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**Acceptance and Commitment Therapy for women
affected by HIV, Pain and Sexual abuse**
A pilot study in Sierra Leone

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Abstract

The consequences of war and conflict on mental health remain long after the events are over. Several publications and reports highlight the need for effective and cost-effective treatments targeting mental ill-health in war affected low-income countries. This study investigated the effects of a two-session Acceptance and Commitment Therapy (ACT) intervention on quality of life, psychological flexibility and Steps taken in valued direction. Participants were women (N=6) seeking help for HIV, Pain and Sexual abuse at a Non Governmental Organization in Sierra Leone. A single case design with repeated measures and pre, mid, and post-measures was used. Results show support for the interventions effect on Quality of Life and Steps taken in valued direction. Due to the small sample size in this pilot study the significance of the findings is limited.

Key words: Acceptance and Commitment Therapy, ACT, Pain, HIV, Sexual abuse, Sierra Leone

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Eleven years after the end of the civil war in Sierra Leone, the country is still suffering from its aftermath. The conflict, which ended in 2001 devastated the country's infrastructure, left many dead and mutilated and half of the population displaced (Macauley, 2012). Sierra Leone is now an extremely poor nation, with great inequalities in income and with one of the worlds highest infant mortality rates (CIA 2012). Since the war, diseases such as HIV/AIDS, malaria and tuberculosis are compounding the situation further (GOSL, 2005).

The basis of this paper is a field study that took place at a non-governmental organization working to deliver psychosocial care in Sierra Leone. The aim of the study was to evaluate the effects of a short-term psychotherapeutic intervention offered to women seeking help for HIV, pain and sexual abuse. The organization where the study took place will be referred to in this paper as the counseling center.

Women in Sierra Leone

During the civil war, thousands of girls and women were forced into slave labor. Systemic sexual abuse, violence and sexual slavery were common and many were abducted for recruitment as child soldiers (Baker & May, 2004). After the war, women are still subjected to gender violence, have less access to education as well as less power in both political and private spheres (Caulter, 2009). Additionally, many women are not only faced with trauma and injuries directly related to the war, but also implications of poverty, low social status and fewer educational opportunities.

The abduction and sexual abuse of women and girls during the war resulted not only in psychological traumas and unwanted pregnancies but also the spread of sexually transmitted diseases. Women and minorities, particularly those living in poverty, are now those most affected by HIV worldwide (UNAIDS, 2006). Predisposing factors such as increased levels of prostitution, intravenous drug use, traditions and norms that encourage multiple sexual partners and the low status of women leaves Sierra Leone at risk of facing an HIV outbreak (Macauley, 2012).

Mental Health in developing countries

War and torture are known to be related to mental disorders. Disorders that cause intense suffering and dysfunction and bring extensive consequences for both individuals and society (Betancourt & Williams, 2008; De Jong, 2002). In developing countries, recognition and treatment of mental disorders has largely been overlooked

(WHO, 2009). In a recently launched program called The Mental Health Gap, the World Health Organization (WHO) highlights the need for mental health services and psychosocial interventions in low- and middle-income countries. According to WHO, mental health treatment should be available in the community for anyone who needs it. The Mental Health Gap Program was initiated to address the fact that more than four in five people in need of services for substance abuse and mental and neurological conditions do not receive help. The program further describes that when services are available, the interventions are often neither evidence-based nor of high quality (WHO, 2010).

Cultural differences and mental health

Even though research describe a lack of resources and public institutions to address mental health in many developing African countries, anthropological research has uncovered traditional ways to deal with mental illness. These methods are often integrated into social, religious and traditional structures (Patel, 1995; Utas, 2003). Additionally, the ways in which symptoms of mental illness are related and interpreted in Sub Saharan Africa often differ from Western interpretations. Although Western influence means that traditional views are changing and approaching a Western model of mental illness, symptoms of mental illnesses are still more commonly attributed to external causes such as evil spirits, non-observance of taboos and consequent ancestral displeasure than to biomedical concepts (Patel, 1995). In Sierra Leone, anthropological studies have noted descriptions of mental illness as being perceived to be outside the body and described in terms of invasion from the bush (Utas, 2003; Shaw, 2000).

Patel (1995) describes psychotic illness as often recognized as “madness”, whilst less severe forms of psychiatric illness (depression, agoraphobia, somatization) are more frequently considered to be social problems. Behavioral features of mental illness as well as somatization are more common than in Western interpretations (Patel, 1995), a contrast also observed in refugee populations (Lin, Carter, & Kleinman, 1985). Ebigbo (referred in Patel 1995) describes that in Sub Saharan Africa, the somatic localization of the soul and mind is in the chest, head and/or abdominal regions. He goes on to reason that the phenomenon of somatic presentations may be related to this localization of the soul and mind.

Research into mental health in conflict and post conflict settings

When reviewing research into mental health in war-affected countries, two main perspectives appear: trauma-focused and psychosocial approaches. Advocates of trauma-focused approaches view the direct exposure to violence and destruction related to war as the critical factor. Typically, these are events that are potentially traumatic, often assessed by war-event checklists (for example the disappearance or death of a loved one and physical assault). According to this view, addressing symptoms caused by traumatic events will not only improve mental health but also help people to cope more effectively with environmental stressors. In contrast to this, a psychosocial approach focuses on stressors related to social and material losses caused by armed conflict, such as the destruction of a home, shattered social networks and loss of material support (Miller & Rasmussen, 2010). Advocates of psychosocial approaches are less interested in individual differences and treating the individual than in restoring the physical environment, providing predictability and routine and altering stressful conditions. According to the psychosocial perspective, this is the most effective way of improving mental health (Betancourt & Williams, 2008).

The main criticism facing trauma-focused interventions in post conflict settings concerns the appropriateness of applying individualized psychological treatments and models developed in the Western world in non-Western cultures. The evidence for the efficacy of "talking therapies" is substantial in the industrialized nations where these therapies have been developed, but the extent to which psychotherapeutic models and the strategies they use are appropriate for other populations is a matter of which there is little knowledge (Bolton et al., 2003). In West Africa, conditions differ those in which psychotherapy was originally developed, something that may reduce effectiveness (Patel, 1995). In addition, many people live in extremely poor and unsafe conditions that are rare in developed countries. Concerns about the barriers facing the implementation of psychological treatments in third world countries have also been raised, among them the lack of skilled human resources and the lack of resources in the health care sector (Patel, Chowdhary, Rahman, & Verdeli, 2011; Naeem, Gobbi, Ayub, & Kingdon, 2010). Additionally, some researchers have argued that symptoms described in western psychiatric diagnoses, like Post Traumatic Stress Disorder (PTSD) symptoms, may have a different meaning or value in different cultures. Meaning that it may depend on

cultural context whether symptoms are interpreted as distressing (Nicholl & Thompson 2004). In contrast, meta-analyses show beneficial results for psychological interventions as treatment for PTSD and depression in both adults and children in humanitarian settings (Tol et al., 2011; Patel et al, 2011). Research also suggests that a narrow psychosocial focus may underestimate the severe impact that exposure to war and armed conflict can have on psychosocial functioning and mental health. If interventions only target daily stressors, they may risk overlooking the need for more specialized treatment for traumatized or depressed individuals (Miller & Rasmussen, 2010).

Considering the criticism of both perspectives, The Sierra Leone Human Development Report (UNDP, 2007) highlights a significant need for psychosocial counseling focusing on trauma healing as a way of improving the livelihood of survivors of the civil war across the country. In connection with this, the WHO recommends interventions on both a societal and individual level in low-income countries, including Cognitive Behavioral Therapy (WHO, 2009).

Cognitive Behavioral Therapy

CBT is one of the most extensively researched forms of psychotherapy and has been concluded to be clearly effective for a wide range of disorders, such as trauma symptoms and pain. (Jayasvasti 2011, Panther & Liebman 2005, Lechner et.al 2003; Butler, Chapman, Forman, & Beck, 2006; Foa 2011). CBT has further been evaluated for patients with HIV, displaying positive effects on symptoms of depression, on adherence and decrease in pain-related impairment (Huggins, Bonn-Miller, Oser, Sorrell, & Trafton, 2012; Jayasvasti, 2011). Most research of CBT has been carried out in the western part of the world. However, some studies have been conducted in non-western countries like Pakistan (Naeem, 2011), Thailand (Jayasvasti et. al, 2011), Sri Lanka (Sumathipala, Hewege & Hanwella, 2000), Kenya (Papas et al., 2010) and South Africa (Tshabalala, 2011). These studies show that CBT could be an effective treatment in low-income countries and in different cultural contexts.

Quality of Life

Besides interventions and practices of mental health, the WHO is also researching psychometric instruments, such as the measure of Quality of life. In an attempt to broaden the scope of the evaluation of effects of health care interventions,

many clinical researchers have turned their attention to Quality of life assessment as a complement or alternative to more symptom-focused approaches. The WHO define Quality of life as “an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns” (Skevington, S.M, Lofty, M, O’Connell, 2004 p. 2). Several studies have shown that the subjective wellbeing of the client is related more closely to treatment seeking behavior, compliance and evaluation of treatment rather than the objective medical condition. The use of Quality of life measures may therefore be a valuable alternative to statistical approaches to defining clinical significance and a complement to traditional symptom-based measures (Gladis, Gosch, Dishuk, & Crits-Christoph, 1999).

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy belongs to the wave of Cognitive Behavioral Therapy, and is based on the same learning principles as CBT, but developed within a pragmatic philosophy called functional contextualism. Meaning that psychological events are regarded as actions of the whole organism, interacting with and in a context. According to the philosophy of contextualism, behavior, the environment, history, and outcome of the behavior are all part of the context and important to consider while proceeding through therapy. Merely removal of a client's problematic behaviors from the context (e.g only analyzing manifested behavioral symptoms) is thought to miss the cause and nature of the problem and opportunities for its solution (Hayes & Pierson, 2005).

In addition, ACT uses a pragmatic criterion of truth, which means not conducting any evaluation of the right or wrong of a person’s actions. Rather than categorizing behaviors as positive or negative, the effects of these behaviors are evaluated as consistent or not consistent with the individual’s goals and values (Hayes Strosahl & Wilson, 1999). This is also referred to as *workability* of actions (Hayes, 2004). In addition, ACT is based on a theory of human language called Relational Frame Theory (RFT) (Hayes, Luoma, Bond, Masuda & Lillis, 2006; see also Blackledge 2003 for an extended introduction). Within an ACT-framework, psychological distress arises as a result of experiential avoidance, which refers to attempts to control painful feelings and thoughts even if doing so limits the quality of life. Experiential avoidance and its relation to psychopathology has gained much

attention in recent psychotherapeutic research (Chawla & Ostafin, 2007). In theories and research of ACT, experiential avoidance is thought to be critical to the development and maintenance of psychopathology (Hayes, Strosahl, & Wilson, 1999). Additionally, in studies of PTSD, Pain and HIV, experiential avoidance has shown to be related to severity of mental ill-health (Maack, Tull, & Gratz, 2011; Gonzalez, Solomon, Zvolensky, & Miller, 2009; McCracken, Vowles, & Eccleston, 2004).

In ACT theory, psychological flexibility is seen as contrary to experiential avoidance and refers to the ability to fully contact the present moment as a conscious person, and based on what the situation affords, changing or persisting in behavior in the direction of chosen values (Hayes, Strosahl & Wilson, 1999). The primary goal in ACT is to increase psychological flexibility through six core processes; *acceptance*, *cognitive defusion*, *contact with the present moment*, *self as context*, *committed action* and *values* (Hayes, 2004).

Acceptance means embracing private events (thoughts, feelings, and physical sensations) consciously and actively, without attempting to change their frequency or form, especially when doing so would cause psychological harm. Acceptance is not an end in itself but rather a way of increasing flexible actions based on values.

Cognitive defusion refers to the way one relates to or interacts with thoughts. Techniques of cognitive defusion attempt to reduce the sometimes unnecessary behavioral impact of thoughts. This is fostered by learning how to see thoughts merely as thoughts, and to view the process of thinking in a more mindful manner, rather than dealing only with the world structured by that thinking. The result of defusion is usually a decrease in attachment to or believability of private events, rather than an immediate change in their frequency.

Self as context refers to an experiential contact with the self as context rather than content. This encourages clients to experience their own thoughts and feelings without identifying with a conceptualized self (for example, “I am worthless” or “I am sick”). If one can be aware of one’s own flow of thoughts and feelings without having an attachment to them, acceptance and defusion can be fostered.

Contact with the present moment involves contacting the present moment as it occurs and being able to experience the world more directly, promoting a more flexible behavior that is thus more consistent with defined values.

Values refer to the qualities in important life domains that are fundamental for

a meaningful life. Values differ from goals in the way that they are not objects to be sought, but rather directions of action that can be initiated moment by moment.

Committed action involves defining the behavioral patterns and behavioral changes that bring the client closer to value-consistent goals. Committed action involves concrete and attainable short term, medium and long term goals. Additionally, efforts to change behavior often lead to contact with psychological barriers that are addressed through other ACT processes (Hayes, 2004).

