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**THIS IS A THESIS UNDER REVIEW**

**Acceptance and Commitment Therapy (ACT)  
To prevent stress and promote health**

**Psychological Treatment of Youth under Stressful Conditions – A Pilot Evaluation of  
the Impact of ACT in an Adolescent Group**

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## **Thank you!**

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## Abstract

The purpose with the thesis was to discuss the theory and practise of Acceptance and Commitment Therapy (ACT) as a preventive treatment of psychological ill-health for youth. The intervention was given to a group of youth (n=38, age 15-18) in two different settings (school setting n=27, clinical setting n=11) and evaluated with self-report instruments. Positive outcomes of less stress and ill-health were hypothesized. The results showed significantly higher experiences of subjective well-being and psychological flexibility, and lower levels of experienced stress and depressive tendencies, and worse general mental health. The present intervention is also compared and discussed in relation to previous ACT interventions.

*Key concepts: ACT, stress, health, adolescence, youth, preventive treatment*

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# 1. Introduction

Acceptance and Commitment Therapy (ACT, said as a single word, not as initials; Hayes, Strosahl & Wilson, 1999) is part of what is called the third wave in Cognitive Behaviour Therapy (CBT). The interventions belonging to the third generation of CBT put great weight on acceptance, commitment, mindfulness and openness to all kinds of experiences. Research on ACT intervention is in constant development because of achievements of promising research findings around the world. The method seems to be working across an unusually broad range of problems, from severe psychosis to interventions for ordinary people with worksite stress (Hayes, Luoma, Bond, Masuda & Lillis 2006). But the literature is still relatively young and many of the ACT interventions which have been scientifically evaluated are short and rather limited. However, one can state by the research made on the method so far, that ACT is a promising therapy and in an interesting stage of development.

In Sweden, ACT has grown popular partly because the need for scientifically evaluated preventive interventions and because of several active researchers on the field, who have produced a number of studies (not all of them published). One of them, Fredrik Livheim, in cooperation with City of Stockholm, offered during some autumn moths in 2007 an education in the ACT method. The education was directed towards health care professionals working with youth: psychologists in school or in child and adolescence psychiatry, social workers and school welfare employees. The aim was to implement this version of ACT as part of the range of therapies in the psychiatric clinics, and/or as a method of stress management for students in upper secondary school (age groups 16-19 years). A pilot group of health care professionals took part in the development of a manual to be used in future educations of ACT intervention. As part of the education, the participants in the pilot group held ACT interventions for groups of youths in psychiatric clinics or schools.

It is the development of the manual and the following intervention that this thesis is about. Also the author took part in this pilot group and held an ACT intervention with a group of youths, and furthermore evaluated five of the groups of adolescents who received ACT intervention. This master thesis both describes this evaluation and the development of a version of ACT, adapted to younger participants in a specific culture and environment. This present edition of ACT is given as a group intervention, unlike the traditional way of

delivering it as individual therapy. The massive background theories of ACT, mainly developed by Steven Hayes and colleagues, and theories of stress, public health and preventive measures, are also given account in the thesis.

### ***1.1 The background of the present study***

The version of ACT investigated and evaluated in the current thesis is a developed version of the method used in the British study "ACT at Work" (Bond & Bunce, 2000). In the study, the group who participated in the ACT intervention showed lowered work related stress and higher general health. The study got attention, partly because of the relatively short intervention and yet significant results, and has been followed up since then. For example, the method was further developed and adapted to suit a younger population in Sweden, by Livheim (2004) in his master thesis in psychology. The results of the randomized controlled study with Swedish students showed that ACT, delivered as a 9 hour mandatory stress management course in school, significantly lowered levels of anxiety, and led to significantly better functioning in the participants' major problem area, in comparison to a control group. A two year follow-up study of Livheim's work was done by Jacobsson and Wellin (2006), and the results showed that the intervention group had significantly higher psychological flexibility and better cognitive processing. They had also significantly lower stress and anxiety, all compared to the control group.

The interesting results from these two studies on Swedish youth gave rise to several new research questions. For example, can supplementary independent research replicate previous results showing that ACT reduces stress and anxiety, when delivered as a stress management course to students? Can ACT function as a preventive measure to reduce public health problems? Is the consequence of preventive ACT intervention in school a decline of the society's cost and efforts for health problems in the future? These questions demand further research and are too large to be answered by this kind of thesis, but issues like these are the underlying motivation for evaluating preventive measures for youth.

The current thesis aims at investigating the ACT method, and the recent development of this specific ACT intervention. The purpose is to examine whether the ACT intervention is functional and appropriate for groups of adolescents in school and in clinical settings (the purpose is further elaborated later in the text). The groups are evaluated by self-report

measures before and after intervention. It is important to keep in mind that the evaluation is made in the middle of the process of developing a new manual for ACT directed towards adolescents. The thesis is thus an evaluation of a pilot study of ACT for youth. An additional aim of the project was to assess how the intervention worked with course leaders that had no prior training in ACT. This is however not discussed in the current thesis.

Below, some existing background theory of stress and youth is described, and further on the theory and the method of ACT.

## **2. Theory part 1: Stress and youth**

### **2.1 Stress**

Stress is a commonly used term but it is rather difficult to find a definition that captures all of its aspects. Depending on the context, the term stress can refer to major life events or daily hassles (stress as stimulus), or psychological responses that occur under pressure (stress as response), or a state of emotional distress (stress reflecting an emotional state), or the inability to deal with life demands (stress reflecting limitations in coping). In the psychological literature the frequently used definition is formulated by the two psychologists Lazarus and Folkman in 1984: stress arises when a particular event threatens the well-being, because the individual evaluate it as challenging, or exceeding the coping resources.

#### **2.1.1 Evolutionary perspective of stress**

In Europe, modern human beings have lived for about 35 000 years. During this period, the human inheritance has been almost identical. Quick stress reactions have been necessary to handle life-threatening situations, and through natural selection those who had quick reactions on danger survived. From this perspective, we are engendered to react on danger. But the modern society today is different, and very strong stress reactions often do more harm than good. We are no longer threatened to death on an everyday basis, but our stress reactions are almost the same as if we were. It is not an appropriate response to run away when you are angry with the boss, which most likely was the suitable reaction a couple of thousand years ago when you experienced stress. The difference is that throughout history, stressors have been something in the environment, such as a bear in the forest or an enemy; things or events that do not apply to modern life. The latest 150 years of development puts completely different demands on humans than before. Stress reactions are more often triggered by our own mental activity. For example, when we are doing a presentation at work or have a lot on our minds, our bodies react in almost the same way as if we were hunted by a bear. This is a kind of aggressive stress that we can recover from. But if the stress lasts for long without the possibility of recovery for the body and brain, the reactions turn into a more harmful kind of stress (for example Levi, 2000).

The stress hormones play an essential role in the stress reaction. Cortisol is one of them, a hormone with many actions; for example to prevent the immune system to overreact to injuries, or to affect the heart rate and the blood vessels to help the body coping with stress. Various sites in the brain regulate the production of cortisol to stay within certain bounds, depending on the stress level and the body's requirements. This system can become overloaded and sometimes complicated to shut off, as a result from chronic stress exposure, poor adaptation or repeated stressors (Nash & Theborge, 2006). Prolonged increased levels of stress-hormones in the body can cause physical problems, such as vein calcification, diabetes, or depression. This can be further complicated in combination with behaviours such as consumption of tobacco, alcohol and drugs, special dietary choices, irregular sleep schedules, lack of exercise, or medication (McEwen 1998; 2004; in Nash & Theborge, 2006). This pattern of problems is more frequently seen in younger groups. Overweight and obesity in children increases as well as sleep deprivation. A raise is also seen in psychosomatic problems, such as stomach ache or headache (The Children's Ombudsman, 2005). High levels of stress hormones (for example cortisol) can with time cause cognitive problems, e.g. difficulties with concentration, memory or sleep, and gradually affect the brain and lead to an exhaustion state caused by stress and disease (McEwen, 2006; Björkman, Joneborg & Klingberg-Larson, 2001). In the modern society, stress has become a common source of getting into vicious circles of behavioural, emotional and cognitive malfunction.

### **2.1.2 The psychological concept of stress**

The literature seem to agree that psychological stress is when the individual experience an imbalance between perceived demands and perceived resources, which results in a burden on the biological system. The original psychological conception of stress was formulated by the two psychologists Lazarus and Folkman (1984): stress arises when a particular event threatens the well-being, because the individual evaluate it as challenging, or exceeding the coping resources. The definition includes the individuals' appraisal of the problem, e.g. an estimation of the own ability to handle the stress (to cope). But in psychological literature it is argued that this definition does not differ between negative and positive stress, mentions no physical reactions, and does not make space for an individual valuation of the situation. According to this definition, stress is something that occurred in the past and not that may happen in the future. Ideas of conceivable risks in the future are a source of stress (for example Bremberg, 2006). However, it is difficult to find a definition that includes all the above mentioned

shortcomings. Maybe a more complete definition of psychological stress should unite the above mentioned limitations, e.g. involve the kind of stress (positive or negative), the situation, the bodily mobilization, and have some temporal aspect.

## **2.2 Youth**

Youth, adolescence, or late teens; there are some different expressions for this period in life, characterized by the transition from child to adult. Typical are changes in physic, hormones, behaviour, emotion, and cognition. The amount of years spent in this stage varies from one individual to another, and also how the period is experienced. In other words, youth is a heterogeneous group that makes it difficult to find a representative and limited definition.

The majority of adolescents in Sweden are in good health (Bremberg, 2006). But the transition from child to adult is popularly known to be vulnerable and problems may arise, probably because of many first time-experiences. The period is as well documented as exposed and signs of ill-health are increasing. There are several examples of documentation that during the adolescent period various indications of ill-health may occur (for example Davey, Yücel & Allen, 2008; Giedd et al. 2006). To mention one kind of vulnerability to ill-health, the increase of depression in this age interval can be pointed out. There are several explanations offered for the raise of depression; it may be the result of changes in the hormonal environment in the brain (Angold et al., 1999; Brooks-Gunn and Warren, 1989), changes in the experience of the post-pubertal body (Susman et al., 1987), an increased experience of interpersonal stress (Leadbeater et al., 1995) and changes in cognitive style and capacity, especially for rumination (Nolen-Hoeksema et al., 1991). Other signs of vulnerability that may occur are anxiety disorders, such as phobia, generalized anxiety disorder, or panic disorder. These kinds of anxiety disorders are associated with suicidal ideation or attempts (Boden, Fergusson & Horwood, 2007).

To clarify the point: there are no documentation of that youth is a more difficult period in life compared to other stages. There are several examples of ill-health in all ages, but the adolescence might be a vulnerable and exposed transition in life and some individuals may be in need of guidance because of several new experiences.

## **2.3 The situation in Sweden**

The evaluation of the ACT intervention is made in Sweden. A description of the current situation of health in youth and school might be helpful to understand the motivation and the ambition of the study, and is presented below.

### **2.3.1 Stress**

The second largest health problem of the Swedish population today is psychological ill-health. In some further years, it is expected to be the very largest problem in the Swedish society (Swedish National Institute for Public Health, 2005). The self-reported mental health in Sweden is rapidly getting worse, especially among “young adults” (18-24 years). Some surveys show that mental ill-health among young adults in Sweden has been doubled or tripled during the period 1988/89 – 2001 (Swedish National Institute for Public Health, 2006). A report from the State Department of Sweden shows that the amount of people on long-term sick leave and early disability pension is one of the highest in the world (Rydh, 2002). In 2002, the total amount of people on long-term sick leave and early disability pension constituted about 14% of the working-age population, and was constantly increasing. This is an enormous cost for society. The most common symptoms these people reported were pain in the neck, shoulders, and back, as well as diffuse stress related symptoms such as fatigue.

During the last 10-20 years, several reports have shown that it is getting more common among Swedish youth to feel depressed, be worried, have problems sleeping, and be in pain (Bremberg, 2006). Common problems among the young adults are anxiety, worry, pain and problems with sleep. Some studies indicate that young women are an especially vulnerable group when it comes to mental ill-health (Stockholm County Council, 2003). These symptoms are often described as signs of stress. The ill-health and the stress are also observed in younger groups than before, and it increases (The Children’s Ombudsman, 2005).

### **2.3.2 School**

The main activities in youth are characterized by learning, adaptation and change. School is the central activity and is often the place where most time and energy is spent. School has a dualistic role, by both helping the students to establish coping strategies, and to stress performance in regard to get good grades. Demanding processes such as figuring out the

future and developing an identity are in full action. The ability to deal with stressors successfully by functioning psychological coping resources, may serve as buffer against the negative effects of stress on health (Kristensson & Öhlund, 2005).

A report from the Swedish National Agency for Education (SNAE; 2007) points out that every third Swedish school must develop a better ability to discover students in need of special support (both concerning learning and social adaptation) and to provide for these needs. A third of the teachers in school do not consider themselves to have enough knowledge or competence to discover students with special needs, and more than half of the teachers do not consider themselves to be able to provide this kind of support. In this regard, Swedish school is insufficient in the function of getting hold of youth with difficulties in order to reduce current suffering and future problems (SNAE, 2006).

In Sweden, the upper secondary school is voluntary, yet 98% chooses to attend it (SNAE, 2007). Most students feel that if they shall have a chance to get a job in the future, they have to pass the upper secondary school. The students experience that they have a very low level of control whether they shall go to secondary school or not. And in school, they feel a lack of control and possibility to influence the school situation (SNAE, 2006; 2007). In the report from 2006 that inquires the students' attitudes towards school, 33% stated that they always or often feel stressed in school (46% of the women, 21% of the men). There was a difference in the level of stress in students in study aligned programs, where 42% report stress, and occupation aligned programs, where 24% report stress. The level of experienced stress increased with age. The most common reason to feel stress was an experience intense work load in combination with high demands from oneself, school or parents. There are several situations, both every day and traumatic ones, which may elicit stress responses, but the majority of the students experience most stress around school or education. Some demands, e.g. stressors, that has been identified by Cox, Griffiths, Barlowe, Randall, Thomson, & Rial-Gonzalez (2000) include lack of control, poor social support, role conflicts, and work overload. These stressors in combination are similar to what the Swedish pupils reported (SNAE, 2006), and is one reason why preventive efforts of health or stress management could facilitate for youth in school. ACT intervention is such a preventive effort.

### **3. Acceptance and Commitment Therapy as an alternative – motivation for the project in the specific setting**

Efforts for the above mentioned stress related problems are traditionally given when difficulties are experienced, and individual destructive patterns are set. An approach that may avert this development is to provide preventive measures by teaching health management techniques early in life. For society, it is relatively economical to use general preventive health treatment, if compared to selective measures that society has to provide for, if psychological problems in the population as a whole are not counteracted at an early stage (Swedish National Agency for Education, The National Board of Health and Welfare, Swedish National Institute of Public Health, 2004). Kaplan (2000) has examined different ways for society to prevent ill-health, and describes at least two pathways to prevention: primary and secondary preventive health care. Primary prevention is efforts given to undiagnosed members of society as a prevention of disease. Secondary prevention, on the other hand, is about detecting and treating disease that already exists. Secondary prevention is commonly used in western societies, especially the US, even though the pay off so far seem to be quite limited. Primary prevention is not used in the same extent in health care, partly because the effects are not sufficiently evaluated, according to Kaplan. Primary prevention may offer the most health at the lowest cost for society.

Vulnerability in adolescence, reports of increasing stress and ill-health in the young population, reports of difficulties to get hold of the problems in school, accompanied by the knowledge we have about preventive measures and their effects, motivate preventive measures in order to try to avert the development of ill-health among youth. This edition of ACT is such an intervention. As mentioned above, a study of ACT as preventive measure for ill-health and stress has already been made in a Swedish school, and the results are promising. This present intervention and accompanied evaluation has the overall intention to assess a developed version of Livheim's 2004 study. In accordance to Kaplan's theories of primary prevention (2000), this type of treatment is economical for society. However, the empirical part of this current study is given both as primary and secondary preventions. The groups from the psychiatric clinics are given forms of secondary prevention, because ACT is given to individuals with in some extent existing problems. This component is the pilot part of the study. The groups from school are given forms of primary prevention, because these

individuals are given ACT as preventive measure. This component is a replication of Livheim's study from 2004.

The version of ACT that is evaluated in this thesis is usually referred to as "ACT – to prevent stress and promote health". In the future, the idea and the ambition is that it shall be given as a primary prevention to students in school and that it shall be further evaluated in randomised controlled trials as a secondary prevention.

## **4. The purpose**

The purpose of the current study is partly to present and discuss a preventive health treatment: Acceptance and Commitment Therapy (ACT). The intervention method is thoroughly described. The purpose is also to assess the method used, e.g. the appliance of self-report measures, to evaluate the impact of ACT intervention, in order to prepare for an improved study; this is thus a pilot study.

### ***4.1 The research questions for the evaluation***

The research questions at issue are:

- Does a 12-hour ACT intervention have any impact on a group of youth regarding subjective well-being, the level of psychological flexibility, experienced stress, levels of depression and anxiety, general mental health, and alcohol consumption, studied by the self report instruments used in the study? Can possible changes be effects of the intervention?
- Does this version of ACT intervention have any impact on a clinical group of youths, and in that case; does the intervention have any different effect in comparison to a group of students in school?
- Does the result show any differences between this 12-hour version of ACT, in comparison to the 9-hour version delivered by Livheim 2004?

An additional aim of the project was to assess how the intervention worked with course leaders under education, e.g. who had no prior training in delivering ACT. This information is limitedly discussed in the present thesis.

### ***4.2 Hypotheses***

The hypotheses are that the ACT intervention shall have positive impact on the group as a whole, and also in the two subgroups that consists of the participants in school setting and participants in clinical setting. No obvious differences are hypothesized between the 9-hour and the 12-hour intervention.

## 5. Theory part 2: Introduction to Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) developed from a branch of the empirical clinical psychology. The three letters can also build up the message: Accept, Choose, Take action, three aspects significant of this method. Within ACT, great weight is put on scientifically evaluated and well-defined techniques. It is also important that the theoretical frames on which the method is founded can sufficiently motivate these techniques and explain why they work successfully (Hayes & Smith, 2007). Because of the importance and the level of development of the philosophical and theoretical foundations of this method, these aspects are explained in the following.

### 5.1 Philosophical perspective – functional contextualism

ACT is based on functional contextualism (Hayes, 1993; in Hayes et al., 1999) which is a philosophical viewpoint that focuses on the ongoing act: the interaction with the context. *Contextualism* has three core components: a focus on the *whole event* (interaction between all parts of the event, both historical and situational), the *role of the context* for understanding the nature and function of an event, and a *pragmatic truth criterion* (truth is always local and pragmatic, for example; what is true for you is not always true for me because we may have different goals). In ACT, the philosophy is what is true is what works. Therefore, in the ACT-approach, the client is encouraged to stay with an experience of what works and does not work. This is how the pragmatic truth criterion is operationalized.

The distinctive feature of *functional* contextualism is the *unique goals*. The goals specify how pragmatic truth criterion can be applied. The truth criterion of contextualism is successful working. The goals of functional contextualism pay an important role. The goals can be several, but most important is behavioural influence as outcome. Therefore, in ACT, there are only two contextual features that can lead directly to behavioural influence: those external to the behaviour of the individual and those that are manipulable (at least in principle). Given this goal, the analysis must trace phenomena back to the environmental context, both historically and situational. This is what differentiates ACT from cognitive therapy, most of the traditional behavioural therapies, and many other perspectives. Rather than trying to

change the form of private experience, ACT attempts to change the functions of private experiences by manipulating the context in which some forms of mental activity, e.g. thoughts or feelings, are usually related to other activities, e.g. actions (Hayes et al., 1999).

