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Effect of the Intervention of the Compassion Cultivation Training on the Level of Self-Criticism and Self-Compassion

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JH. SM. and BS designed research project and designed the shortened version of the intervention. SM collected data. SM wrote the first draft of the article. All authors BS, JH, and SM interpreted the results, revised the manuscript and read and approved the final manuscript.

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Abstract

The Compassion Cultivation Training (CCT) is an intervention aimed at compassion cultivation involving a variety of meditation practices and exercises enhancing mental and emotional well-being, empathy, and kindness towards others and oneself. The goal of the study was to analyze the effect of the shortened online intervention, The Compassion Cultivation Training, on the level of self-criticism and self-compassion in an available non-clinical sample of 117 participants. Data were collected before intervention, immediately after intervention, and two months after completion of the CCT. All participants were randomly assigned to the experimental or the control group. At the final measurement, 24 participants were in the intervention and 30 participants in the no-contact control group. The battery of administrated questionnaires consisted of two scales: The Forms of Self-Criticism/Attacking and Self-Reassuring Scale and the Self-Compassion Scale. The results of the research confirmed the effectiveness of online CCT intervention since the participants from the experimental group achieved a significant increase in the level of self-compassion and a decrease in the level of self-criticism. The study offers promising results in that the shortened online version of CCT lasting 14 days is also effective not just in cultivating compassion but also in decreasing self-criticism.

Keywords: The Compassion Cultivation Training, intervention, self-criticism, self-compassion

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Влияние тренинга по развитию сострадания на уровень самокритики и самосострадания

Резюме

Тренинг по развитию сострадания (CCT) – это метод обучения, направленный на развитие сострадания, включающий различные медитативные практики и упражнения, улучшающие психическое и эмоциональное благополучие, сочувствие и доброту по отношению к другим и к себе. Цель исследования состояла в том, чтобы проанализировать влияние сокращенного онлайн-обучения «Тренинг по развитию сострадания» на уровень самокритики и сострадания к себе в доступной неклинической выборке из 117 участников. Данные были собраны до обучения, сразу после и через два месяца после завершения тренинга по развитию сострадания. Все участники были случайным образом распределены в экспериментальную или контрольную группу. При финальном измерении 24 участника были в экспериментальной группе и 30 участников в группе бесконтактного контроля. Анкета участников состояла из двух шкал: шкалы форм самокритики/атаки и самоуспокоения и шкалы самосострадания. Результаты исследования подтвердили эффективность онлайн-обучения, поскольку у участников экспериментальной группы было достигнуто достоверное повышение уровня сострадания к себе и снижение уровня самокритики. Исследование предлагает многообещающие результаты в том смысле, что сокращенная онлайн-версия тренинга продолжительностью 14 дней также эффективна не только для развития сострадания, но и для снижения самокритики.

Ключевые слова: тренинг по развитию сострадания, вмешательство, самокритика, сострадание к себе

■ INTRODUCTION

Self-compassion and self-criticism

Self-criticism is associated with a negative relationship with oneself in the form of excessive self-criticism and always demanding the best of oneself [4]. It can be in the form of negative self-assessment and self-image, which are often focused on various aspects of the self, such as physical appearance, behavior, inner thoughts, and emotions as well as on personality and intellectual attributes [5]. One of the key problems for some self-critical individuals can lie in the fact that they have no access to memories when they were kind and caring towards themselves, with inadequate ability for self-compassion [6]. The study [7] also found that highly self-critical individuals are more ready to feel antagonistic thoughts towards the self but are less ready to initiate and accept soothing and kind expressions.

Self-compassion has three components [8, 9]: 1) Self-kindness, which includes extending forgiveness, empathy, sensitivity and patience to all aspects of the self, including

all actions, feelings, thoughts, and impulses; 2) General human experience, which is the ability to accept our connection with others and which reflects the understanding that suffering is part of the general human experience, meaning that even if a person is feeling pain s/he does not feel isolated in his/her suffering and is able to forgive his/her failures and imperfections; 3) Mindfulness, which is the ability to be fully aware, to understand the situation in spite of emotional tension [10].

There are several interventions [9, 11] that can be used to lower self-criticism and increase self-compassion, since both of those constructs are evidently connected with psychopathology on the one hand and psychological and physical health on the other [12, 13] as well as with well-being [14].