The ACT principle states that, when conceptualizing psychopathology and pain, it is not only the severity of pain and other symptoms that influences patient functioning, but also the psychological relationships between these symptoms and behaviors. Hence, the goal in treatment is not explicitly to reduce pain or distress, or to change the frequency or content of thoughts. Instead, ACT seeks to improve functioning by modifying the impact of pain and other symptoms through increased psychological flexibility (Hayes et al., 2006)

Why ACT?

At present, the effects of ACT have been evaluated with regard to a diverse number of chronic illnesses and psychiatric disorders, with promising results (Hayes, Barne-Jolmes & Roche, 2001; Dahl, Wilson & Nilsson 2004; Gregg Callaghan, Hayes & Glenn-Lawson 2007; Ruiz, 2010). Although ACT is a relatively recent contribution in psychotherapy, empirical support is growing and ACT is currently listed as Evidence Based Treatment with strong support in the areas of Pain and Depression (APA, 2012). In reviews of ACT treatment, a high number of these ACT studies have featured extremely short interventions that have shown relevant effects (Ruiz, 2010).

The theoretical concept of experiential avoidance has been found to be an important component in explaining psychopathology. ACT works specifically to target dysfunctional behavior patterns of experiential avoidance. In the areas of Pain, HIV and sexual abuse this may be of particular relevance. Tull, Gratz, Salters & Roemer (2004) have shown the tendency to suppress thoughts and the intentional withholding of emotional responses to be associated with severity of trauma related symptoms. Longitudinal studies of patients with HIV indicate that avoidant coping is correlated to greater HIV disease progression (Ironson et al., 2005a) and that denial can increase mortality as well as predict a more rapid progression to AIDS (Ironson et al., 1994; Leserman et al., 2002). In the area of pain, experiential avoidance has been

shown to be related to less tolerance of pain (Hayes et.al, 1999). Several studies have also shown that emotional avoidance processes may increase pain intensity, and that acceptance strategies can lead to improved emotional adjustment related to pain. This is of relevance when treating patients with HIV and AIDS since research has shown that patients with HIV/AIDS have high rates of non-HIV related chronic pain (e.g., musculoskeletal pain and headache), pain connected to progression of AIDS, as well as nerve damage related to anti retroviral treatment (Huggins, Bonn-Miller, Oser, Sorrell & Trafton, 2012). Many HIV positive women in Sierra Leone also have histories of sexual abuse, a circumstance that may further increase the risk of developing chronic pain (Larue, Fontaine, & Colleau, 1997; Linton, 1997). Additionally, one important life stressor indicating emotional distress for persons living with HIV/AIDS and experiences of sexual abuse is self-stigma (Leserman, et.al 2002). Beliefs about HIV and attitudes towards infected individuals in Sierra Leone, as well as a stigma connected to sexual abuse, leaves women at risk of self-stigmatization. ACT has been shown to reduce self-stigma in other populations, such as substance-abuse (Luoma, Kohlenberg Hayes, Buntin & Rye, 2008) sexual minorities (Yadavaia & Hayes, 2008) and overweight individuals (Lillis, Hayes, & Bunting, 2009). Hence, ACT could be an effective method addressing ill-health related to stigma for the women in this study.

In summary, there is a need for effective treatment in order to counteract mental ill health and to improve the quality of life of women in Sierra Leone. Women appear to be a more vulnerable group often faced with numerous difficulties. ACT is a new model of CBT that has shown promising results when it comes to a variety of psychological problems, based on the assumption that common processes underlie and maintain psychological problems. ACT is further distinguished from more traditional methods of CBT in that it is less symptom-oriented, operating more broadly to target the general dysfunctional behavior patterns of avoidance and psychological inflexibility. For the reasons mentioned above, ACT could be a method to address the diverse difficulties faced by many women in Sierra Leone. Supported by previous studies implemented in developing countries that have used short term therapy (Lundgren, Dahl, Yardi & Melin, 2008 and Lundgren, Dahl, Melin & Kies 2006), a short term intervention was deemed the most cost effective and suitable therapy in the case of this particular study.

There has been only a small number of studies evaluating the effectiveness of implementing psychological therapy in developing countries (Stone & Warren, 2011) and, to date, no studies of CBT or ACT in Sierra Leone. There was, therefore, good reason to in this pilot study, investigate the effects of a brief ACT intervention for women seeking help at a counseling center in Sierra Leone.

Aim

The aim of this study was to evaluate the effects of a short term ACT intervention offered to women seeking help for HIV, pain and sexual abuse at a counseling center in Sierra Leone, in terms of Quality of life, Steps taken in valued direction and Psychological flexibility. A second purpose of the study was to gather information that could generate improvements of the intervention as well as hypotheses for further research.

Research questions

1. What are the effects of the ACT intervention on the dependent variables:
 - Quality of life
 - Steps taken in valued direction
 - Psychological flexibilityin participants' pre- and post-measures?
2. What are the participants' perceptions of the intervention with regard to its importance and the extent of the support it provided?

Method

Participants

The participants were six women seeking support at a counseling center in Sierra Leone. Table 1 presents summarized information of the participants' demographic characteristics regarding reason for contact with the organization, multiple problems, tribe, number of children and educational and economical status. The mean age was 38.67 years ($SD=6.15$, range from 33 to 50 years old). Three of the

women came into contact with the organization after being diagnosed with HIV, two of the women because of a history of sexual abuse, and one woman came in contact with the organization due to reoccurring headaches.

HIV, pain and sexual abuse are known to be related, as experienced in the case for the women participating in this study. Therefore, Table 1 shows how many of the women were treated for problems relating to one of the three areas other than that which they primarily sought help for. For example, one of the women with HIV had been abducted and sexually abused during the war, and the women seeking help for sexual assault had experienced pain. One of the women with HIV also suffered from recurring headaches. Headaches were the most common type of pain experienced, followed by pain in the stomach and the pubic area. With regard to educational status, all but one of the women participating in the study had completed secondary school. One of the women had learnt to read and write through adult education and four of the women had undergone vocational education following secondary school. Of these, one had completed a course in catering and another participated in courses in catering when she had the opportunity. One of the women had completed hairdresser training and another had begun a course in computer studies, although had been unable to complete the course due to illness.

Four different tribes are represented, corresponding to the four largest ethnic groups in Sierra Leone (Temne 35%, Mende 31%, Limba 8%, Kono 5% retrieved from CIA, 2012). The table showing Economic status is a summary of participants' answers to the question, *"Have you enough money to meet your needs?"* regarding food, clothing and living, with the response alternatives of *"not at all"*, *"a little"*, *"moderately"*, *"mostly"* and *"completely"*. Five of the six women had children.

Table 1. *The table shows participants' tribe, number of children, reasons for seeking help at the organization, multiple problems, educational status, occupational status and economic status.*

Variable	Category	<i>n</i>
Tribe	Mende	2
	Temne	2
	Kono	1
	Limba	1
Number of Children	0	1
	1	2
	2	1
	4	2
Main reason for seeking help at the organization	HIV	3
	Pain	1
	Sexual abuse	2
Participants with multiple problems addressed during intervention	HIV/Pain	2
	HIV/Sexual abuse	1
	Sexual abuse /pain	2
Educational status	Secondary school	1
	Adult education	1
	Secondary school and vocational training	4
Occupational status	Student	2
	No work	2
	Working sometimes	2
Economic status		
(participants' perceptions of having enough money to meet needs regarding food, clothing and living)		
	Not at all	3
	A little	3

The clients were recruited at a non-governmental organization working to deliver psychosocial counseling. The counseling center's services are free of charge and open to the public. At present, the organization's main activities are HIV testing, HIV

counseling and counseling for women who have been exposed to violence and sexual abuse. HIV testing is performed mostly in the field. Clients testing positive are referred to hospitals to receive free medication and invited to the organization for counseling and follow-up treatment. Once a month, clients are invited to experience-sharing meetings at the organization. In the area of gender-based violence, besides counseling, the organization is also reaching out to victims through community-based information, dramas and home visits. Some of the organization's clients are also referred from an adjacent elementary and vocational school for girls. The organization is currently in the process of implementing and investigating how ACT could benefit their clients and their work. This has been done by the staff participating in courses and workshops in ACT.

Inclusion criteria

The inclusion criteria were that individuals were aged at least 18 years old and understood spoken English or Krio (the *lingua franca* in Sierra Leone).

Exclusion criteria

The exclusion criteria were active substance abuse, residence outside central Freetown (more than two hours of travel time) and critical life circumstances that would make participation difficult.

Compensation

All participants were given compensation for their travel to and from the counseling center. The given amount corresponded to a return ticket with local transport. At the counseling center, fresh water was always available, and sometimes fresh fruit and bread.

Material

Materials used in the present study were self-report instruments, a modified version of The Bull's Eye Values Survey in the shape of a wooden board, tape, a recording machine and post-it notes used to facilitate exercises during the intervention.

Procedure

Participants were recruited from the Counseling Organization and interviewed during the recruitment meeting. Information from this interview served as a basis to

answer the second research question. Participants that met inclusion criterion continued to pre-testing meetings. During the first pre-test meeting, clients were given an informed consent form, WHOQOL-BREF, AAQ II and BEVS. Questions and options were read out loud to the participants and a counselor translated or explained phrases or words from English to Krio when necessary. Approximately 20 minutes were devoted to BEVS; to decide on and verbalize a value in each one of the four areas of BEVS, as well as examine obstacles preventing the participant living consistently with their values. After the introduction to BEVS, the participants gave a rating in each area. Subsequently, BEVS were administered for all pre-measures, the intervention and post-measures. WHOQOL-BREF and AAQ II were administered on the first, seventh and last post measure (*Figure 1*). A treatment evaluation were conducted on the first or second post-measure. All pre measures, as well as the intervention, were conducted at the counseling center. Where possible, post-measures were taken at the center, and mostly in connection to participants' attending meetings or experience-sharing. In some cases, in which participants could not attend post-test meetings at the counseling center, measurements of BEVS were conducted by the telephone. The last post-measure (nr 10) was conducted by the staff at the center.

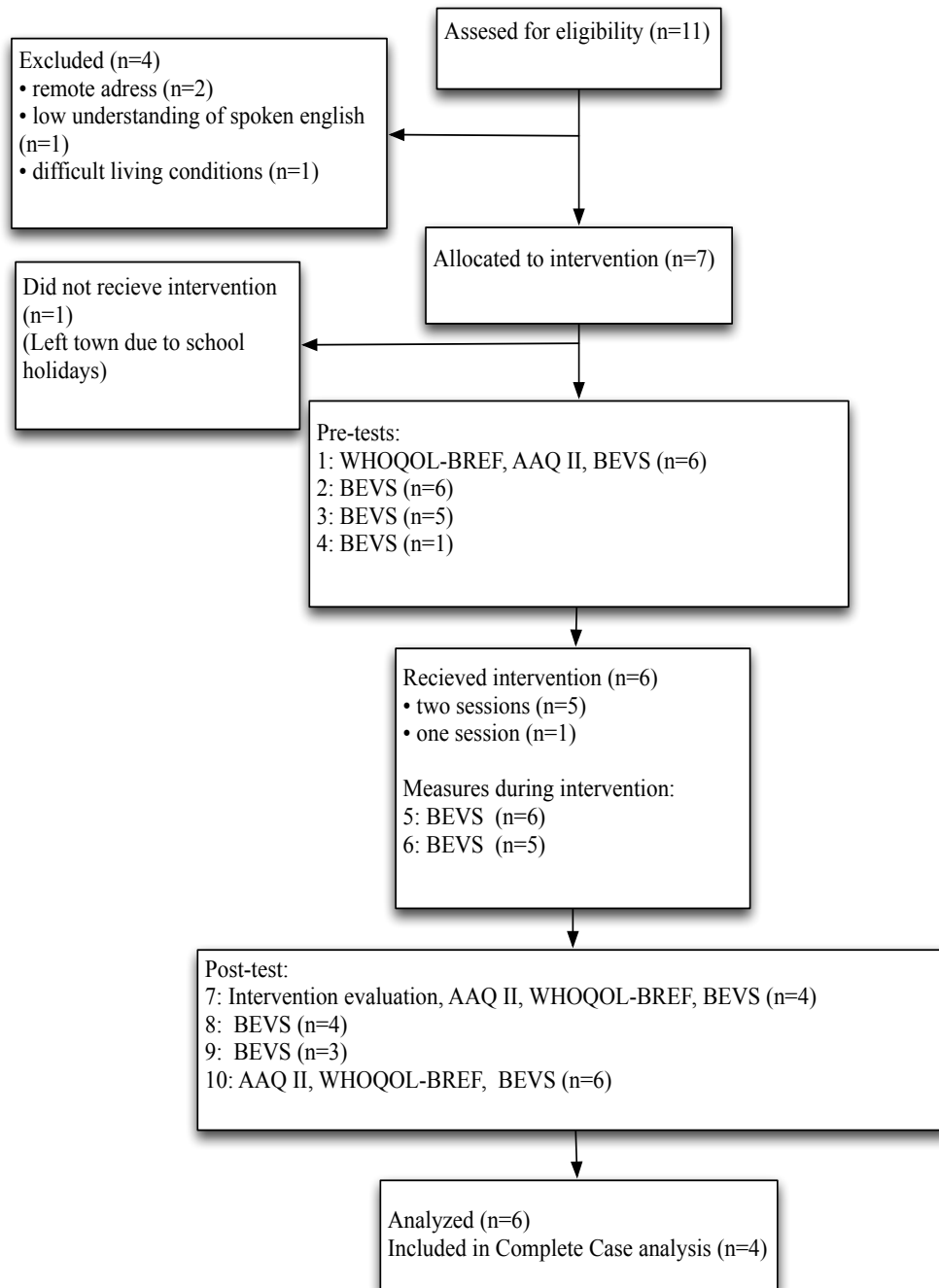


Figure 1. Flow chart showing the procedure of the study.