The four philosophical perspectives (the whole event, the role of the context, pragmatic truth criterion, and unique goals) are all reflected in ACT method as implicit assumptions. ACT places great emphasis on specifying values and goals at the individual level. Actions are evaluated in relation to the participants' chosen values and goals, and the issue is always workability, not objective truth (Hayes et al., 1999).

ACT works from a contextual behavioural viewpoint. It is contextual in the perspective that it sees cognitions and other forms of behaviour as what it is, no more no less. It is behavioural in the sense that it addresses cognitions and other forms of behaviour from a contextual-behavioural point of view, and not in a mechanistic content-oriented way like many of the cognitive-behavioural treatments (Hayes et al., 1999).

This is in brief the philosophical outlook of ACT. In the next part, I progress by summarizing the theoretical basics of the method.

## ***5.2 Theoretical perspective – Relational Frame Theory and the Understanding of Linguistically Processes***

The intellectual foundation of ACT is the Relational Frame Theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001). The RFT builds on a contextual behaviour analytic perspective, in which behaviour is contingency-shaped, e.g. learned by trial and error, and/or rule-governed, e.g. learned by verbal formulations of events and relations between them. RFT believes that the human brain and the human language are the sources of much human suffering because of the ability to make linguistically relations (Hayes et al., 1999). There are several other schools of psychology that also focuses on language as a key to understand human activity and the human world, such as narrative psychology and psycholinguistics.

According to RFT, human behaviour is guided by networks of mutual relations: relational frames. These relations are the core of human language and thinking, and make it possible to learn new things without having to found it on concrete personal experiences. An example of

this: a cat can learn to keep away from a hot stove, but this demands that that the cat at least once gets burnt by putting the paw on the stove. A human child, on the other hand, can learn this by a verbal explanation from an adult, and will never have to touch the stove in order to learn that you can get burnt. In the external world, this ability is a valuable tool. But when it comes to our internal world, verbal rules can seriously limit and inhibit our flexibility towards experiences (Hayes & Smith, 2007).

The actual definition of the term relational frame is that it “specifies a particular pattern of contextually controlled and arbitrary applicable relational responding involving mutual entailment, combinatorial entailment, and the transformation of stimulus functions. This pattern of responding is established by a history of differential reinforcement for producing such relational response patterns in the presence of relevant contextual cues, not on a history of non-relational training with respect to the stimuli involved” (Hayes et al., 1999, p. 41).

To explain this in other words, humans can arbitrary connect external events as well as thoughts, emotions, actions, or personal characteristics (in principle anything) to other events, thoughts or emotions. These connections, e.g. *relations*, can express similarity, comparison or values, temporal and causal connections, personal or spatial relations. A *relational network* is when events are connected and understood in a certain way, and these verbal relations are bidirectional. These networks make useful self-knowledge possible, but it also makes self-criticism or self-avoidance almost inevitable. This is called “the principle of bidirectionality”. RFT views verbal knowledge as the result of elaborated and interconnected networks of derived stimulus relations. This is what our minds are full of. These networks of relational responses allow associations that are the root of human suffering (Hayes et al., 1999). The ability to think in terms of relations has given humans an evolutionary advantage, but is also what harms us and makes us suffer (Hayes & Smith, 2007). In short, our minds do not always know what is good for us and sometimes makes incorrect interpretations.

For humans, once verbal relations are derived, they never seem to go away completely. You can add to them, but you cannot really eliminate them. They may disappear functionally, but they may reappear if newly learned verbal behaviour is disrupted. We keep on drawing assumptions out of these verbal relations as long as they help us make order out of our world (Hayes et al., 1999). Then, almost as by impulse we believe that these assumptions are true. This is why language processes can be so destructive.

For example, if you try hard not to think of an unpleasant thought or event, you may succeed to keep it away for some time. But this does not work for long and the thought becomes more pushy and assertive than ever. The unpleasant thought will dominate the thinking, and it will become even more probable that it will lead to some reaction (Wegner, 1994). Suppressing the thoughts will only make the situation worse, to try not to think of something can easily lead to viscous circles of harmful thinking.

Therefore, ACT suggests a completely different way of thinking. ACT attempts to untie the verbal knots by loosening the binds of language itself. Instead of spending energy on trying to change or suppress the thoughts, the ACT method proposes changing the context, not the cognitions. By this technique, the intention is to create *cognitive defusion*: a healthy psychological distance to the contents of the thoughts. This is also entitled *psychological flexibility*, which aims at changing the negative influence of private experiences (thoughts, feelings, physical sensations, or memories) and to build a flexible and effective variety of behaviours around these experiences. These concepts will be further elaborated later in the text and will also be evaluated in the empirical part.

The argument of changing the context, not the cognitions, can be tied to the specific phenomenon stress. According to ACT theory and the traditional psychological definition of stress by Lazarus & Folkman (1984); that stress arise when a particular event threatens the well-being, because the individual evaluate it as challenging or exceeding the coping resources; there are two ways to handle the stress. The first is to attack the stressor, e.g. the source of the stress. The second is to change the experience of stress, by changing the experience of the threat against the inner balance and the ability to cope with the stress. ACT intervention is about the second alternative; to change the experience of stress. How ACT intends to do this is elaborated below.

### **5.3 ACT treatment components**

At the technical level, ACT can be understood as a collection of exercises, metaphors and procedures almost all of them borrowed from elsewhere – from the human potential movement, eastern traditions, behaviour therapy, and the like (Hayes et al., 1999). ACT is one of several therapies in “the third wave” of behaviour therapies (BT) and cognitive behaviour therapies (CBT). Other methods in this area are dialectical behaviour therapy (DBT) or

mindfulness based cognitive therapy (MBCT). ACT aims at changing the negative influence of private experiences (thoughts, feelings, physical sensations, or memories) and to build a flexible and effective variety of behaviours around these experiences.

Greco, Blomquist, Acra, & Mouton (unpublished) have identified some active components in ACT intervention. These components are milestones for behaviour change that intends to lead to improved quality of life. These factors work as a developmental process throughout the whole intervention, not as individual goals in each session. How the particular components were fulfilled in this specific intervention is described in detail in the part “procedure in the intervention”.

### **5.3.1 Creative hopelessness**

The aim with generating creative hopelessness is to motivate the participant to change. Past and current efforts that are made to control physical and emotional pain are explored. The short- and long-term workability of different strategies are evaluated, based on own direct experience. “Costs” of control efforts across important life domains are identified. Even if the current life situation of a participant is experienced as hopeless, the participant him/herself is not hopeless. The person is totally responsible for his or her life and can make active choices, even if there are experiences of high distress, pain or anxiety doing it.

### **5.3.2 Control as the problem; acceptance as the alternative**

To be able to develop with ACT, it is necessary for the participants to understand that they up until now have been engaged in an unsuccessful struggle, e.g. trying to control, and that control is the problem. The paradox of control is demonstrated in different ways. Acceptance of private experiences (“willingness”) must be seen as an alternative to control to be able to change.

### **5.3.3 Values identification**

This component involves identifying personal values and distinguishing them from goals. In this step, personally important life domains are also identified. It involves realizing that hard work and change must be done in favour of space for personal values.

### **5.3.4 Defusion and mindfulness**

The aim with defusion is to weaken the domination of literal language and linguistically connections. To become aware of verbal constructions that interfere with willingness, and

develop a peaceful relation with painful thoughts, feelings and sensations, are part of this step. Mindfulness can reduce stress, partly because full it is incompatible to rumination that triggers the stress system.

### **5.3.5 Self-as-context**

This component involves getting in contact with the observing self, and experience the momentary, ongoing nature of thoughts, emotions or bodily sensations. It includes willingness to experience all kinds of private events.

### **5.3.6 Values clarification**

This step is about exploring the participants' personal values, e.g. answering questions such as “what is important in your life?” or “how do you want others to experience you?” To set up behavioural goals and a plan of action linked to the values is made, as well as identifying internal and external obstacles or barriers that are in the way of valued-based living.

### **5.3.7 Willingness-as-action; self-compassion**

This step is about supporting the participant in making and keeping commitments that will move him or her in valued directions. To implement acceptance and change methods so as to overcome internal or external barriers to achieve valued-based living is part of this component. The participant is instructed to practice acceptance and compassion towards the self, particularly during demanding periods.

## **5.4 Key concepts in ACT**

Psychotherapy within ACT is based on the philosophy and theory described above. The treatment focuses on six key components: 1) acceptance, 2) values, 3) committed action, 4) cognitive defusion, 5) self as context, and 6) contact with the present moment – mindfulness. Each component is a step on the way in the intervention, and each involves different techniques and metaphors developed to create a psychological context. From these six contexts, ACT tries to make it possible to experience negative thoughts, feelings, physical sensations and memories, even if they are painful. The final concrete goal for the participant in ACT is to understand what is important in life and to take steps in that direction, including a sometimes painful history, memories or reactions that can arise as obstacles along the way (Livheim, 2004; Hayes et al, 1999).

This is a model illustrating the positive psychological processes that are strengthened in ACT:

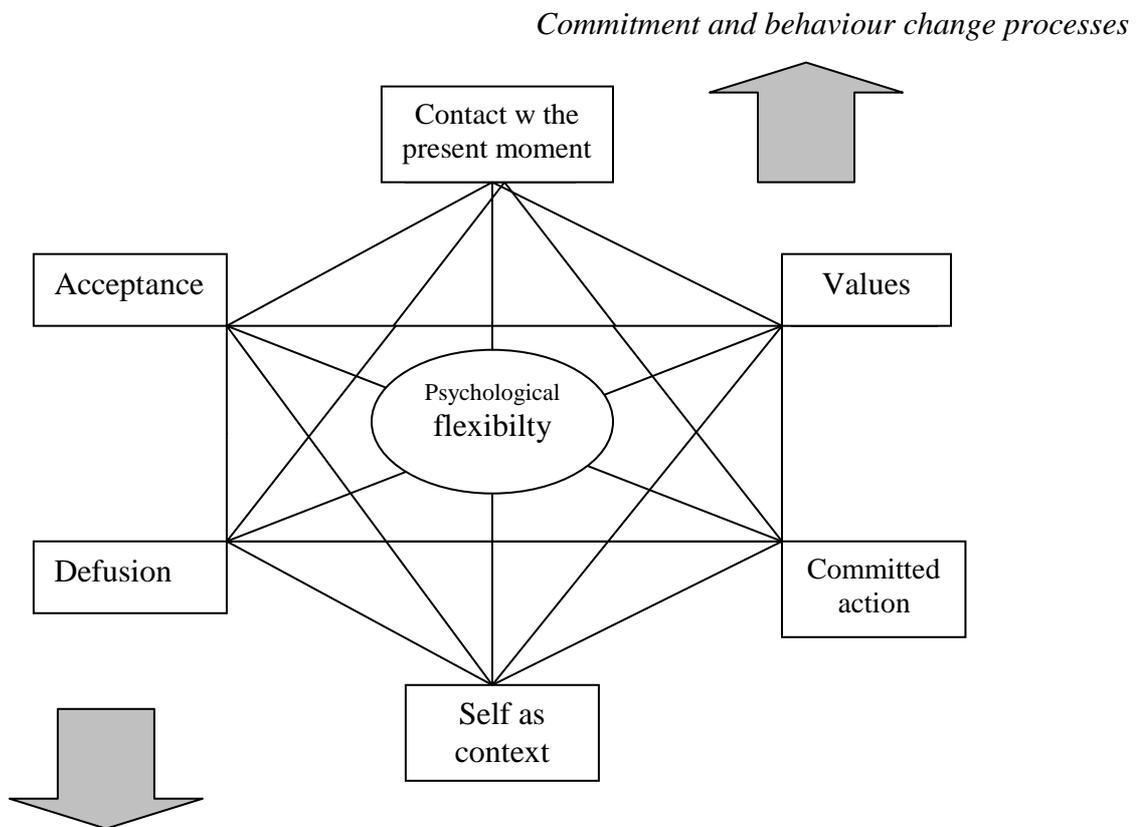


Fig 1: a model of the positive psychological processes ACT seeks to strengthen. *Model copied from Hayes Luoma, Bond, Masuda & Lillis (2006).*

Each basic component of ACT is now shortly presented, in purpose to create a better understanding of the whole.

### 5.4.1 Acceptance

The alternative, and opposite, of avoidance is acceptance. The word means to receive or take what is offered. In psychology it implies to actively experience an event or a situation. Acceptance is essential for any type of psychotherapy because the client and the therapist must experience a problem to have something to work with. In ACT, the component of acceptance aims at abandoning dysfunctional patterns and to actively and openly experience feelings and thoughts just as they are (Hayes et al, 1999). Acceptance is to recognize all the experiences and impressions that fill our conscious in each moment, without judging. For example: acceptance is when attention no longer is focused on the pain, even though it is still

there, but on the life one really wants to live. An improved level of acceptance increases flexibility, allows freedom to act and to let go of the need of control, and the negative consequences connected with control (Hayes, 2007).

### **5.4.2 Values**

Identification of goals and values is done by letting the participants define how their life would look like if there were no limitations. The purpose with this exercise is to come in contact with what is important in life, what gives energy, recovery, meaning and vitality, and to inquire if there is balance in life in general. This gives the participant coherence and reason to put effort into going in a certain direction. There are other important aspects of defining goals and directions in life. As an example, in this current intervention, the participants are reminded that they choose to go in a form of school that is voluntary, and that they do this to fulfil something that is important for them (get a good future). This should improve the experience of control and motivation, which are both successful to reduce feelings of stress (for example Cox et al. 2000). The other aspect is to identify values that people in general consider important in nine domains of life, such as close relations, friendship, or work. The tool used for this purpose in this version of ACT is a variation of the life compass, also known as Valued Living Questionnaire (VLQ; Dahl, Wilson & Nilsson, 2004. In this text, this tool is referred to as “the life compass”). When stressed, people frequently lose perspective and solve problems only in the short-term. For example, investing 100% of your energy in studying works for a short while, but if the work load is too heavy, it can be harmful in the long run. Often, the stress is not the problem; it is the lack of rest and recovery for the body and mind that is harmful. To define what kinds of activities that provides energy and recovery is important, because it is often these types of things that we do not prioritise when we are stressed. In this way, we shrink our existence to be only about the stressful part in life. How to fill up the energy reservoir is individual, some likes to spend time with friends and family, some to be in the nature. It is the activities that we do not prioritise when we are stressed, that actually add energy, which we need in order to recover. The idea with the life compass is to learn what is important in life, what kind of activities, in which area of life, that gives meaning and vitality, and also to get an overall view if there is balance between different areas of life (Dahl, 2005; Livheim, 2004).

### **5.4.3 Committed action**

Another important component involves choosing and to take action. When the participant has identified goals and directions in life, it is all about acting in this way. The ambition in this component of the intervention is to make the participant act including the fears of getting rejected or hurt. For some, a change in the amount of studying is suitable, and for some to spend more time with the family, in order to get balance in life. This is elaborated by analysing the life compasses individually. This method is similar to behaviour activation, a method that for example has proved valuable for adults with depression (Dimidjian et al, 2006).

### **5.4.4 Defusion**

Cognitive *fusion* is when irrational verbal connections have been developed and the original connection between two stimuli has been “transformed”. Cognitive defusion is the opposite of this and involves a healthy psychological distance to negative cognitions. This is an important tool in ACT that builds on the RFT. Instead of “being your thoughts” you learn how to observe them from outside, and in this way make a distance between the world we constitute out of our thoughts, and the thinking itself, that is an inner, mental process. Thoughts about the self can with defusion techniques differ between the person who accommodate these thoughts, and the linguistic representation of your self that the thinking creates. Such a distance leads to peace in mind, not necessarily because the inner struggle is over but because you no longer “live in the war zone” (Hayes & Smith, 2005).

### **5.4.5 Self as context**

According to ACT-theory there are three aspects of the self. The *conceptualized self* is the sum of all linguistic categories, values and beliefs about one-self. The *ongoing self-awareness* is the immediate, continuous knowledge about what we experience in the present moment. This side is non-judgemental and flexible. The *self as an observer* is the part of the self-identity that we linguistically probably have least contact with. In contrast to the other two aspects, the observing self do not use language. The content is not easily described. However, ACT theory believes that the observing self is a development from the language and is of fundamental importance for the well-being. The linguistic relations are learned early in childhood and are dialectical. These kinds of relations become meaningful if they are assigned to a certain observer (a conscious). It is from this part of the self you view the world, now and through your history. This self is abstract and without limits, sometimes called “the

no-thing self”. This aspect of the self may appear when practising cognitive defusion; a feeling of observing yourself just letting your mind wonder without getting caught by the content of your thoughts. It is this side of the self that ACT, and other methods using linguistic defusion, encourages you to get in contact with (Hayes & Smith, 2005).

#### **5.4.6 Contact with the present moment – mindfulness**

To be mindful is to be deliberately present in the moment, without judging or valuing. The core skill to learn in mindfulness is how to step out of and stay out of self-perpetuating cognitive routines. To be mindful is to be aware, to let go, in a way that abandons involvement in these cognitive routines, freeing oneself from the attachment or aversion that drives the thinking patterns (Segal, Williams & Teasdale, 2002). This involves stepping into the self as an observer, as mentioned above. The ambition is to relate to experience in a different way. Mindfulness practise is applicable in every day life in activities such as walking or eating, and also involves mindfulness meditation practice, by one-self or guided by a recording.

### **5.5 Research on ACT**

Several research studies of the impact of ACT with adults have been made around the world, and documented as a successful treatment in several different fields. In this thesis, a selection of the research made is presented. The collected tendencies point out ACT as an effective alternative for people with various types of problems. Some examples are mentioned below.

A randomised controlled study by Bond and Bunce (2000) evaluated the impact of ACT management for work-related stress in a large UK media organisation. A group who received a brief, group-based ACT intervention was compared to a wait-list control group, and to a group who received a program in how to reduce stressors at their source. In this format of delivering ACT in groups, and also in the developed versions by Bond and Bunce (2003), the intervention was given in the “2 + 1” method (brief psychotherapy delivery, Barkham & Shapiro, 1990; in Bond & Bunce 2000). The participants received three, three-hour sessions: the first two on consecutive weeks, and a third three months later. In this treatment format, the result showed that the ACT intervention improved the participants’ general mental health, depression, and innovation potential in relation to the control group. This is congruent to the theory of ACT: findings showed that the intervention improved people’s mental health and

innovation potential, because it increased their ability to act in accordance with the values that they hold, and not on the psychological events, such as thoughts, feelings, memories or physical sensations.

Forman, Herbert, Moitra, Yepmans & Geller (2007) made a randomized controlled effectiveness trial of ACT and cognitive therapy (CT) for depression and anxiety. 101 heterogeneous outpatients with moderate to severe anxiety and mood disturbances participated and were randomly assigned to CT or ACT condition. The rate and degree of patient improvement over time appeared equal for the two groups. In both CT and ACT groups, the participants showed clinically significant improvements as a function of the treatment. The effectiveness of CT and CBT is well-documented, and in this study, ACT appears to be as successful for the described groups. Participants in the CT-condition changed in “observing” and “describing” their experiences, while outcomes for participants in ACT-condition were associated with experiential avoidance (e.g. the opposite of acceptance), “acting with awareness”, and acceptance. This suggests that the mechanisms of change are different in the two methods.

