Benefits of a Mindfulness and Compassion-Based Intervention for Students in Academia, a Pilot Study

Albin Hagberg Medin and André Lindberg
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Abstract. High stress levels are currently affecting a large portion of the Swedish student population, causing both physical and psychological problems. Previous research has shown that mindfulness and compassion based interventions have beneficial effects regarding stress related illnesses and the goal of this study was to explore the effects of a newly developed intervention based on mindfulness and compassion (MAC). 5 participants in the test group and 11 in the control group were recruited out of students actively seeking help for stress related illnesses. Their level of perceived stress, well-being and self-compassion was measured through established self-report scales. Significant reductions in stress levels and increases in well-being were found when compared to the active control group who were given standard treatment.

College students in the United States have reported increasingly higher rates of stress during the subsequent 10 years since the millennia (Pryor, Hurtado, DeAngelo, Palucki Blake, & Tra, 2010). In Sweden, this trend is not as big but reports from 2001 and 2013 points to high levels of stress for students at universities all over the country (Tjänstemännens Centralorganisation, 2001). In a national survey by Centrala Studiestödsnämnden (2011) Swedish students reported a variety of negative stress related health symptoms. 45 percent find it difficult to concentrate, 50 percent reports pain in back, neck and/or shoulders, 36 percent have trouble sleeping and 71 percent reports that they often feel stressed. As high levels of stress under long periods of time has been shown not only to increase the prevalence of these reported symptoms but a whole spectrum of adverse health effects such as decline of the immune system, high blood pressure, depression and chronic fatigue (Thoits, 2010; Lupien, McEwen, Gunnar & Heim, 2009), stress among college students is a major problem to deal with. Another set of reasons why it is relevant to find ways to assist students in dealing with stress are the cognitive effects of enduring high workload such as reduced working memory, concentration and problem-solving ability as well as reduced empathy and impoverished relationships (McEwen & Sapolsky, 2009). These are important factors both for academic performance and well-being and thus interventions that may dampen the stress levels of students would be of benefit. Mindfulness is one type of stress reducing intervention that has becoming increasingly popular in research the past ten years.

Mindfulness Interventions

In his book, Kabat-Zinn (1990) describes mindfulness as: “Paying attention in a particular way: on purpose, in the present moment, and non-judgmentally”. This description has become a cornerstone, used widely as a definition in the research of mindfulness. Developing this type of “mindful” attention has been shown to yield a wide spectrum of positive benefits, both psychological to physiological (Chiesa & Saretti, 2009; Fjorback, Arendt, Òmbol, Fink & Walach, 2011; Irving, Dobkin & Park, 2009). Examples on the former include reduction in stress, rumination and anxiety in a variety of studies on different
populations, while examples on the latter include positive changes in immune system function and reduced inflammatory response (Rosenkranz et al., 2013). There are also preliminary signs of changes on neurological level from mindfulness meditation. One study by Davidson (2003) showed that participants in a mindfulness intervention experienced an increase in positive affect and immune system function, which was correlated with a shift in frontal lobe activity. Another study by Farb, Segal and Anderson (2012) found changes in areas with relevance to interoceptive ability and social cognition. All of these effects have been found for participants in Mindfulness Based Stress Reduction courses (MBSR), which is a standardized 8 weeks mindfulness intervention. For students in health care, these interventions have proven to be effective in reducing the level of psychological distress that may occur when facing suffering in patients and clients on a daily basis, combined with high workloads in the academic environment (Shapiro, Astin, Bishop & Cordova, 2005; Shapiro, Oman, Thorensen, Plante & Flinders, 2008; Rosenzweig, Reibel, Greeson, Brainard & Hojat, 2003).

