşek, M., Dinç, M., & Ögel, K. (2019, 2019/10/02). Determinants of the addiction treatment drop-out rates in an addiction counseling centre: a cross-sectional study. *Psychiatry and Clinical Psychopharmacology, 29*(4), 446-454. https://doi.org/10.1080/24750573.2018.1505283

Stotts, A. L., Green, C., Masuda, A., Grabowski, J., Wilson, K., Northrup, T. F., Moeller, F. G., & Schmitz, J. M. (2012, 2012/10/01/). A Stage I pilot study of acceptance and commitment therapy for methadone detoxification. *Drug and Alcohol Dependence, 125*(3), 215-222. https://doi.org/https://doi.org/10.1016/j.drugalcdep.2012.02.015

Stotts, A. L., & Northrup, T. F. (2015, 2015/04/01/). The promise of third-wave behavioral therapies in the treatment of substance use disorders. *Current Opinion in Psychology, 2*, 75-81. https://doi.org/https://doi.org/10.1016/j.copsyc.2014.12.028

Uhl, G. R., Koob, G. F., & Cable, J. (2019). The neurobiology of addiction. *Annals of the New York Academy of Sciences, 1451*(1), 5-28. https://doi.org/https://doi.org/10.1111/nyas.13989

Van Kessel, P., Triemstra, M., & De Boer, D. (2014). *Handreiking voor het meten van kwaliteit van zorg met Patient Reported Outcome Measures*. NIVEL.

Van Wijngaarden, B., Meije, D. l., & Kok, I. (2008). *Het onderscheidend vermogen van een Consumer Quality Index voor kortdurende ambulante geestelijke gezondheidszorg en verslavingszorg*.

Witkiewitz, K., Montes, K. S., Schwebel, F. J., & Tucker, J. A. (2020). What Is Recovery? *Alcohol Res, 40*(3), 01. https://doi.org/10.35946/arcr.v40.3.01

Witlox, M., Garnefski, N., Kraaij, V., de Waal, M. W. M., Smit, F., Bohlmeijer, E., & Spinhoven, P. (2021). Blended Acceptance and Commitment Therapy Versus Face-to-face Cognitive Behavioral Therapy for Older Adults With Anxiety Symptoms in Primary Care: Pragmatic Single-blind Cluster Randomized Trial [Original Paper]. *J Med Internet Res, 23*(3), e24366. https://doi.org/10.2196/24366

Young, R. M., Hasking, P. A., Oei, T. P. S., & Loveday, W. (2007, 2007/04/01/). Validation of the Drinking Refusal Self-Efficacy Questionnaire—Revised in an Adolescent Sample (DRSEQ-RA). *Addictive Behaviors, 32*(4), 862-868. https://doi.org/https://doi.org/10.1016/j.addbeh.2006.07.001

# Appendix

## Appendix A

*Final interview scheme used during the interviews with the participants.*

Topic 1: Algemene ervaring

- Hoe heeft u Voluit Leven ervaren?
    - Samenvattend (dus u heeft Voluit Leven beleefd als …) … Kunt u hier nog meer over vertellen?
    - Was het doel van Voluit Leven al vanaf het begin van het programma duidelijk?

Topic 2: Bijeenkomsten + gemiste bijeenkomsten

- Heeft u alle bijeenkomsten bijgewoond?
    - Zo niet, heeft dit consequenties gehad voor het vervolg van het programma?
    - Hoe vond u het om na de gemiste bijeenkomst de volgende bijeenkomst bij te wonen?
    - Wat was de reden dat u deze bijeenkomsten heeft gemist?
- Kunt u wat vertellen of de … bijeenkomst?
    - Het zoeken naar het geluk en hier en nu.
    - Vermijdingsstrategieën > experiëntie vermijding en hier en nu
    - Cognitieve fusie en vermijden en hier en nu
    - Acceptatie en hier en nu
    - Cognitieve diffusie technieken en hier en nu
    - Zelfbeeld, flexibel zelfbeeld
    - Waarden en toegewijde actie
    - Waarden en toegewijde actie
    - Samenvatting
- Welk thema heeft u het meest aangehad? Welk thema vond u het minst nuttig?
- Kunt u een voorbeeld geven van…
- Samenvattend: U heeft dit dus zo beleefd, kunt u hier nog wat meer over vertellen?
- Bij bijeenkomst … was er huiswerk. Heeft u het huiswerk gemaakt? Hoe is dit huiswerk u bevallen? Voegde het maken van het huiswerk iets toe aan de bijeenkomst?
- Wat vindt u van het boek? Is het boek een toevoeging op het Voluit Leven programma?

Topic 3: Effectiviteit

- Wat heeft u aan Voluit Leven gehad?
- Bent u tevreden over het resultaat van Voluit Leven?
    - Was de behandeling naar uw mening de juiste aanpak voor uw klachten?
- Hoe leerzaam vond u Voluit Leven?
- Welke aspecten van Voluit Leven gebruikt u nog in uw dagelijkse leven?
    - Op welke momenten gebruikt u Voluit Leven?
- Heeft Voluit Leven u geholpen bij uw verslaving? Zo ja, op welke manier?