Recruitment

Participants were recruited from an experience-sharing meeting at the counseling center. All clients had visited and been in contact with the counseling

center before. Sixteen women participating at the meeting were given information about the study and invited to an interview. Out of these, eleven women came to the interview. Two of the women were excluded due to remote addresses and one woman due to difficult living conditions. One woman with Mende as first language was excluded due to having little understanding of English or the local language Krio. Screening for exclusion criteria was made during the intake interview. Client nr 5 was recruited from the adjacent vocational school, but was only available for the first interview. During the screening interviews, a counselor working for the organization was present, translating from Krio to English when needed.

The intake interview was semi-structured, meaning that the interviewer asked the clients both some pre-written questions with standardized answers and some open questions (see appendix 1). Participants were informed of the conditions of the study and asked if they would like to participate if invited. A considerable amount of time was devoted to questions about the study and explaining the nature of psychological treatment.

Ethical considerations

The women participating in the study had experienced war, abuse and other stressful events. An ethical issue to consider is that the measurements and intervention in the study could arouse strong and perhaps harmful reactions from the participants. An effort to minimize stress was taken by explaining and introducing the measures and intervention in a calm and non-demanding manner. Before completing the psychometric instruments, all participants were told that they could speak to the therapists or counselors regarding any thoughts and feelings their participation may elicit.

An additional ethical concern is that neither the effect of ACT nor any other psychological therapy has been studied in the cultural context of Sierra Leone. Even though exercises and components of the intervention had been practiced and evaluated by staff members at the counseling center, the intervention may not sufficiently account for differences and specific needs related to the cultural context in which the study was performed.

Informed consent was obtained from each of the participants prior to the start of the intervention. Participants were informed that the study was voluntary and could

be terminated at any time without consequences and that all information gathered in the study would be treated as confidential. For research purposes, participants were coded by number and are not identifiable in any research reports or publications.

Treatment was considered to be within the scope of the organization's ordinary work.

Design

This study was performed as a quasi-experimental single-subject design with pre-treatment baseline measures followed by measures during treatment and post-treatment.

The participants entered at baseline, phase A, where measurements were taken but no intervention given. The ACT intervention was introduced during phase B, and followed by post measures in phase C, taken to observe any changes post intervention. A continuous measurement was used in phase A, B and C, and standard measurements used in phase A and C (see *Figure 1*). Continuous measurements were included to rule out specific threats to internal validity related to assessment (Kazdin 2010). The evaluation of the intervention were conducted during post measure 7 or 8. The choice of design was based on the study being an exploratory investigation of a new field.

Independent variables

The independent variables were time before and after the intervention and the two sessions of ACT (see appendix 2).

Both sessions were based on the exercise *The Life Line* (further described in Dahl, Plumb, Stewart and Lundgren, 2009). The exercise served as a functional analysis (FA) of the workability of the clients' behavioral strategies. FA means an examination of the clients' responses to emotions, feelings and surroundings, and the consequences of responses when taken action in accordance with stated values. The exercise further functioned as a tool to give the client an understanding and acceptance of her earlier learning experiences.

Session 1) The Life line.

Aim. The overall objective of the session was:

- 1) A functional analysis of the participants' strategies to handle obstacles and distress in relation to values.
- 2) To establish psychological flexibility around private events like thoughts, emotions and physical sensations, thus helping the participant to engage in more healthy and vital actions.

The session began with an acceptance-based exercise. In the Life Line exercise, concepts such as values, obstacles, defusion of thoughts, workability of strategies and commitment were emphasized. During the exercise, participants, together with the therapists, identified situations that evoked painful emotions and thoughts. The clients' strategies of managing the thoughts and emotions were evaluated either as facilitating movement in the valued direction or as a barrier preventing the client from moving in that direction. Exposure to pain and painful emotions was used, in addition to various defusion exercises. Defusion of negative thoughts was addressed by exercises as well as role-play. The participant ended the session by stating a short-term goal in the valued direction.

Session 2

Aim: 1) To increase psychological flexibility with regard to disturbing and painful private events.

- 2) To state long and short term actions.

The second session expanded on the work carried out in the first session, reviewing previously stated actions. The Life line was used to anticipate obstacles that might resent themselves in the future and identify workable strategies to tackle them.

The participant ended the session stating and committing to long and/or short-term actions in their valued direction. The duration of the sessions was approximately 45 minutes.

Dependent variables

The first dependent variable for evaluating the effect of the intervention was quality of life. Quality of life was chosen as a subject of investigation due to it being a well-known and well-studied concept that has been evaluated in a wide range of different countries and populations, including post-war settings (Skevington, 2004; Giacaman, 2007). Quality of life was measured with the WHOQOL-BREF instrument. The second dependent variable was the ACT specific construct psychological flexibility, a

variable chosen in this study due to its significance in ACT theory and its relation to psychopathology (Bond et al., 2011). Psychological flexibility was measured with *The Acceptance and Action Questionnaire II (AAQ II)*. The third dependent variable was steps taken in valued direction measured with the *Bull's Eye Values Survey*. This variable was chosen due to being a central process in ACT and shown to predict wellbeing (Lundgren, Dahl & Melin, 2007). Steps taken in valued direction were measured using a modified version of the the Bull's Eye Values Survey (BEVS) (se appendix 3). A purpose of using the BEVS instrument was its usefulness both as a therapeutic tool, a measure of outcome, and a process measure (Lundgren, et al, 2007).

The WHOQOL-BREF is a 26-item, 5-point Likert scale assessing Quality of life. It is a short version of the WHOQOL-100 assessment. The WHOQOL-BREF is divided in four domains of QOL: physical, psychological, social and environmental. Of the 26 items in the WHOQOL-BREF, 24 originate from each of the facets of QOL in the WHOQOL-100, and the two remaining 'benchmark' items are from the general facet on general health and overall QOL (items that are not included in the scoring). The WHOQOL-BREF has shown acceptable internal reliability ($\alpha > 0.7$, Domains: physical 0.82, psychological 0.81, social 0.68 and environment 0.80) and test-retest reliability (.66-.87 for subscales) (Harper & Power, 1998) and performs well in tests of validity in a survey of adults carried out in 23 different countries (Skevington, et al., 2004)

The Acceptance and Action Questionnaire II is a 10-item, 7-point Likert scale assessing psychological flexibility. Higher score on AQQ II indicates higher flexibility. The AAQ II has shown high to moderate correlations in the expected direction with a wide range of quality of life outcomes such as depression, anxiety, general mental health, job satisfaction and more. Longitudinal research indicates that AAQ II predicts future mental health and that score on AAQ II mediates the link between ACT and improvement in wellbeing as well as behavior consistent with values (Hayes, et al., 2006). The instrument has shown good validity and reliability (test-retest reliability= .79-.81, mean alpha α =.84) (Bond et al., 2011).

Bull's Eye Values Survey assesses value attainment, discrepancy between stated values and behaviors, perceived barriers to valued living and behavioral persistence. Value attainment and persistence when encountering barriers are

measured by the use of a dartboard. The client is asked to describe a specific, deeply held value in each of four different life areas: Personal growth/Health, Relationships, Leisure and Work/Education. The bull's eye represents perfect consistency in behaving in valued directions despite any difficulties, and the client is asked to place an X representing how close to the bull's eye he or she is currently living. The outer rings surrounding the bull's eye represent distance from being perfectly persistent (Lundgren, Luoma, Dahl, Strosahl, & Melin, 2012) The test-retest reliability for all BEVS areas score is $r=.85$, and the test retest reliability coefficient for the different domains are: Personal Growth/Health=.77 Relationships $r= .80$ Leisure= .74 and Work/Education= .81 (Lundgren et al., 2012).

In this study, a modification of the Bull's eye was made to create an instrument suitable for the organization and the participants in the study. The participants were presented with a 40*40cm wooden board divided in four different areas, with seven rings surrounding the bull's eye. Placing an X in the center of the dartboard gave seven points and marking the outer most ring one point. Instructions were adapted to the conditions in this study. Values attainment and persistence in the face of barriers are in this study referred to as steps taken in valued direction.

Treatment Evaluation. The evaluation of the intervention was performed through an interview for about 5-15 minutes where the participants were asked the questions: Have you seen any changes in your life after the intervention? What parts of the intervention did you find useful? One additional question was related to participants work capacity. The participants were asked how much they work and given the options: "no work", "sometimes" and "every day". Participants were further questioned about their area of work.

Analysis

In single-subject designs, each participant serves as her or his own control. Inference of the effect of the intervention is drawn by observing the influence of no treatment compared to treatment on the same person(s) (Kazdin, 2010). Kazdin (2010) recommends single subject design as a useful and relevant approach to show that a clinical significant effect has occurred and that the intervention is responsible for the change. Traditionally, visual inspection of graphical displays is the primary method of data evaluation in single subject design (Clark Carter, 2004). Kazdin (2010) argues that visual inspection is an adequate method of analyzing single case

data. However, he acknowledges the value of using statistical analysis when no stable baseline exists, when treatment effects are difficult to predict accurately (as for new interventions) and statistical control is needed for extraneous factors in naturalistic environments (Kazdin, 1982)

Visual Analysis. Visual analysis has been criticized for having low inter-rater reliability, which has been shown in studies to apply both for professionals and for untrained analysts (Brossart, Parker, Olson, & Mahadevan, 2006). Therefore, several statistical analyses have been performed for this study. A group level analysis, investigating the difference between means for the dependent variables Psychological flexibility and Quality of life, was performed using a paired t-test. Differences in pre and post- measurements for Steps taken in valued direction were also performed at group level, using a paired t-test. In this analysis only participants with at least three pre and post measurements were included (Complete Case Analysis for participants 1, 2, 3 and 7, mean of data points 1, 2 and 3 compared to the mean of data points 7, 8 and 10).

Person oriented analysis. In the analyses described above, the participant is regarded as the unit of analysis. In this approach, there is a risk that differences between individuals may contaminate the result (Ekehammar et al., 2010). One approach aiming to reduce the effects of confounding variables and strengthen internal validity is the person-oriented approach described in Ekehammar et al. (2010). This model is used for each individual in this study, in which the *items* on the dependent variables are regarded as units of analysis, rather than the participant. Meaning that for each participant, data on each item collected at pre-measures are compared to the same dependent variables items collected at post-measures. Following this model, a paired t-test was used to examine statistical significant differences between means for pre and post measures. To further investigate whether participants result in general showed a significant difference between pre and post-measures, a one-sample two-tailed t-test was undertaken for all participants' t-values.

In order to compare all participants in the analysis of BEVS (with regard to missing data), the analysis of BEVS was carried out using data from measure point 1 and 10. In the analyses described above, the four areas of BEVS, the four Quality of Life domains, and the two questions measuring general Health and General Quality of Life in the WHOQOL-BREF were analyzed separately.

Effect sizes were calculated with Cohen's *d* and adjusted with Öst's (2006) recommended limit for values within-group analysis (0.50 for a small effect, 0.80 for a medium effect, and 1.10 for a large effect). For the group analyses, a non-parametric test was used to check the accuracy of the t-test.

Correlations between measurements were calculated with *Pearson's r* and interpreted in a correlation matrix. In some cases the last post-measurement varied between the participants. Hence, a correlational analysis was performed in order to investigate whether any relationship existed between the result for this measurement and the time at which it was taken. In the case of time, the earliest date was assigned "1" and for other dates, time was added as the additional number of days (for example, measurement 1 taken on 23/4 was assigned nr 1 and measurement 2 taken on 26/4 assigned nr 4).

As a result of the loss of material, data for the first post measure (measure point 5) on WHOQOL-BREF and AAQ II were only available for two of the participants, this data were not included in the group analysis, but presented in the section of individual results.

Results

The first research question was: What are the effects of the ACT intervention on the dependent variables: Quality of life, Steps taken in valued direction and Psychological flexibility in participants' pre- and post-measures.

Results show significant differences on group as well as individual level between pre and post- intervention measures for the dependent variable Quality of life. For the variable Steps taken in valued direction individual analysis show differences just above the level of significance. No significant differences between pre and post-intervention were found for the dependent variable Psychological flexibility. The second research question was: What are the participants' perceptions of the intervention with regard to its importance and the extent of the support it provided? This question will be answered in the section of individual results, as well as in the discussion of results.

Results will be presented below in the following order: First, results on group level, following results of the person-oriented analysis. Information regarding work

capacity is additionally compiled in a table. Lastly, each individual's results on dependent variables are presented in a separate section, along with a graphical display of BEVS.