Improvement in cognition and executive function has been shown under considerably shorter time durations (Zeidan, Jonhnson, Daimond, David & Goolkaisan, 2010) as well as neurological changes due to neuroplasticity in various brain regions (Tang, Ma et al., 2009; Tang, Lu et al., 2010). Of special relevance to our study are novel studies showing how brief mindfulness training for college students increases their working memory capacity (Mrazek, Franklin, Phillips, Baird & Schooler, 2013) and knowledge retention during lectures (Ramsburg & Youmans, 2013). Thus, mindfulness interventions may benefit this population even when being compressed from the standardized 8 weeks format.

**Compassion Interventions and Self-Compassion**

Another evidence based intervention for reducing stress is through the cultivation of compassion. One broad description currently used for compassion in research is: “the recognition of and desire to alleviate suffering”. This translates to a conceptual understanding of compassion as having affective, cognitive and behavioral aspects. Novel studies has distinguished specific modes of posture, touch and vocalization associated with compassion. Its origins may be derived from evolutionary standpoints such as caregivers who respond to suffering among their peers create stronger bonds which increases survival and replication rates for both the individual and the group as a whole (Goetz, Keltner & Simon-Thomas, 2010).

To this date, three different interventions are found in the literature: i) Compassion Focused Therapy (CFT) (Gilbert, 2010a), ii) Compassion Cultivation Training (CCT) (Jazaieri, Jipa et al., 2012) and iii) Cognitive-based Compassion Training (CBCT) (Ozawa-de Silva & Dodson-Lavelle, 2011). Through discussions, theory and practice consisting of brief visualizations, participants in these interventions develops both their empathy and ability to respond compassionately towards others and oneself instead of hostility. An in depth explanation on the curriculum in CFT is found in a publication of Gilbert (2009) and the other interventions are described in their pilot studies. Interventions for cultivating compassion may have recently emerged in psychological research but the concept itself is older than a millennia. In religion, compassion has been of integral value in all of the major traditions including Christianity, Judaism, Islam, Hinduism, Sikhism and Buddhism (Balslev & Evers, 2010). In the ongoing scientific exploration of compassion, three different types of compassion are usually distinguished: i) possessing compassion for others, ii) receiving it from others and iii) having compassion for oneself, self-compassion (Jazaieri et al., 2013).

Of these three types, self-compassion is of major interest to our study. One definition of self-compassion is offered by Neff (2003a): “Self-compassion entails being kind and
understanding toward oneself in instances of pain or failure rather than being harshly self-critical; perceiving one's experiences as part of the larger human experience rather than seeing them as isolating; and holding painful thoughts and feelings in mindful awareness rather than over-identifying with them”.

Self-compassion as a trait has been made measurable through a questionnaire, and has been shown to predict a wide range of positive factors for wellbeing and health in the general population such as increased feelings of happiness, optimism and curiosity, to decreased anxiety, rumination, depression and fear of failure (Neff, 2003b). In the general population however, there is often a tendency to fear self-compassion because it might undermine one's motivation (Gilbert, McEwan, Matos & Rivas, 2011) A fear that is ungrounded in scientific results as these show how self-compassionate individuals are more likely to pursue their goals despite failing instead of being stuck in self-criticism and guilt (Neff, Kirkpatrick & Rude, 2007; Neff, Rude & Kirkpatrick, 2007b) and also tend to have mastery goals rather than performance goals (Neff, Dejitterat & Hsieh, 2005).

Self-compassion is also a valuable construct that in many cases may replace the difficult concept self-esteem, which correlates not only with well-being but also with narcissism and aggression (Neff, 2011; Neff & Vonk, 2009). From the definition it seems self-compassion and mindful attention are connected and this association has been examined in several studies, demonstrating that participants in MBSR courses increases their disposition for self-compassion during the course (Birnie, Speca & Carlson, 2010; Shapiro, Austin, Bishop & Cordova, 2005; Shapiro, Brown & Biegel, 2007). Preliminary results show that students may benefit from increasing their self-compassion. In a study by Leary, Tate, Adams, Batts-Allen and Hancock (2007), self-compassion was shown to buffer against negative self-feelings and emotions in several situations that students often find themselves in, such as distressing social events and when receiving ambivalent feedback.