Dalrymple & Herbert (2007) made a pilot study with 19 adults with generalized social anxiety disorder. The program included exposure exercises in context of the ACT model, and was delivered individually in 12 1-hour sessions weekly. The results showed significant improvement in symptom reduction from pre-treatment to follow-up (at 3 months) on self-report measures of social anxiety and quality of life. There were also reports of less fear and avoidance, increased functioning, and greater consistency between behaviours and stated values. The participants reported less experiential avoidance over time, which according to the authors, points out this as a potential mechanism of change in ACT. The participants also reported greater perceived control over emotional reactions and external events over time. However, larger trials of ACT for social anxiety disorder are needed.

Also relevant for this current study is research on ACT intervention for stress and pain. Brief ACT intervention (four 1-hour weekly sessions) was given to public health workers in Sweden who showed signs of chronic stress or pain (Dahl, Wilson & Nilsson, 2004) at the same time as medical treatment as usual (MTAU). Directly after and six months after intervention, the ACT participants (n=11) showed fewer sick days; a mean of 1 sick day compared to 11,5 sick days for MTAU group (n=8). The ACT group used fewer medical

treatment resources (in this study measured by the number of times they visited a physician, specialist, or physical therapist) compared to a group who only received MTAU.

In a randomized controlled trial, patients with positive psychotic symptoms received ACT at the same time as treatment as usual (Bach & Hayes, 2002). ACT consumers showed significantly higher symptom reporting and lower symptom believability. The rate of rehospitalization after four months was half that of the control group, who got treatment as usual.

Hayes, Wilson, Gifford, Bissett, Piasecki, Batten, Byrd & Gregg (2004) made a study on ACT for severe substance abuse. To add ACT to polysubstance-abusing addicts was associated with lower objectively assessed opiate and total drug use in the follow-up, compared to those who did not receive ACT. The results also showed lower subjective measures of total drug use for those who received ACT. Measures of adjustment and psychological distress improved, but still, ACT for drug abuse demands further research.

Lappalainen, Lehtonen, Skarp, Taubert, Ojanen & Hayes (2007) examined the efficacy of CBT and ACT in a preliminary controlled effectiveness study in Finland. Trainee therapists delivered a mean number of 9.6 individual treatment sessions (60 minutes) of CBT and 9.1 sessions of ACT to outpatients (n=28). The therapists were given initial training in both methods (CBT 12 hours; ACT 6 hours) and supervision. They had prior to the study no or very limited experience of delivering psychotherapy. The result show moderately better outcomes regarding social functioning, better symptom improvement and acceptance with ACT, than CBT. In CBT condition, participants showed improved self-confidence more rapidly. Authors note that ACT appear to be different at the level of process and perhaps also on outcome levels. These results were reached despite that students in the beginning felt less knowledgeable about ACT and were more fearful throughout using it. The method is somewhat limited, but the results suggest for the benefit of ACT, that therapists with only six hours training can make some positive results for participants.

### **5.5.1 Research on ACT for youth**

Working with ACT in younger populations demands some special requirements, both regarding the ethical approach and developmental modesty. Children and adolescents are able

to benefit from most of the activities of ACT, but some sections are more difficult. For example, to develop a sense of self-as-context and to be aware in the present moment (mindfulness) are known to be the difficult tasks, especially for children (Murrell & Scherbarth, 2006).

The empirical research of ACT for youth is so far rather limited. More randomised controlled trials are definitely needed in order to evaluate the actual effect of ACT intervention. In a review over the research made on ACT for children, adolescents and parents, Murrell & Scherbarth (2006) mention that several studies around the world are under preparation or so far unpublished. The lack of research of ACT on youth is also the reason why the present study is founded on an unpublished thesis. However, some of the existing research is presented below.

In a randomised controlled study by Livheim (2004), Swedish pupils in upper secondary school participated in a nine hour ACT intervention (n = 230, 116 in ACT condition and 114 in control group). This intervention was made with Bond and Bunce's (2000) "ACT at work" study as a model. The intervention was modified to fit the younger group, the majority between 16-18 years. It was also delivered in the 2+1 format. Among the significant results was an increase of function in the participating students' major problem areas and decreased anxiety levels, and also tendencies of decreased stress levels and depression (Livheim, 2004). This study was followed up two years later by Jacobsson and Wellin (2006). The results in the follow-up show that the effects of the ACT intervention were still strong, and even more evident, two years later than after one month. The intervention group had significantly higher psychological flexibility and cognitive processing. They had also significantly lower stress and anxiety, all compared to the control group. There was a strong tendency for a higher general psychological health in the intervention group.

In a case-study (Wicksell, Dahl, Magnusson, & Olsson, 2005), a 14 year old girl with chronic pain was treated with 10 sessions, which included education about the nature of chronic pain, ACT (for example shifting from unworkable pain control strategies to acceptance), and education of parents in how to coach their daughter. The patient went from 100% absence from school during the 60 days before intervention to no absences and had changed her coping strategies at 6-month follow-up. She achieved and maintained her value-based goals, and reduced functional disability and pain both at post-treatment and at follow-ups (3 and 6

months). In an uncontrolled pilot study by Wicksell, Melin, Olsson (2007), 14 adolescents with chronic pain were given a very similar intervention as in the case-study above. In this study, it was hypothesized that the participants avoided pain and related stimuli and that this was central to their disability, and that functioning could increase and pain decrease by introducing acceptance strategies and exposure. The objective of the study was, as in most ACT interventions, to increase the participants functioning, in contrast to reducing distress or pain. After treatment and at follow-up, improvements in function, school attendance and pain were seen. These two studies suggest that acceptance is useful in rehabilitation of adolescents in pain, but randomized controlled studies are needed to further evaluate the effect.

In a case study by Heffner, Sperry, Eifert & Detweiler (2002), a 15 year old female with anorexia nervosa was given ACT, traditional CBT and family interventions. Among the positive changes, the authors noted anorectic symptom reduction to the non-clinical range, her weight increased to normal and her social relations improved. This is a single case study and the results may not be applicable to other cases of anorexia nervosa, and the effects of the three different treatments are difficult to isolate, but may contribute to developing the ACT method in this area.

Metzler, Biglan, Noell, Ary, and Ochs (2000) made a randomized controlled trial with 339 youths (15-19 years) from public sexually transmitted disease clinics in the USA. The intervention given was based on social-cognitive theories but had several ACT-like components and was heavily acceptance-based. The aim was to promote willingness and set value-consistent goals. At 6-month follow up, the treatment participants significantly reported fewer non-monogamous partners and fewer sexual contacts with strangers in the past 3 months, less alcohol or marijuana before sex and higher acceptance of emotions, compared to the control group.

In a research review, Murrell & Scherbarth (2006) writes that there are several unpublished studies of high school students at risk for academic failure or juvenile delinquency. Reports with ACT and different kinds of risk behavior, such as smoking and other substance use, self-injurious behaviour, and academic success, has been the subject for researchers in numerous countries. The studies yield promising results but little is yet published.

## 6. The current intervention and modifications of the method

Several changes have been made by the creator of the new manual for this current ACT intervention, in comparison to earlier studies. Below, I describe and motivate some of the differences compared to both earlier versions of ACT and Livheim's 2004 study.

A major difference, compared both to "ACT at work" (Bond & Bunce, 2000) and to "ACT in school" (Livheim, 2004), is the new 12-hour format. Before, the course was nine hours in 2 + 1 format, three hours each: the first two delivered on following weeks and the third delivered a month after session two. The current intervention was delivered as a 12-hour course, divided into four 3-hour sessions. The occasions were delivered on four different weeks, every other week. More exactly, occasion one week one, occasion two week three, occasion three week five, and occasion four week seven. The reasons for modifying the intervention format are founded on the verbal and written feedback that Livheim received after his 2004 study and some other performed interventions. Apparently there was a requirement for practising the newly learnt way of thinking during a longer period of time. Also, the participants considered the sessions a bit too intense and asked for shorter and more sessions. The sessions are still three hours long in this format, but less intense. For example, there are now more time for discussions and follow-ups of the home exercises. This was made in order to raise the probability for the participants to do the exercises and thus implement behaviour change in the every-day life between the sessions. Additionally, Livheim thought the 12-hour format was a more practical way of delivering the intervention (interview with Livheim on 21/11-07).

Every one of the four sessions involved group discussions, experience-oriented exercises and more. The four sessions are described in the attachment. Exercises and metaphors are taken from Hayes et al (1999) and Dahl, Wilson & Nilsson (2004) but adapted to the Swedish language and culture, and the age level in the current groups. A treatment manual has been developed, and the course is now delivered by using power point presentations. The manual, power point presentations and hand-outs are designed and written by Livheim.

Tasks to be done at home between the occasions were given each session and the importance of doing these was well emphasized. In the three last sessions, the tasks supposed to be done at home were discussed in the groups in purpose of solving possible problems and to

encourage the participants to comply with the tasks. No formal control of the tasks was made. Examples of the tasks are practising mindfulness by listening to a CD, to do physical exercise at least twice a week during the course, and to try to apply acceptance in the every day life.

Another important difference in this “ACT for youth” version in comparison to earlier ACT interventions is the greater weight on mindfulness. A CD with mindfulness exercises were added, which was not the case in “ACT at work” (Bond & Bunce 2000). The CD is recorded by Fredrik Livheim (2007) and contains six different exercises. Three of them are 30-, 15- and 5 minutes guided mindfulness meditation, one is a 5 minute exercise in mindful walking, another is a 7 minutes long exercise in cognitive defusion and the last one is a 6 minutes exercise in acceptance. The contents are in agreement with the original philosophies of MBCT, ACT, mindfulness based stress reduction (MBSR), and Vipassana (Buddhist insight meditation). To get some kind of regularity and continuity in the mindfulness practice, a CD with exercises was necessary. Another purpose with the CD was to deliver an “immediate experience” of acceptance. For example, the ambition was that some of the verbal formulations on the CD should “follow” the listener in the everyday life in order to change the relations to some experiences. The reason for adding this aspect is the increasing amount of research that shows mindfulness as essential for a better health. For example; Kabat-Zinn and colleagues showed in several studies that the MBSR program decreases stress (for example Kabat-Zinn 1994); Teasdale, Segal and Williams (2004) found that mindfulness meditation can prevent depression and relapse in depression, especially if someone had three or more episodes; it reduces levels of anxiety (Miller, Fletcher & Kabat-Zinn 1995), alters the general mental health and gives more psychological flexibility (Livheim 2004, Jacobsson & Wellin, 2006), increases the body’s immune system (for example Davidson, Kabat-Zinn, Schumacher, Rosenkranz, Muller, Santorelli, Urbanowski, Harrington, Bonus, Sheridan, 2003), improves sleep (Shapiro, Bootzin, Figueredo, Lopez, Schwartz, 2003), and improves the ability to manage pain, and gives a healthy distance to thoughts and feelings (Hayes et al, 1999). A recent study by Chinese researchers found that a group of randomly assigned participants who received meditation practice, already after five days of training 20 minutes a day, showed significantly better attention and control of stress than a similarly chosen group given relaxation training (Tang et al, 2007).

In this intervention there were two group leaders instead of one as in Livheim (2004), and other the previous versions. The idea with this change was that the group leaders should be

able to discuss the method and support each other in delivering the course for the first time, especially since they were new to ACT.

## **6.1 Procedure in the intervention**

Short summaries of the main goals of each session are presented below. A detailed review of the sessions can be found in attachment 1.

### **6.1.1 Session one**

This session was about stress, the language and acceptance. The major aims were to:

- 1) Establish a good contact between the group leader and the participants (an alliance)
- 2) Generate “creative hopelessness” in order to open up for new strategies (treatment component 1)
- 3) Make participants view control as part of the problem (treatment component 2)
- 4) Create defusion from linguistically rules and to propose acceptance as an alternative (treatment component 2)

### **6.1.2 Session two**

The overall subjects and aims of session two were to:

- 1) Repeat the last session and the tasks and exercises done between the sessions
- 2) To identify life values and inquire in what extent the participants live according to these values – use the life compass (treatment component 3)
- 3) To identify barriers in the way of the ideal life and the life the participants actual life

### **6.1.3 Session three**

This session was about obstacles and psychological flexibility, and the aim was to:

- 1) Repeat the two last sessions and the work with the tasks at home
- 2) Break down valued directions and obstacles to goals and concrete actions
- 3) Learn about and experience the observing self (treatment component 5)
- 4) Create psychological flexibility (treatment component 4)

### **6.1.4 Session four**

This last session was about compassion and to continue practising what the participants learnt in the ACT course on ones own, in the everyday life. The aim of the forth session was:

- 1) Repetition of the three earlier sessions and the work done at home for this session

- 2) Mindfulness meditation on compassion (treatment component 6)
- 3) Togetherness – confirmation in communication
- 4) Decision-making
- 5) Summary and to continue on ones own

## 7. Method

In the method part, the following is presented: the design of the study, the procedure, the participants and drop-outs, the ACT-group leaders, the reference group, and the ethical considerations at issue, the questionnaires, and the selection of statistical methods.

### 7.1 Design

The empirical part of the study have a design of a pre- and post-intervention evaluation of the participants' self-reported well-being, psychological flexibility, levels of depression, anxiety and stress, their general mental health, and the alcohol consumption. These aspects are considered by the self report measurements described below. The ACT intervention was given as a 12-hour course, divided into four three-hour sessions. This is an outline of how the intervention and the evaluation were implemented:

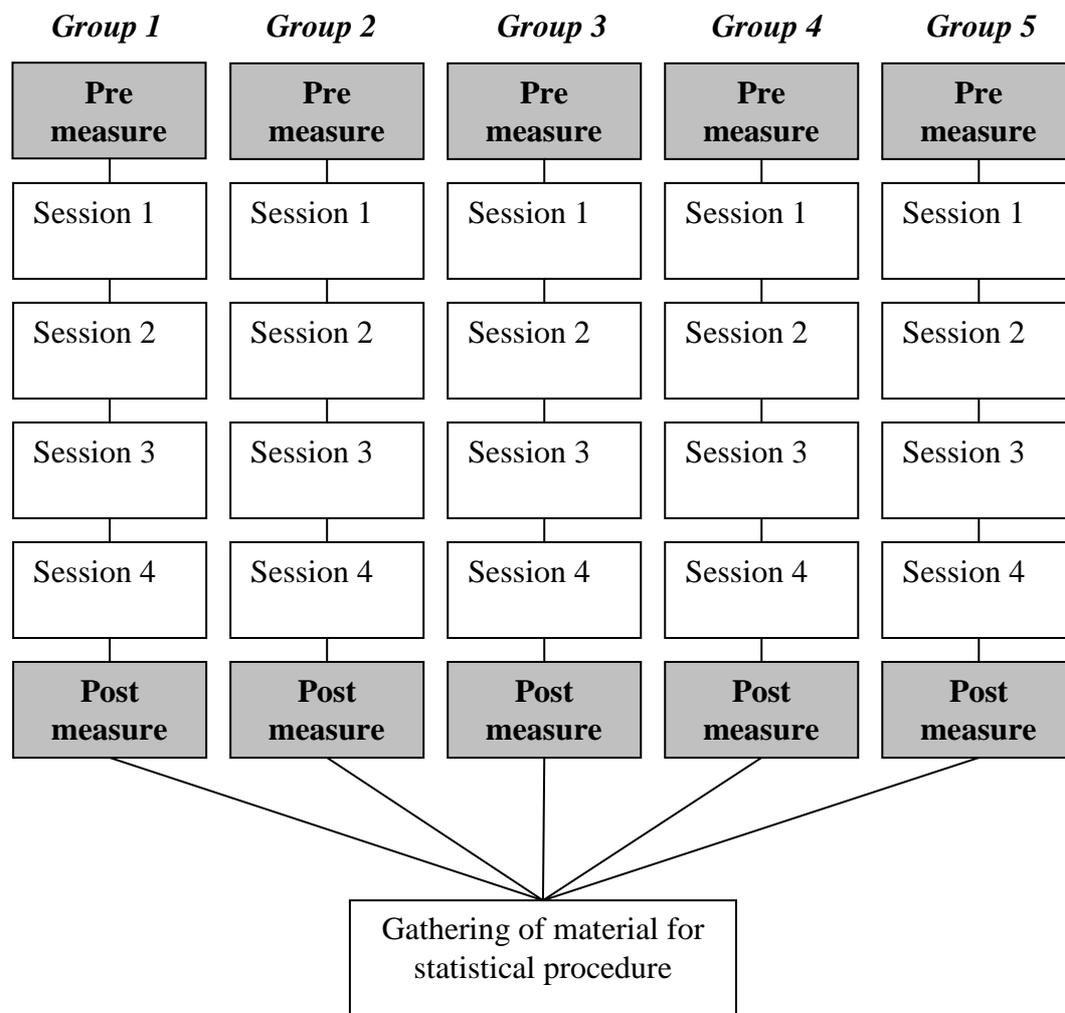


Fig 2: a model of the intervention.

The results were then statistically analysed and discussed.

## **7.2 Procedure**

The 22 participants in the ACT course leader education pilot group (e.g. the psychologists and social workers) were asked to participate in an evaluation of the ACT intervention that was aimed to be part of a master thesis in psychology. The participants made 11 pairs, e.g. 11 groups. Two of the pairs were to deliver the intervention to adults, and was consequently excluded from the study. Additionally two of the pairs were positive to participate but were excluded because of different practical reasons (the youths in one group were severely dyslexic and not able to fill in the self report measures, the leaders of the other group felt too stressed over delivering this intervention for the first time and choose not to participate). Two group leaders did not want to participate. Out of the five remaining pairs, three of the pairs delivered ACT in a clinical setting, and two in school setting.

In the clinical setting, the participants were either finished with their treatment at the open ward clinics, or in therapy at the same time as they took part in ACT. The participants were thus offered ACT as a complement to their ordinary treatment. No attempts to isolate the ACT intervention from other treatments were made. Only individuals who voluntarily agreed to participate in ACT were included.

In the school setting, there were two different conditions. In the first condition, the participants were a regular class (25 pupils at the start of the intervention) and were given ACT as part of the curriculum. In the other condition, ACT was offered to any voluntary students in a small school. The participants were in different classes and had different schedules, and the intervention was given during regular school hours. Consequently, the ACT collided with the education for some participants. An arrangement between the ACT course leaders, the teachers and the principal was made, that those who went to ACT instead of the normal lessons were not to be reported as absent and were to have no negative consequences.

When the group recruitment for participation in the evaluation was done, the group leaders who agreed to participate in the evaluation were informed of the procedure. They were all given the material for the pre- and post-measure by e-mail. They were to print and administrate the paper evaluations themselves. The evaluations were coded, divided and collected by each group's leaders, immediately before the first session and instantly after the

last session. The group leaders had received a manuscript to follow when giving instructions about the evaluation (attachment 2) and rules of how to answer possible questions. The participants were given approximately 20 minutes to fill in the questionnaires during silence. If more time were needed the participants could take some extra time. Some participants in the ACT intervention choose not to participate in the evaluation, with no negative consequences.

A few participants in the evaluation did not fill in the paper form directly after the last session and were asked to do this as soon as possible afterwards, with a maximum delay of about one week. The evaluations were sent by post to the evaluation organizer for the statistical procedure.

The intervention took place at four different occasions and lasted for totally 180 minutes (3 hours) each. The participants were given two 15-minutes breaks during which they were offered some fruit or sandwiches, depending on the time of the day. The groups received the course at different points during the afternoon.