Group level results

In table 2 a paired t-test show significant differences between pre and post-measures for the dependent variable Quality of life $t(5)=-3.33, p=.02$, the Quality of Life domain of Physical Health $t(5)=-3.45, p=.02$, and for General Quality of Life $t(5)=-3.8, p=.01$, and General Health $t(5)=-4.00, p=.01$. No significant differences were found in psychological flexibility $t(5)=-1.44, p=.21$, or for the quality of life domains psychological (II) $t(5)=-1.98, p=.11$, social relations (III) $t(5)=2.14, p=.09$, and environment (IIII) $t(5)=2.16, p=.08$. Given the few participants in the studied sample, the non-parametric Wilcoxon Signed Rank Test was additionally performed, showing similar results.

Table 2. *Descriptive data and group analysis of the dependent variables psychological flexibility measured with AAQ II, and Quality of Life measured with WHOQOL-BREF. The four domains of WHOQOL-BREF and the two questions of General Health and General Quality of Life are presented separately (N=6, df=5).*

Instruments	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	t^a	p	d^b
AAQ- II	40.8 (3.43)	42.8 (4.31)	-1.44	.21	-0.59
QOL-TOT	69.8 (9.26)	87.6 (7.42)	-3.33	.02*	-1.36
GQL	2.8 (0.75)	4.0 (0.00)	-3,8	.01*	-1.55
GH	2.2 (1.17)	3.5 (0.55)	-4.00	.01**	-1.64
QOL-D I	19.8 (3.06)	24.7 (1.63)	-3.45	.02*	-1.41
QOL-D II	17.5 (3.93)	22.2 (3.19)	-1.98	.11	-0.81
QOL-D III	7.3 (2.73)	9.5 (1.05)	2.14	.09	-0.87
QOL-D IIII	20.0 (4.24)	23.8 (3.92)	2.16	.08	-0.88

$N = 6$. ^a = Dependent t-test. ^b = Cohen's d . (0.50 for small effect, 0.80 for medium effect, and 1.10 for large effect* $p<.05$, ** $p<.01$). AAQ-II = Acceptance and Action Questionnaire II, QOL-TOT=World Health Organization Quality of Life BREF assessment. GQL- Results on WHOQOL-BREFs question measuring Global quality of life. GH- Results on the WHOQOL-BREF question measuring global health. QOL-D I-IIII=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain

Table 3 presents a Complete Case Analysis of BEVS including participant 1,2,3 and 7 comparing the mean data for (pre) measure points 1, 2 and 3, and the mean data for (post) measure points 7, 8 and 10. The analysis show significant differences between pre and post-measures for BEVS total $t(3)=-3.24, p=.05$, and the domains Health $t(3)=-5.00, p=.02$, and Work/Education $t(3)=-6.15, p=.01$. No significant differences were found in the areas of Leisure $t(3)=-5.00, p=.58$ or Relations $t(3)=-2.45, p=.09$. Wilcoxon's Signed Rank Test showed results in same direction but above significant level ($p<.05$) for BEVS total ($z=-1.83, p=.07$) Health ($z=-1.83, p=.07$) and Work/Education ($z=-1.83, p=.07$), Leisure ($z=-.055, p=.58$) Relations ($z=-1.83, p=.07$)

Table 3. *Paired t-test for the dependent variable steps taken in valued direction measured with BEVS. Complete Case Analyze (N=4, df=5).*

Instruments	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	t^a	p	d^b
BEVS					
Total	40.5 (9.68)	55.8 (5.38)	-3.24	.05*	-1.6
BEVS					
Health	8.5 (3.00)	14.8 (1.26)	-5.00	.02*	-1.0
BEVS					
Work/Education	8.8 (1.89)	14.5 (1.73)	-6.15	.01**	-5.9
BEVS					
Leisure	13.5 (2.65)	12.3 (2.63)	-.620	.58	-0.31
BEVS					
Relations	9.3 (2.99)	14.3 (2.50)	-2.45	.09	-1.22

$n = 4$. ^a = Dependent t-test ^b = Cohen's d (0.50 for small effect, 0.80 for medium effect, and 1.10 for large effect) p =level of significance * $p<.05$, ** $p<.01$, BEVS = Bull's Eye Value Survey. SD= standard deviation.

Table 4 show results for the person-oriented analysis. The participants' results were significantly different from the critical t -value of 2.57 (df 5 two-tailed, $p=.05$) in Quality of Life measured by WHOQOL-BREF $t(5)=-5.32, p=.00$. For Steps taken in valued direction measured by BEVS, effects are just above the level of significans $t(5)=-2.56, p=.05$. Results on AAQ II were not significant $t(5)=-.59, p=.58$.

Table 4. *A person-oriented analysis of AAQ II, WHOQOL-BREF and BEVS.*

Instruments	t^a (SD)	p	df
AAQ II	-.59 (.90)	.58	5
QOL	-5.32 (1.93)	.00	5
BEVS	-2.56 (1.94)	.05	5

Significant correlations are marked as bold, all significant correlations $p < .001$, at least. AAQ= Acceptance and Action Questionnaire II. QOL=WHOQOL-BREF all items included. BEVS=Bull's Eye Values Survey. For BEVS pre- measure point one are compared to post-measure point 10. ^a=two - tailed one- sample t-test of mean score against 2.570. SD=standard deviation. df =degrees of freedom.

Correlations. An investigation of the relationship between post-measures and time showed no significant effect of time on the last post-measure. A Pearson product-moment correlation was run to determine the relationship between participants result on AAQ II, WHOQOL-BREF and BEVS for pre and post-measures. Additionally, correlations between the BEVS domain health and the WHOQOL-BREF domain physical health, and the BEVS domain relations and the WHOQOL-BREF domain social relations were examined. The data showed no violation of normality except for pre-measures of AAQ. No significant correlations were found.

Psychometric properties. Internal consistency of the measurements AAQ II and WHOQOL-BREF were analyzed for pre and post-measures. An analyze of internal consistency was performed using Cronbach's alpha. For pre-measures WHOQOL-BREF reached an alpha level of $\alpha = .75$, and on post-measures $\alpha = .70$, in the range of acceptable to good. Analyzes of reliability on pre-measures for AAQ II presented a negative alpha level of $\alpha = -.25$. For post-measures the alpha level was $\alpha = -.57$, both considered as unacceptable internal reliability. Due to the small sample size in this study the significance of the findings is limited.

Changes in occupational status. During the first meeting, several participants stated being prevented from working. To address this area further, questions related to work capacity were developed together with the personnel at the counseling center. The questions were: How much do you work? And rating alternatives: *Never*, *Sometimes* or *Everyday*. The results for the four participants who provided information show that the status of those participants who were students did not change. One of the participants estimated her working hours to be part time

(working sometimes) and remaining unchanged after the intervention, but described a change in the area of her work when she started a new business. One participant went from having no occupation (no work) to a high frequency of work (working every day) and another went from having a medium work frequency (working sometimes) to a high frequency (working every day) (see table 5).

Table 5. *Participants' changes in occupational status.*

Participants' occupational status after the intervention	<i>N</i> (6)
Student → student	1
No work → working every day	1
Working sometimes → working sometimes	1
Working sometimes → working every day	1
Unknown	2

Individual results

For each participant, results on BEVS are shown on graphs. Pre and post-measures of AAQ II and WHOQOL-BREF are presented in tables. In this table General Health, General Quality of Life, and the four Quality of Life domains are presented separately. These results follow a short presentation of the participant, a description of main issue, and summarized qualitative information from the evaluation of the intervention.

Participant 1

Figure 2 is a graph showing the process of the participant's Steps in valued direction, measured by BEVS, throughout the study. The graph shows a clear positive trend in the four life domains, the trend being visible during baseline measures.

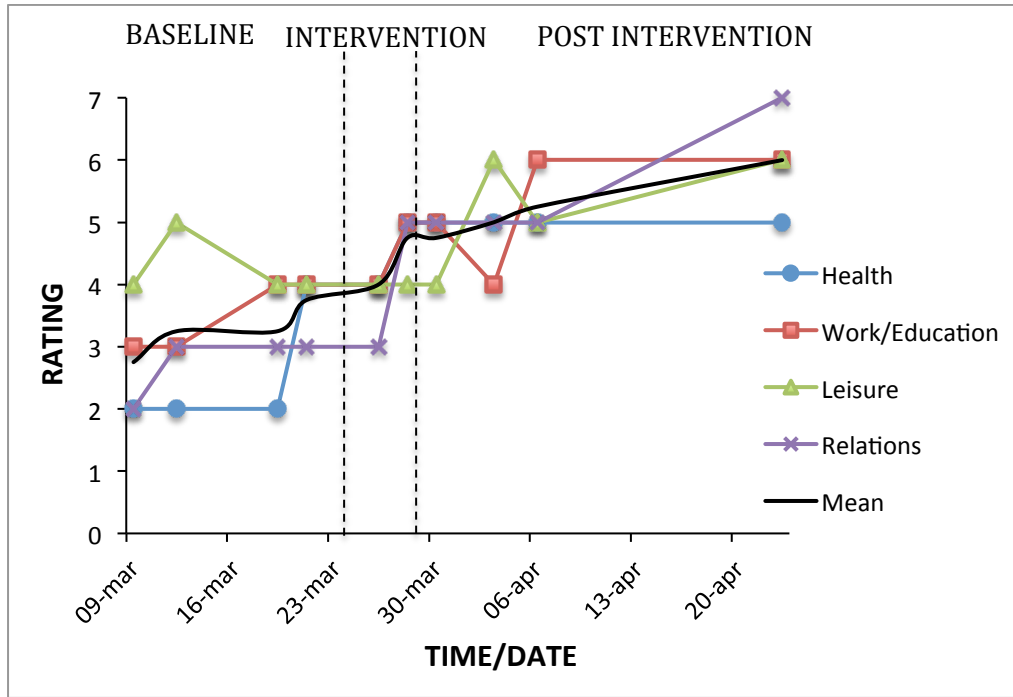


Figure 2. Participant 1. Weekly ratings on the process-measure BEVS are presented for each life domain. The bold line shows the average trend for all domains.

Table 6 shows pre, mid, and post-measures for participant 1. A significant difference is detected between mid and post-measures on total score on WHOQOL-BREF, $t(25)=-3.90, p=.00$. General health and General quality of life and the four Quality of life domains additionally show a positive change. The largest effect in Quality of Life areas is seen in the area of physical health between pre and mid-measure, following a negative trend between mid and post-measure. A positive trend, but below level of significance is shown on AAQ II between pre and post-measure $t(9)=1.21, p=.26$, with a slight change detected between pre and mid-measures.

Table 6. The table presents score on pre, mid and post-measures on the dependent variables psychological flexibility, and Quality of Life for participant 1.

Instrument	Pre	$t^a (p)$	Mid	$t^b (p)$	Post	$t^c (p)$
AAQ II	40	.00 (1.00)	44	0.85 (0.42)	48	1.21 (.26)
QOL-BREF	69	-3.88 (0.00)	85	-.29 (.77)	85	-3.90 (.001)
GQL	2		4		4	
GH	1		2		3	
DOM I	18		26		22	
DOM II	19		19		22	

DOM III	9	11	10
DOM IIII	20	23	24

AAQ-II= Acceptance and Action Questionnaire. QOL-BREF=World Health Organization Quality of Life BREF assessment, total score. GQL- Result on WHOQOL-BREF question measuring Global quality of life. GH- Results on WHOQOL-BREF question measuring global health DOM I-III=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain. t=paired sample t-test. p= level of significans. Significant correlations are marked as bold, all significant correlations $p<.001$, at least. For AAQ II and WHOQOL-BREF, result for paired t-test are presented, ^a= analysis of pre and mid-measures. ^b=analysis of mid and post-measures and ^c=analysis of pre and post-measures

Participant 1 came in to contact with the counseling center after being diagnosed with HIV.

Main issue: As a consequence of feelings of shame and not wanting to talk about her HIV status the participant experiences difficulties with being open to her family and friends. She puts a lot of effort in not thinking of her status, and gets very upset when thoughts about HIV comes over her. The participant does not disclose her whereabouts connected to HIV (going to the counseling center, or the hospital collecting her medicine) and spends much time at home.

Qualitative results: In the treatment evaluation the participant describes changes in her life. For example, instead of collecting her medicine during times when there is less risk of being seen, she now visits the hospital during office hours. She states "I will not let shame keep me from holding my back straight". The participant also describes having a more open communication with her family.

The part of therapy she experience as having most use of is being able to handle overwhelming thoughts and feelings herself, and not being dependent on others' comfort and presence.

Participant 2

The graph in *Figure 3* showing the participants Steps in valued direction measured by BEVS, indicates an increasing progress in all four life-domains, the progress starting before the intervention phase. A slight decrease in all life domains except relations is detected in the last post-measure.

