AN ONLINE GUIDED ACT INTERVENTION FOR UNIVERSITY STUDENTS: WHAT ARE THE STUDENT EXPERIENCES, AND DO THEY DIFFER DEPENDING ON ANXIETY LEVEL?

Kersti Lantto

Master's thesis

The Department of Psychology

The University of Jyväskylä

May 2021

THE UNIVERSITY OF JYVÄSKYLÄ
The Department of Psychology

LANTTO, KERSTI: An online guided ACT intervention for students: What are the student experiences, and do they differ depending on anxiety level?
Master's thesis, 42 pages, 3 appendix pages.
Supervisor: Raimo Lappalainen
Psychology
May 2021

Psychological problems are a serious and increasing health threat to university students. Online interventions present a promising low-cost, easy-access support option. This study explored the student experiences of Student Compass, an online guided ACT intervention developed in the University of Jyväskylä. The study also investigated whether the experiences differ depending on pre-intervention anxiety levels. The intervention was 7 weeks long and included online material and support from student coaches in the form of three meetings and online feedback. The participants (n = 148) filled in GAD-7 before the intervention and a questionnaire about their experiences after the intervention. The student experiences of the Student Compass were highly encouraging; almost all the students were satisfied with the intervention and would recommend it to their friends. Most students thought they had gained significant benefits from the program, such as learning new skills, gaining insight, and noticing improvements in their mental well-being. The most useful aspect of the intervention was thought to be the coach support, and most students felt the amount of support was sufficient. The experiences did not differ depending on anxiety level, indicating that high anxiety is not a barrier for online interventions, at least when the amount of support is moderate. While more research is warranted, the mandate from students for making supported online interventions more widely available is strong.

Key words: online interventions, online ACT, student experiences, anxiety

I would like to thank my supervisor Raimo Lappalainen and the project researcher of Student Compass Panajiota Räsänen for their support and help during the process.

Table of contents

1 INTRODUCTION

1.1 Psychological problems in university student populations

Psychological problems including stress, anxiety and depression present a serious health threat to university students (Krumrie et al., 2010; Regehr et al., 2013). Mental health issues are more prevalent among university students than the general population (Bayram & Bilgel, 2008; Cooke et al., 2006; Ibrahim et al., 2013; Stallman, 2010), and their prevalence has been on the rise in the past decades (Gallagher, 2007; Kitzrow, 2003; Kunttu et al., 2017). In Finland, a third of students report having psychological problems, diagnosed depression and anxiety disorders having tripled since the year 2000 (Kunttu et al., 2017; Villa, 2016). Importantly, only 45% to 65% of students struggling with mental health issues seek professional help (Cooke et al., 2006; Eisenberg et al., 2007; Zivin et al., 2009), which could reflect both attitudes and external barriers with seeking and receiving help. Barriers with accessing face-to-face therapies can include lack of time, fear of stigma, unavailability, and cost amongst others (Guilliver et al., 2015; McKinney, 2009; Titov, Andrews & Sachdev, 2010).

1.2 Online interventions

A form of treatment with potential to address these issues is treatment delivered online (Titov et al., 2010). Online interventions are treatments that are mainly delivered on web pages or via email including psychoeducative materials and exercises in text and video formats (e.g., Andersson et al, 2009; Bendelin et al., 2011; Kelson et al., 2017; Lappalainen et al., 2015; Levin et al., 2017). Internet-based interventions can be categorised into guided and unguided interventions. Unguided interventions rely on users completing the course-material independently, whereas in guided versions an element of human support is delivered on top of the online intervention, for example in the form of emails, telephone calls or face-to-face consultations (e.g., Andersson et al, 2009; Kelson et al., 2017; Lappalainen et al., 2015; Levin et

al., 2017; Lillevoll et al., 2013; Richards and Timulak, 2013; Wilhelmsen et al., 2013; Johansson et al., 2015).

Some of the benefits of web-based interventions are their cost-effectivity, easy updatability based on current research, and lesser stigma (Amstadter et al., 2009). Moreover, online interventions have good potential as a treatment for students, who spend more time on the Internet than the general population (Chiauzzi et al., 2008, Kunttu et al., 2017) and prefer informal forms of help (Goodwin et al., 2016; Stallman, 2010).

1.2.1 Online cognitive behavioural therapy

The most researched online interventions are treatments based on cognitive behavioural therapy (CBT) (Andersson, 2009). CBT can be defined as a group of therapeutic approaches that focus on challenging and changing unhelpful cognitions, thoughts, beliefs, and behaviours, with the goal of developing personal coping strategies and improving emotional regulation (Beck & Beck, 2011; Field et al., 2015).

There is increasing evidence on the effectivity of online CBT interventions. Meta-analyses have shown it to be effective in treating anxiety, depression, and common mental health disorders (Grist & Cavanagh, 2013; Newby et al., 2016). Supported online CBT have moderate post-treatment effect sizes (Cuijpers et al., 2010; Andersson et al., 2014; Richards & Richardson, 2012) and roughly the same success rates as traditional face-to-face therapy (Andersson & Cuijpers, 2009; Gerhards et al., 2011; Johansson & Andersson, 2012). Evidence also exists for the continuity of treatment effects over time (Carlbring et al., 2009). Moreover, web-based CBT interventions are effective for youth and young adults in treating anxious and depressive symptoms (Ebert et al., 2015; Christ el al., 2020), as well as students in treating depression, anxiety, and stress (Davies et al. 2014; Dear et al., 2019).

1.2.2 Online acceptance and commitment therapy

Third-wave cognitive behavioural therapies differ from traditional cognitive behavioural therapies in their focus on processes like mindfulness and acceptance (Hayes, 2004). One such form of CBT is acceptance and commitment therapy (ACT) (Twohig, 2012). ACT is a transdiagnostic treatment that

attempts to influence the mechanisms behind psychological suffering that are not dependent on diagnosis. ACT centres on increasing psychological flexibility, which is the ability to be in contact with the present moment without needless struggle to change the inner experiences that occur, and to persist in actions guided by personal values (Hayes et al., 2006). Instead of directly trying to change the content of thoughts, the objective of ACT is to change a person's reactions to them. The techniques utilised in ACT centre on mindfulness, acceptance, and values-based processes (Hayes et al., 2006; Twohig, 2012). The six processes of change in ACT are acceptance, defusion (which means a less literal take on one's thoughts), being present, self as context (which is the ability to observe inner experiences without fusing with them), values, and behavioural commitment (Hayes et al., 2006).

Web-based interventions utilising acceptance and mindfulness techniques have been shown in meta-analyses to be effective for treating depression, anxiety, and stress (Brown et al., 2016; O'Connor et al., 2017; Spijkerman et al., 2016), as well as increasing satisfaction in life (Lappalainen et al., 2014). Furthermore, web-based ACT interventions show promising results in student populations, with significant alleviations in anxiety, depression, and stress rates of university students (Levin et al., 2017; Levin et al., 2016; Räsänen et al., 2016; Viskovich and Pakenham, 2018).

1.2.3 Role of human support in online interventions

Meta-analyses show that interventions with an element of human support lead to better outcomes than interventions without human support (Andersson & Cuijpers, 2009; Johansson & Andersson, 2012; Palmqvist et al., 2007; Richards & Richardson, 2012; Spek et al., 2007; Wright et al., 2019). Furthermore, unguided interventions suffer from a significant number of dropouts (Christensen et al., 2009), whereas guided interventions have better adherence rates (Van Ballegooijen et al., 2014).

Interestingly, it seems that guidance does not need to be explicitly therapist-delivered to be effective and acceptable (Andersson & Titov, 2014). Trials by Robinson et al. (2010) and Titov et al. (2010) comparing clinician and technician assisted online treatments for depression and anxiety found no difference between clinician and technician guided groups, with both conditions resulting in large improvements. Furthermore, both conditions were well-accepted among participants as indicated by attrition rates. In these trials, the role of the technician was to provide support and encouragement, but clinical concerns were referred to a clinician (Robinson et al., 2010; Titov et al., 2010). This suggests

that provided the intervention is highly structured, guidance can be delivered by non-therapists (Andersson & Titov, 2014).

1.2.4 Acceptability of online interventions

While the effectivity of web-based CBT and ACT interventions has been well demonstrated, their acceptability to participants is also of importance as it can influence uptake and reach (Chambers et al., 2013). The acceptability of online CBT in treating anxiety and depression seems to be good as indicated by adherence and satisfaction rates (Andrews et al., 2010; Rost et al., 2017), and is high also among students (Dear et al., 2019). Similarly, third-wave cognitive and behavioural online interventions seem to be well-accepted as measured by participant evaluation and attrition rates (O'Connor et al., 2018). High completion rates and usage data also suggests a high acceptability among students (Levin et al., 2014; Levin et al., 2015; Räsänen et al., 2016).

To challenge this, a recent meta-analysis by Cuijpers et al. (2019) indicates that although there seem to be no differences between the effectivity of guided online CBT and other delivery methods of CBT (such as individual and group therapies) for depression, the acceptability of guided online interventions is lower as measured by drop-out rates. Rost et al. (2017) criticise the methodology used in defining user acceptance as most of the studies they reviewed reported 'high' or 'very high' acceptability, even though mean drop-out rates were 32%.

Direct measures such as questionnaires and qualitative methods can provide more insight to the question of acceptability. Exploring participant experiences more directly can help shed light to the factors behind acceptability, such as what is perceived as helpful or unhelpful by participants and what factors influence adherence (Rost et al., 2017).

1.3 Participant experiences of online interventions

1.3.1 Participant experiences of online ACT

Some research on participant experiences with online ACT has been conducted. A theme emerging from this research is that some participants extract a few useful techniques from the interventions (such as mindfulness skills), while others experience more profound changes such as increases in valued activities, changes in their thoughts and attitudes, and the ability to change their perspectives on thoughts and feelings (Ahtinen et al., 2013; Bendelin et al., 2020; Köhle et al., 2017). Helpful aspects with online ACT interventions seem to include learning to clarify values, learning skills to cope with emotions and thoughts, and doing exercises related to ACT processes (Köhle et al., 2017, Lappalainen et al., 2015).

1.3.2 Participant experiences of online CBT

The participant experiences of online CBT have been well explored using qualitative methods. A meta-synthesis of 8 studies by Knowles et al. (2014) found the main benefits of online CBT to be increased sense of control and privacy. Individual qualitative studies have shown that the opportunity to do therapy flexibly and with immediate access is seen as an advantage (Beattie et al., 2009; Gerhards et al., 2011; Perera-Delcourt & Sharkey, 2019). Online CBT participants also find the interventions a valuable source of knowledge and learning (Gerhards et al., 2011; Lillevoll et al., 2013). Moreover, reductions in depression rates motivate participants to persist with the interventions (Gerhards et al., 2011).

However, the meta-synthesis by Knowles et al. (2014) found that the experiences are dialectal in nature, with some participants perceiving the factors of privacy and control as limitations, although they were highlighted as advantages by others. Other barriers for online interventions include internet-skills and equipment related issues (Gerhards et al., 2011; in Lillevol et al., 2013), and the generality of contents (Richards & Timulak, 2012). For example, Fernández-Álvarez et al. (2017), identified lack of specificity as one of the main reasons for dropping out.

1.3.3 Student experiences of online CBT

When it comes to university students' experiences, research has demonstrated that online CBT is well-accepted and satisfactory (Richards & Timulak, 2012; 2013). Interestingly, some students seem to prefer online CBT to face-to-face counselling (Mitchell & Dunn, 2007). Self-control over administration of treatment and ease of use are seen as advantages by students (Mitchell & Dunn, 2007; Richard & Timulak, 2012; 2013). Insight into their problems (Mitchell & Dunn, 2007), and learning new skills and strategies to manage depression are also considered as helpful (Richards & Timulak, 2012; 2013). Like in other populations, lack of personalisation and technical frustrations are highlighted as barriers (Richards & Timulak, 2012; 2013).