By having self-compassion, instead of reacting with self-criticism and guilt over negative events such as failed exams and postponed work, students may easier respond with kindness and forgiveness to themselves which reduces stress levels (Gilbert, 2010b). Another issue for students in health care and counseling professions is the psychological distress caused by overwhelming suffering in others, empathic distress. Counterintuitive as it may seem, practice of compassion has been shown to actually reduce the risk of empathic burnout (Lolak, 2013). In the review of compassion meditation interventions by Hofmann, Grossman and Hinton (2011) the positive benefits of these practices are multifaceted, causing positive affect, reduced stress, enhanced activation in brain areas associated with emotional processing and empathy and improvement in immune system function.

**Mindfulness and Compassion Intervention**

As concluded in the first part of our introduction, stress related illnesses are negatively affecting a majority of Swedish college students and mindfulness and compassion based interventions could play a role in the improvement of health, well-being and thus the academic results of students as they progress with their studies. To this date, no educational programs in Gothenburg offer their students similar interventions within the regular curriculum. In our study, we aimed to explore how students would benefit from a novel intervention on mindfulness and compassion (MAC). It is a 5 weeks course based on theory and practice in mindfulness and compassion. The course is offered free of charge by the local student health organization as an alternative treatment to students with stress related illnesses who seek their help (Akademihälsan I Göteborg, 2013).
Purpose and hypotheses

As earlier mentioned there are several studies showing reductions in stress and increases in self-compassion from both mindfulness and compassion interventions. Thus we wanted to test these factors on this newly developed intervention. To our knowledge there are currently no studies published on the effects of either mindfulness or compassion based group interventions on Swedish college students, making this a valuable contribution to this field. Especially since this intervention combines practical and theoretical elements from both mindfulness and compassion, which is a novel approach to interventions not only in Sweden, but worldwide. Another area we wanted to explore was if the time duration for this particular intervention was sufficient for significant improvements to occur for the participants. Instead of the currently established time period of 8 weeks in similar existing interventions, the MAC course is compressed to 5 weeks which makes it more suitable in the highly pressured time schedule of college students.

As the participants in our study primarily sought help for stress related illnesses, the purpose of our first hypothesis is to examine the efficacy of the intervention on reducing stress.

Hypothesis 1: ‘Mindfulness and Compassion intervention decreases perceived stress levels.’

Previous research has shown indications of increased well-being from similar interventions (Shapiro, Astin, Bishop, & Cordova, 2005). Thus we wanted to investigate the potential effect on well-being from this intervention. Therefore, our second hypothesis is

Hypothesis 2: ‘Mindfulness and Compassion intervention increases satisfaction with life’

Lastly our third hypothesis intends to distinguish the effect of this intervention on the participants’ degree of self-compassion.

Hypothesis 3: ‘Mindfulness and Compassion intervention increases self-compassion’

Method

Study design

This study was a quasi-experiment with a test group and an active control group without randomized selection. The test group was subject to an intervention in the form of a 5-week course in mindfulness and compassion training and the control group received standard treatment consisting of an average of 2.5 meetings with a psychologist under 5 weeks. Both groups were measured in the initial week of the course and once more shortly after the completion of the last scheduled meeting of the course.

Participant selection

The sample groups consisted of individuals receiving treatment for health-related issues at a Swedish health care center called Akademihälsan who is specialized in helping students enrolled in programs or courses at the University of Gothenburg and Chalmers
University of technology. Students voluntarily seek help from this organization for any wide variety of problems such as back pains, migraines, anxiety, depression and suicidal thoughts.

For the test group, 14 course participants in MAC were asked to participate in a study exploring the effectiveness of mindfulness and compassion training when treating i) feelings of stress, ii) life satisfaction and iii) self-compassion. The final sample size in this group was 5 individuals.