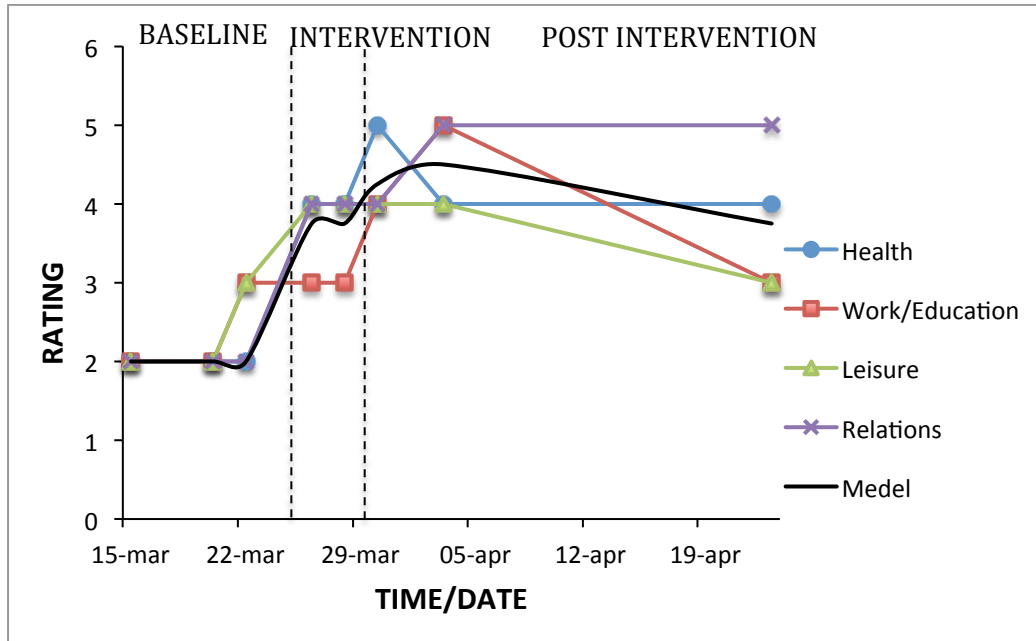


Figure 3. Participant 2. Weekly ratings on the process measure BEVS are presented for each life domain. The bold line shows the average trend for all domains.

In table 7 a significant change is detected on total quality of Life measured by WHOQOL-BREF $t(25)=-5.32, p=.00$. A positive change is detected in all quality of life domains and in General Health and General Quality of life. No significant change is detected in psychological flexibility measured with AAQ II $t(9)=0.00, p=1.00$.

Table 7. Pre and post-measures on the dependent variables for participant 2.

Instrument	Pre	Post	$t^a(p)$
AAQ II	40	38	0.00 (1.00)
QOL-BREF	63	95	-5.32 (.00)
GQL	2	4	
GH	1	3	
DOM I	20	26	
DOM II	14	27	
DOM III	8	10	
DOM IIII	17	25	

AAQ-II= Acceptance and Action Questionnaire. QOL-BREF=World Health Organization Quality of Life BREF assessment, total score. GQL- Result on WHOQOL-BREF question measuring Global quality of life. GH- Results on WHOQOL-BREF question measuring global health DOM I-III=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain. For AAQ II and WHOQOL-BREF,^a= results from paired t-test. p = level of significance. Significant correlations are marked as bold, all significant correlations $p<.001$, at least

Participant 2 came in to contact with the counseling center after being diagnosed with HIV.

Main issue: The participant describes feelings of anger and sadness when reminded of her HIV status. Feelings of shame of her disease and fear of peoples' reactions have resulted in social withdrawal and the participant spending much time at home. As a consequence of scarring from blisters related to HIV, the participant only wears clothes that cover her arms and legs.

Qualitative results: In the treatment evaluation, among other things, the participant is wearing skirts for the first time since being diagnosed with HIV and describes this as a major life change. She also experiences the disease having less control over her life, and a feeling of greater hope for the future.

Participant 3

Figure 4 is a graph showing the participants Steps in valued direction measured by BEVS. The data indicates a positive trend for all life domains, with a slight decrease between the second last and the last post-measure.

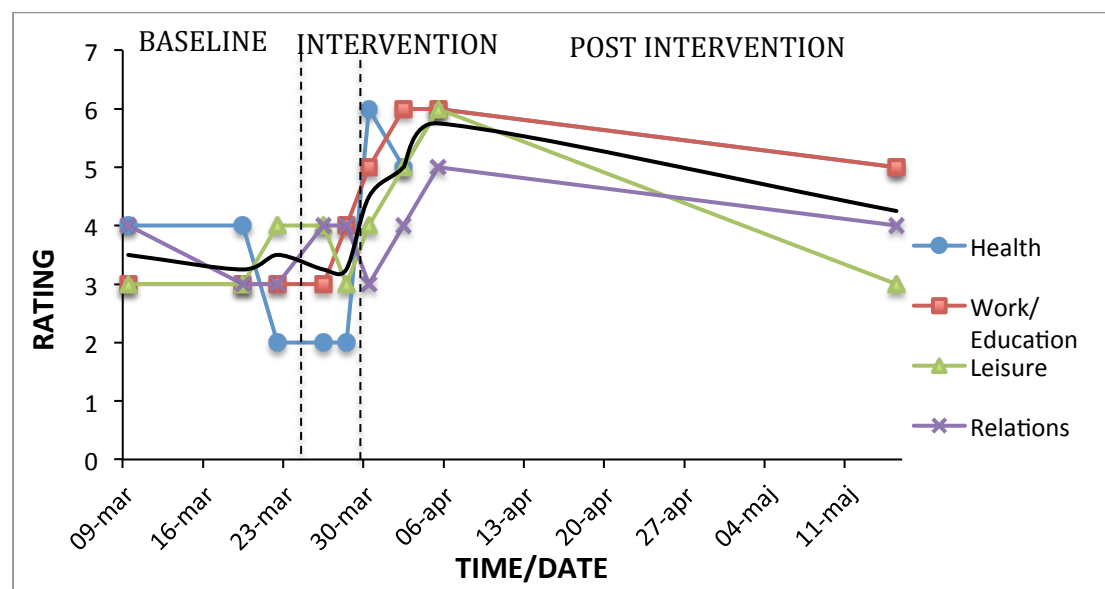


Figure 4. Participant 3. Weekly ratings on the process measure BEVS are presented for each life domain. The bold line shows the average trend for all domains.

In total Quality of Life a significant difference between pre and post-measures are shown $t(25)=-5.43$ $p=.00$, between pre and mid-measures $t(25)=-2.07$, $p=.05$, and mid

and post measures $t(25)=-2.44, p=.02$. The positive change is shown on all Quality of Life domains and on General Health and General Quality of Life. No significant change is seen in psychological flexibility but a slight decrease is seen between pre and mid-measures $t(9)=0.48, p=.64$.

Table 8. *The table presents pre, mid and post- measures on the dependent variables Quality of life and psychological flexibility for participant nr 3.*

Instrument	Pre	$t^a (p)$	Mid	$t^b (p)$	Post	$t^c (p)$
AAQ II	47	0.48 (.64)	43	0.60 (.56)	47	0.00 (1.00)
QOLBREF	58	-2.07 (.05*)	73	-2.44 (.02*)	88	-5.43 (.00**)
GQL	3		3		4	
GH	2		2		4	
DOM I	23		22		26	
DOM II	13		18		23	
DOM III	3		6		8	
DOM IIII	14		22		23	

*AAQ-II= Acceptance and Action Questionnaire. QOL-BREF=World Health Organization Quality of Life BREF assessment, total score. GQL- Result on WHOQOL-BREF question measuring Global quality of life. GH- Results on WHOQOL-BREF question measuring global health DOM I-III=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain. For AAQ II and WHOQOL-BREF, t=result for paired t-test. ^a=results between pre and mid-measure, ^b=analysis of mid and post measures ^c=analysis of pre and post measures. p= level of significans. Significant correlations are marked as bold, * $p<.05$, ** $p<.01$*

Participant 3 came in contact with the counseling center due to a history of sexual abuse.

Main issue: When experiencing pain (headache, stomach and back pain) the participant takes painkillers and often stays at home. The participant's residence is crowded and noisy, causing her irritation, stress and difficulties concentrating on studies.

Qualitative results: In the intervention evaluation the participant describes feeling less constrained by pain and being able to attend lectures and meetings despite having headache. "Me no let the pain stop me, I feel fine". The exercise described as most helpful was the exercise conducted on the Life Line, aiming at finding peace within despite outer distractions. She emphasizes that being able to speak freely

knowing that no information would leave the room was an important part of the intervention.

Participant 4

Figure 4 presenting ratings on Steps in valued direction shows irregular ratings that indicate a general increase in total score before intervention and a decrease in post-intervention measures.

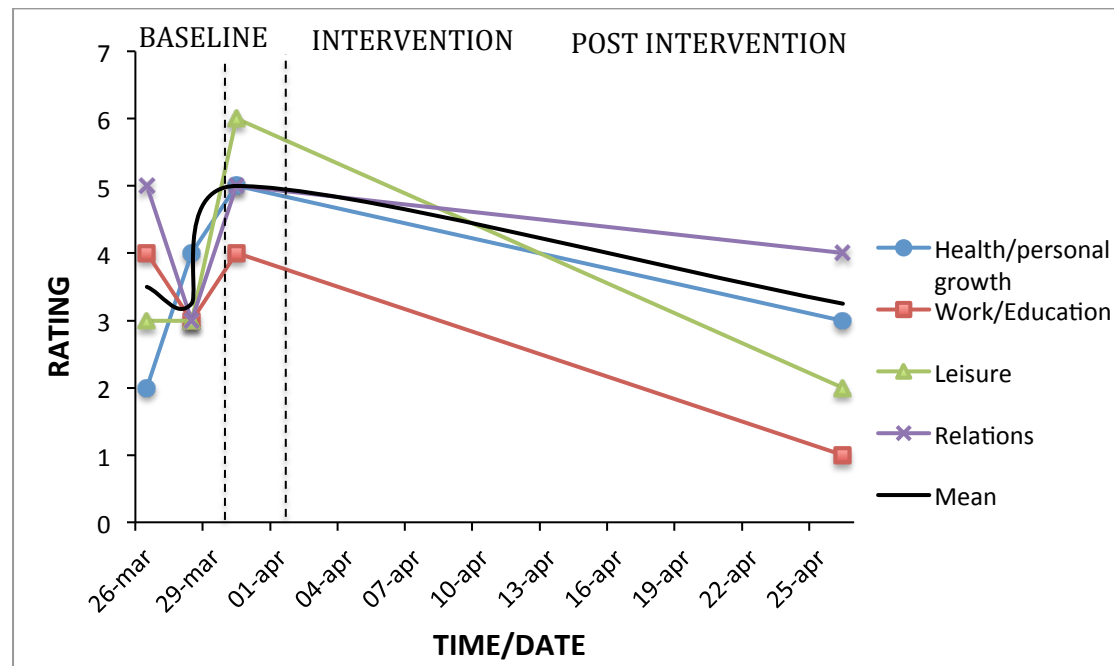


Figure 4. Participant 4. Weekly ratings on the process measure BEVS are presented for each life domain. The bold line shows the average trend for all domains.

Table 9 show no significant changes between pre and post-measures of psychological flexibility $t(9)=-.148, p=.89$, or in Quality of Life measures $t(25)=-.570, p=.57$. A slight negative change is seen in the environmental domain of Quality of Life and a slight positive change in the Quality of Life domain social relations.

Table 9. The table presents pre and post-measures on the dependent variables psychological flexibility and Quality of Life for participant 4.

Instrument	Pre	Post	$t^a (p)$
AAQ II	37	38	-.148 (.86)
QOL-BREF	73	75	-.570 (.57)
GQ	4	4	

GH	3	4
DOM I	23	24
DOM II	17	17
DOM III	6	9
DOM IIII	20	17

AAQ-II= Acceptance and Action Questionnaire. QOL-BREF=World Health Organization Quality of Life BREF assessment, total score. GQL- Result on WHOQOL-BREF question measuring Global quality of life. GH- Results on WHOQOL-BREF question measuring global health DOM I-III=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain. For AAQ II and WHOQOL-BREF, ^a=results for paired t-test. p= level of significans. Significant correlations are marked as bold, all significant correlations $p<.001$, at least

The participant came in contact with the counseling center due to sexual abuse during the war.

Main issue: The participant describes sometimes feeling scared and jumpy. She resides close to one of her perpetrators and experiences great discomfort when seeing him. As a consequence of headaches, stomach pain, and fear of encounter the perpetrator and other people the participant regards as hostile and judgmental, she avoids eye contact and spends much time at home.

Qualitative results

Participant 4 did not attend the second treatment session or post-measures 7-9, and could not be reached for an evaluation of the intervention.

Participant 6

Figure 5 presenting a graph of BEVS ratings of Steps taken in valued direction shows great variability in baseline ratings. The graph does not indicate any bigger progress in any of the life domains.