1.3.4 Participant experiences regarding the element of support

A major theme arising from the participant experiences of both unsupported and supported online interventions is the need for support. A study by Lappalainen et al. (2013) found that the most useful components of an ACT intervention were perceived to be personal feedback and advice. On another hand, Fernández-Álvarez et al. (2017) identified insufficient support as one of the biggest reasons for dropping out from an unsupported CBT intervention. Human support has been suggested to potentially improve both adherence and the participant experiences of online interventions (Gega et al., 2011; Gerhards et al., 2011; Knowles et al., 2015). When it comes to students, Richards and Timulak (2012) found that the validation, advice, and compassion received from a therapist via email contributed positively to their intervention.

Gega et al. (2011) suggest that human support could be important in guiding the use of online intervention platforms, encouraging completion of homework and other important therapeutic activities, and helping tailor the standardised advice to each user's individual needs. Lillevoll et al. (2013) found that therapist consultations facilitated understanding and helped explain the relevance of generic online content. Moreover, the therapist-relationship provided a space where thoughts and feelings could be shared, and advice and feedback received. A therapist can also encourage the participant to stick with the intervention when it feels challenging (Bendelin et al., 2011).

1.3.5 Problem severity and user characteristics

There seems to be a range of responses to online CBT among participants, from seeing it as perfectly addressing their needs to finding it disappointing and experiencing no benefits (Bendelin et al., 2011). People who experience the most benefit from online interventions are motivated, self-reliant, familiar with computers, and unwilling or unable to do face-to-face therapy (Beattie et al., 2009; Bendelin et al., 2011; Perera-Delcourt & Sharkey, 2019; Richards et al., 2016). Moreover, experiences may vary depending on problem severity. Christensen et al. (2009) found that higher severity and chronicity of anxiety and depression predicted lower adherence with online CBT. Lappalainen et al. (2015) studied the experiences of individuals with depressive symptoms in a minimally supported online ACT intervention and found that severely depressed individuals as assessed pre-intervention were less satisfied than individuals with milder depression, hoping for more support and face-to-face contact. Exhaustion and distress were identified as barriers to independent work with the intervention. Depressed individuals in other studies have stressed that deeply depressed people would not have the strength to pursue online interventions (Holst et al., 2017). It appears that because of the active role users play in online interventions, people have different capacities to pursue them. The severity of mental health problems seems to be linked to this, although only few studies have explored this and only in relation to depression.

1.3.6 Summary of participant experiences

Research on the participant experiences of online interventions has shown that participant appreciate the aspects of easy accessibility and flexibility, as well as privacy and anonymity, common to online interventions. Online interventions are also seen as a source of new information and an opportunity to learn new techniques to enhance mental well-being. Experiencing improvement from use helps to motivate the participants. However, some participants seem to prefer face-to-face contact and a more structured intervention. Technical frustrations are common with many online interventions. Furthermore, users often experience the material to be too general and not specific enough to their needs, although this can be alleviated through personal feedback by a support person. The importance of human support is evident from participant experiences. Human contact is experienced as a source of validation and empathy, and a space for sharing personal experiences. Human support improves adherence, and it does

not need to be explicitly therapist-delivered to be effective and acceptable. Finally, people seem to have different capacities to work independently on online interventions. Severity of psychological problems seems to be related to the quality of experiences and more severe depression can lead to a greater need for support. However, this has not been extensively studied, and research relating to for example anxiety is lacking altogether. Experiences of university students have been less studied, but they echo those of other groups. (Andersson & Titov, 2014; Beattie et al., 2009; Bendelin et al., 2011; Fernández-Álvarez et al., 2017; Gega et al., 2011; Gerhards et al., 2011; Lappalainen et al., 2015; Lillevoll et al., 2013; Mitchell & Dunn, 2007; Perera-Delcourt & Sharkey, 2019; Richards & Timulak, 2012; 2013; Robinson et al., 2010; Titov et al., 2010).

1.4 Rationale for the current study

While the participant experiences of online CBT interventions have been extensively studied, there is less research on online ACT interventions. Furthermore, there are few studies with student samples, although university students could be a promising target population for online interventions. Additionally, most studies of participant experiences with online interventions have not taken problem severity into account, and no studies exist that look at experiences depending on anxiety levels.

Generalised anxiety disorder (GAD) is a common anxiety disorder that shares many features with other anxiety disorders. It presents as worry about the past, present or future that is persistent and excessive. It can cause significant distress to the individual and is often comorbid with mood disorders (Judd et al., 2998; Tyrer & Baldwin, 2006). Anxiety is common among Finnish students, 7% of students in Finland presenting with a diagnosed anxiety disorder (Kunttu et al., 2017). Thus, exploring if higher anxiety levels predict a worse experience with an online intervention among Finnish students could help inform what kinds of populations such interventions could be targeted to.

1.4.1 Student Compass

Student Compass is an ACT-based online intervention aimed for students that has been developed in the University of Jyväskylä. The intervention centres on values, mindfulness and acceptance-based processes containing information in the form of texts and videos, and exercises in text and audio formats. It can be carried out independently or with the assistance of a coach. The coach-guided online intervention has been found to increase participants' well-being, mindfulness skills and life satisfaction, and to reduce perceived stress and depressive symptoms (Räsänen et al., 2016). Furthermore, these effects are maintained over a 12-month follow-up period.

1.4.2 Aims

The current study set out to explore the student experiences of Student Compass, a supported online ACT intervention. In addition, the current study aims to discover whether the experiences differ depending on how severe their anxiety was before taking part in the intervention.

The research questions are:

1. What are the participant experiences of the Student Compass intervention?
2. Are the participant experiences different depending on the pre-intervention anxiety level of the student?

The first question is approached with an open mind, and no hypothesis is set. A tentative hypothesis regarding question two is set that the participant experiences differ depending on pre-intervention anxiety level. It is postulated that because of the active role participants play in online interventions, more severe mental health problems predict a worse experience and a greater need for support (Christensen et al., 2009; Lappalainen et al., 2015).

2 METHODS

2.1 Data

The supported Student Compass intervention is run twice a year (autumn and spring) for the students of University of Jyväskylä. This study includes data from autumn 2017 to spring 2019 (n = 168), with 38 (22.6%) participants in autumn 2017, 39 (23.2%) participants in spring 2018, 54 (32.1%) participants in autumn 2018 and 37 (22%) in spring 2019.

2.2 Participants

2.2.1 Recruitment and questionnaires

Participants were recruited via advertisements on student union mailing lists, university webpage, and posters. Advertisements included information about the program, inclusion criteria and contact details. Students who expressed initial interest in the program were contacted with an email including further information and an outline of the program, as well as Questionnaire 1 (n = 270) that had questions about expectations of the program, suicidal thoughts, and possible contact with mental health services.

The participants for the study were selected based on the following criteria: a) having student status in the University of Jyväskylä, b) not participating simultaneously in a psychological intervention or receiving psychological therapy and c) not reporting serious suicidal ideation. Based on these criteria, 102 students were excluded. People excluded from the study were offered a similar supported program but were not included in research.

The students who fit the inclusion criteria were sent a link to fill in Questionnaire 2 (n = 168) before taking part in the program. This questionnaire included measures on anxiety (GAD-7) psychological well-being (MHC-SF), perceived stress (PSS-10) psychological flexibility (AFQ-Y), mindfulness skills (FFMQ) and health (PHQ-SADS). The questionnaire also included questions on life-

changes and problems, time spent on studying, working alongside studying, previous contact with mental health services, relationship-status and family-members living in the same household. Participants were also asked to fill in a consent form for research participation. After completing the programme (after 7 weeks), participants filled in Questionnaire 3 (n = 148) with the same measures as Questionnaire 2 and a section to review the program (Feedback form).

2.2.2 Participant characteristics

The participant characteristics are represented in Table 1.

Table 1. Participant characteristics.

	All	Completers	Drop-outs
N	168	148	20
Mean age	23.79 (SD 3.57)	23.57 (SD 3.38)	25.4 (SD 4.55)
Sex	Women 144 (85.7%) Men 23 (13.7%) Other 1 (0.6%)	Women 129 (87.2%) Men 19 (12.8%)	Women 15 (75%) Men 4 (20%) Other 1 (5%)
GAD-7 mean	7.30 (SD 4.34)	7.47 (SD 4.40)	6.05 (SD 3.75)

20 people (11.9%) dropped out during the program. The completers and drop-outs differed significantly in mean age, the dropouts being older than completers ($t(166) = -2.172$, $p = 0.016$). There were no significant differences regarding sex or GAD-7 means. Data from the dropouts was not included in the analysis, as they had not completed the Feedback form.

2.3 Coaches

Each participant was appointed a coach for the duration of the intervention. The coach was responsible for supporting the participant throughout the program. The coaches were 77 psychology master's students in the University of Jyväskylä with 70 women and 7 men. Their mean age was 25.60 (SD =

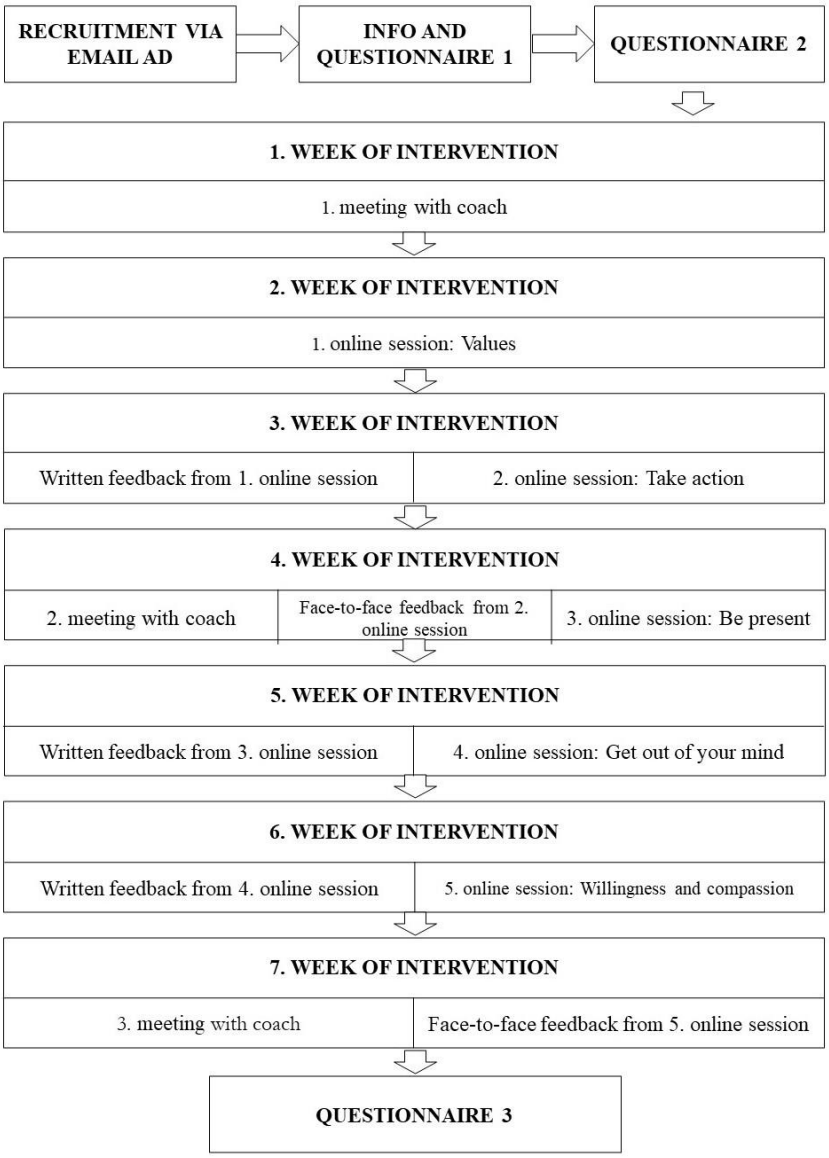
3.17). One coach had on average three participants to support and they contacted their participants via email-addresses created specifically for the program. Before the intervention, the coaches took part in an 8-hour training on ACT and 5-hour training on working with clients. They were also provided with training material for independent study. The coaches received supervision every week from a psychologist with expertise on ACT. Supervision included discussions on practical issues, giving feedback, and selecting exercises. Small peer-groups for the coaches were also organised as an avenue for studying together and sharing experiences.