### **7.3 Participants**

The total group had 38 participants, 25 women (66%) and 13 (34%) men. At the start of the course the age interval was between 15 and 18. The mean age was 16.76 (23 of the participants were 17 years old). 33 of the participants had Swedish as mother tongue, and 5 had another language. The 38 participants formed five groups who received the intervention under different conditions, some in school and some in open ward psychiatric clinics. The groups received the intervention separately with different group leaders.

The five groups who received ACT intervention varied in size; depending on where the participants received the intervention, the group size varied from five in a clinical setting up to 24 in school setting.

Also the number of participants who filled in the different questionnaires in the evaluation varies. First, not all who received intervention participated in the evaluation. And because of missing information on some measures, some questionnaires are excluded. This was done when the participant had neglected a page or alike. Another reason is that the group leaders

from the clinical condition regarded some of the measures as not useful in relation to the aim of the intervention and not suitable in their particular group. This measure was the BDI (described below). So what is referred to as “participants in the evaluation” is the number who filled in both pre and post evaluation, as “participants in the intervention” is the total number of participants in the course, including the ones who did not participate in the evaluation.

### **7.3.1 The clinical group**

The “clinic group” consisted of 11 participants from three different clinics of child- and youth psychiatry. The number of participants in the intervention was 16 and 11 in the evaluation. All participants in the clinic group were female (100%) and the age varied between 15 and 18 (M=16.45). Two of the clinics were regular child and adolescence psychiatry open wards (up to 18 years). The third clinic was a special ward for youth with dependence problems. 10 had Swedish as mother tongue, 1 had another language.

### **7.3.2 The student group**

The number of participants in the “student group” was 27, 14 women (52%) and 13 (48%) men. Age interval was 16-18 (M=16.89). One group was given ACT voluntarily and the other was given it obligatory as part of the curriculum, as described above. 23 of the participants in the student group had Swedish as mother tongue, 4 had another language.

## ***7.4 Reduction of participants***

There were more people starting the course than finishing it. 55 participants filled in the pre evaluation and 38 filled in the post evaluation. This makes a reduction of 17 people (31%). The drop-outs are primarily from the school settings where there were the reduction was 12 people. 11 of these persons were excluded because they were absent twice or more. One was absent only the last time and did not ever fill in the post evaluation. In the clinical setting there was 5 drop-outs. The reason for these drop-outs or exclusions were that the participant was absent twice or more, or absent the last session and did not ever fill in the post evaluation, or that they did not bring the caregivers permission to participate and was because of this excluded. The questionnaires that are evaluated in this study are only from the participants who filled in both pre and post intervention evaluations. In total, 10 of the participants in the evaluation were absent one of the four sessions. Three of the participants were absent twice. If someone was absent more than twice and still wanted to continue the intervention, that person

was excluded from the evaluation but not the intervention. The participants who were absent twice but still included in the evaluation were considered as motivated to continue by the group leaders and committed to finish the course. For the ones who missed out on an occasion or two, a quick repetition was offered and access to the material from the missed session was distributed.

### ***7.5 The group leaders***

The five different groups were led by two course leaders each, e.g. 10 group leaders in total. The clinical groups were led by psychologists or psychotherapists. The student groups were led by school counsellors, or the psychiatrist who had training in psychotherapy, or the psychology student. All the leaders were trained in ACT in totally 16 hours. A detailed manual and power point presentations was followed throughout the intervention.

### ***7.6 The reference groups***

The groups used as reference groups in the discussion and analysis of the result in this thesis, are students who received ACT intervention by Livheim (2004). Reference group A (“ACT group”) received ACT as a nine hour mandatory course in school in Uppsala, Sweden. Group A consists of 104 students, 45 girls (43%) and 59 boys (57%). This group was used as intervention group in Livheim’s 2004 study. Reference group B (“control group”) has not received any stress intervention at all, and was used as a control group in Livheim’s earlier study. This group consists of 105 pupils, 43 girls (41%) and 61 (58%) boys, also from an upper secondary school in Sweden. The age interval in both reference groups is between 15-21 years, but the majority is between 16-18 years old. Totally it consisted of 52% men and 48% women.

### ***7.7 Ethical concerns***

Every participant in the intervention was asked to approve to take part in both the evaluation and in the master thesis, by ticking in a square for agreement on the front page of the evaluation (attachment 3). They were informed that the material would be handled confidentially and anonymous, and that no individual result would be presented in the thesis.

Only results on a group level would be reported. All questionnaires would be coded in the statistical procedure and in the later report of the results.

All participants were given a hand-out with information and telephone numbers of where to turn in case of severe problems. These were the names and telephone numbers of the local school nurse, the school welfare workers, and the local open ward clinic for child- and adolescent psychiatry and health.

If the participant was under 18 years of age, which is the age of majority in Sweden, a special sheet with information of the ACT intervention, the evaluation and the future publication of it in a master thesis was handed out (attachment 4). This was to be taken home and returned to the group leaders with the signature of the parent/person in custody of the child.

## **7.8 The measures**

The self-report instruments used in this study were originally selected to match the measures in Livheim's (2004) study, so that the results could be compared. A measure of clinical depression (Beck Depression Inventory, BDI; Beck, Rush, Shaw & Emery, 1979) was added. The reason for including this inventory was an original ambition to use the score of a well-documented clinical measure as a threshold for depression. Unfortunately, not all of the course leaders agreed to include the BDI, primary because they regarded the clinical groups as too vulnerable to fill in many questionnaires (time and effort) or because that the participants in the clinical groups already had established ill-health and were in the clinic for that reason. Therefore, the number of participants who filled in the BDI is smaller than the other questionnaires and the original ambition to use the score as a threshold was disregarded.

One measure of psychological flexibility (Acceptance and Action Questionnaire, AAQ; Hayes, Strosahl et al, 2004) had been published in an updated version with better psychometric capacity, and this new scale was included in the present evaluation instead of an older one (Hayes, Strosahl, Wilson, Bissett, Pistorello, Toarmino, Polusny, Dykstra, Batten, Bergan, Stewart, Zvolensky, Eifert, Bond, Forsyth, Karelka, & McCurry, 2004).

Another measure (GHQ-12; Goldberg, 1972) was scored in a different way than in Livheim (2004), and could because of that not be compared. The different way of scoring was used

because of information in the literature about this questionnaire, indicating that the bimodal way of scoring (0-0-1-1) gave better psychometric characteristics than the Likert way Livheim used (Goldberg, Gater, Sartorius Ustun, Piccinelli, Gureje & Rutter, 1997).

One measure that was used by Livheim (2004; the problem questionnaire, PQ by Folke & Parling, 2004) was excluded after ethical considerations that it might threaten the confidentiality, and because of possible difficulties that may occur in handling the material in smaller groups.

The remaining scales that created five variables could be compared to Livheim's 2004 results. Below is a presentation of all the scales used in the evaluation.

### **7.8.1 The pre-measure**

The material in the pre measure consisted of:

1. Information to the participants
2. Questions regarding the participants' background

The self-report measures:

3. Satisfaction With Life Scale
4. Acceptance and Action Questionnaire
5. Beck Depression Inventory
6. Perceived Stress Scale
7. Depression Anxiety Stress Scale
8. General Health Questionnaire

#### **7.8.1.1 Questions regarding the participants' background**

The first page of the evaluation was composed of seven questions that the participants were asked to answer. The first questions were: sex (male/female), age (in years), and mother tongue (Swedish/other).

A question constructed by Livheim (2004) that intended to examine the level of motivation to participate in the intervention was used as well in this study. In translation from Swedish, it was: *How motivated are you now to participate in this stress management course?* The

answer alternatives were on a 7-point scale *not at all motivated* (1) to *very motivated* (7). There are no psychometric data for this question.

A question that intended to measure psychological flexibility was made by Livheim (2004) and included in this study. There are no previous psychometric data for this question and therefore it is uncertain what it really investigates. The question in translation from Swedish is: *If I am afraid or anxious of doing something or meeting someone, I...* to be answered on a 7-point scale from *...follow the thought/emotion and avoid doing it* (1) to *...see it as only a thought and do what I want anyway* (7). This question correlated significantly with AAQ-2 that intends to measure the same concept ( $r = .654, p < .01$ ).

To investigate the participants' alcohol consumption, a question to be answered on a 5-point scale with increasing amount of consumption was created. The responses were taken from a report of adolescent alcohol consumption made by the Swedish Centre for Alcohol and Narcotic abuse ([www.can.se](http://www.can.se)). The answering alternatives were increasing in amount from (1) *I do not drink alcohol*, up to (5) *I drink up until five beers (3,5-5% alcohol), a bottle (70 cl.) of wine (app. 11% alcohol), or a half bottle (70 cl.) of spirits (app. 40% alcohol)*. A high point indicates high risk behaviour.

### **7.8.1.2 Psychological well-being – the Satisfaction With Life Scale**

The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) is an established measure of life satisfaction, which is an essential concept in the research of subjective well-being. The scale has shown sufficient sensibility to detect change in life satisfaction during the course of an intervention. This five item instrument aims at giving a global evaluation of the individual's view and quality of life by using the person's own criteria. The participant is asked to agree or disagree on statements, such as *"in most ways my life is close to my ideal"*, by using a 7-point Likert scale. The scale extends from *strongly disagree* (1) to *strongly agree* (7). Possible points on the scale are 5-35. Higher points indicate higher subjective well-being. The SWLS has been used internationally to evaluate students and adults (Pavot & Diener 1993). This scale has good psychometric qualities such as high reliability, concept validity and high test-retest validity (for example Diener et al. 1985, Hultell & Gustavsson, 2008). Intern validity according to Cronbachs alpha in the present study was .87.

### **7.8.1.3 Psychological flexibility – Acceptance and Action Questionnaire**

The Swedish version of the 10-item Acceptance and Action Questionnaire, second version, (AAQ-2; Hayes, Strosahl et al 2004; Parling & Lundgren) was used to measure the participants' psychological flexibility, e.g. ability to live the life they want to live, despite thoughts and emotions that may be viewed as obstacles. The AAQ-2 evaluates acceptance for negative thoughts and emotions, and the willingness to yet take steps in valued directions in life. Experiential avoidance is measured by the AAQ, and has been documented as empirically distinct from other cognitive processes involved in emotion deregulation, such as anxiety sensitivity (Forsyth et al, 2003; in Feldner, Hekmat, Zvolensky, Vowles, Secrist, Leen-Feldner, 2006) An example of a statement is: "*I am in control of my life*" and shall be answered on a 7-point Likert scale that extends from *never true* (1) to *always true* (7). Some items are inverted. Possible points on this scale are 10-70, and a higher point indicates higher psychological flexibility, e.g. that the person do in less extent fuse with negative thoughts, avoid emotion less and do not allow thoughts, feelings and physical sensations to direct behaviour. Reliability is .81-.87 (Hayes & Bond, unpublished power point) and the internal consistency .70. The AAQ has been found to correlate moderately to highly with Beck Depression Inventory and Beck Anxiety Inventory (Hayes et al. 2004). For a more detailed review of the psychometrics of the AAQ, please see Hayes, Louma, Bond, Masuda & Lillis (2006). Intern validity according to Cronbach's alpha was .89.

### **7.8.1.4 Depression – Beck Depression Inventory**

The Beck Depression Inventory (BDI; Beck et al, 1979) is a widely used self-report measure that identifies symptoms related to cognitive, behavioural, affective, and somatic components of depression. It consists of 21 items rated on a 4-point scale. The score is added to give a total score of 0-63. Each item scores from 0-3; a higher point represents a more intense depression. Levels of depression are categorized as follows: a = none to minimal (0-9), b = mild to moderate (10-18), c = moderate to severe (19-29), d = severe (30-63). Satisfactory validity and reliability have been documented for BDI in general (for example Beck & Steer, 1987) and for nonclinical adolescents (Byrne & Baron, 1993). Intern validity according to Cronbach's alpha was .95.

### **7.8.1.5 Stress – Perceived Stress Scale**

This 14-item questionnaire (PSS) was used to examine subjective experienced stress in different situations (Cohen, Kamarack & Mermelstein, 1983). As an example, the participant

is asked to estimate how often in the last week “*that you could not cope with all the things that you had to do*”? The answers are reported on a 5-point Likert scale from *never* (0) to *very often* (4). The points are added to give a global measure; possible points vary from 0-56 where a higher point indicates less experienced stress in every day situations. The score on the PSS can be viewed as an indication of risk for developing clinical psychological problems. The PSS has sufficient intern validity and test-retest validity (Cohen et al, 1983). The intern validity in this study was according to Cronbach’s alpha .88.

#### **7.8.1.6 Depression, Anxiety, and Stress – Depression Anxiety Stress Scale**

In this 21-item scale, developed by Lovibond and Lovibond (1995), levels of depression, anxiety and stress are evaluated subjectively by the participant. The participant is asked to estimate how much each statement applied to him/her over the past week. The statements are valued on a 4-point Likert scale from *did not apply to me at all* (0) to *applied to me very much* (3). An example of a statement is “*I found it difficult to relax*”. High results indicate higher levels of depression, anxiety and/or stress. On the scale as a whole, points vary between 0-63. On the three subscales (depression, anxiety and stress) there are seven statements each, presented in random order. The reliability of the three subscales is good, and the test-retest values are also good (.71 for depression, .79 for anxiety, and .81 for stress; Brown, Chorpita, Korotitsch, Barlow, 1997). The anxiety subscale of this test correlates .81 with Beck Anxiety Index and the depression subscale correlates .74 with BDI (Lovibond & Lovibond 1995). The intern validity according to Cronbach’s alpha was .93 for the total scale, .86 for the depression subscale, .78 for anxiety subscale and .90 for stress subscale.

#### **7.8.1.7 General mental health – General Health Questionnaire**

The General Health Questionnaire 12-item version (GHQ-12; Goldberg, 1972) was used to evaluate the subjective general mental health. The participants were asked to estimate how they experienced their life situation during the last week, and to score it on a four degree scale. The 12 questions cover four areas: anxiety/stress (three questions), depression (four questions), self-confidence (three questions), and cognitive processing (two questions). The four areas can create four subscales but this measure is commonly used as a global measure of mental health, and the point treated as a total score. This was also the case in this current study. The scale was scored in the bimodal way; 0-0-1-1 and a higher point indicate more psychological ill-health. This scale has been widely used in studies evaluating work related health (for example Bond & Bunce 2000) and as a screening instrument for common mental

disorders, and is translated into at least 38 languages (Goldberg et al, 1997). Intern validity according to Cronbach's alpha was .87.

### **7.8.2 The post-measure**

The material in the post intervention evaluation consisted of:

1. Short information to the participants
2. Questions regarding the participants' background

The self-report measures (same as in the pre-measure):

3. Satisfaction With Life Scale
4. Acceptance and Action Questionnaire
5. Beck Depression Inventory
6. Perceived Stress Scale
7. Depression Anxiety Stress Scale
8. General Health Questionnaire
9. Feedback, an evaluation of the satisfaction with the ACT-course

First in the post-intervention material was very short information to the participants of how to fill in the forms and that the participation was voluntary. Some of the questions in the "background information" sheet were modified. The motivation question was removed, and a question of how many times (if any) they had been absent, replaced it. The question of psychological flexibility and alcohol consumption remained the same. Then, the participants were asked to fill in the same self report measures as in the pre measure, 3-8 described above.

At the end, an evaluation of the satisfaction with the ACT course was added (attachment 5). The answers were to be reported on a 7-point scale. The questions in English were: 1. *How valuable do you consider the sessions?* 2. *How valuable do you consider the mindfulness CD?* 3. *What grade do you give the course as a whole (sessions, group exercises, home tasks, the CD)?* 4. *How many times a week did you practise to the CD?* Then there were two more questions regarding the participants' level of satisfaction with the course and some space for free feedback.

## **7.9 Selection of statistical methods**

Basic statistical analyses were conducted using SPSS (version 15.0). Primarily, the significant results are considered. The threshold of significance provides information about the security level of a result, e.g. if the result is random or reliable. For example, a p-value of .05 indicates that there is a 5% probability that the result is random, but 95% probability that the result is “true” (Aron, Aron & Coups, 2006; [www.statsoft.com](http://www.statsoft.com)). Simple linear correlations, i.e. the relations between the variables, were examined with Pearson correlation ( $r$ ). For the correlation analysis, guidelines from [statsoft.com](http://statsoft.com) were used. It recommends significant correlations between  $\pm 0.10$ - $\pm 0.29$  as small,  $\pm 0.30$ - $\pm 0.49$  as medium, and  $\pm 0.50$ - $\pm 1.00$  as large. To evaluate the differences in mean values between the groups from pre- to post-measure, paired samples t-tests were used.

The number of participants on the measures varies in the analysis, partly because the clinical groups did not fill in the BDI. In the few cases where there were a small number of missing values on the questionnaires, the information was replaced by the mean value for that person on the particular questionnaire.

The intern validity of each questionnaire was calculated by Cronbach’s alpha. It is a measure of reliability, based on the correlations within the test. The recommended alpha-value should be over .70 (Aron et al, 2006), in order to be able to rely o the questionnaire.

## 8. Result

First in this part of the thesis is a table of descriptive basic statistics to provide an overview of the whole group, the subgroups and the variables. Significant changes from pre- to post measure are marked out by asterisks.

Table 1

*Descriptive statistics (Mean (M), Standard Deviation (SD), and number of participants (N)) for all measures in the total group, the student group and the clinic group, at pre- and post-intervention.*

Measure	Group	M (SD) pre-	M (SD) post-	N
Motivation	Whole	5,26 (1,40)	-	35
	Student	5,22 (1,50)	-	27
	Clinic	5,38 (1,06)	-	8
Livheim's psychological flexibility	Whole	4,17 (1,27)	4,87 (1,19)**	35 (pre) / 38 (post)
	Student	4,37 (1,24)	4,89 (1,25)*	27
	Clinic	3,50 (1,20)	4,82 (1,08)*	8 (pre) / 11 (post)
Alcohol consumption	Whole	2,97 (1,44)	2,82 (1,49)	35 (pre) / 38 (post)
	Student	2,85 (1,46)	2,74 (1,38)	27
	Clinic	3,38 (1,41)	3,00 (1,79)	8 (pre) / 11 (post)
SWLS	Whole	23,55 (6,42)	24,97 (5,61)*	38
	Student	25,48 (5,17)	26,15 (5,70)	27
	Clinic	18,82 (6,94)	22,09 (4,37)	11
AAQ	Whole	45,37 (11,97)	48,74 (10,71)**	38
	Student	47,96 (12,25)	50,44 (11,00)*	27
	Clinic	39,00 (8,81)	44,55 (4,78)*	11
PSS	Whole	28,53 (10,03)	22,37 (9,57)**	38
	Student	26,52 (9,14)	20,56 (9,89)**	27
	Clinic	33,45 (10,82)	26,82 (7,36)*	11
DASS total	Whole	17,79 (13,04)	13,45 (12,30)**	38
	Student	15,30 (12,69)	12,04 (12,77)	27
	Clinic	23,91 (12,33)	16,91 (10,79)*	11
DASS depression	Whole	5,16 (4,82)	4,37 (4,87)	38
	Student	4,19 (4,68)	4,30 (5,33)	27
	Clinic	7,55 (4,50)	4,55 (3,75)*	11
DASS anxiety	Whole	4,50 (4,24)	3,13 (3,47)	38
	Student	4,15 (4,23)	2,85 (3,48)	27
	Clinic	5,36 (4,34)	3,82 (3,48)	11
DASS stress	Whole	8,13 (5,55)	5,95 (5,00)**	38
	Student	6,96 (5,36)	4,89 (4,86)*	27
	Clinic	11,00 (5,14)	8,55 (4,55)	11
BDI	Whole	10,67 (9,56)	8,94 (11,53)	30 (pre)/ 33 (post)
	Student	10,78 (9,83)	8,56 (12,33)	27
	Clinic	9,67 (8,14)	10,67 (7,47)	3 (pre)/ 6 (post)
GHQ	Whole	7,84 (3,59)	9,00 (3,25)**	38
	Student	8,41 (3,72)	9,52 (3,30)*	27
	Clinic	6,45 (2,94)	7,73 (2,90)	11

\*significant change from pre- to post measure at  $p < .05$  level

\*\*significant change from pre- to post measure at  $p < .01$  level

On the question examining level of motivation, the participants were asked to answer on a 7-point scale (1 = *not at all motivated*, 7 = *very motivated*). This variable was only measured before the intervention.