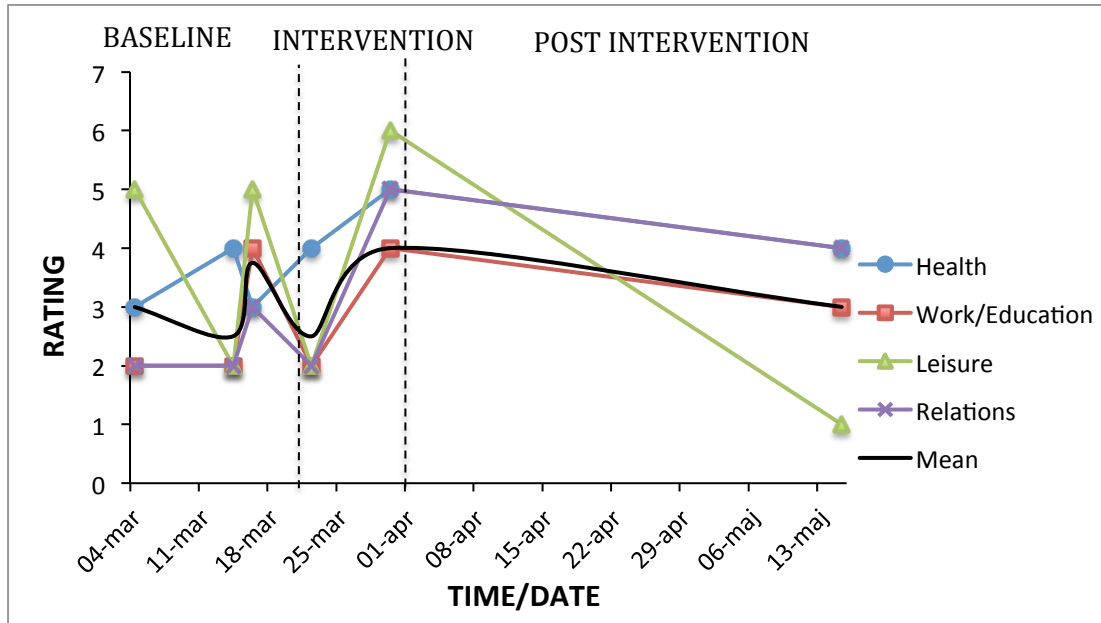


Figure 5. Participant 6. Weekly ratings on the process measure BEVS are presented for each life domain. The bold line shows the average trend for all domains.

Table 10 shows a significant positive changes in measures of total Quality of Life $t(25)=-4.32, p=.00$, with the greatest change shown in the domain physical health. No significant change between pre and post measures is detected in psychological flexibility measured with AAQ II $t(9)=-.22, p=.82$.

Table 10. The table presents pre and post measures on the dependent variables psychological flexibility and Quality of Life for participant 6.

Instrument	Pre	Post	$t^a(p)$
AAQ II	42	44	-.22 (.82)
QOL-BREF	71	95	-4.32 (.00)
GQL	3	4	
GH	2	3	
DOM I	15	26	
DOM II	18	22	
DOM III	7	11	
DOM IIII	26	29	

AAQ-II= Acceptance and Action Questionnaire. QOL-BREF=World Health Organization Quality of Life BREF assessment, total score. GQL- Result on WHOQOL-BREF question measuring Global quality of life. GH- Results on WHOQOL-BREF question measuring global health DOM I-III=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain. For AAQ II and WHOQOL-BREF, ^a=

results for paired *t*-test. *p*= level of significans. Significant correlations are marked as bold, all significant correlations $p<.001$, at least

The participant came in to contact with the counseling center due to recurrent headaches.

Main issue: Reoccurring headaches and fear of trigger headaches results in the participant avoids attending classes, going to church and meeting friends. The participant also describes postponing important goals in life, explaining not being able to achieve those before she is free from pain and has a regular income.

Quantitative results: Participant 6 could not be reached for post measure 7-9 or a qualitative evaluation of the intervention.

Participant 7

Figure 6 showing a graph of ratings on BEVS does not indicate any larger progress in Steps taken in valued direction. In the areas of work/education and health/personal growth a positive change is shown on measures just after intervention, following a negative slope towards the last measure point.

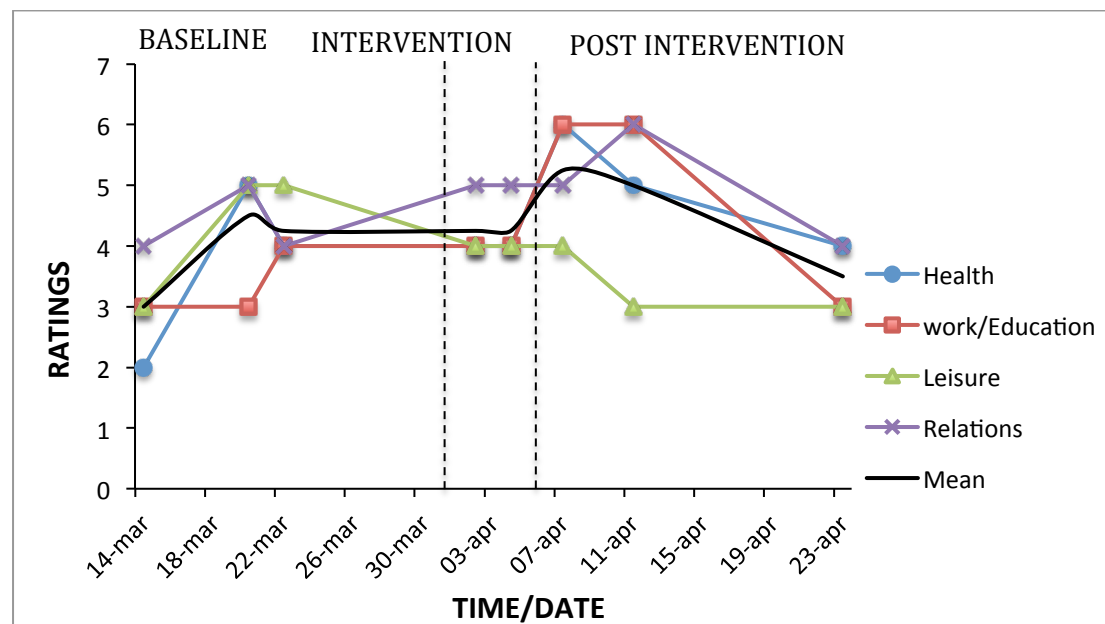


Figure 6. Participant nr 7. Weekly ratings on the process measure BEVS are presented for each life domain. The bold line shows the average trend for all domains.

Table 11 presenting pre and post-measures on AAQ II and WHOQOL-BREF show no significant change in total Quality of life $t(25)=-.53$, $p=.60$, a slight positive

change is seen in the quality of life domains of physical health and environment, and a slight negative change for the psychological and social relations domains. No significant change is detected in psychological flexibility $t(9)=-.82, p=.43$.

Table 11. *The table presents pre and post-measures on the dependent variables psychological flexibility and Quality of Life for participant nr 7.*

Instrument	Pre	Post	$t^a (p)$
AAQ II	39	42	-.82 (.43)
QOL-BREF	85	88	-.53 (.60)
GQL	3	4	
GH	4	4	
DOM I	20	24	
DOM II	24	22	
DOM III	11	9	
DOM IIII	23	25	

AAQ-II= Acceptance and Action Questionnaire. QOL-BREF=World Health Organization Quality of Life BREF assessment, total score. GQL- Result on WHOQOL-BREF question measuring Global quality of life. GH- Results on WHOQOL-BREF question measuring global health DOM I-III=WHOQOL-BREF's four Domains: I=Physical Health domain, II=Psychological domain, III=Social relations domain, IIII=Environmental domain. For AAQ II and WHOQOL-BREF, ^a=results for paired t-test. p = level of significans. Significant correlations are marked as bold, all significant correlations $p<.001$, at least

The participant came in to contact with the counseling center after being diagnosed with HIV.

Main issue: The participant has headaches and reoccurring thoughts about transmitting her disease to others. The thoughts are especially present when playing with children and cooking for others. As a consequence she spends less time with her neighboring children and avoids physical contact. She describes that thoughts, tiredness and pain has kept her from working.

Qualitative results: In the evaluation the participant describes the intervention as helpful. *"I don't even think of that I have HIV. There is no stopping. I just feel good"*. She emphasizes the exposure of pain exercise as valuable. At the time of the evaluation the participant is working on a regular basis. She additionally describes an improvement in her physical health related to a regular intake of antiretroviral drugs.

Discussion

The purpose of this study was to evaluate the effect of a short term intervention of Acceptance and Commitment Therapy for women seeking help for HIV, pain and sexual abuse with regard to the dependent variables Quality of life, Steps taken in valued direction and Psychological Flexibility. A second aim was to examine the participants' perceptions of the intervention.

Results show some support of the intervention's effect on the dependent variables Quality of Life and Steps taken in valued direction. No inference can be made regarding Psychological flexibility. The qualitative evaluation further support the interventions importance for the participants' tendency to engage in values based actions.

Nevertheless, results should be interpreted with caution considering the small sample size and limitations of the study design that cannot fully rule out variables other than the intervention causing changes in dependent variables.

In the following section, results will be discussed with regard to the study's limitations and strengths, along with implications for further research. Lastly, there is a more general discussion of the implementation of this intervention, as well as psychological treatments generally, in Sierra Leone.

Results

With regard to the dependent variable Quality of Life, statistical analysis at group level shows significant changes between pre and post-measures. Additionally, the person-oriented analyses show that four out of six participants significantly increased their Quality of Life after the intervention.

Regarding the measure Steps taken in valued direction, a visual analysis of graphs show a positive trend for three of the participants. However, for two of these three participants, the trend is present before the start of the intervention. This makes it difficult to conclude that the intervention is responsible for the effect. The instrument used to measure Steps taken in valued direction may be responsible for pre-treatment effects, an issue that will be discussed further in the measurement section. A person-oriented analysis of BEVS including pre-measure 1 and 10 additionally supports an effect on participants Steps taken in valued direction.

For the dependent variable Psychological flexibility measured with AAQ II, no difference is detected. Calculated effect sizes indicating the magnitude of the effect generally showed large effect sizes.

Even though difficulties in achieving and evaluating an effect from the intervention remain, the qualitative evaluation of the intervention conducted by four of the participant's show that several participants experienced changes in their life after the intervention. Out of these four participants, all who worked or sought work before the intervention had increased their working hours in comparison to pre-measures. Two of the participants had started new jobs and another had increased her workload within a previous area. Circumstances supporting the participants' increased ability to work could be an effect of the intervention are, amongst others, that one of the participants worked in an area related to food, where thoughts relating to the risk of infecting others prevented her from working. In this case, it can be added that the participant was well aware of how HIV is spread still experienced irrational thoughts about infection risks.

One participant who had started a new work project described this as being possible once she had become aware that there were many possible routes she could take actions in her valued direction. The participant described how she had fewer tendencies to delay plans around future work prospects and how she decided to engage in a new area of business where there was a possibility for her to work.

The participant whose main occupation was studying reported in the evaluation that after the treatment, she attended lectures and meetings with other students more frequently. She added that even though she still got headaches, they did not as frequent hinder her studies. She also reported decreased stress levels and increased concentration, meaning it was easier for her to study. In the evaluation, the participant also reported a change in the way she related to her thoughts, feelings and pain.

Method

Design. In evaluating whether the effects on dependent variables are in fact caused by the intervention, an assessment must be made of a study's internal validity. Maturation and history are common threats to internal validity in single-subject designs. Maturation relates to the risk that participants change over time. Considering the limited duration of the study, this may be of less impact. Regarding history,

participants may have been affected by changes and factors in their everyday life. One way to control for history is through the use of multiple baselines and randomization of participants regarding the time of introduction of the intervention. It was not judged possible to use multiple baselines and randomization for this study, thus it is not possible to rule out the effect of history. However, according to Kazdin (2010), a single subject design with several participants secures *some* control of threats to validity, such as history and maturation.

In general, the success of single subject research rests on achieving a stable baseline. Significant variability in the baseline makes it difficult to determine whether any changes in behavior are due to the introduction of a treatment condition. Stable baselines can be difficult to establish in applied settings, however the more data points that can be obtained the better. Some variability in baseline measures was observed in all participants' pre-measures, and in the case of participant number 4 only two pre-measurements were collected, making the evaluation of the intervention uncertain.

Regarding history, changes and events in the participants' everyday life may have affected the ratings. One such example of external factors other than the intervention that may have affected dependent variables are courses and training that participants have taken part in during the study. For example, shortly after the intervention, two of the clients were invited to give guidance to a UNAIDS group on how to reach out to the public with information about HIV. Another indirect effect of the intervention related to external factors is the effect of the therapists' interactions with participants. Observations and statements from the organizations' staff members gave reason to believe that the way the external therapists interacted with participants was different to the way in which the staff members at the organization commonly interact with clients. As one staff member stated, "I was surprised to see that you treated the clients just like anyone, like colleagues". External influences like this may have had a global effect on dependent variables.

Participants' health status and differences in health status is a variable that may have affected participants during the intervention. This was accounted for by participants on their first meeting at the counseling center being examined by a nurse working at the counseling center. Information about participants' medication and physical health status were further collected during intake interviews. Although, no extensive physical examination or continuous measure of participants' physical health

or intake of medication were done in relation to the study. For participant 5, suffering from reoccurring headaches, a more thoroughly examination of the participants' previous medical examinations were done. Considering the effect that improvements and deteriorations in physical health may have on dependent variables, there is reason to bring closer attention to the effect of participants' physical health.

The purpose of using continuous measurements as well as standardized pre, mid and post-measures was to strengthen the design. This may decrease the risk of regression to the mean regarding measures of BEVS. Regression to the mean refers to the tendency of a variable that is extreme on its first measurement, to be closer to the average on a second measurement. However, in this study, none of the participants' initial ratings on dependent variables were interpreted as extreme.