2.4 Internet-based ACT intervention

2.4.1 Intervention flow

The duration of the intervention was seven weeks, and it consisted of three face-to-face meetings with the coach and 5 weeks of independent work on the online platform (demonstrated in Table 2).

Table 2. Intervention flow (model from Mäenpää & Peltola, 2018).



2.4.2 Contents

The Student Compass online platform offers three alternative routes centring on stress, anxiety, and depression. The routes are similar in content but have been formulated to fit each theme. The routes consist of five phases that contain psychoeducative texts and videos, exercises in audio and written formats, as well as metaphors and fictitious example stories of students who previously completed the intervention. The themes through the 5 phases are: 1) clarifying values, 2) taking action, 3) being present,

4) watching one's thinking and 5) awareness and acceptance (see Table 1). The Student Compass website also includes a collection of relaxation and other exercises, and literature on ACT.

Table 3. Phases of the Student Compass routes (model from Räsänen et al. 2016).

Phase	Theme and aim	Examples of exercises and activities	Weekly well-being exercise: summary of instructions
1) Clarifying values	Clarifying values. Difference between values and goals.	Half-a-year of living (exercise) Two kids in a car (metaphor) Video on values	Clarifying and reflecting on one's values: Draw a map of you values. Rate importance of values from 0-10. Rate how effectively you live according to you values from 0-10. Reflect in ACT weekly diary (AWD).
2) Taking action	Taking value guided action. Examining possible obstacles for value-guided choices.	Passengers on a bus (metaphor) Video on values and goals	Defining goals and committing to take values-based action: Choose one area of importance in your life right now. Define small goals on that area. Reflect in AWD.
3) Being present	Contact with the present moment and minfulness.	Mindful breathing, eating, sitting Leaves on the stream Video on being present	Being mindful in daily activities: choose one daily activity to observe mindfully during the week. Practice 'Leaves in the stream' -exercise. Taking action according to values: one value guided action. Reflect in AWD.
4) Watching one's thinking	Cognitive defusion. Taking an observer attitude towards thoughts and feelings. Weakening the control of language.	Observer (exercise) Video on noticing and naming thoughts, AWD	You are not the same as your thoughts (exercises): practice at least one of the exercises every day. Continuing with mindfulness activities: continue observing one daily activity. Taking action according to values: one value guided action. Reflect in AWD.
5) Awareness and acceptance	Developing awareness of the self-as-context. Accepting thoughts, feelings, memories as they are.	A stone on the beach (exercise) Video on expansion and self-awareness, AWD	What I would need to accept (exercise): reflect on what you need to accept in your life to move forward. Practice 'A stone on the beach' -exercise. Taking action according to values: one value guided action. Reflect in AWD.

The participants chose one route to follow throughout the program. Each week the participants submitted a written well-being exercise to their coach, in which they had to reflect on the theme and exercises they had worked on that week. They also reflected on their thoughts in the ACT weekly diary. After submitting the written wellbeing exercise from each phase, the participants received feedback from their coaches either in written format through the website or face-to-face in a meeting (see Table 2). Feedback had to be provided within two days of the homework deadline. Participants were divided into two equal groups before the intervention without their knowledge to receive either semi-structured or freely written feedback. As there were no statistically significant differences between semi-structured and freely written feedback for the effectivity of the intervention, the feedback groups are blended for the purposes of this study. The purpose of the feedback was to encourage and motivate the participants

and provide perspectives into their reflections. The coaches could answer questions, fix misunderstandings on ACT principles, and recommend exercises as needed, as well as orientate the participants for the next theme.

2.4.3 Meetings

The participant and the coach met face-to-face three times: in the beginning, in the middle, and in the end of the intervention (see Table 2). The meetings were an hour long and were recorded depending on participant consent. The first meeting included a semi-structured interview of the client's situation with the intention of defining central issues the client wanted to focus on during the intervention. This was done using functional and contextual analysis as a basis. The client also received information about the flow of the intervention, and the possible route (anxiety, depression, or stress) was discussed. Deadlines for returning homework and receiving feedback were also agreed upon.

Based on the interview, the coaches drew together a functional analysis for their clients. A functional analysis describes the problems of an individual, demonstrating their directional relationships, their causes, and possible other factors. Ultimately the analysis helps choose items of focus for the intervention (Haynes & O'Brien, 1990).

After the initial interview, the coaches contacted their clients with recommendations for the route, although the participants were free to choose whichever of the three routes. The participants were also provided with a timetable and guidance for using the Student Compass website. The participants received anonymous usernames for the website and each coach could only see the texts of their own clients.

The second meeting was organised during the 4th week of the intervention. The meeting was semi-structured, with discussions on the client's current situation and experiences with the intervention. The functional analysis was presented to the client and the client was given the opportunity to make changes to it. Goals were formed based on the analysis. At the end of the meeting, the client and the coach performed an exercise chosen for the client and the next theme was discussed.

The final meeting was a semi-structured interview at the end of the intervention. The objective of the meeting was to go through the current situation of the client and sum up their experience with the program, what they had learned and what changes had taken place during the intervention. The coach's aim was to help their client to notice where they had progressed and encourage the client to stick with

developing their skills. A plan for practising after the intervention was made and possible need for further support discussed. After the interview, the client filled in Questionnaire 3.

2.5 Measures

2.5.1 GAD-7

The participants filled in GAD-7 twice, first pre-intervention in Questionnaire 2 and second post-intervention in Questionnaire 3. For the purposes of this study, only the pre-intervention GAD-7 measure is used (see the second research question).

GAD-7 is a measure for assessing generalised anxiety disorder (Spitzer et al., 2006). The score is calculated as the sum of seven questions, with the response categories ‘not at all', 'several days', 'more than half the days', and 'nearly every day' scores being 0, 1, 2, and 3, respectively. The cut-off points for mild, moderate, and severe anxiety are 5, 10, and 15, respectively.

With the threshold of 10, GAD-7 has the sensitivity of 89% and a specificity of 82% for generalised anxiety disorder, and it captures other common anxiety disorders such as panic disorder, social anxiety disorder and post-traumatic stress disorder moderately well (Kroenke et al., 2007).

2.5.2 Feedback form

Included in Questionnaire 3 was the Feedback form (Appendix A). The Feedback form was filled in post-intervention after the final interview. The Feedback form included questions on satisfaction with the program, perceived benefits and learned skills, usefulness of different sections and methods, technical issues, the role of the coach, and other opinions about the program. The questions had response options that were either open ended with a text box for answering, on a Likert scale (e.g., 1 = strongly agree, 5 = strongly disagree), or in a yes or no form. For example, question 2. (“How satisfied are you with the Student Compass intervention?”) had a 6-point scale from “1 = extremely satisfied” to “6 = extremely unsatisfied”. Some questions were individual, some had five to thirteen sub-questions. For example

question 5. (“Coach support. How did you feel about the relationship with your coach during the program?”) had eight sub-questions. The questions were presented in Finnish but have been translated into English for the purposes of this paper. The questions in the Feedback form were not presented in the same order as in the Appendix A. Some questions from the Feedback form (such as the open-ended questions) are not included in the analysis and are not presented in the Appendix A.

2.5.3 Error responses

Error responses were identified based on discrepancies with responses to open-ended questions. For three participants, responses to all 8 sub-questions of question 5 (“Coach support. How did you feel about the relationship with your coach during the program?”) were considered as erroneous and were removed before the analysis (all three participants had responded “5 = strongly disagree” to each sub-question but were satisfied with coach support in their responses to open-ended questions).

2.6 Analysis

The statistical analysis was conducted with IBM SPSS Statistics 26. 2-tailed p-values < 0.05 were considered statistically significant. Data from dropouts ($n = 20$) was not included in the analysis, as they had not completed Questionnaire 3.

To explore the first research question “What are the participant experiences of the Student Compass intervention?”, questions number 1 - 5 and 8 - 10 were analysed by calculating frequencies for different response options for each question. For questions 6 and 7, sub-question means were calculated in order to rank different working methods and sections of the program. For questions 6 - 9, a repeated measures ANOVA was run to see if there were significant differences between the sub-questions.

To explore the second research question “Are the participant experiences different depending on the anxiety level of the student?”, the participants were divided into three independent groups based on their GAD-7 scores. The groups were formed using the diagnostic cut-off points (0 - 4 minimal anxiety, 5 - 9 mild anxiety, 10 - 14 moderate anxiety and 15 - 21 severe anxiety), but moderate and severe anxiety

groups were combined to form a large enough group. Five questions to compare the experiences of the anxiety groups were chosen based on their importance and relevance to the second research question, or the possibility to form a sum variable out of several sub-questions. The questions chosen were number 2 (“How satisfied are you with the Student Compass intervention?”), 4 (“How did you experience the amount of contact with the coach?”), 5 (“How did you feel about the relationship with your coach during the program?”; 8 sub-questions), 8 (“What kinds of benefits have you gained from the Student Compass intervention?”; 13 sub-questions), and 9 (“What skills have you learned during the Student Compass intervention?”; 10 sub-questions) (see Appendix A for all sub-questions and response options).

Three sum variables were calculated for questions number 5, 8 and 9. For question number 8, sub-question 13 was reversed to form a reliable sum variable. Cronbach’s Alpha was calculated to determine the reliability and internal consistency for each sum variable (question 5 = 0.93, question 8 = 0.91 and question 9 = 0.90). The normality of distribution for each sum variable was checked visually, each sum variable being sufficiently normally distributed. Differences between the anxiety groups were then tested using one-way between-groups ANOVA.

Differences between the anxiety groups for the standalone questions (2 and 4) were tested using cross tabulation. For question number 4, Chi Square Test was used to determine significance. For question number 2, responses were combined from a 6-point scale to a 3-point scale: ((1) extremely satisfied, (2) satisfied or somewhat satisfied, (3) somewhat unsatisfied or unsatisfied or extremely unsatisfied) to better meet test conditions (less than 20% of cells can have expected count less than 5). Because the conditions for Chi Square Test were not met despite this (3 cells (33.3%) had expected count less than 5), Fisher's Exact Test was used to determine significance.

3 RESULTS

3.2 Experiences

3.2.1 Time spent on the program

Half of the participants (52%) spent one to two hours on the program per week (see Figure 1). 20.3% reported using the program less than an hour and 27.6% reported using the program more than two hours per week.

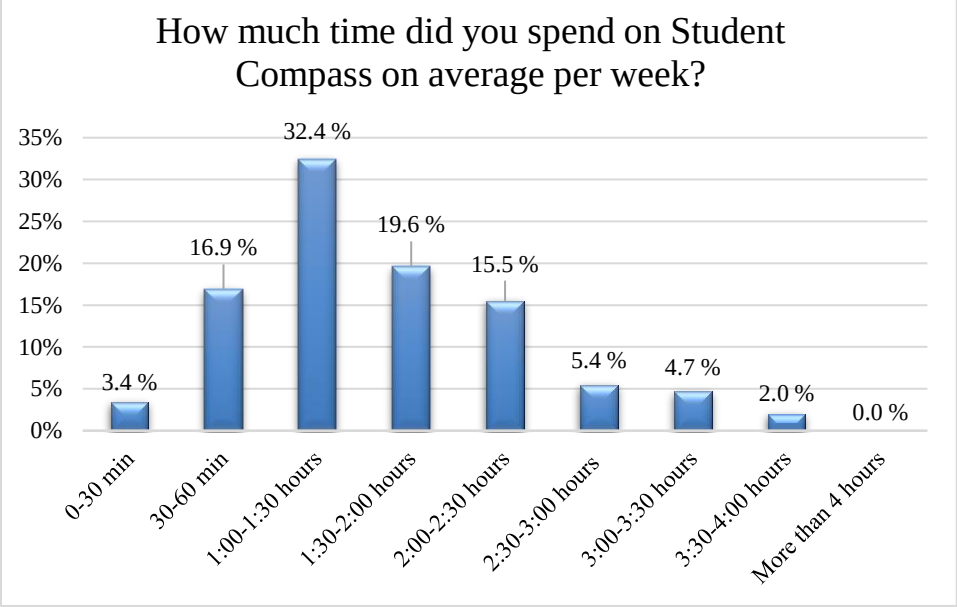


Figure 1. Time spent on the Student Compass per week.