## **8.1 Changes between pre- and post-measure**

The changes in mean values of the result between pre- and post intervention evaluation was statistically analyzed with paired sample t-tests. The research questions concerned possible changes of:

- |                              |  |
|------------------------------|--|
| a) Subjective well-being     | by SWLS                                  |
| b) Psychological flexibility | by AAQ and Livheim's own question (2004) |
| c) Experienced stress        | by PSS and stress subscale in DASS       |
| d) Depression/Anxiety/Stress | by DASS total scale                      |
| e) Depressive tendencies     | by BDI and depression subscale in DASS   |
| f) Anxiety                   | by anxiety subscale in DASS              |
| g) General mental health     | by GHQ                                   |
| h) Alcohol consumption       | by measures from can.se                  |

### **8.1.1 Question a: Subjective well-being measured by SWLS**

In the group as a whole, there was a significant increase on the total score on **SWLS**:  $t(37) = -2.13, p < .05$ . This indicates higher subjective well-being after intervention. There were no significant changes in the student or clinical group.

Research of subjective well-being provide an additional point of reference to traditional psychological studying of understanding unhappiness and ill-being in the form of pathologies, by trying to understand individual subjective experiences of well-being in relation to own criterions instead (Pavot & Diener, 1993). In this way, this instrument provides to the understanding of the concept of health, which also consists of both negative and positive aspects. Additionally, to experience high subjective well-being and quality of life is related to keeping a good global mental health. The result in this present study, which showed an increase of subjective well-being and quality of life in the group as a whole after intervention, can be interpreted as if the ACT intervention increased the participants' mental health.

### 8.1.2 Question b: Psychological flexibility measured by AAQ-2 and by Livheim's self-created question (2004)

In the group as a whole, there was a significant increase on the total score of AAQ-2:  $t(37) = -3.38$ ,  $p < .005$ . This indicates greater psychological flexibility after intervention.

In the student group there was a significant increase in score:  $t(26) = -2.12$ ,  $p < .05$ , and also in the clinical group:  $t(10) = -3.05$ ,  $p < .05$ . This point towards a greater psychological flexibility in the clinical group compared to the student group.

In the group as a whole, a significant increase on the score of **Livheim's question** of psychological flexibility was seen:

$t(37) = -3.53$ ,  $p < .01$  which indicates higher psychological flexibility (which is what the question *intends* to measure, but no psychometric data is available). Significant increases was also seen in the student group:  $t(26) = -2.40$ ,  $p < .05$  and in the clinical group:  $t(7) = -3.00$ ,  $p < .05$  which indicates a bigger change in the clinical group.

Psychological flexibility is the central concept that ACT tries to impact, and it was investigated by the self-report instrument created by the founders of ACT theory, the AAQ-2. Greater psychological flexibility indicates greater ability to live life including negative thoughts and emotions that may be viewed as obstacles and acceptance for these mental activities, and more willingness to take steps in valued directions in life. The score on psychological flexibility measured by the AAQ-2 had significantly risen in the total group at post measure. The change was observed also in the two subgroups and was bigger in the clinical group than among the students. This change is elaborated in the discussion part.

There is no psychometric information about the question created by Livheim (2004) so we do not know what exactly the question examines. But significantly higher scores were observed after the intervention, both in the group as a whole and in the two subgroups. The higher score intends to show higher psychological flexibility. The change was somewhat bigger in the clinical group than in the student group. But since this question is not standardised or further evaluated one should be careful in drawing conclusions from this result. Still, the reason for including the question is that it would be interesting to see if the phenomenon of psychological flexibility could be assessed by a single question. Still, more information and trials are needed.

### **8.1.3 Question c: Experienced stress measured by PSS and the stress subscale in DASS**

In the group as a whole, the score on the **PSS** was significantly lower after intervention:  $t(37)= 5.48, p = .000$ . Also in the student group, the post-score was lower:  $t(26)= 4.44, p = .000$  and in the clinical group:  $t(10)= 3.09, p < .05$ .

The score on the **stress subscale of DASS** was significantly lower after intervention:  $t(37)= 3.25, p < .005$ . This was also observed in the student group:  $t(26)= 2.58, p < .05$  but no significant change was seen in the clinical group.

The score of subjective experienced stress in different situations, according to the PSS, was significantly lower after intervention, both in the whole group and in the two subgroups. Also the stress subscale of the DASS showed less stress in the whole group and the student subgroup. No significant change was seen in the clinical group on the stress subscale of DASS. These results together, point out the level of subjectively experienced stress as lower after intervention. The change was somewhat stronger in the student group, but the clinic group reported more stress. Stress might be something that is affected by ACT intervention and in the present version of ACT, less stress was a well-pronounced goal of the intervention. It is a good sign that reports of lower stress levels were seen in two independent measures. This indicates a more reliable result if compared to the outcome of a single measure. The student group showed larger changes than the clinical group on the PSS, and was the only subgroup that showed changes on the stress subscale of DASS. This indicates that the student group was more influenced regarding stress. The differences on the one variable between the subgroups are difficult to explain and to rely on, partly because of small samples. However, the changes in the group as a whole are interesting. It signifies motive to do more research on ACT for stress in healthy as well as in clinical groups.

### **8.1.4 Question d: Depression/Anxiety/Stress measured by DASS total scale**

There was a significant decrease in **total score on the DASS** for the whole group:  $t(37)= 2.80, p < .01$  which designates lower subjectively evaluated levels of depression, anxiety and stress after intervention. In the subgroup that consisted of students, there were

no significant changes, but in the clinic group the post-intervention score was lower than before intervention:  $t(10) = 2.29, p < .05$ .

Regarding the total score on the DASS there was a significant decrease for the whole group. In the student subgroup there were no significant changes but in the clinic group, the post intervention score was lower than pre intervention. This appoints lower subjectively evaluated levels of depression, anxiety and stress assessed as a global measure. The change in the clinic group may be a sign of greater impact of ACT on the considered depression, anxiety and stress as an overall measure in clinical groups.

### **8.1.5 Question e: Depressive tendencies measured by BDI and depression subscale in DASS**

In the group as a whole no significant changes was seen regarding depression on the **BDI**, and no changes in the separate groups either.

There was no significant change on the **depression subscale of DASS** in the group as a whole or in the student group, but a significant decrease in the clinical group was seen:  $t(10) = 2.70, p < .05$ . This indicates less depressive tendencies in the clinical group.

There were no significant changes on the BDI, the questionnaire that measures cognitive, behavioural, affective, and somatic components of depression. It should be noted that the BDI is a measure originally developed for adults and the participants were youths. There is a possibility that this measure does not capture the specific character of youth depression and therefore no results are seen in this sample. But on the other hand, the depression subscale of DASS showed a significant decrease of depressive tendencies only in the clinical group. This means that the clinical group experienced less depression after the intervention. No significant changes in the group as a whole or in the student group were seen. Depressive tendencies were seen in the student group; the mean levels of depression went from over the threshold for mild-moderate depression according to the BDI, to minimal depression after intervention. The score in the clinical group went the opposite way, e.g. the level of depression increased over the threshold from minimal to mild-moderate, according to the BDI, but not significantly. But the score on the depression subscale of DASS were higher in the clinical sample indicating larger levels of depression in this group in comparison to the student sample. As a summary; the two scales showed different information and more research is

needed to establish the impact of ACT on depression in both healthy and clinical adolescent groups.

#### **8.1.6 Question f: Anxiety measured by the anxiety subscale in DASS**

In the group as a whole there were no significant changes regarding **anxiety subscale of the DASS**, and not in the separate groups either.

Concerning anxiety measured by the DASS subscale, no significant changes were found. But in the whole group, there was a strong tendency towards a lower point of anxiety, e.g. less anxiety after intervention. The results from the evaluation indicate that ACT intervention has no impact on level of anxiety.

#### **8.1.7 Question g: General mental health measured by GHQ**

In the group as a whole, there was a significant increase in the score of the GHQ:

$t(37) = -2.91, p < .01$  which indicates a lower general mental health, e.g. the health had gotten worse. The result in the student group also showed an increase in the score:

$t(26) = -2.21, p < .05$ . No significant change was seen in the clinical group.

This is a very interesting significant change in the group as a whole; an increase in the score of the GHQ. The same significant change was seen in the student group but not in the clinical group. This indicates a worse mental health in the group as a whole and in the student sample. This might be signs of a double effect of the intervention and is additionally elaborated in the discussion part.

#### **8.1.8 Question h: Alcohol consumption measured by intervals from Swedish centre for alcohol and narcotics (can.se)**

In the group as a whole there were no significant changes regarding **alcohol consumption** and not in the separate groups either.

In summary, the whole group changed significantly on seven measures out of 11 assessed. These were subjective well-being (SWLS), psychological flexibility (AAQ-2 and Livheim's question), subjectively perceived stress (PSS), stress subscale of DASS, total score of DASS, and general mental health (GHQ). On one of these measures, the result was the opposite of the hypotheses (the general mental health; GHQ). Differences in subgroups were seen on stress subscale of DASS and general mental health (GHQ), where the student group changed

but not the clinic group. Changes were seen in the clinic group but not in the student group on the total score of DASS evaluating depression, anxiety and stress as a whole concept, and on the depression subscale of DASS.

## 8.2 Correlations

In the correlation analysis, 12 variables were involved. The self-report instruments used in the evaluation intended to examine similar phenomena and were therefore expected to correlate, as seen in the table. All information analysed below are the scores collected before the intervention, for the reason that an intervention can affect the participants and their answers. “Motivation” variable is the answers on the single question regarding level of motivation, “Psych flex” is the answers on Livheim’s self-created question that intended to assess psychological flexibility, and “Alcohol” is alcohol consumption.

Table 2

*Correlations between the measures before intervention*

Measure	GHQ	DASS tot	DASS dep	DASS anx	DASS stress	PSS	SWLS	AAQ	BDI	Motivation	Psych flex	Alcohol
GHQ	1	,743(**)	,740(**)	,589(**)	,653(**)	,640(**)	,586(**)	,658(**)	,736(**)	,105	,472(**)	-,035
DASS total		1	,895(**)	,863(**)	,913(**)	,790(**)	,642(**)	,762(**)	,854(**)	,029	-,375(*)	-,145
DASS depression			1	,672(**)	,719(**)	,697(**)	,669(**)	,707(**)	,873(**)	-,089	,437(**)	-,144
DASS anxiety				1	,680(**)	,641(**)	,541(**)	,643(**)	,708(**)	,038	-,166	-,241
DASS stress					1	,760(**)	,513(**)	,685(**)	,704(**)	,115	-,373(*)	-,031
PSS						1	,654(**)	,795(**)	,792(**)	,097	,550(**)	-,177
SWLS							1	,702(**)	,783(**)	,066	,468(**)	,061
AAQ								1	,844(**)	-,087	,654(**)	,380(*)
BDI									1	-,012	-,458(*)	-,166
Motivation										1	,057	-,054
Psych flex											1	,259
Alcohol												1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Pearson correlations showed large significant correlations between all self-report measures, indicating that there were different kinds of relations between the variables. Alcohol consumption had a medium positive correlation with psychological flexibility (AAQ-2),

showing that high alcohol consumption predicts high psychological flexibility. There was no significant correlation between motivation and any other measure.

There were medium and large significantly positive correlations between Livheim's self-created question of psychological flexibility and general mental health (GHQ), quality of life (SWLS), and psychological flexibility (AAQ). This indicates that if a participant scored high on Livheim's question of psychological flexibility, the score is high as well on the other measure, and that the variables measures something similar. In this case, it points out that higher psychological flexibility by this measure involves lower mental health, higher quality of life and higher psychological flexibility measured by AAQ. The negative correlations of Livheim's question points out the relationship between higher psychological flexibility and less depressive tendencies and less stress measured by DASS, less depression by BDI, but more stress measured by PSS. The different relations between the stress measures (DASS stress subscale and PSS) and this question of psychological flexibility are somewhat paradox, but it is important to remember that the currently discussed question is not standardised elsewhere and also that the concept of psychological flexibility is rather young.

### 8.3 Level of satisfaction with the intervention

The participants were asked to fill in a feedback-sheet after the last session. They were to grade questions 1-3 below on a scale from 1 (*very bad*) to 7 (*very good*). On question 4, the participants were asked to rate an average of how many times a week (1-7) they had listened to the CD during the whole intervention. It was recommended to listen twice in the beginning and five times a week the last weeks of intervention. On question 5 and 6, participants were asked to grade the level on their agreement on two statements on a scale from 1 (*disagree*) to 7 (*strongly agree*).

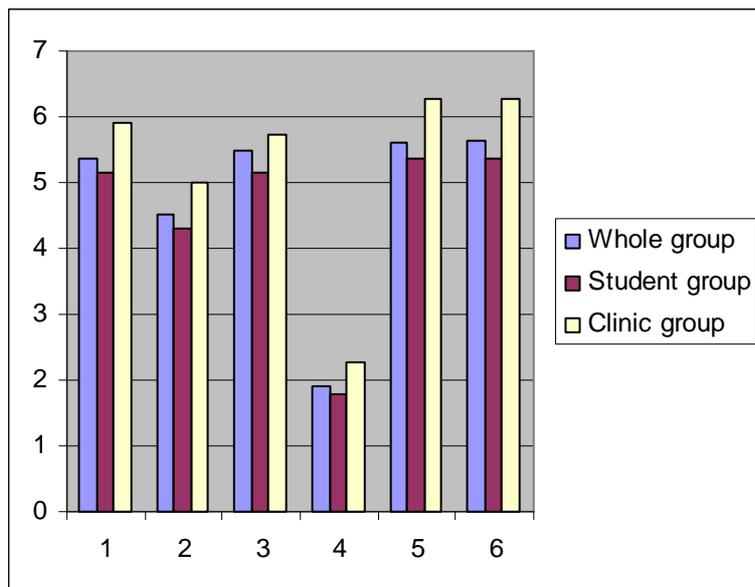
Table 3  
Descriptive data of feedback and level of satisfaction

Question	Group	M (SD)	N
1. How valuable do you consider the sessions?	Whole	M=5.37 (SD=1.15)	38
	Student	M=5.14 (SD=1.14)	27
	Clinic	M=5.91 (SD=1.04)	11
2. How valuable do you consider the mindfulness CD?	Whole	M=4.53 (SD=1.41)	34
	Student	M=4.30 (SD=1.49)	23
	Clinic	M=5.00 (SD=1.18)	11
3. What grade do you give the course as a whole?	Whole	M=5.50 (SD=0.86)	18*
	Student	M=5.14 (SD=1.06)	7
	Clinic	M=5.73 (SD=0.65)	11
4. How many times a week did you practise to the CD?	Whole	M=1,92 (SD=1.39)	38
	Student	M=1.78 (SD=1.31)	27
	Clinic	M=2.27 (SD=1.56)	11
5. I would participate in the course again (if I hadn't taken it already).	Whole	M=5.62 (SD=1.57)	37
	Student	M=5.35 (SD=1.70)	26
	Clinic	M=6.27 (SD=1.01)	11
6. I would recommend the course to my friends.	Whole	M=5.63 (SD=1.60)	38
	Student	M=5.37 (SD=1.71)	27
	Clinic	M=6.27 (SD=1.10)	11

\*Only 18 participants answered this question because a practical mistake between the group leaders.

As seen both in the table and in the staple diagram on the next page, the clinical group rated a little bit higher than the student group on every question and statement. They also reported that they listened and practised to the CD more often than the student group. For questions 1-3 and 5 and 6, this indicates that the clinical group was more satisfied with the intervention compared to the student group.

28 of the 37 participants in the total group (75.2%) reported that they would take the course again, if they had not already taken it, e.g. agreed or stronger on the statement examining this. 29 persons out of the 38 (76.4%) agreed to the statement of recommending the course to their friends.



*Overview of feedback in the whole group and the two subgroups*

1. *How valuable do you consider the sessions?*
2. *How valuable do you consider the mindfulness CD?*
3. *What grade do you give the course as a whole?*
4. *How many times a week did you practise to the CD?*
5. *I would participate in the course again (if I hadn't taken it already).*
6. *I would recommend the course to my friends.*

## **8.4 Comparisons of the results of the 12-hour intervention with the 9-hour intervention**

There are four variables from this current evaluation that can be compared to Livheim's 2004 study. However, the comparisons made here are not statistically tested and it is therefore not possible to make any conclusion of the differences between the two interventions. It is also important to remember that the studies are of diverse designs and quality so that the values are different in strength. Although the comparisons provide some interesting information, so they are illustrated and discussed below. The main differences between Livheim's earlier intervention and the newly made intervention, is the number of hours of the course (3x3 hours= 9 hours in 2004 vs. 4x3 hours= 12 hours in 2007), and that the group leaders in this current version had no extensive experience of ACT, and that there is a clinical group involved in the present course. Below is a table of descriptive statistics of the mean values on each comparable variable pre- and post intervention, for the ACT intervention group and control group from the 9-hour course (2004), and for the total group and the two subgroups

from the 12-hour course (2007). A bigger standard deviation of the mean value indicates a weaker result. This should be considered in relation to the size of the mean. Group “ACT” is the participants in ACT condition from Livheim’s 2004-study, “Control” is the control group from Livheim’s 2004-study, ”Whole” is the total group from this present study, “Student” is the student group and “Clinic” is the participants from the clinics in this present study. The significant changes within each study are marked out by asterisks.