A further threat to internal validity comes from demand characteristics, which refers to the risk that the participant answers according to what she thinks is expected of her. This threat to validity is related to the problem of repeated measures, that the participant may respond in a more positive way over time to show the therapist that she is improving. The ratings on dependent measures as well as the evaluation being conducted face to face may increase the risk of demand characteristics. Considering that some of the participants did not feel confident in writing in English, the choice of face-to face evaluations was obvious. An effective approach to decrease the risk of demand characteristics is to use an independent rater, an approach that should be considered in future research. Another weakness in research design is related to measurement is reactivity, which refers to changes in behavior due to the measurement itself, and that repeated measurements may change the participants' attitudes towards the measure over time. This will be further discussed in relation to BEVS in the measurement section.

In this study it was not possible, due to the design of the study, to draw any conclusions regarding the effect of the treatment compared with that of other treatments or of no treatment. In order to provide useful knowledge, any further research could consist of studies with either a control group or an alternative treatment group.

One drawback of this study is the evaluation of the intervention. Only including two questions, and none of the questions specifically examining the participants perceptions of less useful components of the intervention (e.g what parts

of the intervention did you find less useful?) supplied limited information. A more thoroughly evaluation of participants' experiences of the treatment and its effects would have been valuable, preferably conducted at the same time as the last post-measure. An additional evaluation conducted at the end of the post-measures phase could also further supply information on the effect of the intervention over time. Complementing the qualitative evaluation with more quantitative measurements would have increased the possibility of drawing conclusions about the magnitude of the treatment's effects on the behaviors in areas of interest. Since this study had an explorative aim, qualitative measures were chosen in order to minimize the risk of confining the evaluation to a small number of measurements, as well as to give the participants the opportunity to talk freely about their experiences.

Statistical analyses

Statistical analyses were performed at an individual and group level. At group level, a paired *t*-test was performed for all participants for the dependent variables Psychological flexibility and Quality of life. For the measured process of Steps taken in valued direction, there was a considerable amount of missing data for post-measure data for participants 4 and 6. Therefore, a complete case analysis was performed, including participants 1,2,3 and 7. As a result of having few participants, a non-parametric equivalent of the *t*-test, Wilcoxon's matched pairs test, was also performed.

In single subject design studies, each individual functions as their own control. This design provides the opportunity to analyze individuals' information in a manner that is not possible in a group design study. In statistical analysis on group level there is a risk that differences between individuals are confounding the results and threatening the study's internal validity. In this study, therefore, a person-oriented statistical analysis has also been performed for each individual. A two-tailed one sample *t*-test of a compilation of participants' *t*-values provided information of if participants' results, on average, were significantly different between pre and post-measures. This type of analysis can be a valuable complement to visual analysis, when a statistical analysis is desirable. In this person-oriented analysis, a measurement of BEVS is also included. In the analysis of BEVS, a single measure point from pre and post- measurements have been compared. This can be seen as against the aim of using a process measure, which is to provide a picture of

participants' level over time. A comparison of average values for pre and post-measurements could have given a more representative result. The choice to use data from a single measure point was made in order to allow the inclusion of all participants in the analysis.

The intervention

The different components of the intervention were chosen to be in accordance with the basic principles of ACT. The majority of the exercises used have been thoroughly tested and have been developed by established ACT therapists. The design of the study means that it is not possible to comment on the effects of the separate components of the intervention, or whether there were components that had no effect. Taking a more thorough, standardized and comprehensive way to investigating the separate components would help to gather more information about which parts of the intervention that are most important. Another way would be a study providing the possibility of comparing various treatment components.

The intervention consisted of two sessions, less than most evaluated therapies of ACT. Related to the length of the therapy is that all participants except number 1, showed a decrease in Steps taken in valued direction on the last post-measure. This may be a consequence of the limited time of the intervention and may indicate a need for a "boosting session" and follow up of participants.

In order to ensure the possibility of replication and the integrity of the treatment, a treatment protocol was used. In order to further ensure the integrity of the treatment, the study could have used recordings of sessions, with an encoding of the sessions ACT compatibility performed by a qualified ACT therapist.

Treatment Acceptability

Participants' evaluation of the study, as well as their high level of compliance regarding participation in exercises and exposure during the treatment can be interpreted as indicative of high treatment acceptability. This is interesting given that few participants knew what psychological treatment implied, and as such had not previously had private treatment sessions with a counselors or psychologists. When participants were asked how they felt about the meetings, several explained that they felt comfortable and appreciated that so many people cared about and listened to them. A more comprehensively operationalized and standardized method of

measuring treatment acceptability is needed in order to be able to draw firm conclusions.

Participants

The aim of this study was to test a therapeutic model and to provide a basis for generating new hypotheses for further research, and it was not in scope of this study or research design to contribute results that can be generalized to a greater population. The participants in this study came into contact with the counseling center due to HIV, pain and a history of sexual abuse. Since no demographic data is available for the individuals invited to participate in the study but chose not to, it is difficult to make an analysis of the withdrawals. Since the counseling organization has no demographic data for other clients, it is also difficult to draw any conclusions about the representativeness of the study's participants for this group. However, there is value in discussing participants' representativeness and how their characteristics may have affected the results.

The study had few exclusion criteria, which resulted in a heterogeneous sample regarding participants' connection to the organization. Participants were further representative of the four biggest tribes in Sierra Leone. All participants in the study were literate, with differences in proficiency between individuals. This reflects a high rate compared to the latest survey of literacy in Sierra Leone conducted in 2004 (CIA 2012), presenting a national rate among women of 24.4%. Even though literacy is higher in urban areas like Freetown, participants in the study generally had a higher literacy than the general public, and all but one of the participants had finished secondary school.

The reason for the participants' high levels of literacy could be in part due to the exclusion criterions (e.g. one participant were excluded due to little understanding of English) and in part due to illiterate clients choosing not to participate in the study. Furthermore, a greater understanding of English is coupled with a longer time spent in school, since English is the language used in Sierra Leone's schools, despite Krio being the lingua franca and understood by more than 95% of the population.

Three of the participants stated not having money enough to meet their needs, regarding food, clothing and living. And half stated "a little" money. The questions used to examine participants' economical status were a modification of a question in WHOQOL-BREF. Several options as ways to capture economical status were

discussed with the personnel at the counseling center. A more quantitative measure were first thought of, although e.g. asking participants of how much they earned, or how much money they spent, focusing on a monetary amount may not fully have captured participants' situation. In Sierra Leone the trade of services and goods are common. Additionally, salesmen often rely their success in business on relations to customers. Which means that selling goods on credit is a common way to establish relations with customers and ensure that they are coming back (see Shaw, 2009 for an extended introduction). Hence, just examining a specific period of income during a specific time may not satisfactorily account for the actual earnings. Alternative ways to reliably capture the economical status of women in Sierra Leone is an issue to be discussed in further research.

One drawback of this study is missing data. For participants 4 and 6, only one post measure is available, making it difficult to comment on whether the treatment had any effect for these participants. Similarly, no qualitative evaluation was available for these participants. In this case, there can only be speculation as to whether there was a common reason for the participants failing to provide a post measurement, such as the treatment having a less positive effect on these two participants, or whether this was simply due to chance. One factor distinguishing these two participants from the others was a greater need for translation from English to Krio, which could have affected the participants' insight into and understanding of exercises and the therapists' guidance.

Compensation. Determining the size as well as the type of compensation for participation in a study is a difficult matter. The economic burden for the clients was weighted against the risk of influencing the participants' motivation and perception of the intervention. The number of meetings, as well as travel compensation, was decided in consultation with the staff at the organization, concerning the logistic and economical burden to the clients. Although the compensation given to participants could have affected the results of the study, this risk is small in relation to the high cost that participants would have borne if no compensation were given, in consideration of the participants' economic situation.

Dependent variables and measurements

Whilst the study investigated the effects of a relatively untested treatment method in a group that had not been tested before, there were many variables that

would have been of interest to study. In this study, measurements had to be limited since reading the questions out loud and sometimes using translations were time-consuming. Hence using short instrument for data collection were judged to be most suitable, in order to minimize the demand on participants. Thus, the instruments measuring dependent variables were chosen in part because they could be administrated quickly and easily. The instruments relevance for the organization's ongoing work was also an important factor. Since it was the ACT therapy that was being evaluated, it was important to measure processes relevant to ACT. The counseling center also had an interest in gather information relating to which measurements could be used to evaluate ACT interventions in the future. In light of this, two previously tested instruments were chosen to measure ACT concepts.

Quality of Life. Quality of life was chosen as a subject of investigation due to it being a well-known and well-studied concept. The WHO's shortened measurement for Quality of life was chosen due to it being a sound, cross-culturally valid instrument giving information about subjective Quality of life across four areas of life. In this study it showed acceptable to good internal validity ($\alpha = 70-75$) The WHOQOL-BREF further had the advantage of providing the opportunity to research whether there existed coherence between domains in BEVS and WHOQOL-BREF. The Quality of life domain of Health and the BEVS domain Health, the Quality of life domain of Social relations and BEVS domain Relations in particular, may have a degree of correspondence between the two measurements. However, this lay outside the study's main research aims, as, with so few participants in the study, it was difficult to obtain reliable information in this area. When correlations between measurements were examined no significant correlations were found, a result that could be related to the limited sample.

Although analysis of the WHOQOL-BREF measure supports the validity in the studied group, a more thoroughly cross-cultural examination and validation of the instruments measuring dependent variables in this study is needed. A thoroughly investigation of the relevance of domains and questions in the instruments, as well as a translation or adaptations to Krio is fundamental for further research. However, translations to the written language of Krio is a complicated question since very few of Sierra Leones' inhabitants are familiar with reading Krio, due to English being the chosen language of public and private educations. A simplification and adaptation of English questions could be a useful alternative.

A study of WHOQOL-BREF in a Palestinian population demonstrates that political freedom, self-determination, participation in democratic processes and feeling involved in political decision-making are perceived as important contributors to Life Quality (Giacaman et al., 2007). The study raises the question of adding new domain (s) to the WHOQOL-BREF, a contribution particularly relevant to post-conflict societies and cultures, as in Sierra Leone.

Bull's Eyes Values Survey. One reason for modifying the format of the BEVS was to create an instrument that did not consume paper and an instrument less dependent on electricity for the printing of paper. A second reason was to create a situation less similar to a test in an educational situation. An additional reason was to be able to use the measurement more actively during the sessions. One limitation of this is that the psychometric properties of the original BEVS may have been distorted by the modification of the measurement. In the original BEVS instrument, measurements are taken by using a ruler and measuring the number of millimeters from the bull's eye to the participants' ratings. The modification of BEVS, meaning an instrument with only seven rating options, may have reduced the sensitivity of the instrument and may further result in a decrease in ability to detect differences between the estimates. Additionally, the design of BEVS may cause implications for the study design in relation to stable baseline measures. For every life area a valued direction is formulated. In this particular study, both the participants and the researchers devoted considerable amount of time to exploring and formulating values during pre-intervention measures. This procedure is likely to increase participants' understanding of the instrument and establish an important basis for the intervention. However, it may have kick-started a process of participants becoming more aware of important core values, a process that may increase the likelihood of participants initiating changes in their life before the intervention. This may explain the positive trends in BEVS ratings observed before the start of the intervention. In relation to standardized questionnaires, exploration of life values is more difficult to conduct in a standardized fashion, an area for further research could be whether difficulties of verbalizing core values are related to the tendency to take Steps in valued direction.

Acceptance and Action Questionnaire II. When the internal consistency of AAQ II was analyzed, Cronbachs Alpha gave a negative value indicating negative covariance between items. In small samples and for measures with few items, sampling error producing a negative average covariance is more likely (Hays, 1981).

In small samples the alpha value will be sensitive to small changes and variations. Hence results should be interpreted with caution, and a larger sample size is needed to be able to draw firm conclusions about the measurements' internal reliability in the studied group.

Errors may also be explained by the complexity of the measurement and by items worded in opposite directions. For example item 10 "*My thoughts and feeling do not get in the way of how I want to live my life*" approaches a double negative, and the meaning may be lost when the reader has English as a second language.

A possible consequence of items formulated as statements instead of questions is the risk of loss of understanding when questions are read out loud. This manner of administering an instrument that is supposed to be self-rated may have distorted the psychometric properties. The items of the AAQ II have further attracted criticism for being difficult to comprehend for persons not exposed to ACT or other contextual CBTs (Bond et al., 2011). This gives reason to discuss the threat of response shift, which refers to changes in a person's internal standards of a measurement. The *shift* refers to a change in criteria, values or perspective that may lead to a different evaluation of behaviors, situations and states. There may have been a risk of participants interpreting items of the AAQ II different after the intervention than they did at the pre-measure. Additionally, cultural differences may have affected interpretation of items. When reading item nr 3 "*I am afraid of my feelings*", spontaneous reactions and comments from some participants were "why should I be afraid of my feelings?" Regarding item number 6 "*I am in control of my life*", several participants rated "*never true*", explaining that God is the one in control of their life. Additionally, for some of the participants, the AAQ II show contradictory patterns to the corresponding measure BEVS. A likely explanation may be that, due to the extraneous factors mentioned above, the AAQ II did not satisfactorily capture the construct of psychological flexibility. Another possible explanation is that AAQ II attempts to capture psychological flexibility in a more general manner, whilst BEVS focuses on flexibility in the four different life areas related to stated values, and is thus more domain specific.