3.2.2 Satisfaction

92.5% of the participants were either extremely satisfied or satisfied with the program (see Figure 2). 99.6% of the participants said they would recommend the Student Compass to others.

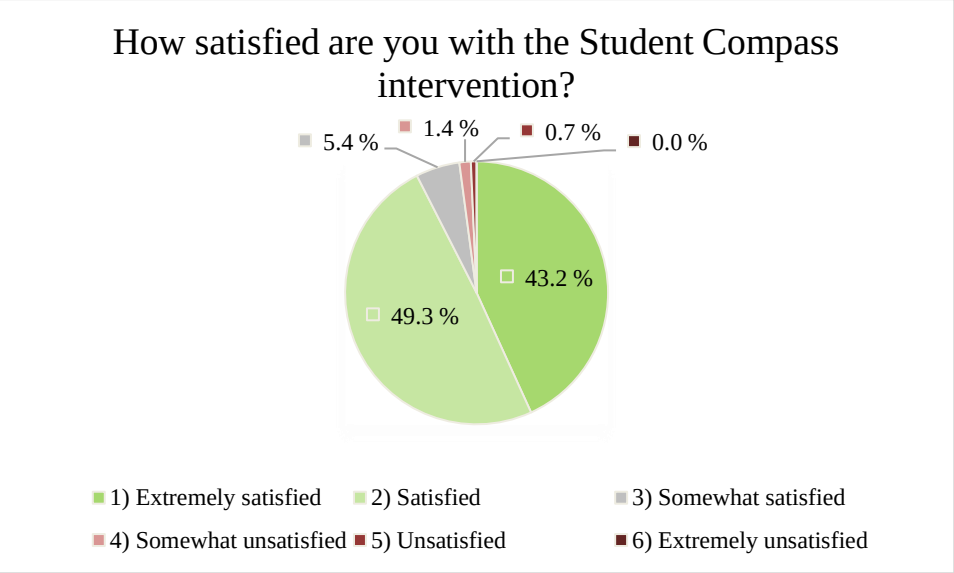


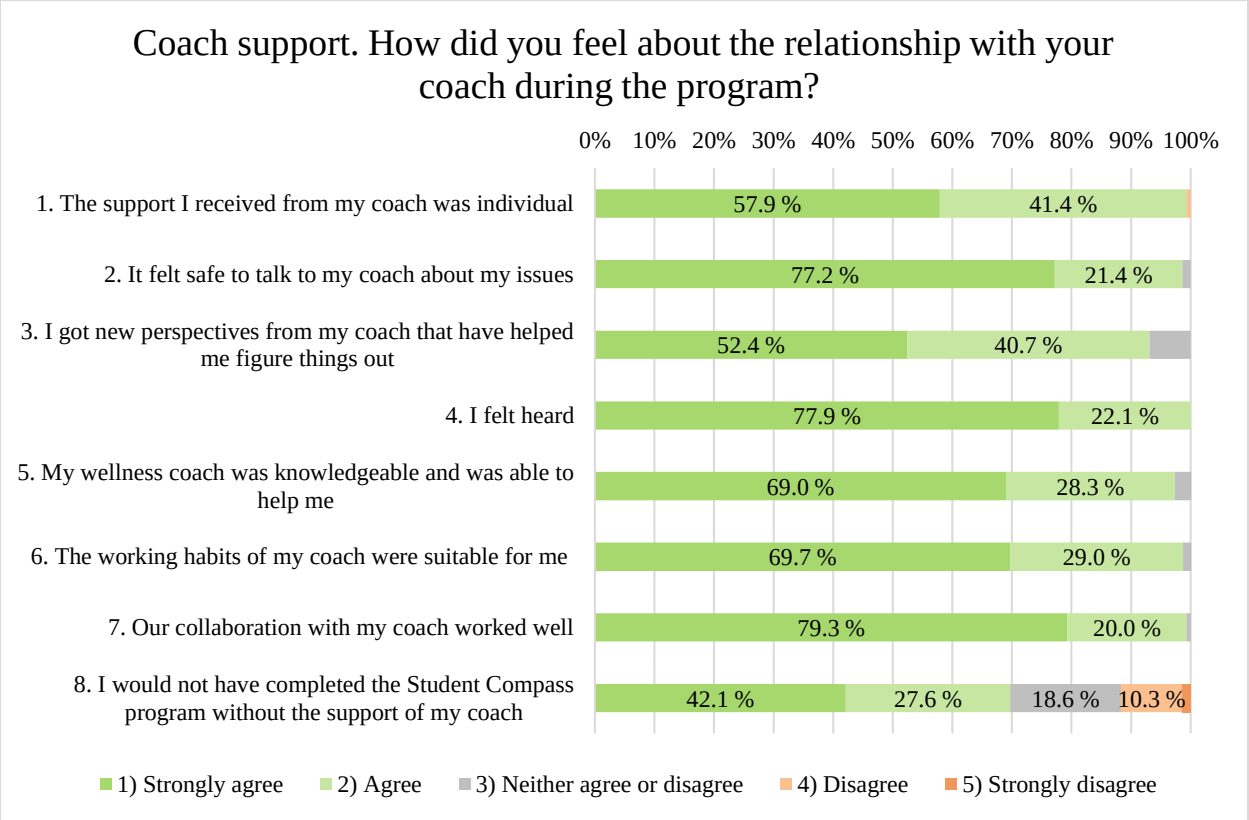
Figure 2. Satisfaction with the Student Compass.

3.2.3 Coach support

The amount of contact with the coach was found suitable by most of the participants (85.1%). However, 14.9% felt the amount of contact was too little.

Most of the participants agreed that the support they received was individual (99.3%), it felt safe telling about their issues (98.6%), they got new perspectives from their coach (93.1%), they felt heard (100%), their coach was able to help them (97.3%), the coach's working habits were suitable (98.7%), and the collaboration with the coach worked well (99.3%) (see Table 4). Most participants (69.7%) agreed that they would not have completed the program without the support of their coach. However, a subset of participants (11.7%) felt they would have completed the program also without support.

Table 4. Experiences of coach support.



3.2.4 Usefulness of different working methods and sections

The usefulness of different working methods (question 6, see Appendix A) was measured with a different scale in 2017 (n = 36) and 2018 - 2019 (n = 112). The results from 2018 - 2019 are reported here because of the larger sample size. The descriptive statistics from 2017 can be found in Appendix B.

The working methods were rated by the participants on a scale of 1 = not useful, 2 = somewhat useful, 3 = useful and 4 = very useful. The mean ratings and standard deviations can be seen in Figure 3. The best rated working methods were the meetings with the coach as well as the functional analysis made by the coach with mean ratings of 3.43 to 3.59. The weekly wellbeing exercises and online feedback from the coach were also found useful with mean ratings of 3.16 and 3.04, respectively. The least popular working method was the ACT weekly diary with a mean rating of 2.07.

Repeated measures ANOVA was run to see if there were differences in the ratings of the working methods. Because Mauchly's test indicated a violation of the sphericity assumption, Hyunh-Feldt

corrected results are reported. There were significant differences between the ratings of different working methods ($F(5.18, 574.63) = 91.31$, $p < 0.001$).

Bonferroni corrected pairwise comparisons showed that the ratings of each meeting with the coach were significantly higher than the ratings of weekly well-being exercises, online feedback from coach and ACT weekly diary ($p < 0.05$). The rating of the functional analysis was also significantly higher than ratings of online feedback from the coach and ACT weekly diary ($p < 0.001$). The rating of ACT weekly diary was significantly lower than all the other working methods ($p < 0.001$).

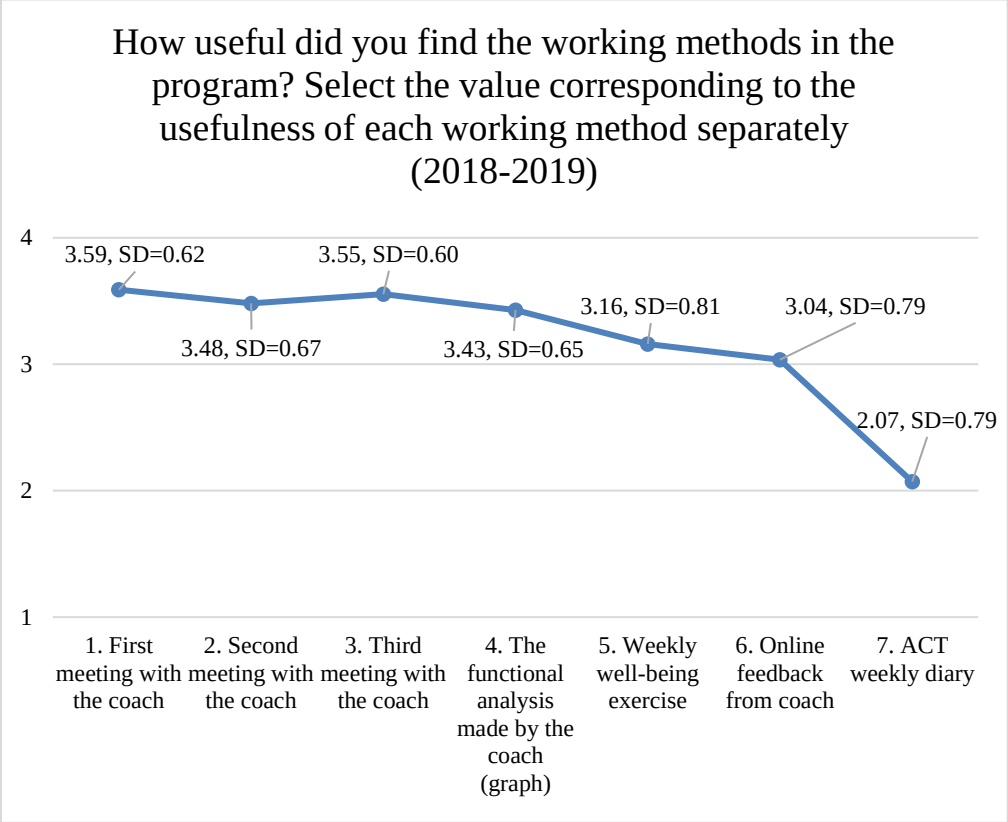


Figure 3. Usefulness of different working methods (2018 - 2019).

Different sections of the Student Compass website were rated on a scale of 1 = no benefit, 2 = some benefit, 3 = a lot of benefit and 4 = huge amount of benefit. The mean ratings and standard deviations can be seen in Figure 4. The mean ratings range from 2.27 (case studies) to 3.30 (1. THEME: clarifying values).

Repeated measures ANOVA was run to see if the ratings of different sections differed significantly. Because Mauchly's test indicated a violation of the sphericity assumption, Hyunh-Feldt

corrected results are reported. There were significant differences between the ratings of different sections ($F(8.10, 1189.97) = 35.09$, $p < 0.001$).

Bonferroni corrected pairwise comparisons show there were no significant differences in the ratings of the five ACT themes ($p > 0.05$), indicating that they were found equally beneficial. When it comes to the form of exercises, audio recordings were found to be significantly more beneficial compared to text ($p > 0.005$). Case studies and videos were rated the least beneficial sections of the Student Compass, sections 1 - 8 having significantly better ratings ($p < 0.001$).