Compassion Cultivation Training

The Compassion Cultivation Training (CCT) is a program focused on education in the area of self-compassion. The theoretical foundation of CCT follows a Tibetan Buddhist contemplative practice and psychological knowledge [2]. The basis of CCT is that compassion is the fundament of our human nature and is part of our everyday experience [15]. The individual sessions and exercises are focused on developing the following areas: soothing one's mind and concentrating through calming one's mind and breathing technique; meditation for developing kindness and compassion towards self and others; active compassionate practice, where individuals imagine that they can take on the pain and sadness of others and offer them their own happiness; integrated practice involving compassion development [11].

The effect of the CCT program [1] was reported by the authors with respect to the following three forms of compassion: compassion for others, accepting compassion from others, and self-compassion. The sample consisted of participants randomly divided into an experimental and control groups. The experimental group undergoing the CCT program, manifested significant improvement in all of the three above mentioned aspects of compassion. As a follow up to these findings, in the next study [2] concentrated on evaluating the CCT program effect on mindfulness, affect, and emotional regulation. The results indicated that compared to the control group the CCT program resulted in an increase in mindfulness and happiness, as well as a decrease in worries and emotional suppression on the part of the experimental group. Subsequently, authors [3] studied the manner in which CCT intervention influences the process of thinking about unpleasant or vice versa pleasant subjects, and also, whether compassionate meditation affects such thinking processes. Undergoing the CCT intervention, participants spent shorter time thinking about unpleasant things compared to those who did not undergo the intervention. Moreover, the study [16] found that participants reported decreased anxiety, increased calmness, and increased ability to accept their affective experiences.

In addition to the above-mentioned research studies by the authors of the intervention, there are several studies by independent researchers on CCT effectivity. A study [17] revealed that CCT does not decrease the burnout syndrome at work nor does it alleviate interpersonal conflicts for healthcare workers. However, the authors did state that the participants at the onset of testing did not show high levels of burnout. On the other hand, their study showed that CCT actually can increase mindfulness, self-compassion, and work satisfaction while decreasing fear of compassion [16]. The effect of CCT in healthcare was the subject of another study [17], in which the authors examined cancer patients and their

perspectives. The authors used a qualitative method of analyzing interviews aimed at in-depth understanding of compassion training from the point of a hospitalized patient. The analysis showed the importance of cultivating compassion in healthcare workers by active practicing of various compassion development techniques. The results [18] indicate that compassion training contributes to a positive perception of oneself, one's thoughts and attitudes. This has been confirmed [19] by results that training participants attained improvements in the area of psychological health (decreased depression and stress) and life satisfaction and happiness. In addition, significant decrease in anxiety and then an increase in altruistic orientation, i.e., ability to feel compassion for others, were also found. Thus, these results predict that developing compassion not only increases personal well-being and mental health, but it also successfully affects interpersonal relationships and the relationships with oneself.

■ THE AIM OF THE RESEARCH STUDY

The aim of our research study was to analyze the short- and long-term effect of a 14 day online intervention – The Compassion Cultivation Training – on the level of self-criticism and self-compassion in an available non-clinical sample of participants.

H1: After completing the CCT intervention, the participants in the experimental group will score lower in self-criticism than participants in the control group [1, 19].

H2: After completing the CCT intervention, the participants in the experimental group will score higher in self-compassion than participants in the control group [1, 17].

H3: The increased level of self-compassion will persist even 2 months after the completion of the CCT intervention [1, 16, 17].

H4: The decreased level of self-criticism will persist even 2 months after the completion of the CCT intervention [1, 19].

■ METHODS

Research sample

At the first measurement, the total sample comprised 117 non-clinical available participants, who were randomly assigned to an experimental and a control group. After the third measurement, 54 participants remained; 45 women and 9 men; age range 19 to 39 years (Mdn=23.0; IQR=7). The experimental group included 24 participants who underwent the CCT intervention. The control group had 30 participants who did not take part in the CCT intervention but just like the experimental group did fill out the battery of questionnaires prior to, immediately after, and 2 months after the CCT intervention. Our participants were recruited from the available general public using various web portals and social networks. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Materials and tools

The questionnaire battery contained an informed consent of the participants, questions concerning sociodemographic data such as age, gender, education and address, and two scales to measure self-criticism and self-compassion described below. These measurements were done three times; prior to, immediately after, and two months after the intervention.