The manner in which the psychometric instruments were administered differed between measure points, a fact that may have affected results. The majority of data was collected at the counseling center by a master student of psychology, however the last post measures were conducted by the staff at the counseling center

(for all participants except number one, who conducted her ratings at home). Additionally, some post measures of BEVS were collected by telephone due to participants spending time outside Freetown. For the measures conducted over the telephone, participants were given a paper sheet of the BEVS scale to rate at home. This lack of standardization of measuring may have affected data. However, at post-measures, participants were familiar with the BEVS and could easily discuss their thoughts and the reasons for their ratings.

The questions and options examining the frequency of participants work in this study needs to be developed. Using a more general measure aimed at capturing the participants' perception of how much they were able to work. A more quantitative measure could give more exact information. Although asking for a more precise amount of time, e.g how many hours a day the participants worked, were thought to be distorted by external events, like common traffic jams, loss of water and electricity and weather phenomena like heavy rain or heat waves affecting the participants amount of work. The effect of the intervention on work capacity is an interesting area of research and for further studies complementary scales to measure work capacity and the validation of scales are needed.

Implications for further research regarding dependent variables and measurements. Further examination of other variables than those examined in this study would bring a more comprehensive picture of the effects of the intervention. For example, the concept of experiential avoidance is known to be associated to higher levels of ill-health in individuals with HIV, pain as well as for victims of sexual abuse. To measure the participants experiential avoidance, with additional instruments, could lead to a deeper understanding of participants' problems and bring valuable input to further research in this area. A further exploration of acceptance and mindfulness components may be especially relevant for the studied group given that disengagement coping paired with lower levels of mindful-based attention have been found to correlate with higher levels of anxiety and HIV/AIDS related stigma. Additional measures of self-stigma could contribute to important knowledge and guide adaptations of the intervention.

Implications for further research

This study has investigated the effect of a short-term ACT treatment for women affected by HIV, pain and sexual abuse. It has not been within the scope of

this study to evaluate the possibility or appropriateness of implementing such an intervention in Sierra Leone. The following is a discussion concerning the implementation of this intervention, in relation to criticism expressed against the use of western “talking therapies”. The discussion takes as its starting point the fact that ACT (along with other psychological treatments) has not previously been evaluated in the country, as well as a consideration of the prevailing social, cultural and economic circumstances.

The intervention was conducted by two qualified psychologists with in-depth knowledge and experience of ACT, and a postgraduate student with basic knowledge and experience of ACT. Further research is needed into whether or not treatment conducted by health care workers with a lesser degree of education and experience in ACT is as effective, as well as the degree of education and experience needed in order to conduct an effective ACT treatment.

Whether the treatment methods evaluated in the study would be able to meet the social, cultural and economic needs and constraints of Sierra Leone is an issue that has not been addressed by this study. However, Mats Utas, an anthropologist who over the course of some years conducted research into young people and ex-combatants in West Africa, provides interesting reflections that are relevant to this question. In one study based in Sierra Leone, *Sexual abuse survivors and the complex of traditional healing*, Utas has investigated existing traditional methods of treatment for women who had experienced sexual assault. He finds a complex network of healers, herbalists, both Muslim and Christian priests and *Sowei mammies* (heads of female secret societies), where medical treatment is interwoven with traditional rites and diverse religious practices. This healing complex were evaluated as having high local perceived legitimacy. Utas recommends that, in order to deliver a positive outcome in the long term from methods aiming to help vulnerable individuals, these methods should be accessible within the community, and included in the existing healing complex.

In a country with a great need for reconstruction, widespread poverty and limited healthcare resources, the local community provides a number of tools and resources that can be used by external organizations and agents in order to create efficiency and perceived legitimacy for psychosocial projects. Despite this, cultural resources are seldom taken advantage of and are sometimes even shunned (Utas, 2009). However, it should be mentioned at this point that within the before mentioned

healing complex are certain elements that are not conducive to the empowerment and increased independence of women. One example of this is the common practice of FGM (Female Genital Mutilation). Another serious problem is the belief in the potential of traditional and religious methods to cure HIV, a belief which has led to an increased risk of infection and failed treatment. Circumstances like these could be a reason why external agents choose to act outside of existing traditional methods. Alternatively, working alongside and within these complexes through dialogues, observations and analyses can be a way to indirectly influence and bring about positive changes from within the local healing complex. As expressed by Utas,

”If one wants to have an impact on the healing complex it is important not only to take an active part in the reform efforts but also to allowing one’s own tools to be modified in relation to local complexities” (Utas 2009 p 28).

We cannot be certain of the precise reasons why the women in this study generally experienced an increase in their quality of life, and worked more towards their desired goals and core values. Further studies involving qualitative interviews, combined with both short- and long term measurements of variables which are meaningful for individuals, groups and for society would provide valuable information, providing a foundation for the further development of treatment methods for psychological illness in Sierra Leone. Investigating which processes and components in the treatment (such as defusion, acceptance, connecting with core values, etc.) and in the procedure (contact and relationship with the therapist, confidentiality, etc.) that are meaningful would be a step towards working for the integration of these elements into the existing healing complex. A culturally sensitive evaluation and integration of the effective components for different treatments could be a more effective and a more efficient use of resources than working towards the implementation of an outright ACT treatment program. A similar study into the significance of the various elements comprising Sierra Leones traditional healing complex had contributed valuable knowledge. With respect to the sociocultural context, research into which treatment components that are effective, and in what way they can be integrated into the existing healthcare and education systems could provide information of more cost-effective approaches and provide the possibility of accessible and effective treatments.

In summary, the outcome of this study indicates that the participants raised their quality of life and their tendency to act towards their core values after participating in a short term Acceptance and Commitment Therapy. Participants also reported changes in their life related to their capacity to work and changes in perceived stress and self-stigma after the completion of the intervention. This study cannot give a definitive answer to whether or not the outcome is due to the intervention itself, and if so, which components of the treatment were significant. These issues, along with issues concerning the development and implementation of psychological treatments and its role in Sierra Leone, are important areas for further research.

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Appendix 1

Intake form

Day:.....Month:.....Year:.....

Location:.....

District:.....

Name:.....Age:.....

Contact number:.....

Tribe:.....Religion:.....

Place of birth:.....Place of residence:.....

Relational status:

Married.....Single.....Divorced.....Widow.....Other.....

Number of children:.....

Education:.....

Reading abilities:

None.....A little.....Moderate.....Good.....Excellent.....

Reason for seeking help at the

organization:.....

Medications:.....

Use of alcohol:

Never.....Once a month.....Every week.....Everyday.....

Abuse of drugs:

Never.....Once a month.....Every week.....Everyday.....

Occupation:.....

How much do you work?

Never.....Sometimes.....Everyday.....

Economical status:

Have you enough money to meet your needs? (regarding food, clothing, living)

Not at all.....A little.....Moderately.....Mostly.....Completely.....

Appendix 2

Treatment Protocol

The interventions two sessions evolved around the Life Line exercise. This exercise served as a functional analysis of the workability of the clients behavioral strategies, meaning an examination of the function of the participants responses to thoughts, feelings and surroundings when taken actions in accordance's to stated values. Responses are analyzed in terms of constraining the participant or helping her taking action in a valued direction. The behavior strategies were further classified as strategies aiming at avoiding or escaping unpleasant feelings and sensations, or strategies with the purpose of connecting the participant to desired goals and values.

The following paragraphs 1-8 describe the content of the intervention. Even though both sessions had the same general structure, the exercise of acceptance was only practiced during the first session that focused on paragraph 1-5 and 8, while the main focus of session two are described in paragraphs 5-8.

1) Exercise of Acceptance

Aim: Facilitate taking different perspectives. Help the client connect to the bodily sensation of being loved and cared for and accept herself as she is in the present moment.

The exercise begins with the participant sitting down closing her eyes. The therapist instructs her to focus on her breath without trying to change the way she is breathing. For some minutes the participant is encouraged to open up to whatever feelings and thoughts that comes in her way. After practicing this breathing meditation the participant is instructed to imagine a loving person in her life. With a gentle touch on the participant's arms the therapist help her connect to a feeling of being loved and accepted. The participant is further encourage to change perspective, and imagine her self as a little child in need of love and acceptance.

With the child in mind the participant is instructed to give unconditional love and acceptance to herself.

During sessions when the participant showed judgmental and harsh tendencies towards herself, or when searching for ways to take care of herself, the participants experiences during the exercise were used as a reminder and connector to important values.

2) The Life Line

Aim: a functional analysis of the participant's strategies to handle obstacles and distress in relation to values. Establish psychological flexibility around private events like thoughts, emotions and physical sensations, thus helping the participant to engage in more healthy and vital actions.

The participant is introduced to the Lifeline (in this study an actual line was drawn on the floor). In the beginning of the exercise the participant was placed on one end of the line while a therapist represented her valued direction, facing the participant and holding the Bull's eye board at the opposite side of the Lifeline.

3) Define a valued behavior

Aim: Formulate and examine actual behaviors in relation to stated values.

The participant is asked to describe a behavior that is in accordance to her values in one of the four life areas (Example: Go outside the home and look for job opportunities).

4) Identify barriers

Aim: To elaborate the functional analysis of barriers and obstacles in relation to

values.

Evolving from the Life Line different obstacles that risks constraining the participant acting according to her values were examined. (Example: Thoughts and feelings about being less worthy or competent due to sickness, other people being judgmental, pain etc.).

5) Role-play the barrier

Aim: To elaborate the functional analysis of barriers and obstacles in relation to values. This included examining strategies of experiential avoidance.

Barriers and alternative strategies are role-played by therapists. The participant is encouraged to describe the emotions and physical sensations she experience when facing barriers, how she reacts and acts to these barriers and if the actions are helping or constraining her. When describing unworkable strategies the participant was physically moved away from her valued direction.

6) Alternative strategies

Aim: Helping the client examining alternative approaches to obstacles and barriers and decrease experiential avoidance

Alternative strategies when facing barriers are explored and evaluated. (Example: if the clients reaction to pain is to go home and wait for the pain to pass away, thus keeping her from acting values consistent, an alternative strategy could be to accept that the pain is present and still engage in desired behaviors)

6) Multiple examples

Aim: Help the participant generalize workable strategies across different situations.

Alternatives to unworkable strategies when facing barriers are tried out in different situations. The therapist are modeling and prompting different processes such as acceptance, mindfulness, diffusion and self as context.

7) Change of perspective

Aim: Providing the participants with experience and training of functional and value-based actions, and to look at her situation from an outside perspective.

Changing perspective refers to the participant roleplaying different parts of the *Life Line*, now acting as the barrier and the therapist, acting different behavior strategies and moving the therapist away from, or in line with the valued direction.

8) Committed action

Aim: Facilitate and increase the possibility of participants engaging in valued actions in a long-term perspective.

The client is encouraged to state and commit to long and short-term actions in valued direction.

Exercise of exposure

Aim: To decrease the participants experiential avoidance strategies and help her to stay open in the presence of pain and distressing emotions.

When participants showed signs of experiential avoidance in relation to pain or emotions, an exercise of exposure were practiced (a modified version of *getting bigger than your pain* in Dahl & Lundgren, 2006).

The exercise begins with the participant focusing on a sensation of pain or a disturbing feeling. She is encouraged to actively seek out and explore the feeling or sensation. She is further guided through an examination of the feeling in terms of where it starts and where it ends and if it changes in intensity or quality. The therapist is observant of signs of experiential avoidance like muscle tensing and increase in heart rate, and encourage the participant to continue to stay open and relax instead of trying to get rid of the feeling or push it away.

Diffusion Exercises

Aim: To help the client take perspective on her thoughts and help her to stay open in the presence of distressing or disturbing thoughts.

During the sessions when participant show signs of fusing with thoughts and feelings, different exercises were used to create cognitive defusion. Three different defusion exercises with the same general structure were used. All exercises begun with the client writing down a negative thought or feeling on a piece of paper.

1) In the first exercise the client is asked to place the paper on her chest. The therapist gives the following instructions:

The purpose of this exercise is to try and change the way we are relating to words that comes in the way of openness and acceptance. We will stand in silence and and look into each other's eyes until the end of the exercise. Your challenge is to stay open even if you feel the urge of looking away.

2) Dancing and defusion. In the second exercise music and dance is used to change the way the client is relating to her thoughts. Different negative thoughts are

assigned dance steps. The therapist calls out the different words creating a dance of defusion.

3) Singing and defusion. In this exercise singing is used to change the way the client is relating to feelings and thoughts. In a song familiar to the participant, lyrics are replaced by negative thoughts and feelings sung out loud.

Appendix 3

Picture of the BEVS instrument used in the study.



Instruction for BEVS:

Start from your values. Think that your value is "Bull's Eye" (the middle of the dart board). Bull's Eye is exactly how you want your life to be, a direct hit, where you are just the one you want to be in your life and where you get what you want from life. Make an X on the dart board in each area that best represent what your life have looked like since the last measure within each area of value. An X in Bull's Eye means that you are living completely in accordance with your value in that area, perfect and vital. An X far from Bulls Eye means that your activities don't correspond to how you want it to be, that your feet are not going in your valued direction