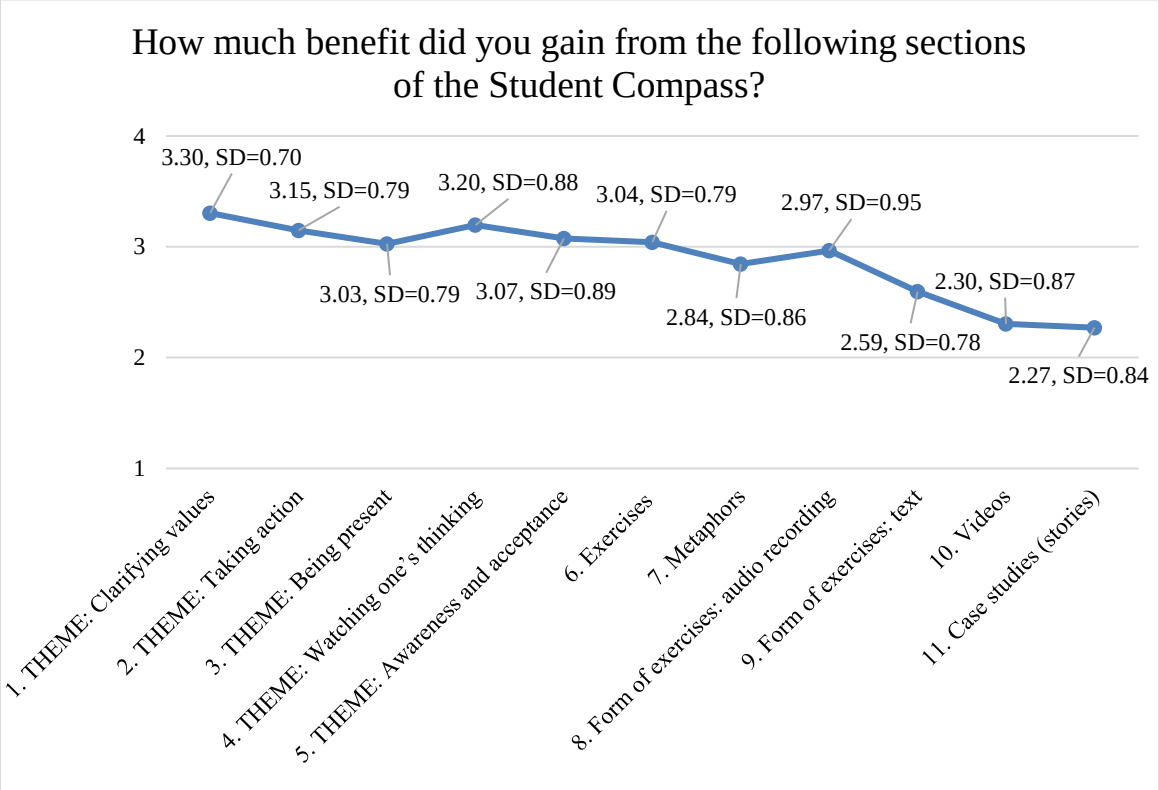


Figure 4. Benefit gained from different sections of the Student Compass.

3.2.5 Experienced benefits

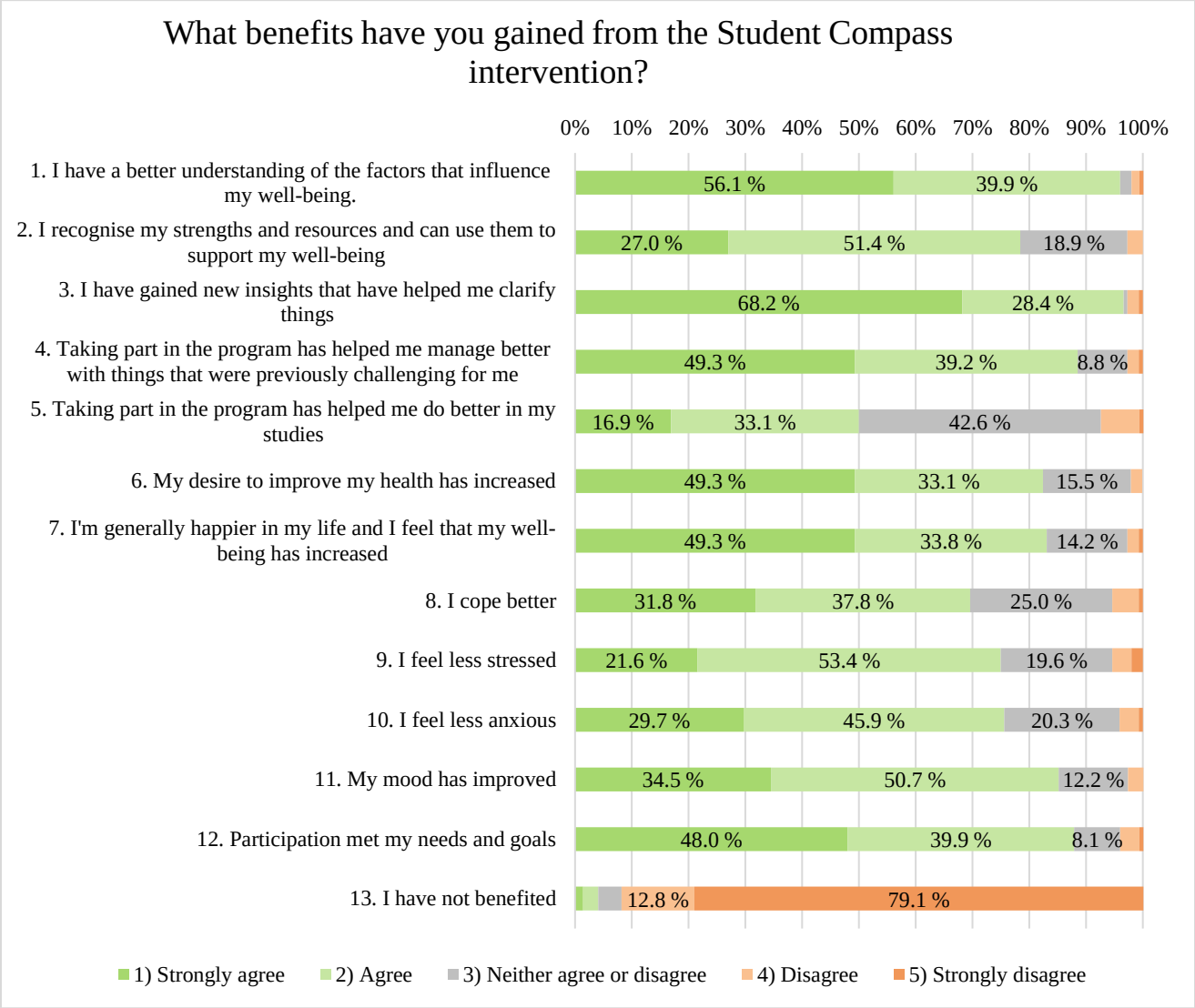
The distribution of responses regarding benefits gained from the program is represented in Table 5. More than 90% agreed that they have a better understanding of factors that influence their wellbeing and that they have gained new insights that have helped them clarify issues. Benefit was also clear regarding experienced stress, anxiety, mood, and wellbeing with more than 70% agreeing they experienced

improvements in these aspects. Least benefit was experienced in doing better in studies; 50% were undecided or disagreed with the statement. However, only 4.1% agreed they experienced no benefit from the program.

Repeated measures ANOVA was run to see if there were significant differences in the responses to the sub-questions. Because Mauchly's test indicated a violation of the sphericity assumption, Greenhouse-Geisser corrected results are reported. There were significant differences between the sub-questions ($F(7.45, 1095.11) = 232.02$, $p < 0.001$).

Bonferroni corrected pairwise comparisons show there was a significant difference between sub-question 5 (mean = 2.41, SD = 0.87) and all the other sub-questions ($p < 0.05$), indicating that significantly less benefit was experienced in terms of doing better in studies as compared to all the other questions on benefit. There was also a significant difference between sub-question 3 (mean = 1.39, SD = 0.68) and the other sub-questions, except sub-question 1 ($p < 0.05$), indicating that gaining new insight was rated better than the other forms of benefit. Sub question 1 (mean = 1.51, SD = 0.68) differed significantly from sub-questions 2, 5, 8, 9, 10, 11, and 13, indicating that having a better understanding of factors influencing well-being was also rated better than the other forms of benefit.

Table 5. Benefits gained from the Student Compass intervention.

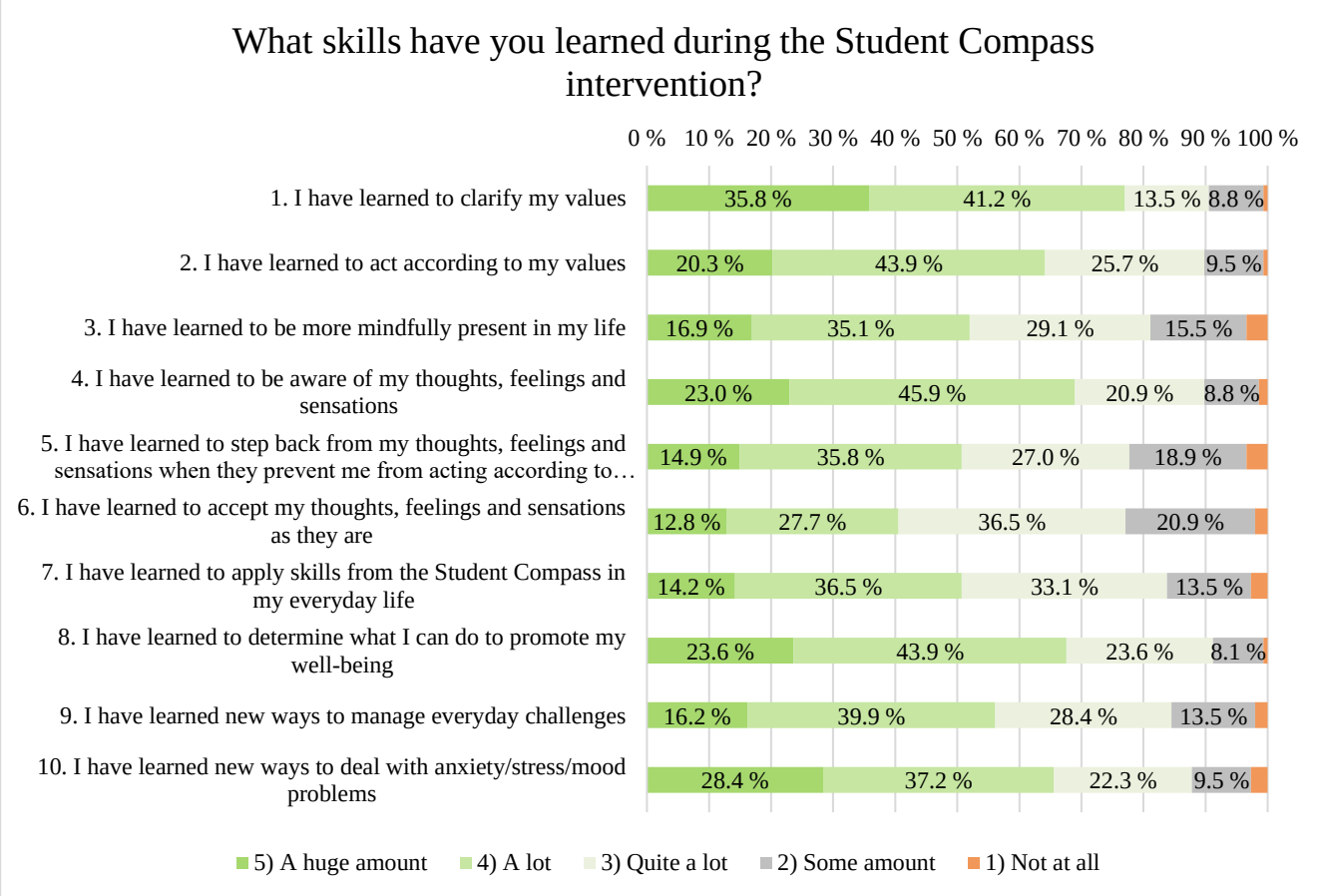


When it comes to skills learned through the program, more than 70% of the participants report learning at least quite a lot in all the aspects inquired (see Table 6). 90% or more of the participants felt having learned (at least quite a lot) to clarify their values, to be aware of thoughts, feelings, and sensations and to determine what they can do to promote their wellbeing. More than 70% felt they had learned (at least quite a lot) to step back from their inner experience and accept it as it is. More than 80% felt they had learned (at least quite a lot of) new ways to manage everyday challenges as well as anxiety, stress, and mood problems. 83.6% thought they had learned (at least quite a lot) to apply skills from the program in their everyday lives.