Table 4  
*Overview of differences between the 9-hour and 12-hour intervention*

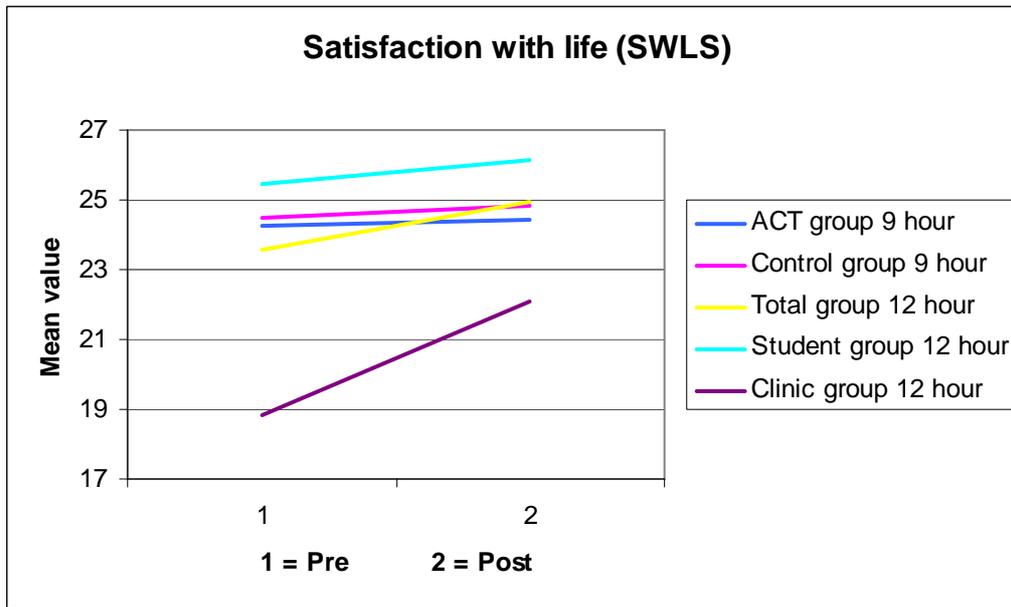
Measure	Group (N)	M (SD) pre	M (SD) post
Quality of life and well-being – Satisfaction With Life Scale (SWLS)	ACT (96)	24,27 (5,38)	24,45 (5,83)
	Control (101)	24,47 (5,53)	24,84 (5,20)
	Whole (38)	23,55 (6,42)	24,97 (5,61)*
	Student (27)	25,48 (5,17)	26,15 (5,70)
	Clinic (11)	18,82 (6,94)	22,09 (4,37)
Depressive tendencies – DASS depression subscale	ACT (104)	8,98 (8,64)	6,67 (8,29)
	Control (105)	8,72 (8,60)	7,09 (7,93)
	Whole (38)	5,16 (4,82)	4,37 (4,87)
	Student (27)	4,19 (4,68)	4,30 (5,33)
	Clinic (11)	7,55 (4,50)	4,55 (3,75)*
Anxiety – DASS anxiety subscale	ACT (104)	7,42 (8,08)	4,02 (6,05)*
	Control (105)	6,25 (6,64)	5,03 (6,89)
	Whole (38)	4,50 (4,24)	3,13 (3,47)
	Student (27)	4,15 (4,23)	2,85 (3,48)
	Clinic (11)	5,36 (4,34)	3,82 (3,48)
Subjective stress – DASS stress subscale	ACT (104)	13,94 (9,26)	9,40 (8,12)
	Control (105)	13,43 (8,98)	9,87 (8,45)
	Whole (38)	8,13 (5,55)	5,95 (5,00)**
	Student (27)	6,96 (5,36)	4,89 (4,86)*
	Clinic (11)	11,00 (5,14)	8,55 (4,55)

\*\* Significant at the 0.01 level.

\* Significant at the 0.05 level.

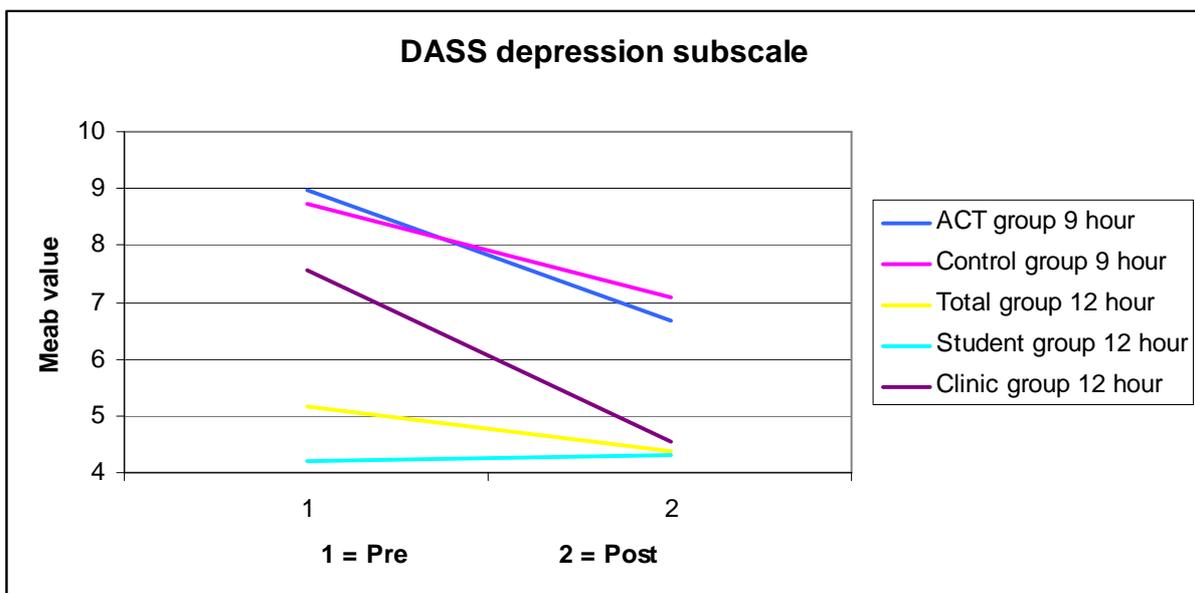
There are graphic overviews of the changes in mean value on the following pages. Please note the different scaling on the y-axis on the five graphs.

Figure 2  
*Mean values for the five subgroups at pre and post intervention*



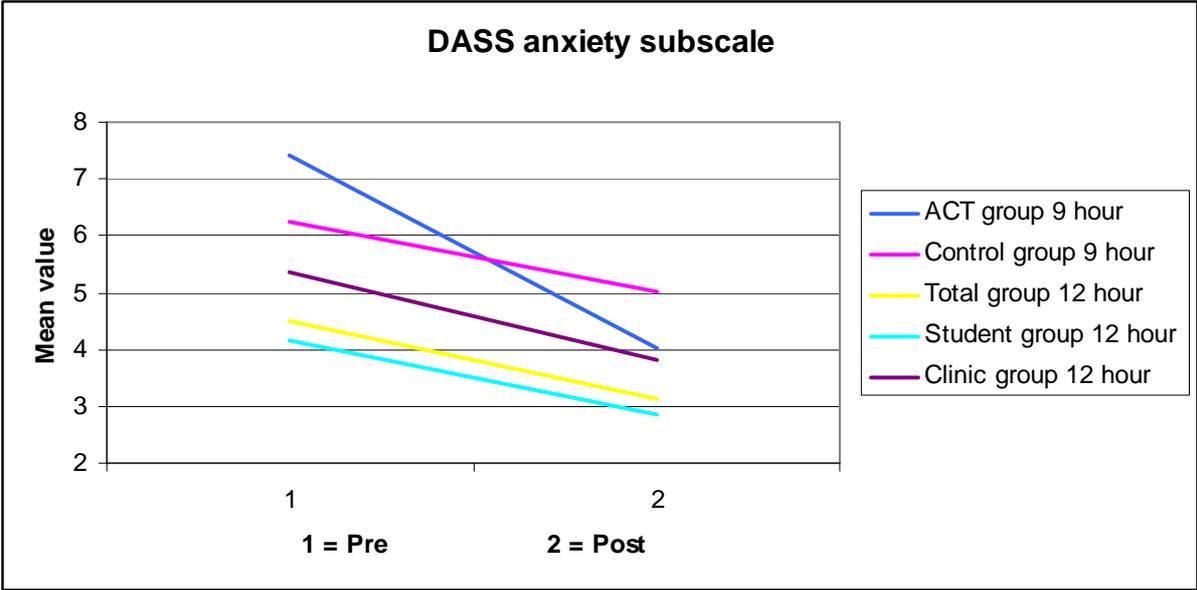
On this scale, a higher point indicates higher subjective quality of life and well-being. On the measure for quality of life, the participants in the 9-hour ACT intervention in 2004 increased the mean score very little. The control group increased little as well, even though they did not get any intervention at all. As seen in the graph, the clinic group in the 12-hour intervention started at the lowest point of all groups and has the steepest rising. This point out that the clinic group had lowest satisfaction with life both before and after intervention, and also increased the mean score the most.

Figure 3  
*Mean values for the five subgroups at pre and post intervention*



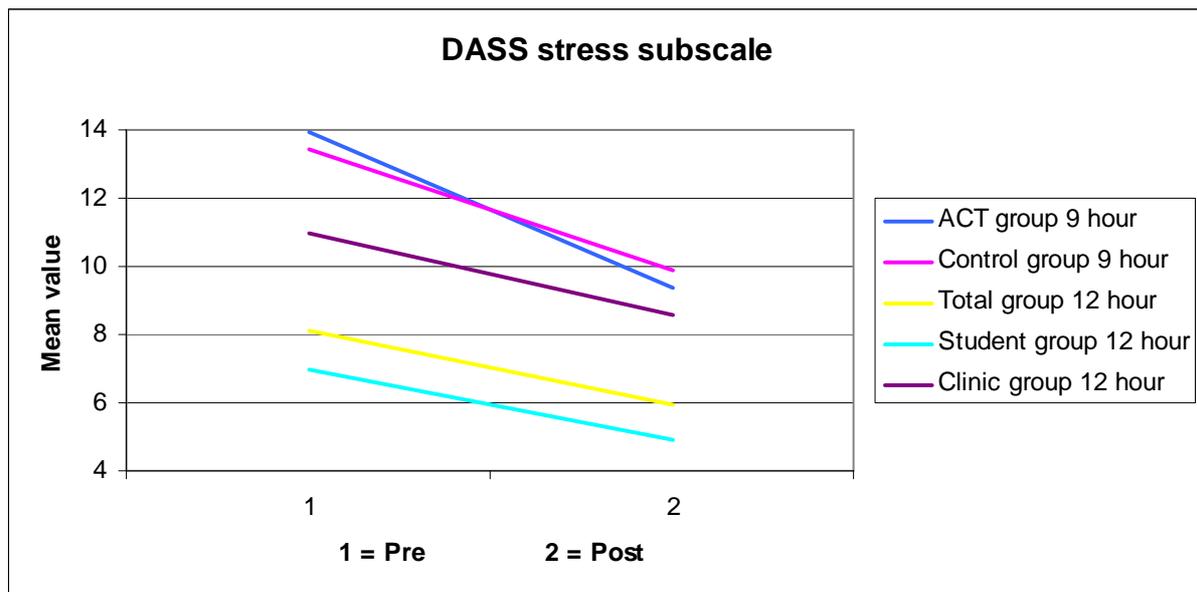
A lower point on this scale indicates less depressive tendencies. All involved groups lowered their mean score except for the student subgroup in the 12-hour intervention who increased it a little bit. The ACT intervention group in the 9-hour course lowered more than the control group. Important to remember is that the control group did not get any intervention at all, except for regular education in school. By this type of comparison, the clinic group in the 12-hour intervention was most affected by ACT.

Figure 4  
*Mean values for the five subgroups at pre and post intervention*



A lower point indicates less anxiety. The biggest change in mean value of anxiety has the 9-hour ACT-intervention group. But all other groups also have lower average points after intervention. According to the comparison of mean values, the 9-hour intervention had bigger effect on self-reported anxiety measured by DASS anxiety subscale.

Figure 5  
Mean values for the five subgroups at pre and post intervention



The pre- and post measure of the stress subscale of DASS show lower mean scores for all groups, and a lower point indicates less reported stress. The participants in the 9-hour intervention had a higher average score than the participants in the 12-hour intervention both before and after intervention. Especially the student group in the 12-hour intervention (“Total group”) is different to the group that also consisted of students in the 9-hour intervention (“ACT group”), both before and after intervention. Again, the control group shows similar changes as the other groups, even though it did not get any ACT intervention.

## 9. Discussion

The primary purpose of the current thesis was to present and discuss Acceptance and Commitment Therapy. The secondary purpose was the evaluation and the research questions concerning the impact of an ACT intervention in an adolescent group (n=38) and in the two subgroups that consisted of students from upper secondary schools (n=27) and of patients from psychiatric open ward clinics (n=11). Outcomes of more psychological flexibility, less stress, depressive tendencies, anxiety, ill-health and alcohol consumption were hypothesized. The intervention was also assessed regarding the potential differences between the previous 9-hour format and the current 12-hour format. Other factors to reflect on were the outcome with group leaders who had very little previous experience of teaching ACT, and additionally the method used in the evaluation, e.g. the appliance of the selected self-report measures. The results showed several significant changes in the group as a whole and in the subgroups, for example regarding psychological well-being, psychological flexibility, subjective experienced stress and depression that all changed according to the hypothesis. The level of general mental health got worse. All results are further considered below.

Before the results are discussed it is important to note that this is a pilot-study with a limited number of participants and a somewhat inadequate design in the aspect of lack of control group and randomisation. It is impossible to draw any general conclusions out of the results of such a small sample. The evaluation shall be seen as a pre-pilot evaluation that may point out principles and guidelines for further studies. However, the evaluation has been motivating to carry out and still; it is interesting to discuss the results as tendencies.

### 9.1 Discussion of the results

The research questions at issue were:

- Does a 12-hour ACT intervention have any impact on the group regarding subjective well-being (research question a: SWLS), the level of psychological flexibility (b: AAQ & Livheim's question), experienced stress (c: PSS & stress subscale in DASS), level of depression (e: BDI & depression subscale in DASS) and anxiety (f: anxiety subscale in DASS), general mental health (g: GHQ), and

alcohol consumption (h: measures from can.se) according to the self report instruments used in the study? Can possible changes be effects of the intervention?

- Does this version of ACT intervention have any impact on a clinical group of youths, and in that case; does the intervention have any different effect in comparison to a group of students in school?
- Does the result show any differences between the 12-hour version of ACT in comparison to the 9-hour version delivered in 2004?

The hypotheses were that the ACT intervention should have positive impact the group as a whole, and also in the two subgroups.

### **9.1.1. A summarizing discussion of the changes**

As mentioned before, the design of this study do not allow any conclusions or generalisations to be drawn based on the results, because this demands larger randomised samples and ideal design. Therefore, no clear answer can be delivered by this study on the research questions investigating if ACT intervention has any impact on a group of youths and if the intervention has different effect in a clinical group of youths in comparison to a group of students. On the other hand, a discussion can be held about the changes in the group as a whole and in the two subgroups.

There are at least two possible explanations for the increase of psychological flexibility that is interesting to discuss. First, for the reason that the measure AAQ is developed to examine the precise concept that the intervention tries to affect, it is possible that the AAQ is the only measure that captures these changes in a successful way. The AAQ is designed to capture changes on a broader level than the other more symptom-focused measures used in this study. But one should be careful to interpret these results, because there is also a risk that there is a bias in using the AAQ to evaluate the impact of ACT. This is because of the reason that the method, the measure, and also the concept, are all developed by the almost same group of researchers. The concept of psychological flexibility and the instrument AAQ are both relatively young as well as the method of ACT, and the psychometric characteristics and other

qualities are not investigated as well as in many other instruments and methods on the field. However, the result in this sample points towards evaluating the instrument AAQ further and towards developing the concept of psychological flexibility as well.

The only result that was opposite to the hypothesis was the worse health seen in the group as a whole and in the student subgroup after intervention. This might be a double effect of the study. First, a possible explanation for the increased levels of ill-health is that ACT aims at changing the context in which unpleasant mental experience arise, not the thoughts and feelings. If this result is a consequence of the intervention, these youths may be more welcoming to unpleasant mental activity, e.g. accepting negative thoughts and emotions, and therefore experience more ill-health. Second, the result shed light on another important consideration of delivering this intervention to healthy students in the normal population, which is that there may be a risk for increased ill-health. As a consequence of the intervention in which the participants learn to pay attention to all kinds of mental activity, the youth might notice signs of mental ill-health that they were not aware of before. This can contribute to an experience of feeling worse, maybe in the shape of increased rumination because of more negative content in the mind. It might be this tendency we see in the results of the GHQ that indicate worse mental health in the student group but not in the clinical group. This is a very important aspect of delivering interventions to healthy groups as well as to clinical groups, e.g. the possibility of worsening the experience of health, and is something that has to be considered before progressing in the development of the intervention. But again, the results are vague and reported in small groups and conclusions can not be drawn. Possible explanations might be the few items of the questionnaire (12 items) in combination with a small sample and no randomised control group which makes the measure sensitive. This discussion is developed when discussing the self report questionnaires in a later section.

In summary, the group as a whole changed significantly on seven out of the 11 variables assessed, and the two subgroups changed significantly on five variables each. Based on the number of significant changes, the intervention had equal effect in the two subgroups. The student group changed on the following measures: psychological flexibility measured by the AAQ-2 and Livheim's question, and subjectively experienced stress measured by the PSS and the stress subscale of DASS, and at last the students changed on general mental health according to the GHQ. Summing up this, the student group increased the psychological flexibility, lowered the stress level and reported worse health after intervention. The clinic

group also changed on five variables. These were psychological flexibility measured by the AAQ-2 and Livheim's own question, the total scale of DASS measuring levels of depression, anxiety and stress as a total score, on the depression subscale of DASS, and at last subjectively experienced stress measured by the PSS. To sum this up, the clinic group changed regarding psychological flexibility in the same extent as the student group, and concerning subjectively experienced stress not in the same extent as the student group. Additional to the student group, the clinic group changed regarding the total score of depression, anxiety and stress and on a supplementary scale of depression. To analyze this, the changes in the student group were more homogenous because it showed the same kind of changes on the variables that investigated similar phenomena, e.g. psychological flexibility and stress. The changes in the clinical group were more spread over the different variables, showing a somewhat irregular result. This may be a random observation but still important to shed light on.

Based on the sizes of the changes, the intervention had larger impact on the clinical group because the changes in mean values were in some extent bigger than in the student group. Potential reasons for this can be several, for example that the participants in the clinic group might have been more motivated to take part in the intervention (as was seen on the question regarding level of motivation) because of existing problems, or the probability that they were more used to open up in therapy and fill in questionnaires, and may have been more susceptible to change and new methods of thinking. Also, the clinic group consisted of only women. There is some documentation that there are differences in gender concerning the occurrence of certain diagnoses such as anxiety disorders or depression (similar to the problems seen before intervention in the clinical group), and also in response style on questionnaires, and the level of impact diverse kinds of interventions have on the different genders (for example Sigmon, Pells, Edenfield, Hermann, Schartel, LaMattina, Boulard, 2007). Thus, the fact that there were only women in the clinical group may have influenced the outcome. Another indication of the higher openness to treatment that women frequently have might be the fact that there actually were only women in the clinical group. This was partly a consequence of that there were no males with the appropriate mental health problems available in the clinics at the time of the intervention.

### **9.1.2 A summarizing discussion of the correlation**

This evaluation is not primarily a correlation study but a correlation analysis was interesting to perform because it usually provides interesting information about how the investigated concepts are related. Especially informative to evaluate were the relations between the measures that had little information before the analysis, e.g. psychological flexibility measured by AAQ-2, Livheim's self-created question of psychological flexibility, and the questions of motivation and alcohol consumption.

There were medium to strong correlations between all the self-report questionnaires in the evaluation, and the correlations were in accordance with previous findings in the psychological literature. For example: well-being and depression had large negative correlations in earlier studies as well (Pavot & Diener, 1993). The relations of this kind will not be further discussed in this thesis. On the other hand, the in some extent unforeseen relations are the ones involving general mental health measured by the GHQ. A high score of general mental health indicates worse health. The score on GHQ correlates negatively with all the subscales and the total scale of depression, anxiety and stress questionnaire (DASS), negatively with subjectively experienced stress (PSS), and positively with subjective well-being and psychological flexibility both by AAQ-2 and Livheim's own question. This is rather unexpected and not in line with previous research. Possible reasons for this relation are similar to the discussion held regarding the changes on GHQ, indicating that ACT may affect the level of acceptance towards unpleasant mental activity.