Forms of Self-Criticizing/Self-Attacking and Self-Reassuring Scale – FSCRS [6] contains 22 items measuring the level of self-criticism. Participants express their agreement or disagreement with the items using a 5-point Likert scale, where 0 = not at all like me and 4 = very much like me. The questionnaire has the following three components: Inadequate-Self, Hated-Self, and Self-Reassuring self. The Inadequate-Self expresses mostly feelings of inadequacy towards oneself, and feeling excessive self-criticism and failures. The Hated-Self expresses feelings of hate towards oneself, which are associated with contempt for oneself or even wanting to do self-harm. The Self-Reassuring Self expresses positive feelings towards oneself and also includes understanding and supporting one's own shortcomings. The Slovak version of the Forms of Self-Criticizing/Self-Attacking and Self-Reassuring Scale was verified on a Slovak sample of participants [20]. In our study, the questionnaire proved to have a good internal consistency (α=0.75–0.85), validity and corresponding factor structure.

Self-Compassion Scale (SCS) measures the participants' self-compassion level [20]. It consists of 26 items, where participants express their agreement or disagreement with the items using a 5-point Likert scale, where 1 = almost never and 5 = almost always. The questionnaire has the following six dimensions: Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Over-Identification. The dimensions Self-Kindness, Common Humanity, and Mindfulness denote factors measuring sufficient self-compassion in participants. On the other hand, the dimensions Self-Judgment, Isolation, and Over-Identification measure inadequate self-compassion. The authors [21] showed a very good consistency of the Slovak sample of respondents (α=0.86) as well as validity. However, in the Slovak population the total score cannot be used since the scale splits into two factors – self-compassionate and non-self-compassionate reactions [21].

CCT intervention

The majority of research studies on the CCT carried out the intervention for 8 weeks. The subjects participated once or twice a week in a two hour session, which included meditation [1, 2, 16]. To satisfy the needs of our research, we used the adapted version of the CCT program, which we shortened to 14 exercises selected from the ones in the original CCT program [1]. Subsequently, our participants received one exercise a day for 14 days. They were to complete each exercise and at the end of each one, describe what they experienced. This feedback was sent to an online form.

On the first day, the participants received an exercise called Spacious mind, the aim of which was to make the participants feel relaxed and get rid of excessive tension or stress through a deep breathing exercise.

The second day, participants took part in an exercise called Focusing your attention by conscious breathing. This exercise is meant for people to be aware of their breathing in order to attain body relaxation, which in turn helps direct full focus to the conscious breathing process itself.

The third day, the participants did an exercise titled Mindful walking. This exercise begins with relaxing the body with the effort to release all the stress from the body and focus on relaxing. Subsequently, using individual steps the participants were supposed to concentrate on walking, which helps with further relaxation.

On the fourth day, the exercise was Mindful kindness, and the participants were supposed to think of a person close to them. The aim was to empathize with the feelings

and suffering of this person and wish him/her good luck, happiness and to break away from these unpleasant thoughts.

The fifth day, the participants received an exercise called Compassionate reasoning, which followed very closely the previous exercise. In this case, participants were to think of the same person close to them, but the aim of this exercise was to develop compassion towards others and to become aware that every person deserves our kindness.

On day six, the exercise was titled Forgiving oneself. Participants were to think of a situation, which made them feel bad and for which they were reproaching themselves. The aim was to break away from these unpleasant feelings and be kinder to oneself.

Accepting oneself was the exercise sent on day seven. Here the participants were supposed to find ways to be kind to themselves and accept even unpleasant experiences with calmness.

On day eight, participants worked on Creating resolutions, where they focused on reflecting about the past day. The task was to remember everything they experienced in a given day and let these things flow freely through their mind. The aim was to reach acceptance regardless whether the things were positive of negative.

The ninth day exercise was called Self-kindness and the participants were to concentrate on the self. The aim was to be aware of positive feelings towards oneself, which would allow the participants to look at others with greater acceptance.

The tenth day, participants carried out an exercise called Accepting common humanity, where they were supposed to focus on developing feelings of kindness towards people, who are not very close to them. The task was to imagine a person with whom they are not in contact and empathize with their feelings and views.

On the eleventh day, participants were sent an exercise titled Valuing others, during which they were also supposed to focus on the others with respect to their feelings and hopes. The aim was to wish happiness, love and joy globally to all people, not just those close to them.

On day twelve, participants received an exercise called Extending our circle of interest. The task was to free oneself of all worries and become aware of feelings of joy, starting with the self and ending with people we don't even know.

The thirteenth day they received a task titled Fundamental heart. In this exercise they were supposed to choose a person who is suffering or worried and try to understand his/her anxiety and fear. The aim was to bring a compassionate wish to release tension and restore peace and love directed towards this person.