Repeated measures ANOVA was run to see if there were significant differences between the responses to the sub-question. Because Mauchly's test indicated a violation of the sphericity assumption, Greenhouse-Geisser corrected results are reported. There were significant differences between the sub-questions ($F(6.33, 930.76) = 16.12$, $p < 0.001$).

Sub-question 1 (I have learned to clarify my values) had the highest mean (mean = 4.03, SD = 0.95) and Bonferroni corrected pairwise comparisons show it was rated significantly higher than sub questions 2, 3, 5, 6, 7 and 9 ($p < 0.005$). Sub-question 6 (I have learned to accept my thoughts, feelings, and sensations as they are) had the lowest mean of all the sub questions (mean = 3.28, SD = 1.00), and there was a significant difference with sub-questions 1, 2, 4, 8, 9 and 10 ($p < 0.05$).

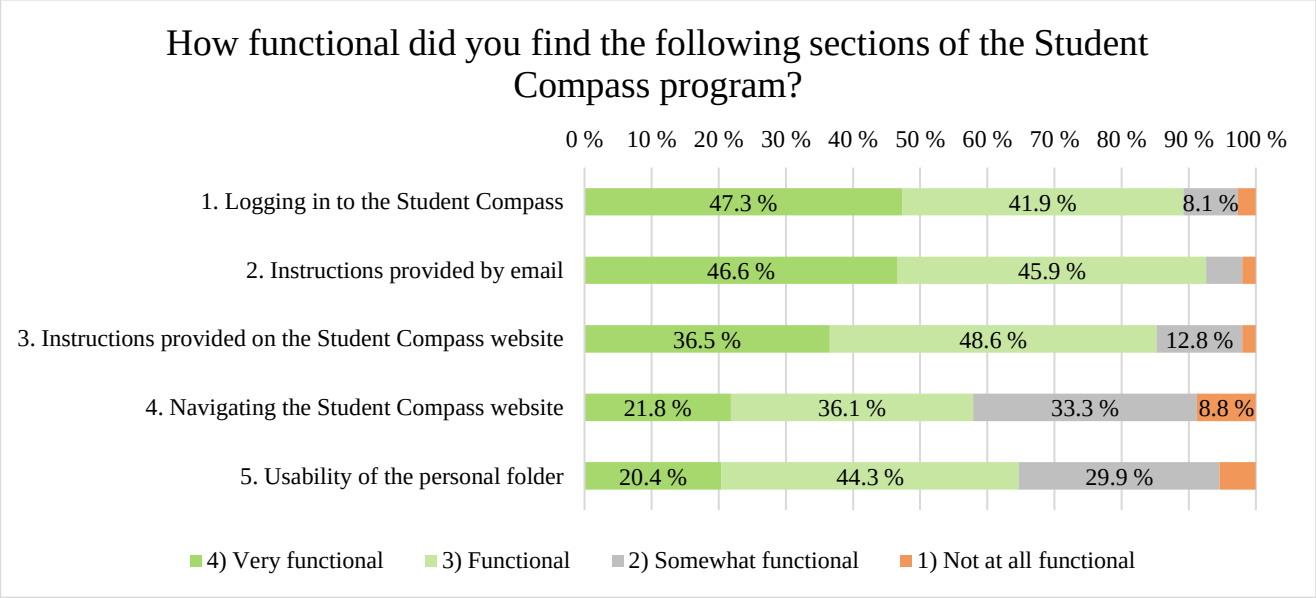
Table 6. Skills learned during the Student Compass intervention.



3.2.6 Technical functionality

The participants were mostly happy with the functionality regarding logging into the website and receiving instructions (see Table 7). However, navigating the website and usability of the personal folder (used for completion of homework) were thought to be less functional.

Table 7. Technical functionality of the Student Compass program.



3.3 Experiences depending on anxiety level

The formation of the anxiety groups based on GAD-7 scores was as follows: 27.7% (n = 41) in minimal anxiety-group, 43.9% (n = 65) in mild anxiety-group and 28.4% (n = 42) in moderate to severe anxiety-group. There were no significant differences between the anxiety groups for any of the questions explored, indicating that the participant experiences were not different depending on the anxiety level of the student.

4 DISCUSSION

The first aim of this study was to explore the participant experiences of the Student Compass intervention. The second aim was to find out whether the participant experiences were different depending on the anxiety level of the student.

The results show that the vast majority of the students were satisfied with the intervention and almost all of them would recommend it to their friends. The students most commonly spent one to two hours on the program per week. Most students thought the amount of contact with the coach was sufficient and felt they would not have completed the program without coach support. Moreover, meetings with the coach were found to be the most useful working method, along with the functional analysis made by the coach. ACT-weekly diary was seen as the least useful. When it comes to different sections of the program, the five themes were found to be equally beneficial. Audio recordings of exercises were found to be more beneficial than the text versions. When it comes to benefits gained from the program, very few participants experienced no benefit. Gaining new insight and having a better understanding of factors influencing their wellbeing were thought to be the greatest benefits. Benefit was also clear regarding experienced stress, anxiety, mood, and wellbeing, most students agreeing they experienced improvements in these aspects. Least benefit was experienced in terms of doing better in studies, half the students being undecided or not agreeing with the statement. Regarding new skills learned, clarifying values was rated the highest, although the other skills such as learning to be aware of thoughts, feelings, and sensations were also rated high. Learning to accept thoughts, feelings, and sensations as they are, was rated the lowest, although most students thought they had learned it at least quite a lot. Moreover, most agreed they had learned to apply these skills in their everyday lives. Some students felt navigating on the Student Compass website and completing homework on the website was not optimally functional. 11.9% (20 students) dropped out during the program. As they did not complete the Feedback form, they were not included in the analysis. Completer and dropouts did not differ in sex or anxiety levels, but the dropouts were older than the completers. Contrary to the hypothesis, the experiences did not differ depending on the anxiety level of the student.

In the students' experience, having a coach promoted adherence, which is in line with reports from previous literature (Gega et al., 2011; Gerhards et al., 2011). The students were also generally satisfied with coach support, despite the coaches being psychology masters' students, not therapists. This

endorses the view that support in online interventions can be delivered by non-therapists (Andersson & Titov, 2014). Moreover, face-to-face meetings with the coach were found to be the most useful working method of the intervention. Most participants agreed that they received new perspectives from their coach, the support was individual, talking about their issues felt safe, and they felt heard. According to previous research, consultations with a support person help explain the relevance of generic online content, and provide a space for sharing thoughts and feelings, as well as for receiving feedback and advice and encouraging completion of homework (Gegea et al., 2011; Lillevoll et al., 2013). This could help explain its crucial role also in this intervention. This also echoes the work of Lappalainen et al. (2013), who found that personal feedback and advice were perceived to be the most useful components of an ACT intervention.

Previous research has shown that participants see online interventions as a source of knowledge and learning (Gerhards et al., 2011; Lillevoll et al., 2013) and student populations benefit from online interventions through gaining insight into their problems (Mitchell & Dunn, 2007). This was also the case with the current study, as students thought that gaining new insight and having a better understanding of factors influencing wellbeing were the biggest benefits of the program. In addition, students thought that clarifying their values was the skill they had learned the best. This is in line with previous literature as learning to clarify values seems to be one of the biggest perceived benefits in ACT-based online interventions (Köhle et al., 2017, Lappalainen et al., 2015).

It was postulated that because of the active role participants play in online interventions, more severe mental health problems could lead to a greater need for support and negatively affect the experience (Christensen et al., 2009; Lappalainen et al., 2015). This was statistically explored in terms of satisfaction with the program, satisfaction with and sufficiency of coach support, experienced benefits, and learned skills. Pre-intervention anxiety levels between completers and dropouts were also compared, with no significant differences. Contrary to the hypothesis, the experiences did not differ depending on the anxiety level of the student, challenging the notion that more severe psychological problems are a barrier to online interventions. However, the case could have been different regarding depression, as previous qualitative research suggests that severely depressed individuals experience a higher need for support, distress and lack of strength making it difficult to pursue online interventions (Holst et al., 2017; Lappalainen et al., 2015). It should also be noted that this intervention included a fair amount of human support, with three face-to-face meetings and online feedback. This is more than for example

Lappalainen et al. (2015) had in their study, where the support consisted only of online feedback. Differences in experiences could have emerged had the support been more minimal.

The current study used questionnaire methods to explore student experiences of an online intervention. It adds to the body of research on student populations and ACT-based online interventions, neither of which have been much studied. Previously, more in-depth qualitative methods have been recommended for such studies (Waller and Gilbody, 2009), and interviewing seems to be the method of choice in this area of research. Using questionnaire data could have led to more restricted, more pre-determined and less in-depth results than interview data. However, for the purposes of the current study, it enabled reporting numerical data and using statistical methods to study the relationship between problem severity and participant experiences. Some limitations of the current study are the overrepresentation of women in the sample, as well as the sample size. Not detecting differences between anxiety groups could be explained by the insufficient number of people in the higher anxiety groups. In addition, the participants were self-referred, which according to previous research can lead to increased reporting of satisfaction with online interventions (Mataix-Cols et al., 2006). Furthermore, drop-outs were not included in the analysis, which is a common shortfall in this area of research (Lillevoll et al., 2013). The acceptability of online interventions is lower than that of traditional therapy if measured by drop-out rates (Cuijpers et al., 2019), so the inclusion of non-completers in the analysis of experiences can be considered especially important, and the lack thereof a major limitation of this study.

The current study offers valuable practical information for people working with online interventions and students, and more specifically for the developers of the Student Compass. A supported online ACT intervention seems to be suitable for treating self-referred students, with high satisfaction rates among this population. It seems that the intervention is well-received even among students with high anxiety, making it a plausible support option for example for people queuing to mental health services. Inclusion of human support is important for students, and it can be delivered by student-coaches. This study also informs future tailoring of the Student Compass, offering insight on the usefulness of the different aspects of the program. As coach support was perceived as the most useful working method, the role of the unsupported Student Compass program needs to be further explored. Focusing on exercises in audio instead of text form seems worthwhile and dropping the ACT-weekly diary from the intervention should be considered. Some technical aspects regarding navigation on the Student Compass website need to be addressed.

The effect of problem severity on the experiences of online interventions needs to be studied further to determine if there are populations that are less likely to have good experiences or need a greater amount of support. The effect of anxiety needs to be studied with a bigger sample, and depression needs to be included as a problem severity measure. Studying online interventions offering less support could also provide more insight into this matter. When it comes to the student experiences of ACT-based online interventions, interview data needs to be included to allow for deeper and less restricted analysis. Future research should also attempt to include interview or questionnaire data from dropouts to explore reasons for non-adherence. Finally, the students in the current study experienced least benefit in terms of doing better in studies, which should be further explored with qualitative methods.

To sum up, psychological problems are a serious and increasing health threat to university students. Providing low-cost, easy-access support early on is critical, towards which online interventions present a promising means. The student experiences of a supported online intervention reported here are highly encouraging and demonstrate that high anxiety is not a barrier, at least when the amount of support is moderate. While more research is warranted, the mandate from students for making supported online interventions more widely available is strong.