There were medium and large significant positive correlations between Livheim's self-created question of psychological flexibility and general mental health, well-being, and psychological flexibility. Medium and large negative correlations were seen between Livheim's self-created question of psychological flexibility and DASS total scale, DASS depression and stress subscales, subjective stress, and depression evaluated by BDI. These correlations indicate that Livheim's own question examines a phenomenon similar to the variable it correlates with, depending on if the correlation was positive or negative. It is a good sign for this single question that intends to measure psychological flexibility correlates positively with psychological flexibility measured by AAQ, because the two measures aim at investigating the same phenomenon.

Alcohol consumption had a single significant medium positive correlation with psychological flexibility measured by AAQ. A speculation about this relation may be that with more psychological flexibility, a person might get more open-minded towards drinking, and vice versa. However, this is an interesting result that might contribute in the elaboration of the concept of psychological flexibility and thus the AAQ. Besides, the few correlations between other variables and alcohol consumption, that is an indicator of ill-health or risk behaviour (Armstrong & Costello, 2002; Maggs & Hurrelmann, 1998), may depend on the construction of the question. It was difficult to find clear categories of consumption for youth. The ones used in the study were taken from a report published by Swedish Centre for Alcohol and Narcotics (Hvitfeldt & Rask, 2007) that investigated drinking habits of youth in Sweden. Perhaps the categories do not catch high-consumers. Maybe the criterions were not appropriate for the participants in the study, or there simply is no correlation between the participants' alcohol consumption and the other variables. A supplementary factor that complicates the discussion is that alcohol consumption also is associated with good psychosocial functioning (Niemi et al, 2006; Maggs & Hurrelmann, 1998) and consequently also in some extent contributes to psychological well-being.

### **9.1.3 Level of satisfaction with the intervention**

In summary, the participants were satisfied with the course. In general, the clinic group responded a little bit higher on every question that investigated how valuable they considered different parts of the intervention and the level of satisfaction. This might be related to the argument that if you have existing psychological problems or ill-health, there are greater possibilities for improvement. Unfortunately, there was a practical misunderstanding between some of the group leaders and the organizer of the intervention so very few participants reported a total grade on the course as a whole. However, the level of satisfaction is high enough to contribute to the motivation of developing the method. 75% of the participants reported that they would take the course again, if they had not already taken it, e.g. agreed or stronger on the statement. 76% agreed or stronger to the statement regarding recommending the course to their friends. The clinic group reported to listen to the mindfulness CD in greater extent than the student group. On the question of how many times a week the participants had listened to the CD, they were asked to grade an average. In total, the participants listened nearly twice a week to the CD. In the beginning of the intervention the instruction was to listen fewer times a week than in the end of the intervention. Because the information of the

post evaluation was collected right after the last session of the intervention, the answers may be a bit higher than the actual average. The explanation for this assumption is that if the instruction was to listen twice a week in the beginning and more often in the end, and the data was collected at the end, the answers can be affected by how many times they had listened in the last couple of weeks. With an instruction like this, the participants might be more likely to report a higher number than their real average throughout the course, because they listen more often at the end than in the beginning. Also, the answers of this specific question should be regarded rather critically, because people are sometimes liable to report doing tasks more often than they actually do.

### **9.1.5 Summarizing discussion of the comparisons between 9-hour intervention and 12-hour intervention**

One of the research questions was to see if there were any differences in the impact of this 12-hour version of ACT in comparison to the 9-hour version, according to the variables that were comparable in the two studies. It is very important to remember that the comparisons made are simple assessments of the mean values of the different groups on the respective variable. The 9-hour intervention had more participants and was evaluated in a randomised controlled trial (RCT). In an RCT, the effects are more regulated and only strong effects and changes are shown. The results shown in the 9-hour version are thus stronger than the ones shown in the 12-hour version. But the achieved results indicate that the intervention provided positive results in the 12-hour as well as in the 9-hour format, despite that the group leaders had no previous experience of delivering ACT. In the 9-hour intervention, the group leader had extensive experience of the method. By the direct comparisons of the studies, it seems as if the current 12-hour format gave greater impact than the 9-hour intervention. This is based on the information in table 4: Regarding subjective well-being and quality of life all groups improved, but it seems as if the groups from the 12-hour intervention and especially the clinic group increased more. Concerning depressive tendencies, all involved groups lowered their mean score except for the student subgroup in the 12-hour intervention who increased it a little bit. The ACT intervention group in the 9-hour course lowered more than the control group on the depression measure. Investigating the level of anxiety, the biggest change in mean value was seen in the 9-hour ACT group. But all other groups also have lower average points after intervention. According to the comparison of mean values, the 9-hour intervention had bigger effect on self-reported anxiety. At last, the measure of experienced stress showed

less reported stress for all groups. However, this is only indications because the present study lacks a control group and is not randomized, but the tendencies point towards positive outcomes if evaluated in wider perspectives in larger RCTs.

Nevertheless, something interesting can be noticed in the comparisons. It seems like the clinical group is the one that has the biggest changes in mean value from pre to post measure. This may depend on that the clinical group reports more stress, depression and anxiety and less quality in life and that the changes therefore are more observable. The seemingly bigger effects in the clinic group are discussed earlier in connection with the changes in the groups.

Something very interesting is that the control group show similar patterns in responses as the other groups. A potential cause for this may be that when filling in the same self-report instrument for the second time, the responses are different compared to filling it in the first time.

## ***9.2 Connections of the result with earlier research***

Several of the findings of this study are in correspondence with earlier results in the literature. The study replicated in some extent the results seen in Livheim's study (2004) and the follow-up by Jacobsson and Wellin (2006), concerning the global positive outcome of ACT intervention in adolescent groups. Among the significant results seen in the 2004 study were increases of function in the participants' major problem areas and less anxiety. The positive result was further strengthened by the follow-up study two years later (Jacobsson & Wellin, 2006), where the same group had significantly lower anxiety and stress, all compared to the control group. The intervention group had in 2006 also significantly higher psychological flexibility and cognitive processing. Higher psychological flexibility and less stress were also seen in the current study, as in previous research. However, anxiety showed no changes in this present study. Anxiety has been documented as something as ACT affects in previous studies (for example Forman et al 2007; Dalrymple & Herbert, 2007; Livheim; 2004). Also the effect on depression has been studied previously, for example in a randomized controlled trial by Forman et al (2007) that investigated the impact of ACT on depression and anxiety. The participants in that study showed clinically significant improvements as a function of the treatment. This corresponds to the result on only one scale of the depression measures in this study, which showed depression as lower after intervention in the clinic group. Less

depressive tendencies were also found in Bond and Bunce (2000). The results of this present study concerning depression are thus not completely in accordance with previous research. General mental health in the present study showed opposite results in comparisons to previous findings (for example Bond & Bunce, 2000).

Numerous of the prior studies of ACT look at factors that are not involved in this present study, such as experiential avoidance, willingness or ability to set value-based goals, level of functioning, presence in school or work, and self-confidence (for example Forman et al, 2007; Metzler et al, 2000; Lappalainen et al, 2007; Wicksell, et al 2007). These aspects are not included in the current study which might be seen as a shortcoming. This is discussed later.

However, the research made so far on ACT both on adults and adolescents needs to be additionally evaluated in RCTs. The results of the current study that are in some extent similar to previous research can be seen as replicating some of the findings. The current results that are in opposition to the preceding studies are vague and should not be viewed as general, but alternatively adding to the further development of the research of ACT.

### ***9.3 Limitations of the study***

The primary limitation of this study is the lack of a randomised control group. The consequence of this is that spontaneous improvements on any variable can not be eliminated. In other words, the possibility that a control group would have changed in similar ways as the intervention group can not be excluded in an uncontrolled study like the present one and hence the changes not ascribed to the intervention.

#### **9.3.1 Selection of measures**

The measures were originally selected to match the ones used in Livheim's 2004 study and the follow-up from 2006. The reason for this was that the 2004-study had significant results and that both the intervention and control group could work as a reference groups for the present study. So most of the measures were selected to match previous research in order to evaluate if and how the intervention worked in the 12-hour format and with a clinical group.

The ideal instruments to evaluate ACT should assess both behavioural and cognitive changes towards acceptance, and approaches for individual goals and values. In this evaluation, the measures used examined states and symptoms, and not directly the broad and somewhat diffuse health related phenomenon that ACT tries to improve. The advantage of measuring states is that there are several well-documented questionnaires to choose between. The disadvantage of using these measures is that they might not capture the possible mental changes that occur in individuals who engage in ACT intervention. The measures used are simply not designed to evaluate changes in the variables that ACT intends to influence. The aspiration with using well-established symptomatology measures was to observe the “secondary effects”. In ACT, and also in mindfulness, the participants are encouraged to investigate how they actually feel. Youth who use avoidance techniques, who do not live the life they really want to live, or are stressed, will probably explore how they actually feel when they stop and really tries to feel. Probable is also that they report more thoughts and feeling that are alike some of the items in the questionnaires, for example “*I feel stressed*”. The pain that this recognition brings is what then motivates the participant for behaviour change. When behaviour change is implemented, the consequence, or “secondary effect”, might be to feel worse or more stressed. This argument applies to the items of GHQ (general mental health) and some of the items of PSS (subjectively experienced stress). So theoretically, it is not unreasonable that the participants in the short-term get “worse” according to these scales even if they make progress in the treatment. A similar example of this principle is the study of patients with positive psychotic symptoms who received ACT (Bach & Hayes, 2002). They showed significantly higher symptom reporting and lower symptom believability compared to a control group, who got treatment as usual, e.g. the ACT participants got “worse” according to the number of hallucinations reported, but they experienced the hallucination as less believable. Despite the higher numbers of reported symptoms, the ACT-group managed longer without rehospitalization and used less medication, compared to treatment as usual.

Another limitation of the study is that only self-report measures are used. Perhaps the appliance of objective measures such as absence from work or school, level of activation, or medication consumption would have contributed with additional information. The issue of measurement is probably the factor that has slowed the production of empirical outcome of ACT research down. Treatment measures suitable for ACT should reveal the acceptance and valuing components, not only traditional measures of symptomatology. The main treatment goals in ACT are to further develop repertoires of valued behaviour, in addition to decrease

avoidance and fusion. Because of this, any assessment package used to evaluate the treatment should include relevant measures of functional impairment, valued-living, avoidance, and fusion, as well as symptomatology.

### **9.3.2 Temporal factors**

Important to remember is that the original ACT intervention is designed to prevent ill-health in the long aspect, approximately 1-10 years. In this study, the post evaluation was made directly after the intervention was finished. A consequence of this may be that possible changes dedicated to ACT may not be measurable at the time of the post-evaluation. Therefore, it would be interesting to do a follow-up study in the future to investigate if there are any lasting effects.

Another possible source of error concerning temporal factors is that the different groups did not receive the intervention exactly every second week during eight weeks. Because of different practical reasons, such as illness of group leader or Christmas vacation, some groups had longer breaks between some sessions. In future studies of this kind, this could be something to control for.

### **9.3.3 Differences in group sizes**

A possible source of confusion may be the very different sizes of the groups. The biggest group had 24 participants and the smallest had five. The ultimate size of a group who receives ACT is, according to Livheim, approximately 6-10 persons in clinical conditions and 10-22 in school settings. This preference is based on the ambition to not point out any participant by having a very small group, and not to neglect anyone by having a very big group. The creation of an alliance between group leader and participants is important and is difficult to create with bigger groups.

In the evaluation, participants who was absent once or twice from the four sessions were included. Those who were absent twice are few, but this fact makes the evaluation more difficult. Where limitations for including or excluding participants should be drawn is a question that needs to be further discussed if the method shall be used in additional studies.

In this current intervention, the clinical group seemed to respond better to the intervention. There were fewer participants in the clinic groups than in the student groups. This has not been statistically evaluated but perhaps the group size had something to do with the outcome. This is a factor that can be studied in the future.

### **9.3.4 Participants and drop-outs**

First, it is impossible to exclude that the result is biased in any way because the lack of randomised and controlled groups. For example, in one of the schools, the ACT course was voluntary and whoever wanted to participate was welcome. As a result, there might be people with very different reasons for going, for example those who were concerned of their stress and health as well as people who wanted to skip other classes. In an other school, the participation was obligatory.

The reduction of participants was 31%. The level of drop-out can be regarded as rather normal. However, the reasons for why some participants dropped out are unknown, which consequently affects the result and makes it vaguer.

### **9.3.5 Uncontrolled variables**

How can we know that changes depend on ACT? This is impossible to know because there was no control group in this study. Also, the majority of participants in the clinical groups received other treatment parallel to ACT, or had recently finished therapy. It is possible that changes depend on the other therapy. No attempts to control for effects from other processes than ACT were done in this study. Also, the participants are youth in school. School is supposed to develop the students on a personal level (Swedish National Agency for Education, The National Board of Health and Welfare, Swedish National Institute of Public Health, 2004). If the participants of the intervention take part in education, and if school fulfils its ambitions, some positive effect should be assigned to school. As seen in Livheim's study from 2004, and in the comparisons of the results of the two evaluations in this study, the control group changed in similar ways as the intervention groups, which may be signs of some uncontrolled variables or spontaneous improvements.

### **9.3.6 The role of the group leaders**

Another possible source of error is the different group leaders. All leaders have professional experience of therapy and teaching, but for all it was the first time delivering ACT. Additionally, the group leaders were under education in the ACT method at the same time as they held the intervention. As organizer of this evaluation, I was unable to control the way the intervention and the messages were delivered. One can assume that these different group leaders made the course somewhat personal depending on individual background or differences in the participating group. For that reason the courses becomes different from each other, even though a manual was followed. Positive outcome with untrained group leaders has been seen in Lappalainen et al (2007) as well, who found that therapists with only six hours training in ACT can achieve positive results.

### **9.3.7 Individual or group changes**

When delivering preventive group intervention, an issue is whether the treatment showed result or if it did not. In this project, changes on group levels were investigated and it is out of this perspective the results are discussed. However, if the matter is investigated on the individual level, what is then a result? If only one single individual gets less depression, or is the limit for a positive result additional individuals? This is a question that is interesting to consider when interpreting the result and an important issue to consider in further research.

### **9.3.8 Ethics**

The ethical concerns are very important, especially when evaluating children and adolescents. Advice of how to conduct the study was taken from guidelines of the ethical council before the evaluation and every recommendation was fulfilled. Because of the different conditions of the participants, the ethical concerns are diverse in a school or in a clinical. However, some ethical limitations may have occurred that the author was unable to control for.

### **9.3.9 The role as author and part of the intervention**

A possible limitation of the evaluation is the fact that the author of the thesis also was the organizer of the evaluation and part of the ACT group leader education, and thus delivering the intervention to one of the groups. To reduce the risk of faulty interpretations of the results and as part of the confidentiality for the participants, the evaluations were coded. The author could consequently not derive any information.

## 10. Future research

Additional RCTs for ACT intervention for all kinds of psychopathologies and ill-health are needed to be able to further develop the theory and the intervention method. There are several areas within the ACT research field that can be supplementary developed, for example the high quality research findings of ACT for youth and children are very limited. Furthermore, RCTs for ACT and adults is required because the results obtained are relatively young and there is a need to replicate them.

An immediate evaluation that will be done when this study is finished is to consider the experiences obtained from this present study and apply them in future research projects. How the intervention is operating in clinical groups is something that more research ought to focus on. It would be interesting to do follow-up studies on the group in this evaluation in order to see how the intervention works in a longer temporal aspect. Questions to be asked in future projects are if it is reasonable to give the intervention to healthy adolescents or if ACT just draws attention to ill-health and therefore worsen healthy individuals' states. Or are the results of the worse health in this study signs of mindful investigating of thoughts and feeling? Further research is needed to shed light on these processes.

The methods used to evaluate the effects of ACT are in need of development as well. Supplementary measures of functional improvement, valued-living, avoidance and fusion, as well as symptomatology measures should be included in the future research of ACT. The questionnaire developed for the purpose, the AAQ, needs additional evaluation and standardisation.

It will be interesting to see results from studies that according to Murrell and Scherbarth (2006) are in progress around the world. Examples of the subjects studied are ACT for high school students at risk for academic failure or juvenile delinquency, ACT and different kinds of risk behavior, such as smoking and other substance use, or self-injurious behaviour, as well as academic success. The studies yield promising results but little is yet published.

Out of the societal perspective, it is important to additionally develop the research and further more establish if there are possible economical savings for society with preventive health treatment.

## 11. Concluding discussion

The results of this study can be viewed as some degree of preliminary support for that the intervention is purposeful in the clinical population as well as replicating previous positive results of ACT for adolescents. The outcome points towards that it probably is valuable to do further research in clinical groups to evaluate the function of this intervention more specifically, in order to prevent suffering.

On the societal level, it might be economical to deliver primary prevention measures, because primary prevention may offer the most health at the lowest cost for society (Kaplan, 2000). Preventive health interventions in general and ACT in particular are methods that require supplementary research. Vulnerability in adolescence, reports of increasing stress and ill-health in the young population, reports of difficulties to get hold of the problems in school, accompanied by the knowledge we yet have about preventive measures and their effects, motivate the studying of preventive measures in order to try to avert the development of ill-health among youth.

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## 13. Appendix

### 13.1 Appendix 1: Procedure in the intervention

#### 13.1.1 Session one

This session is about stress, the language and acceptance. The major aims were to:

- 1) Establish a good contact (alliance)
- 2) Generate “creative hopelessness” in order to open up for new strategies
- 3) Make participants view control as part of the problem
- 4) Create defusion from linguistically rules and to propose acceptance as an alternative

The participants were informed of the agreements of the course considering time, place, and presence and also about the rules of confidentiality and respect for one another during the course. The participants were asked to approve by signing an agreement.

The message of the first session was summarized by a statement by the Danish philosopher Søren Kierkegaard (1813-1855): “Life is not a problem to be solved, but a reality to experience”.

The session started by psychoeducation about stress: there are in general two ways of handling stress, one is to remove or change the stressor, and the other is to change the interpretation of the stress and learn ways to deal with it. The participants were told that this course is about the second alternative, because stress and discomfort is natural parts of life. The participants were then asked to give examples of personal experiences of stress: the physical signs (cannot sleep, dry mouth), the thoughts (worrying, “black out”), the mood changes (easily irritated), and things you do when you are stressed (eat too much, drink alcohol). These examples were written on the whiteboard and discussed in the group. This was followed by a discussion about strategies of stress management with some volunteers, because most of us have experience of strategies that only makes us more stressed. The aim was to *produce a “creative hopelessness”* as a natural motivation to open up for new stress management strategies, towards acceptance of inner mental processes, such as thoughts and feelings.

Next, the brain and our logical thinking were considered. Two “rules of living” were discussed in the group. First, the rule of the external world is: *if it is something you don’t like, get rid of it*. This works in general for stressors in the external world, like ugly wallpaper in your room: you control the problem and you solve it. But the same rule is not applicable to thoughts or feelings in the internal world. Say you struggle with stress and anxiety, and make great effort not to think of it. If unpleasant thoughts arise, they might stress you even more because of your efforts not to think of them, and you get stressed about the stress. This pattern can easily become a viscous circle. In our conscious awareness (thoughts, feelings, memories, attitudes and more), strategies of control does not work in the long run. Rather, in the internal world, control is the problem. If we try to avoid our history, our anxiety, stress or unpleasant thoughts, we are in a struggle we cannot win. At this point of the course, *acceptance is introduced as an alternative*.

During the rest of the session, more education, exercises and metaphors of the central themes were repeated to make sure the message had been correctly understood by the participants. At the end of the session, tasks and exercises to be done at home were supplied and the CD handed out. The “homework” for the next session were to do physical exercise in an optional way twice a week, to listen to the first track on the CD four times a week (33 min mindfulness), and to practice acceptance in an every day setting (what happens with the stress processes when you struggle against them, and what happens when you decide to accept unpleasant experiences?). The group received schedules physical activity and mindfulness practice to plan the activities regarding which day, the time of day, and the ability to check afterwards if they had carried out what they planned or not.