Topic 4: Reden van meedoen

- Wat was u reden om mee te doen met Voluit Leven?
- Heeft u momenten gehad waarop u wou stoppen?
    - Wat waren deze momenten dan?
    - Waarom bent u dan toch niet gestopt?
    - Heeft de behandelaar actie ondernomen op het moment dat u wou gaan stoppen?
        - Zo ja, welke actie? Wat vond u hiervan?
        - Zo nee, had de behandelaar actie kunnen ondernemen volgens u?

Topic 5: Groepsdynamiek + behandelaren

- Hoe voelde u zich in de groep?
- Heeft u steun ervaren van uw groep?
- Heeft u het gevoel gehad dat de groep naar u luisterde?
- Heeft u het gevoel gehad dat de groepsbegeleiders u serieus namen?
- Heeft u het gevoel gehad dat de groepsbegeleiders naar u luisterende?
- Als u terugkijkt naar een vorige behandeling die u heeft gevolgd, zit er dan verschil tussen de houding van de groepsbegeleider en de groepsbegeleider van Voluit Leven?

Topic 6: Technologie als aanvulling

- Denkt u dat technologie, zoals een app of website, een aanvulling kan zijn op het Voluit Leven programma?
- Wat zou u willen dat deze technologie dan zou kunnen doen?
    - *Eventueel voorbeelden geven; app, website, luisterboek.*

Afsluiting

- Heb ik nog iets gemist of heeft u nog iets toe te voegen?
- Bedanken.

**Appendix B.**

*An overview of the used coding scheme.*

| Main code + subcodes | Description |
|---|---|
| Overall impression | Participants' general impression of the programme, including positive and negative feedback. |
| Components of Living to the Full | Participants' comments and feedback on the components of Living to the Full. |
| Mindfulness | Participants' comments on the mindfulness exercises that are thought within the Living to the Full programme, excluding the comments made about using mindfulness in their daily lives (see 'Effect on daily life'). |
| Avoidance strategies | Participants' comments on the theme avoidance strategies and their experiences with this theme. |

| | |
|---|---|
| Cognitive fusion | Participants' comments on the theme cognitive fusion and their experiences with this theme. |
| Acceptance | Participants' comments on the theme acceptance and their experiences with this theme. |
| Cognitive defusion techniques | Participants' comments on the theme cognitive defusion techniques and their experiences with this theme. |
| Self-image | Participants' comments on the theme self-image and their experiences with this theme. |
| Values and committed action | Participants' comments on the theme values and committed action and their experiences with this theme. |
| Effectiveness | Participants' feedback on whether or not they found Living to the Full effective, and comments made about the effect of Living the Full on their addiction, daily life and/or mental wellbeing. |
| Effect on addiction | Participants' comments on how Living to the Full impacted their addiction. |
| Effect on daily life | Participants' comments on the use of Living to the Full in their daily life and the effect of doing Living to the Full in their daily life. |
| Effect on mental wellbeing | Participants' comments on how Living to the Full impacted their mental wellbeing. |
| Completion of Living to the Full | Participants' comments on how much of Living to the Full they completed. |
| Homework | Participants' feedback on doing homework for Living to the Full, including if they did their homework and how helpful they found it. |
| Book | Participants' feedback on the Living to the Full book, including how helpful they found it and whether they would recommend it to others. |
| Peer support | Participants' comments on if they experienced support from their peers in the group and how having peers influenced the programme. |

| | |
|---|---|
| Missed sessions | Participants' comments on how many sessions they missed and what consequences they experienced. |
| Drop-out risks | Participants' comments on any factors that could lead to dropping out of the intervention. |
| Private life | Things in their private life that influenced their participation to the Living to the Full programme. |
| Falling behind | Participants' comments on what challenges they faced that in keeping up with the programme. |
| Confronting | Participants' comments on when they felt the programme was confronting or challenging them. |
| Reasons to participate | The reasons participants gave to participate in Living to the Full. |
| Group dynamics | Participants' feedback on the group and therapist. |
| Group | Participants' feedback on the group, including if they listened to them and the size of the group. |
| Therapist | Participants' feedback on the therapist leading Living to the Full, including their skills and style. |
| Organisation | Participants' feedback on the organisation of Living to the Full, including the set-up of the sessions, invites, the individual programme, a follow-up treatment and the use of technology. |
| Set-up of the sessions | Participants' feedback on how the sessions were organised, including the amount and duration of the sessions. |
| Invites | Participants' feedback on how they were invited to participate in Living to the Full. |
| Individual programme | Participants' feedback on following Living to the Full as an individual programme. |
| Follow-up | Participants' feedback on how they are going to follow-up Living to the Full. |
| Technology | Participants' comments on if they think using technology would be an addition to the programme. |