The control group consisted of individuals actively receiving standard treatment from the organization consisting of meetings with a psychologist. Participants in the control group were recruited by an email containing a brief explanation of the study’s design and purpose and a link to an online questionnaire. This was sent out to the mail list containing 76 people either receiving or waitlisted for treatment at Akademihälsan, but respondents that replied reported they were receiving treatment during both measurements. Responses were collected during the same time as that of the test group. 17 people chose to take part in the first study. In the second stage 11 of the participants in the control group responded and the answers of those not completing both stages of the study were not considered. All of the respondents in the second stage were actively receiving treatment during this period.

Procedure

For the test group, questionnaires containing a total of 31 items were briefly explained and handed out during the first meeting of the mindfulness course and participants handed them in during the following meeting seven days later. Five of the course participants agreed to enter the study. All of them followed through with the entire course and submitted the questionnaire a second time shortly after the completion of the course. The control group received similar instructions by email and replied to the questionnaires through an online survey.

Answers were coded to enable pairing between the measurement points and thereby ensuring confidentiality for participants.

Description of the intervention

The mindfulness and compassion intervention consisted of 6 meetings on a weekly basis. Each meeting lasted for 2 hours and included theory, discussions and practice as well as instructions for exercises between the meetings. The theoretical aspects were taken from the pedagogical description of the three affect regulation systems as described by Gilbert (2010b) as well as various physiological and psychological studies that shows the intimate relationship between thoughts, emotions and bodily processes such as breathing, bodily sensations, posture and behavior. In the first three weeks the theory focused mainly around psychological distress and the fight or flight response, so that participants to a greater extent could identify these states throughout the day and learn to regulate themselves by the means of coming back to the breath with their attention and relaxing tensions in various parts of the body. In the last weeks the theory dealt with new results in research on compassion and positive emotions to motivate the participants to engage fully with the practical aspect of the course.

As for the practical parts, the participants spent the first week focusing on the somatic sensations and feelings of their own breathing. The second and third week dealt with somatic sensations all over the body by going through every bodily part bit by bit, a process known as “scanning the body”. In the fourth and fifth week, focus was shifted towards compassion. In these weeks participants cultivated compassion by mental imagery of different relationships:
first a person one holds dearly, secondly of oneself, thirdly of neutral persons and finally of a person one feels a negative inclination towards.

Through these exercises in imagery, participants were guided to reconnect with feelings of kindness, wishes of happiness and compassion in all these relationships, with a special focus on forgiveness towards oneself and one’s negative relationships. By combining pleasant memories, images of loved ones and inspirational role models, these positive feelings may then be strengthened and more easily accessible throughout one’s life. Participants were encouraged to engage with and explore these practices with a kind, curious and nonjudgmental attitude, putting aside any expectations they might have and labeling any kind of mistakes or hardships as part of the ongoing experience rather than something to fight against, criticize oneself for, or avoid.

**Instruments**

**Perceived stress scale (PSS-14)** is a 14-item scale developed by Cohen, Kamarck and Mermelstein (1983) and measures the degree of stress one appraises to general situations in life. This scale has become one of the most broadly used instruments for measuring general self-perceived stress. Reliability has previously been determined at 0.85 and the PSS-14 test scores can predict both increased risks of diseases as well as biological markers of stress such as cortisol levels, immune markers, wound healing and infectious diseases (Cohen, Kamarck & Mermelstein 1983). Participants indicates their agreement with each item on a 5 step inverted likert-scale, including the question “In the last month, how often have you felt nervous and “stressed”?.”

**Satisfaction With Life Scale (SWLS)** was developed by Diener, Emmons, Larsen and Griffin (1985) and has become one of the worlds’ most widely used scales in research on happiness and well-being. The scale consists of 5 items and is intended to measure global cognitive discernments regarding satisfaction with one’s life. By summing the score on each item one gets the final result of the questionnaire and the reliability has been established at 0.82 (Diener, Emmons, Larsen & Griffin 1985). Every question consist of a 7 point likert-scale ranging from strongly disagree to strongly agree and includes “I am satisfied with my life.”