### **13.1.2 Session two**

The overall aims of session two were to:

- 1) Repeat the last session and the tasks and exercises done between the sessions
- 2) To identify life values and inquire in what extent the participants live according to these values – the life compass
- 3) To identify barriers in the way of the ideal life and the life the participant actual life

The work of session two is characterized by an anecdote from “Alice in Wonderland” by Lewis Carroll 1865. Alice is lost in Wonderland when she meets the cat. She asks which way to go and the cat wonders where she is heading. Alice responds that she does not know. The

wise answer of the cat is: “If you do not know where you are going, it does not matter which way you choose.”

The session was started by a *repetition of the last meeting* and discussions of the homework and possible problems and solutions. Then, behaviour on the basis of linguistically rules are reviewed and exemplified by the words “but” or “and”. When the word “but” is used to form a relation between two things we want to do, it excludes one of them. An example: I want to exercise, *but* I am tired. The word “but” creates a relation which go with the fact that the two things cannot coexist. If the word “but” is replaced by the word ”and”, a more honest, allowing, and freer impression is created: two wills or feelings are able to coexist: I want to exercise *and* I am so tired. The message becomes that you can exercise even though you are tired. By training and examples of this linguistically phenomenon, the participants are encouraged to use the word “and” instead of “but” in everyday life. This way of talking and thinking leads to larger freedom to choose how to act on the basis of what is valued as important in life, and thereby leads to the major theme of this session, which is to identify values in life.

A tool used to *identify life values* in this version of ACT is “the life compass”, also called the Valued Life Questionnaire (VLQ; Dahl, Wilson & Nilsson 2004). It examines nine areas generally regarded as important in life. The participants were asked to grade from 1-10 the importance of each area in their life, where 10 symbolized very important. Then, they were asked to write down in some words, things important in each area in their ideal life: if there were no limits, no demands from parents, teachers or friends, and no social requirements. If a certain area is not seen as important at all, the participant is free to skip that one.

Areas and propositions of what they may contain are:

1. *Intimate relations*: focus on your ideal role in a close relation; describe in what kind of relation you want to be, and how you would like to be in this relation.
2. *Family relations*: how would you like to be as a brother/sister, mother/father, or son/daughter? What qualities do you value and how would you treat others if you were “the ultimate you”?
3. *Friends / social life*: what is a good friend? Describe your ideal friend relation.
4. *Work*: what would you like to work with, what is important in a future job? Both generally and specifically. What kind of colleague do you want to be?

5. *Education / development*: do you want an education? In what subject? What is important in this area?
6. *Recreation / activity in your leisure time*: describe the kind of life you would want to live in your spare time and the kind of activities you value; interests, hobbies, sports...
7. *Spirituality*: this does not have to be a religion, but aims at whatever subjective meaning the individual put to the word spirituality or harmony. Could be to experience nature, take a bath, to meditate, or go to church.
8. *Commitment in society / community*: for some people, engagement in current events in society or politics is important. An example can be to work voluntarily for the homeless. Write down what values in this area that appeals to you.
9. *Physical self care*: how to keep health and physical well being, if that is valued. Items in this area are sleep, exercise, smoking, or food.

To help the participants to think in a wider perspective around their values, a guided imagination practise was done. The group was asked to picture themselves as really old, sitting in a beautiful and peaceful place, saying the last goodbyes to the people important in their lives. What would these people say to you if they came to talk to you one by one, describing your life, recounting what gave your life meaning? The ultimate intention is to identify what differentiates the life the participants want to live, the ideal life, from the life they actually live today. This practise can work as a strong motivation for change towards a life that is closer to one's ideal life.

The next step in the work with the life compass is to do an additional estimation. The task is to grade in what extent (both quality and quantity) one actually lived in accordance with ones values, during the last week. This is done with a scale from 1-10, where 10 is the highest. In the areas where the difference between the priority of importance (scaled earlier) and the actual action (scaled now) was big, the participants were asked to write down what they *experienced as obstacles*, what kind of barrier was in their way. The most common difficulties reported were lack of time, energy, strength or experiences of stress. Strategies of how to solve the incongruence between the wanted life and the actual life was made in the group with some examples. With further work with the life compass, imbalance between the different areas was examined, and it became clearer how much space the participants allowed themselves, a full life space or a shrunk life situation? By drawing on the life compass, the imbalance in life became clear and thus the areas one do not give priority to, but actually

think is an important area in life. Usually when people are stressed, we peel off activities that provide energy. This was followed by discussions of short-term solutions we make when stressed and the constant stress activity in the body, that we can manage for a short while but is harmful in the long-term.

An additional aim with the life compass is to put the participants in contact with their own natural positive reinforces and grow the experience of a free choice, and thereby a feeling of control over their life situation. Many students in the upper secondary school describe their school situation as if they are forced to go to school, and that they do the home works because of the teachers nagging. But in connection with viewing life in a wider perspective, through the life compass, you get in contact with the personal reasons for why one for example is in school (to get a job or an education), and therefore a possible tie to individual motivation and driving force.

The rest of the session was devoted to exercises, role-play and metaphors to identify values, goals and practical actions in order to take steps in the valued directions. Homework for the next session were to do physical exercise twice a week, to listen to track one, two or three, five times a week, to practice acceptance in the every-day life situations, and to do estimations on the life compass four times a week.

### **13.1.3 Session three**

This session was about obstacles and flexibility, and the aim was to

- 1) Repeat the two last sessions and the work with the tasks at home
- 2) Break down valued directions and obstacles to goals and concrete actions
- 3) Learn about and experience the observing self
- 4) Create psychological flexibility

The third session is characterized by a quote from the Swedish singer/songwriter Thomas DiLeva: “Also the one, who do not dare to live, will die some day”.

The session began by *repeating the central messages from the previous sessions* and discussing the tasks and exercises made since last time in the group. Then the work of *breaking down life values and obstacles into goals and actions* began. A form with separate spaces for the nine important life areas (worked with in session two) was handed out for the

participants to fill in. Each life area had divisions for life direction, goals, actions and obstacles, also to be filled in. This form was returned to throughout the whole session, and the ambition was that the participants should fill in the whole form during this session.

An instructed group exercise was made to practise how to get in contact with and *sink into the observing self*. The participants were instructed to sit quietly and mindfully during a guided practice, and think of memories through life; something from this summer, a memory from childhood and so on. They were asked to take an observing position of the different roles they have in life, the emotions they experience, their thoughts and finally of their whole life. The ultimate aim of the practice was to experience the observing part of the self in a direct way. After this exercise, which took approximately 20 minutes, mindfulness meditation and the research findings of the method were discussed. A classical mindfulness practise was done in the group: the raisin exercise. The participants were asked to eat a raisin as if it was for the first time: look at it, smell it, feel it, taste it, experience it with all their senses.

After the discussion and education in mindfulness, the next step was to look closer upon our judgemental and valuing mechanisms. Through some group exercises, the participants explored the human tendency and ability to make relations between almost everything. As a random example, the group was asked “in what way is a banana similar to a car?” and they should try to come up with possible relations. The purpose is to learn to differentiate “virtual qualities” and our thinking, our opinions of the qualities. It happens easily that our ideas of something, e.g. our opinions, believing it is the truth, with the virtual qualities of something is confused. In this way, the *language and linguistically constructions are the origin of a lot of suffering*. To continue with this discussion, an exercise to “de-language” the language was done in the group, with the purpose of creating cognitive defusion. The participants were asked to think of the word “milk” and tell the group their associations, which were written on the whiteboard. Then, everybody in the group, together in chorus, repeated the word “milk” in about 40 seconds. What happened to the meaning of the word? Usually, the common associations disappear and the word becomes just a noise. This exercise can be repeated with an emotionally loaded word, such as “worthless” or “stupid”. The aim is to *create a healthy distance to unpleasant thoughts – psychological flexibility*, and see them just as thoughts; to cognitively defuse from one’s thoughts.

To conclude the session, some of the important messages are repeated and the tasks and exercises to do for next session were introduced. In addition to exercising twice a week and listen to track one, two or three on the CD, the participants were instructed to defuse from their language twice a week by listen to track five on the CD, continue to do estimations of the balance in life and life space on the life compass, and finally do something they had never done before. Examples of such things were handed out on a list.

#### **13.1.4 Session four**

This last session was about compassion and to continue practising what the participants learnt in the ACT course on ones own, in the everyday life. The aims of the forth session were

- 1) Repetition of the three earlier sessions and the work done at home for this session
- 2) Mindfulness meditation on compassion
- 3) Togetherness – confirmation in communication
- 4) Decision-making
- 5) Summary and to continue on ones own

The fourth session was illustrated by a quote from one of Tove Jansson's stories of Mumin: Too-Ticki in "Trollvinter" says: "Everything is very uncertain, and that is what makes me calm."

First, the three *earlier sessions were repeated* and the work done at home between the sessions were discussed. It is important to regularly follow up the participants' own practise and experiences, in order to make the participants go on with it.

Then the new session began by a *mindfulness meditation* during which the participants were instructed to imagine different situations that normally cause compassion, with the purpose to get in contact with this feeling. The aim was to make the participants feel compassion about others and ultimately of one self, and to be able to accept painful pasts, memories and the present, just the way they are. In the group of youths, this exercise that normally takes about 30 minutes was divided into two sets of 10-15 minutes practises. Afterwards, the human tendency to easily remember negative events was discussed. To strengthen positive thinking, the participants were asked to write down five things that they had done well during that day. They were later asked to continue doing this every night before going to bed.

After this rather emotionally heavy exercise, *communication in relationships with others* was discussed. The main message was to learn to confirm the other in any situation and to express oneself in an unambiguous way. In situations of argument, it is important to send clear messages about oneself, starting with I: “I feel...”, or “I want...” Next, the importance to say no and how to do it was discussed. Both of these cases were showed by role play of the group leaders, showing bad and good examples.

To *make decisions* is hard, but very important. To be stressed about making “the right” decisions early in life is common, but it is natural to make incorrect judgments in adolescence. The decision making process is affected by the ongoing development of the brain and therefore often influenced by emotions. Also, it is long-term decisions about the future to be made at this age. ACT encourages decision making, because when you make a choice you often feel relieved. The message is that it is OK to make faulty decisions, and to take one year, or even one month, at a time. Still, it is almost impossible to be sure that the choice is the right one, the only way to know for sure is to wait and see. Most people, also the “successful” ones, have made faulty decisions in their lives. To learn what activities one should prioritise, the participants were to fill in a form of activities that are nourishing, satisfactory, and draining.

Compassion, togetherness and decision-making were the central themes of the fourth session. Practises, discussions, and exercises were over-lapped throughout the meeting. As a summary, some repetition of what to accept and not to accept was discussed, as well as tips of books and CDs for future use.

## **13.2 Appendix 2: Instructions to the group leaders (in Swedish)**

### **Information till gruppledarna/behandlarna om hur utvärderingen av ACT-kursen ska gå till**

1. Vid första kurstillfället, *innan själva kursen sätter igång*, informeras kursdeltagarna om att de som vill får delta i en utvärdering av denna ACT stresshanteringskurs. Utvärderingen är också en del i en psykologexamensuppsats. Deltagandet är frivilligt och kan avbrytas när som helst under kursen utan negativa konsekvenser, alltså ACT-kursen och utvärderingen är oberoende av varandra. Deltagarna får fortsätta kursen även om de väljer att inte vara med eller avbryta deltagandet i utvärderingen. Dock kan deltagarna upplysas om vikten av att ställa upp i utvärderingen/studien, resultatet kan leda till bättre behandlingsmetoder för ungdomar som mår dåligt.

2. Resultatet av utvärderingen kommer att presenteras på gruppnivå och inga enskilda svar kommer att kunna spåras. Materialet kommer att behandlas i kodad form så ingen som arbetar med enkäterna kommer att kunna se vem som fyllt i vilken enkät. Alla formulär kommer att förstöras efter bearbetning, resultatet redovisas i en psykologexamensuppsats.

3. Det som krävs av deltagarna är att de vid första och sista kurstillfället fyller i ett åttasidigt formulär med frågor om bl.a. hälsa och stress. Det tar vanligtvis ungefär 10-15 minuter. Deltagarna måste även godkänna att deras enkät används i utvärderingen genom att kryssa i en ruta på första sidan av häftet med enkäter. Om deltagaren är under 18 år måste målsman skriva under ett godkännande. Denna lapp skickas hem med deltagaren efter första kurstillfället.

4. Det som krävs av gruppledarna/behandlarna är att de delar ut och samlar in enkäter samt "motiverar" deltagare till att ställa upp i studien. Det innebär också att kunna svara på eventuella frågor från deltagarna.

De praktiska uppgifterna blir:

- Att skriva ut och häfta ihop formulären. Formulären finns i bifogade pdf-filer och är åtta sidor långt. Det är självklart viktigt att kontrollera att alla sidor kommer med i varje "mätpaket".
- Att hantera materialet på etiskt försvarbart sätt samt ansvara för kodandet av enkäterna, kodnyckel bifogas.
- Att veta vilka deltagare som är under 18 år och se till att de får en lapp till vårdnadshavaren, samt att den kommer tillbaka!
- Uppreda mätproceduren vid sista kurstillfället.

#### **Formulären ska ges ut i den ordning som följer nedan:**

1. Information till deltagarna där godkännande ska lämnas
2. Bakgrundsinformation (ålder, kön, alkohol, motivation etc.)
3. SWLS (5 item) Satisfaction With Life Scale
4. AAQ-2 (10 item) Acceptance and Action Questionnaire
5. BDI (21 item) Beck Depression Inventory
6. DAS S (21 item) Depression Anxiety Stress Scale
7. PSS (14 item) Percieved Stress Scale
8. GHQ (12 item) General Health Questionnaire

## Muntliga instruktioner till deltagarna vid administrering av enkäter

Ni som ska delta i denna ACT stresshanteringskurs är tillfrågade att ställa upp i en utvärdering av kursen. Utvärderingen består av en åtta sidor lång enkät med frågor om bl.a. stress och hälsa, som tar ca 10-15 min. att göra. Denna utvärdering kommer senare att bli en del i en psykologexamensuppsats.

Det är frivilligt att vara med i utvärderingen och ni kan avbryta deltagandet när som helst, men undersökningar av detta slag är viktiga för att hjälpa ungdomar som mår dåligt.

På framsidan av enkäterna finns möjlighet att kryssa i en ruta för att godkänna att din enkät är med i utvärderingen och i examensuppsatsen. Om du är under 18 år kommer du dessutom att få med dig en lapp hem där din vårdnadshavare får information och möjlighet att godkänna att du är med i utvärderingen.

Enkäterna görs anonymt och ingen kommer att kunna se vem som fyllt i vilket enkät, eftersom enkäterna delas ut med hjälp av koder. När undersökningen är färdig kommer alla enkäter och kodnycklar att förstöras. Alla resultat redovisas i grupp och inga enskilda svar kommer att belysas.

Och nu till instruktioner om hur ni deltagare ska tänka när ni fyller i formulären:

1. Försök att lämna svar på alla frågor även om det inte finns ett alternativ som stämmer helt perfekt med hur just du känner, ta det alternativ som ligger närmast.
2. Fastna inte på en fråga utan försök att gå vidare om det skulle ske. Ta det svar som känns mest rätt för stunden.
3. När du är klar med en sida i formuläret, se efter att du lämnat svar på alla frågorna! Och se till att du bara lämnat ETT svar på varje fråga.
4. Om du är osäker på innebörden av en fråga går det bra att fråga gruppledaren som kan förtydliga.

När alla är klara samlar vi gruppledare in enkäterna och lägger i ett kuvert som försluts (framför deltagargruppen) och ges till undersökningsledaren. Inte ens vi gruppledare kommer att kunna ta del av den information ni delar med er av här.

*Dela ut enkäterna och fyll i kodnyckeln. Ni gruppledare behåller kodnyckeln till nästa mättillfälle.*

### **13.3 Appendix 3: Information to the participant (in Swedish)**

#### **1. Bästa deltagare!**

Vi är väldigt tacksamma för att Du tar dig tid att delta i denna stresshanteringskurs (ACT – att hantera stress och främja hälsa)! Dina svar fyller en viktig funktion för att utvärdera metoden och är till stor hjälp i arbetet att utveckla så effektiva metoder som möjligt för att hjälpa ungdomar att må bättre.

För att projektet ska ha förutsättning att lyckas är vi beroende av att Du besvarar frågorna så ärligt och väl som Du kan. Ingen kommer att få se vad just Du svarat! Inte ens den som läser svaren vet vem det är som har svarat eftersom enkäterna är kodade, och så snart studien är färdig kommer alla formulär att förstöras.

Utvärderingen kommer sedan vara del i psykologexamensuppsats där alla resultat redovisas på gruppnivå och inga enskilda svar kommer att kunna utläsas.

Det här häftet består av några frågeformulär som berör olika områden av Ditt liv. När Du kommer till ett nytt formulär, läs igenom instruktionerna och sätt Dig in i hur det fungerar innan Du börjar svara. Kryssa i det alternativ som passar bäst för just Dig och försök att svara på alla frågor genom att endast kryssa i *ett* alternativ på varje fråga. Du behöver alltså inte fastna så länge på en viss fråga utan ta det alternativ som känns som att det stämmer bäst.

Återigen vill vi påminna om att deltagandet i denna utvärdering är frivilligt och att medverkan i studien inte påverkar ditt deltagande i ACT-kursen. Du kan alltså delta i kursen utan att vara med i utvärderingen om du vill. Kryssa i nedan om du vill delta:

**Jag godkänner att denna enkät används som underlag till en utvärdering av ACT-kursen och till en studie i en psykologexamensuppsats. Jag tackar ja till att delta.**

Om du eller dina föräldrar har frågor om studien får ni gärna ringa till undersökningsledaren, psykologkandidat Emma Stavenow på 0707-78 44 00. Tack för Ditt deltagande!

Det börjar på nästa sida...

## **13.4 Appendix 4: Letter to the person in custody (in Swedish)**

### **Brev till vårdnadshavare**

Din son/dotter ska under hösten -07 delta i en stresshanteringskurs (ACT – att hantera stress och främja hälsa) som ges i samarbete med Center för Folkhälsa (Stockholms Läns Landsting) och Precens (Stockholms Stad).

I ACT-kursen ingår mätningar i form av frågeformulär för att utvärdera kursens funktion och effekt. Dessa mätningar görs anonymt och kommer att vara del i en psykologexamensuppsats. Resultatet av mätningarna redovisas på gruppnivå och inga enskilda svar kommer att kunna härledas. Efter bearbetning kommer formulären att förstöras.

Frågeformulären undersöker bl.a. nivåer av stress, ångest, depression samt eventuella problemområden, hälsa och motivation att delta i kursen.

Det övergripande syftet med studien är att förbättra behandlingsmetoderna för ungdomar och vuxna som mår dåligt.

Eftersom Din dotter/son är under 18 år behöver vi ditt godkännande för att kunna använda detta frågeformulär i forskningssyfte. Godkänn genom att signera nedan.

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Vårdnadshavarens underskrift

Datum

Vid frågor, ring psykologkandidat Emma Stavenow 0707-78 44 00 eller skicka e-post till: [emma.stavenow@gmail.com](mailto:emma.stavenow@gmail.com)



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*(Använd baksidan om du vill skriva mer...)*

*Tusen tack för din medverkan!!!*