5 REFERENCES

Ahtinen, A., Mattila, E., Välkkynen, P., Kaipainen, K., Vanhala, T., Ermes, M., ... & Lappalainen, R. (2013). Mobile mental wellness training for stress management: feasibility and design implications based on a one-month field study. *JMIR mHealth and uHealth*, *1*(2), e11.

Amstadter, A. B., Broman-Fulks, J., Zinzow, H., Ruggiero, K. J., & Cercone, J. (2009). Internet-based interventions for traumatic stress-related mental health problems: a review and suggestion for future research. *Clinical psychology review*, *29*(5), 410-420.

Andersson, G. (2009). Using the Internet to provide cognitive behaviour therapy. *Behaviour research and therapy*, *47*(3), 175-180.

Andersson, G., Carlbring, P., Berger, T., Almlöv, J., & Cuijpers, P. (2009). What makes internet therapy work?. *Cognitive behaviour therapy*, *38*(S1), 55-60.

Andersson, G., & Cuijpers, P. (2009). Internet-based and other computerized psychological treatments for adult depression: a meta-analysis. *Cognitive behaviour therapy*, *38*(4), 196-205.

Andersson, G., Cuijpers, P., Carlbring, P., Riper, H., & Hedman, E. (2014). Guided Internet-based vs. face-to-face cognitive behavior therapy for psychiatric and somatic disorders: a systematic review and meta-analysis. *World Psychiatry*, *13*(3), 288-295.

Andersson, G., & Titov, N. (2014). Advantages and limitations of Internet-based interventions for common mental disorders. *World Psychiatry*, *13*(1), 4-11.

Andrews, G., Cuijpers, P., Craske, M. G., McEvoy, P., & Titov, N. (2010). Computer therapy for the anxiety and depressive disorders is effective, acceptable and practical health care: a meta-analysis. *PloS one*, *5*(10), e13196.

Bayram, N., & Bilgel, N. (2008). The prevalence and socio-demographic correlations of depression, anxiety and stress among a group of university students. *Social psychiatry and psychiatric epidemiology*, *43*(8), 667-672.

Beattie, A., Shaw, A., Kaur, S., & Kessler, D. (2009). Primary-care patients' expectations and experiences of online cognitive behavioural therapy for depression: a qualitative study. *Health Expectations*, *12*(1), 45-59.

Beck, J. S., & Beck, A. T. (2011). Cognitive behavior therapy. *New York: Basics and beyond. Guilford Publication*.

Bendelin, N., Björkdahl, P., Risell, M., Nelson, K. Z., Gerdle, B., Andersson, G., & Buhrman, M. (2020). Patients' experiences of internet-based Acceptance and commitment therapy for chronic pain: a qualitative study. *BMC musculoskeletal disorders*, *21*, 1-12.

Bendelin, N., Hesser, H., Dahl, J., Carlbring, P., Nelson, K. Z., & Andersson, G. (2011). Experiences of guided Internet-based cognitive-behavioural treatment for depression: a qualitative study. *BMC psychiatry*, *11*(1), 1-10.

Brown, M., Glendenning, A. C., Hoon, A. E., & John, A. (2016). Effectiveness of web-delivered acceptance and commitment therapy in relation to mental health and well-being: a systematic review and meta-analysis. *Journal of Medical Internet Research*, *18*(8), e221.

Carlbring, P., Nordgren, L. B., Furmark, T., & Andersson, G. (2009). Long-term outcome of internet-delivered cognitive–behavioural therapy for social phobia: A 30-month follow-up. *Behaviour research and therapy*, *47*(10), 848-850.

Chambers, D. A., Haim, A., Mullican, C. A., & Stirratt, M. (2013). Health information technology and mental health services research: a path forward. General hospital psychiatry, 4(35), 329-331.

Chiauzzi, E., Brevard, J., Thurn, C., Decembrele, S., & Lord, S. (2008). MyStudentBody–Stress: An online stress management intervention for college students. *Journal of health communication*, *13*(6), 555-572.

Christ, C., Schouten, M. J., Blankers, M., van Schaik, D. J., Beekman, A. T., Wisman, M. A., ... & Dekker, J. J. (2020). Internet and computer-based cognitive behavioral therapy for anxiety and depression in adolescents and young adults: Systematic review and meta-analysis. *Journal of medical Internet research*, *22*(9), e17831.

Christensen, H., Griffiths, K. M., & Farrer, L. (2009). Adherence in internet interventions for anxiety and depression: systematic review. *Journal of medical Internet research*, *11*(2), e13.

Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling*, *34*(4), 505-517.

Cuijpers, P., Donker, T., van Straten, A., Li, J., & Andersson, G. (2010). Is guided self-help as effective as face-to-face psychotherapy for depression and anxiety disorders? A systematic review and meta-analysis of comparative outcome studies. *Psychological medicine*, *40*(12), 1943-1957.

Cuijpers, P., Noma, H., Karyotaki, E., Cipriani, A., & Furukawa, T. A. (2019). Effectiveness and acceptability of cognitive behavior therapy delivery formats in adults with depression: a network meta-analysis. *JAMA psychiatry*, *76*(7), 700-707.

Davies, E. B., Morriss, R., & Glazebrook, C. (2014). Computer-delivered and web-based interventions to improve depression, anxiety, and psychological well-being of university students: a systematic review and meta-analysis. *Journal of medical Internet research*, *16*(5), e130.

Dear, B. F., Johnson, B., Singh, A., Wilkes, B., Brkic, T., Gupta, R., ... & Titov, N. (2019). Examining an internet-delivered intervention for anxiety and depression when delivered as a part of routine care for university students: A phase IV trial. *Journal of affective disorders*, *256*, 567-577.

Ebert, D. D., Zarski, A. C., Christensen, H., Stikkelbroek, Y., Cuijpers, P., Berking, M., & Riper, H. (2015). Internet and computer-based cognitive behavioral therapy for anxiety and depression in youth: a meta-analysis of randomized controlled outcome trials. *PloS one*, *10*(3), e0119895.

Eisenberg, D., Golberstein, E., & Gollust, S. E. (2007). Help-seeking and access to mental health care in a university student population. *Medical care*, 594-601.

Fernández-Álvarez, J., Díaz-García, A., González-Robles, A., Baños, R., García-Palacios, A., & Botella, C. (2017). Dropping out of a transdiagnostic online intervention: A qualitative analysis of client's experiences. *Internet interventions*, *10*, 29-38.

Field, T. A., Beeson, E. T., & Jones, L. K. (2015). The new ABCs: A practitioner's guide to neuroscience-informed cognitive-behavior therapy. *Journal of Mental Health Counseling*, *37*(3), 206-220.

Gallagher, R. (2007). National Survey of Counseling Center Directors, 2006. Monograph Series No. 8P. International Association of Counseling Services, Inc.

Gega, L., Smith, J., & Reynolds, S. (2013). Cognitive behaviour therapy (CBT) for depression by computer vs. therapist: patient experiences and therapeutic processes. *Psychotherapy Research*, *23*(2), 218-231.

Gerhards, S. A. H., Abma, T. A., Arntz, A., De Graaf, L. E., Evers, S. M. A. A., Huibers, M. J. H., & Widdershoven, G. A. M. (2011). Improving adherence and effectiveness of computerised cognitive behavioural therapy without support for depression: a qualitative study on patient experiences. *Journal of affective disorders*, *129*(1-3), 117-125.

Goodwin, J., Behan, L., Kelly, P., McCarthy, K., & Horgan, A. (2016). Help-seeking behaviors and mental well-being of first year undergraduate university students. *Psychiatry research*, *246*, 129-135.

Grist, R., & Cavanagh, K. (2013). Computerised cognitive behavioural therapy for common mental health disorders, what works, for whom under what circumstances? A systematic review and meta-analysis. *Journal of Contemporary Psychotherapy*, *43*(4), 243-251.

Gulliver, A., Bennett, K., Bennett, A., Farrer, L. M., Reynolds, J., & Griffiths, K. M. (2015). Privacy issues in the development of a virtual mental health clinic for university students: a qualitative study. *JMIR mental health*, *2*(1), e9.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior therapy*, *35*(4), 639-665.

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

Haynes, S. N., & O'Brien, W. H. (1990). Functional analysis in behavior therapy. *Clinical Psychology Review*, *10*(6), 649-668.

Holst, A., Nejati, S., Björkelund, C., Eriksson, M. C., Hange, D., Kivi, M., ... & Petersson, E. L. (2017). Patients' experiences of a computerised self-help program for treating depression–a qualitative study of Internet mediated cognitive behavioural therapy in primary care. *Scandinavian journal of primary health care*, *35*(1), 46-53.

Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of psychiatric research*, *47*(3), 391-400.

Johansson, R., & Andersson, G. (2012). Internet-based psychological treatments for depression. *Expert review of neurotherapeutics*, *12*(7), 861-870.

Johansson, O., Michel, T., Andersson, G., & Paxling, B. (2015). Experiences of non-adherence to internet-delivered cognitive behavior therapy: a qualitative study. *Internet Interventions*, *2*(2), 137-142.

Judd, L. L., Kessler, R. C., PauIus, M. P., Zeller, P. V., Wittchen, H. U., & Kunovac, J. L. (1998). Comorbidity as a fundamental feature of generalized anxiety disorders: results from the National Comorbidity Study (NCS). *Acta Psychiatrica Scandinavica*, *98*, 6-11.

Kelson, J. N., Lam, M. K., Keep, M., & Campbell, A. J. (2017). Development and evaluation of an online acceptance and commitment therapy program for anxiety: phase I iterative design. *Journal of Technology in Human Services*, *35*(2), 135-151.

Kitzrow, M. A. (2003). The mental health needs of today's college students: Challenges and recommendations. *Journal of Student Affairs Research and Practice*, *41*(1), 167-181.

Knowles, S. E., Lovell, K., Bower, P., Gilbody, S., Littlewood, E., & Lester, H. (2015). Patient experience of computerised therapy for depression in primary care. *BMJ open*, *5*(11).

Knowles, S. E., Toms, G., Sanders, C., Bee, P., Lovell, K., Rennick-Egglestone, S., ... & Bower, P. (2014). Qualitative meta-synthesis of user experience of computerised therapy for depression and anxiety. *PLoS one*, *9*(1), e84323.

Kroenke, K., Spitzer, R. L., Williams, J. B., Monahan, P. O., & Löwe, B. (2007). Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Annals of internal medicine*, *146*(5), 317-325.

Krumrei, E. J., Newton, F. B., & Kim, E. (2010). A multi-institution look at college students seeking counseling: Nature and severity of concerns. *Journal of College Student Psychotherapy*, *24*(4), 261-283.

Kunttu, K., Pesonen, T., & Saari, J. (2017). Korkeakouluopiskelijoiden terveystutkimus 2016. Ylioppilaiden terveydenhoitosäätiö.

Köhle, N., Drossaert, C. H., Jaran, J., Schreurs, K. M., Verdonck-de Leeuw, I. M., & Bohlmeijer, E. T. (2017). User-experiences with a web-based self-help intervention for partners of cancer patients based on acceptance and commitment therapy and self-compassion: a qualitative study. *BMC Public Health*, *17*(1), 1-16.

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

Lappalainen, P., Kaipainen, K., Lappalainen, R., Hoffrén, H., Myllymäki, T., Kinnunen, M. L., ... & Korhonen, I. (2013). Feasibility of a personal health technology-based psychological intervention for men with stress and mood problems: randomized controlled pilot trial. *JMIR Research Protocols*, *2*(1), e1.

Lappalainen, P., Langrial, S., Oinas-Kukkonen, H., Tolvanen, A., & Lappalainen, R. (2015). Web-based acceptance and commitment therapy for depressive symptoms with minimal support: a randomized controlled trial. *Behavior modification*, *39*(6), 805-834.