**Self-Compassion Scale - Short Form (SCS-SF)** was developed by Neff (2003b) and this scale measures the extent to which one has compassion for oneself. This scale has three distinct subscales with positive and negative polarities, namely i) self-kindness/judgment, ii) common humanity/isolation and iii) mindful awareness/over-identifying. This study uses a short-form version of the SCS called SCS-SF. This short-form version demonstrates near perfect correlation with the original \( r \geq 0.97 \) reliability is measured at 0.92 according to Raes, Pommier, Neff and Van Gucht (2011). It is a likert-scale with 12 items and 5 points on each question and the negatively stated items are number 1, 4, 8, 9, 11 and 12. The scale includes the question “I try to be understanding and patient towards those aspects of my personality I don’t like”. A copy of all questionnaires is provided in Appendix A.

**Data Analysis**
Due to low number of participants ($n_{\text{test group}}=5$ and $n_{\text{control group}}=11$) a Mann-Whitney U-test was used to analyze the results. Data on ordinal scale level for each scale was summarized into a score and the difference between measurement points for the matched sample was obtained and ranked. The 14-item Perceived Stress Scales’ scores was inverted due to the predicted positive effect of the intervention being a lower stress level which would manifest as a lower test score. A test statistics was calculated and tested against the critical values for ($\alpha = 0.05$) and ($\alpha = 0.01$).

Results

All results were obtaining using the difference in test score between both measurement points and for each of the three scores. A measure of dispersion for these differences in scores is found in table 1 alongside their Mann-Whitney test score.

Hypothesis 1: ‘Mindfulness and Compassion intervention decreases perceived stress levels.’

For the perceived stress scale the difference in scores ranged from 5 to 21 for the test group with a median of 15, while the control group reported a range of -6 to 14 and a median of -2. A Mann-Whitney U-test was performed and it provided us with a test score of 4, which is significant at 0.01-level. Thus, we can reject the null hypothesis and conclude hypothesis 1 be true. Cronbach’s alpha was 0.85 and 0.92 in the first and second measurement.

Hypothesis 2: ‘Mindfulness and Compassion intervention increases satisfaction with life’

Table 1

Results for all three scales with measures of dispersion (min, max, median & values for the first and third quartile. Results are broken down into test group and control group. PSS-14 is the ‘Perceived Stress Scale’, SWLS is the ‘Satisfaction With Life Scale’, and SCS-SF is the ‘Short Form Self-Compassion Scale’.

<table>
<thead>
<tr>
<th>Test Scale</th>
<th>Differences in scores between measurement points</th>
<th>Min</th>
<th>Max</th>
<th>Median</th>
<th>Q1</th>
<th>Q3</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSS-14</td>
<td></td>
<td>1</td>
<td>12,5</td>
<td>4**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test group ($n=5$)</td>
<td></td>
<td>5</td>
<td>21</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group ($n=11$)</td>
<td></td>
<td>-6</td>
<td>14</td>
<td>-2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWLS</td>
<td></td>
<td>-2,5</td>
<td>6</td>
<td>8*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test group ($n=5$)</td>
<td></td>
<td>3</td>
<td>9</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group ($n=11$)</td>
<td></td>
<td>-11</td>
<td>8</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCS-SF</td>
<td></td>
<td>-3</td>
<td>7</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test group ($n=5$)</td>
<td></td>
<td>-7</td>
<td>18</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group ($n=11$)</td>
<td></td>
<td>-5</td>
<td>7</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Denotes significance at 0.01-level; * Denotes significance at 0.05-level as obtained through Mann-Whitney U-Test
The second hypothesis is investigated using the difference in scores on the satisfaction with life scale which range from 3 to 9 for the test group with a median of 5, while the control group reported a range of -11 to 8 and a median of ±0. A Mann-Whitney U-test was performed and the obtained test score of 8 is significant at 0.05-level. Thus, our results support hypothesis 2. Cronbach’s alpha was calculated at 0.87 and 0.80 respectively.

Hypothesis 3: ‘Mindfulness and Compassion intervention increases self-compassion’

Lastly, results from the short form self-compassion scale were obtained using the same method as before. The difference in scores for the test group ranged between -7 and 18, with a median of 11. For the control group the range was -5 and 7 with a median of 3. The test score was determined at 19 which do not hold up to a significance test at 0.05-level. Thus, our results do not support hypothesis 3. Cronbach’s alpha was determined at 0.90 and 0.84.

Discussion

Three hypotheses regarding the Mindfulness and Compassion based intervention were tested in our study and two were found to hold on a significant level. The first hypothesis was that participants in the intervention would experience reduced levels of stress after completing the course. It was tested by measuring stress levels in the course participants and comparing their results with an active control group who received standard treatment in the same time period. A significant reduction in stress levels was found in the course participants (p < 0.01). This is a novel finding since to our knowledge there are no studies on interventions combining mindfulness and compassion practices explicitly. This finding corroborates those of Shapiro, Oman, Thoresen, Plante, & Flinders, (2008), Geary and Rosenthal, (2011) and Shapiro, Astin, Bishop, & Cordova, (2005) who found reductions in stress levels as measured by the PSS for students and healthcare professionals. It is also in line with the review by Fjorback, Arendt, Ørnbøl, Fink, & Walach, (2011) which found stress reduction by the MBSR intervention in the general population.

The second hypothesis predicted an increase in perceived well-being for participants finishing the course, as compared to the control group. The results supported this hypothesis, as a significant increase in well-being measured by the Satisfaction with Life Scale (SWLS) was found (p < 0.05). We have not found any previous studies that used this instrument on a student population undergoing similar interventions. But in more general populations several experiments have shown significant increases in well-being for participants in interventions based on mindfulness and/or compassion (Fredrickson, Cohn, Coffey, Pek & Finkel, 2008; Ortner, Kilner & Zelazo, 2007; Shapiro, Astin, Bishop & Cordova, 2005).

The last hypothesis was that participating in the intervention would increase self-compassion as measured by the Self-Compassion Scale (SCS). Here we did not find significant effects and there was a wide range from positive to negative changes in self-compassion. It is possible that this is due to the low number of test subjects or the compressed time format, as three different trials on the MBSR intervention found significant increases in self-compassion in various populations (Birnie, Speca, & Carlson, 2010; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Brown, & Biegel, 2007). A previous study by Leary, Tate, Adams, Batts Allen, & Hancock, (2007) indicate that self-compassion is a valuable ability for students to develop. Thus further studies on this particular intervention should aim for larger groups of test subjects to clarify to what extent the intervention has on participant’s degree of self-compassion.
The major limitation of our study was the low amount of participants in the test group. This was likely due to a mistake in the procedure of handing out questionnaires. By letting participants sign the questionnaires directly when they are handed rather than letting them fill them in throughout the first week we believe a larger test sample would have been possible. We assume this as many of the course participants mentioned that they would have liked to participate in the study but had forgotten to fill in the questionnaires. With the test group having only 5 participants it is likely that confounding factors such as learning effects and social desirability bias may have a large influence on our results. Further weaknesses in our study include the lack of randomization and demographic information on the participant that combined with the low number of participants leads to a low generality of our results. As the instructor in the course is one of the co-authors of this study, there is a risk of bias in favoring a positive outcome of the study. Taking this factor in account we made sure the instructor was not involved in analyzing the data. Preferably new studies should be conducted without the involvement of the instructor to ensure impartiality of the researchers. Since the scales used were in English, there is also a risk of confused reports but we deem this to be low since most courses in academia have a far more complex usage of the English language than our surveys and as such, the participants should not have any problems understanding the questionnaires. This could easily be controlled in future research however by adding a question in the form about any troubles that may have aroused for the participant when filling it out.