Levin, M. E., Haeger, J. A., Pierce, B. G., & Twohig, M. P. (2017). Web-based acceptance and commitment therapy for mental health problems in college students: A randomized controlled trial. *Behavior Modification, 41*(1), 141-162.

Levin, M. E., Hayes, S. C., Pistorello, J., & Seeley, J. R. (2016). Web-based self-help for preventing mental health problems in universities: Comparing acceptance and commitment training to mental health education. *Journal of clinical psychology*, *72*(3), 207-225.

Levin, M. E., Pistorello, J., Seeley, J. R., & Hayes, S. C. (2014). Feasibility of a prototype web-based acceptance and commitment therapy prevention program for college students. *Journal of American College Health*, *62*(1), 20-30.

Levin, M. E., Pistorello, J., Hayes, S. C., Seeley, J. R., & Levin, C. (2015). Feasibility of an acceptance and commitment therapy adjunctive web-based program for counseling centers. *Journal of Counseling Psychology*, *62*(3), 529.

Lillevoll, K. R., Wilhelmsen, M., Kolstrup, N., Høifødt, R. S., Eisemann, M., & Risør, M. B. (2013). Patients' experiences of helpfulness in guided internet-based treatment for depression: qualitative study of integrated therapeutic dimensions. *Journal of Medical Internet Research*, *15*(6), e126.

Mataix-Cols, D., Cameron, R., Gega, L., Kenwright, M., & Marks, I. M. (2006). Effect of referral source on outcome with cognitive-behavior therapy self-help. *Comprehensive Psychiatry*, *47*(4), 241-245.

McKinney, K. G. (2009). Initial evaluation of active minds: A student organization dedicated to reducing the stigma of mental illness. *Journal of college student psychotherapy*, *23*(4), 281-301.

Mitchell, N., & Dunn, K. (2007). Pragmatic evaluation of the viability of CCBT self-help for depression in higher education. *Counselling and Psychotherapy Research*, *7*(3), 144-150.

Mäenpää, M., & Peltola, K. (2018). Psykologisen joustamattomuuden, tietoisuustaitojen ja tehtyjen sanavalintojen yhteys opiskelijoiden kokemaan stressiin ja sen muutoksiin verkkovälitteisen hyvinvointiohjelman aikana.

Newby, J. M., Twomey, C., Li, S. S. Y., & Andrews, G. (2016). Transdiagnostic computerised cognitive behavioural therapy for depression and anxiety: a systematic review and meta-analysis. *Journal of Affective Disorders*, *199*, 30-41.

O'Connor, M., Munnelly, A., Whelan, R., & McHugh, L. (2018). The efficacy and acceptability of third-wave behavioral and cognitive eHealth treatments: A systematic review and meta-analysis of randomized controlled trials. *Behavior Therapy*, *49*(3), 459-475.

Palmqvist, B., Carlbring, P., & Andersson, G. (2007). Internet-delivered treatments with or without therapist input: does the therapist factor have implications for efficacy and cost?. *Expert review of pharmacoeconomics & outcomes research*, *7*(3), 291-297.

Perera-Delcourt, R. P., & Sharkey, G. (2019). Patient experience of supported computerized CBT in an inner-city IAPT service: a qualitative study. *Cognitive Behaviour Therapist*, *12*.

Regehr, C., Glancy, D., & Pitts, A. (2013). Interventions to reduce stress in university students: A review and meta-analysis. *Journal of affective disorders*, *148*(1), 1-11.

Richards, D, Murphy, T, Viganó, N, Timulak, L, Doherty, G, Sharry, J, Hayes, C (2016). Acceptability, satisfaction and perceived efficacy of 'Space from Depression', an internet-delivered treatment for depression. *Internet Interventions* 5, 12–22.

Richards, D., & Richardson, T. (2012). Computer-based psychological treatments for depression: a systematic review and meta-analysis. *Clinical psychology review*, *32*(4), 329-342.

Richards, D., & Timulak, L. (2012). Client-identified helpful and hindering events in therapist-delivered vs. self-administered online cognitive-behavioural treatments for depression in college students. *Counselling Psychology Quarterly*, *25*(3), 251-262.

Richards, D., & Timulak, L. (2013). Satisfaction with therapist-delivered vs. self-administered online cognitive behavioural treatments for depression symptoms in college students. *British Journal of Guidance & Counselling*, *41*(2), 193-207.

Robinson, E., Titov, N., Andrews, G., McIntyre, K., Schwencke, G., & Solley, K. (2010). Internet treatment for generalized anxiety disorder: a randomized controlled trial comparing clinician vs. technician assistance. *PloS one*, *5*(6), e10942.

Rost, T., Stein, J., Löbner, M., Kersting, A., Luck-Sikorski, C., & Riedel-Heller, S. G. (2017). User acceptance of computerized cognitive behavioral therapy for depression: systematic review. *Journal of medical Internet research*, *19*(9), e309.

Räsänen, P., Lappalainen, P., Muotka, J., Tolvanen, A., & Lappalainen, R. (2016). An online guided ACT intervention for enhancing the psychological wellbeing of university students: A randomized controlled clinical trial. *Behaviour research and therapy*, *78*, 30-42.

Spek, V., Cuijpers, P. I. M., Nyklícek, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: a meta-analysis. *Psychological medicine*, *37*(3), 319-328.

Spijkerman, M. P. J., Pots, W. T. M., & Bohlmeijer, E. T. (2016). Effectiveness of online mindfulness-based interventions in improving mental health: A review and meta-analysis of randomised controlled trials. *Clinical psychology review*, *45*, 102-114.

Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*, *166*(10), 1092-1097.

Stallman, H. M. (2010). Psychological distress in university students: A comparison with general population data. *Australian Psychologist*, *45*(4), 249-257.

Titov, N., Andrews, G., Davies, M., McIntyre, K., Robinson, E., & Solley, K. (2010). Internet treatment for depression: a randomized controlled trial comparing clinician vs. technician assistance. PloS one, 5(6), e10939.

Titov, N., Andrews, G., & Sachdev, P. (2010). Computer-delivered cognitive behavioural therapy: effective and getting ready for dissemination. *F1000 medicine reports*, *2*.

Twohig, M. P. (2012). Acceptance and commitment therapy: Introduction.

Tyrer, P., & Baldwin, D. (2006). Generalised anxiety disorder. *The Lancet*, *368*(9553), 2156-2166.

Van Ballegooijen, W., Cuijpers, P., Van Straten, A., Karyotaki, E., Andersson, G., Smit, J. H., & Riper, H. (2014). Adherence to Internet-based and face-to-face cognitive behavioural therapy for depression: a meta-analysis. *PloS one*, *9*(7), e100674.

Villa, T. (2016). Katsaus opiskelijabarometrin 2014 tuloksiin: Sosiaalinen hyvinvointi ja terveys. Teoksessa T. Villa (toim.) Opiskelijabarometri 2014. Katsaus korkeakouluopiskelijoiden opintoihin, arkeen ja hyvinvointiin.

Viskovich, S., & Pakenham, K. I. (2018). Pilot evaluation of a web-based acceptance and commitment therapy program to promote mental health skills in university students. *Journal of Clinical Psychology*, *74*(12), 2047-2069.

Waller, R., & Gilbody, S. (2009). Barriers to the uptake of computerized cognitive behavioural therapy: a systematic review of the quantitative and qualitative evidence. *Psychological medicine*, *39*(5), 705.

Wilhelmsen, M., Lillevoll, K., Risør, M. B., Høifødt, R., Johansen, M. L., Eisemann, M., & Kolstrup, N. (2013). Motivation to persist with internet-based cognitive behavioural treatment using blended care: a qualitative study. *BMC psychiatry*, *13*(1), 1-9.

Wright, J. H., Owen, J. J., Richards, D., Eells, T. D., Richardson, T., Brown, G. K., ... & Thase, M. E. (2019). Computer-assisted cognitive-behavior therapy for depression: a systematic review and meta-analysis. *The Journal of clinical psychiatry*, *80*(2), 0-0.

Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of affective disorders*, *117*(3), 180-185.

6 APPENDICES

Appendix A

Feedback form

Question	Response option
1. How much time did you spend on Student Compass on average per week?	0-30 min 30-60 min 1:00-1:30 hours 1:30-2:00 hours 2:00-2:30 hours 2:30-3:00 hours 3:00-3:30 hours 3:30-4:00 hours More than 4 hours
2. How satisfied are you with the Student Compass intervention?	1) Extremely satisfied 2) Satisfied 3) Somewhat satisfied 4) Somewhat unsatisfied 5) Unsatisfied 6) Extremely unsatisfied
3. Would you recommend Student Compass to others?	Yes/No
4. How did you experience the amount of contact with the coach?	1) Too little 2) Suitable 3) Too much
5. Coach support. How did you feel about the relationship with your coach during the program? 1. The support I received from my coach was individual 2. It felt safe to talk to my coach about my issues 3. I got new perspectives from my coach that have helped me figure things out 4. I felt heard 5. My wellness coach was knowledgeable and was able to help me 6. The working habits of my coach were suitable for me 7. Our collaboration with my coach worked well 8. I would not have completed the Student Compass program without the support of my coach	1) Strongly agree 2) Agree 3) Neither agree or disagree 4) Disagree 5) Strongly disagree
6. How useful did you find the working methods in the program? 1. First meeting with the coach 2. Second meeting with the coach 3. Third meeting with the coach 4. The functional analysis made by the coach (graph) 5. Weekly well-being exercise 6. Coach feedback online 7. ACT weekly diary	2017: 1) Not useful 2) Somewhat useful 3) Quite useful 4) Useful 5) Very useful 2018-2019: 1) Not useful 2) Somewhat useful 3) Useful 4) Very useful
7. How much benefit did you gain from the following sections of Student Compass? 1. THEME: Clarifying values 2. THEME: Taking action	1) No benefit 2) Some benefit 3) A lot of benefit 4) A huge amount of benefit

3. THEME: Being present
4. THEME: Watching one's thinking
5. THEME: Awareness and acceptance
6. Exercises
7. Metaphors
8. Form of exercises: audio recording
9. Form of exercises: text
10. Videos
11. Case studies (stories)

8. What benefits have you gained from the Student Compass intervention? (13 sub-questions)

1) Strongly agree
2) Agree
3) Neither agree or disagree
4) Disagree
5) Strongly disagree

1. I have a better understanding of the factors that influence my well-being.
2. I recognise my strengths and resources and can use them to support my well-being
3. I have gained new insights that have helped me clarify things
4. Taking part in the program has helped me manage better with things that were previously challenging for me
5. Taking part in the program has helped me do better in my studies
6. My desire to improve my health has increased
7. I'm generally happier in my life and I feel that my well-being has increased
8. I cope better
9. I feel less stressed
10. I feel less anxious
11. My mood has improved
12. Participation met my needs and goals
13. I do not feel that I have benefited

9. What skills have you learned during the Student Compass intervention?

1) Not at all
2) Some amount
3) Quite a lot
4) A lot
5) A huge amount

1. I have learned to clarify my values
2. I have learned to act according to my values
3. I have learned to be more mindfully present in my life
4. I have learned to be aware of my thoughts, feelings and sensations
5. I have learned to step back from my thoughts, feelings and sensations when they prevent me from acting according to my values
6. I have learned to accept my thoughts, feelings and sensations as they are
7. I have learned to apply skills from the Student Compass in my everyday life
8. I have learned to determine what I can do to promote my well-being
9. I have learned new ways to manage everyday challenges
10. I have learned new ways to deal with anxiety/stress/mood problems

10. How functional did you find the following sections of the Student Compass program?

1) Not at all functional
2) Somewhat functional
3) Functional
4) Very functional

1. Logging in to the Student Compass
2. Instructions provided by email
3. Instructions provided on the website
4. Navigating the Student Compass website
5. Usability of the personal folder

Appendix B

Usefulness of different working methods (2017).