Another limitation of our study is that we did not control for specific parts of the intervention. In our hypothesizes we target only the combined effect of the intervention and it is likely that this effect is due to many causes. Especially since the intervention is a combination of practice and theory in both mindfulness and compassion. An additional factor that may add to the positive effect of the intervention is the therapeutic effect caused by regular group meetings between participants with similar illnesses. A final critique to our design is the lack of follow up tests. In our study we did not have the time scope necessary to do follow up checks and thus we do not know if the positive changes are long lasting. Therefore further investigation into the effect of specific elements of the course could be of interest. As example, one could measure the amount of time each participant spent practicing mindfulness and compassion and analyze if variations here affect the result of the intervention. The total amount of home practice and attendance to group meetings are other factors that could be analyzed to further separate any effective parts of the intervention.

Another inquiry that remains to explore is what type of student gains the most benefit from this intervention. For example one could use instruments on personality and check for correlations between greater effect of the intervention and certain personality scores, or test for gender differences. Preferably, studies should explore the effects of this intervention for other populations than students as well. Besides controlling our findings, further explorations of the efficacy of this intervention should be made with other means of measurement to complement the limits of self-reported data. As our findings in this pilot study were based on a small sample, in a newly developed intervention, more studies are warranted.

**Conclusion**

Our primary goal with the study was to examine the potential positive effects of a 5 weeks intervention based on mindfulness and compassion for Swedish students in academia. As previous research suggest, we hypothesized that participants in the intervention would experience decreased levels of perceived stress and increased well-being, as compared to an active control group given standard treatment. We also hypothesized that the test subjects would develop greater self-compassion during the course. We found significant changes
supporting improvements on self-reported stress and satisfaction with life, while no such support was found for self-compassion. This pilot study has shown that a 5-week course in mindfulness and compassion may benefit the student population and we suggest outlines for further research.

References


Appendix A

Self-Compassion Scale Short-Form

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

<table>
<thead>
<tr>
<th>Almost never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Almost always</th>
</tr>
</thead>
</table>

1. When I fail at something important to me, I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don’t like.
3. When something painful happens, I try to take a balanced view of the situation.
4. When I’m feeling down, I tend to feel like most other people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I’m going through a very hard time, I give myself the caring and tenderness I need.
7. When something upsets me, I try to keep my emotions in balance.
8. When I fail at something that’s important to me, I tend to feel alone in my failure.
9. When I’m feeling down, I tend to obsess and fixate on everything that’s wrong.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I’m disapproving and judgmental about my own flaws and inadequacies.
12. I’m intolerant and impatient towards those aspects of my personality I don’t like.
Satisfaction with life scale (SWLS)

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.
Percieved Stress Scale (14-item)

The questions in this scale ask you about your feelings and thoughts during THE LAST YEAR. In each case, you will be asked to indicate your response by placing an “X” over the circle representing HOW OFTEN you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don’t try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

All questions are answered using the scale below

<table>
<thead>
<tr>
<th></th>
<th>Almost Never</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Fairly Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. In the last month, how often have you been upset because of something that happened unexpectedly?

2. In the last month, how often have you felt that you were unable to control the important things in your life?

3. In the last month, how often have you felt nervous and “stressed”?

4. In the last month, how often have you dealt successfully with day to day problems and annoyances?

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

6. In the last month, how often have you felt confident about your ability to handle your personal problems?

7. In the last month, how often have you felt that things were going your way?

8. In the last month, how often have you found that you could not cope with all the things that you had to do?

9. In the last month, how often have you been able to control irritations in your life?

10. In the last month, how often have you felt that you were on top of things?
11. In the last month, how often have you been angered because of things that happened that were outside of your control?

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

13. In the last month, how often have you been able to control the way you spend your time?

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?