The last day the participants received an exercise with the title Integrated everyday practice, where they were supposed to remember all the previous exercises and choose one to repeat.

Data analysis

To determine the internal consistency of the questionnaires, we first conducted a data reliability test, calculating the Cronbach's alpha coefficient. Subsequently, we tested the assumptions for the use of classic statistical tests, in other words, we wanted to determine if our data are normally distributed. For normally distributed data we used the Shapiro – Wilk test, then the Levene's statistic test of homogeneity, and finally the boxplot test, i.e., the presence of extreme values. When all the assumptions of normal distribution were confirmed, we used the mixed-effect ANOVA in the above-mentioned SPSS statistical

program [22]. When the assumption of normal data distribution was not confirmed we used the non-parametric Brunner's test in the statistical program R [23] package «nparLD» [24]. Subsequently, we created a graphic display of marginal means in case of ANOVA and relative effects in case of Brunner's test, which helped us generate a visual overview of possible effects.

Since the factor structure of the Slovak version of the FSCRS and the SCS is known, we used the raw score for individual dimensions. For the FSCRS questionnaire, we measured self-criticism using the Inadequate-Self dimension, which contains 9 items and the Hated-Self, which contains 5 items. For the SCS questionnaire, we measured self-compassion by the Compassionate Responding (Comp) dimension, which contains a total of 13 items. Subsequently, for each dimension we conducted a pretest, posttest, and a follow-up. Should we find a difference between the control and experimental group as well as a difference between the pretest, posttest, and follow-up measurements then we can speak of a significant effect of the intervention.

■ RESULTS

At the onset of data analysis, we calculated the reliability of the FSCRS and SCS questionnaires. We found that the values for FSCRS as well as SCS are at the bottom limit of internal consistency, α=0.7. We then used descriptive statistics to calculate means and standard deviations for both groups (experimental and control). The exact values are presented in Tables 1 and 2.

Table 1
Descriptive statistic values for experimental and control groups of the FSCRS
Таблица 1
Показатели описательной статистики для данных экспериментальной и контрольной групп по шкале форм самокритики / нападок и самоутверждения (FSCRS)

Dimension	Mean	SD	Mean	SD
	EG	EG	CG	CG
IS pretest	17.67	7.00	19.42	7.15
IS posttest	16.46	5.32	18.00	8.92
IS follow-up	15.29	4.62	17.29	8.63
HS pretest	5.08	3.36	5.58	4.84
HS posttest	3.13	4.03	5.13	4.06
HS follow-up	3.00	3.91	4.63	3.93

Note: IS – Inadequate-Self, HS – Hated-Self, EG – Experimental group, CG – Control group.

Table 2
Descriptive statistic values for experimental and control groups for the SCS
Таблица 2
Показатели описательной статистики для данных экспериментальной и контрольной групп по шкале самосострадания (SCS)

Dimension	Mean	SD	Mean	SD
	EG	EG	CG	CG
COMP pretest	39.54	7.40	36.13	11.13
COMP posttest	46.33	6.61	38.08	8.96
COMP follow-up	46.33	6.56	37.88	10.29

Note: COMP – Compassionate Responding, EG – Experimental group, CG – Control group.

Afterwards, our test sample underwent an assumption test by which we determined the normality of data distribution. Since our sample of participants was small, we tested our data using the Shapiro-Wilk test. To test the homogeneity of error distribution in the groups we utilized Levene's test. To determine the presence of outliers we used the boxplot (interquartile range), and for smaller statistical samples we used Carling's modification of the boxplot method. If the distribution did not have normal values, we used the Hubert-Vanderviener modification. Tables 3 and 4 show exact values for the tests used.

It is apparent from Table 3 that all variables had a normal distribution, except for the following: in the Inadequate-Self dimension for the control group in the follow-up measurements, the Shapiro-Wilk test value was p=0.037; in the Hated-Self dimension, control group, pretest measurements, the Shapiro-Wilk test value was p=0.043; also in the Hated-Self pretest but in the experimental group the value was p=0.019; in the posttest of the experimental group with values of p=0.046; and finally in the follow-up measurements in the control group with values of p=0.045. Outliers, as expressed by boxplot, occurred in three cases, i.e., in the Inadequate-Self dimension, in both the experimental and the control group and also in the Hated-Self dimension in the experimental group, all posttest measurements. As far as Levene's test is concerned, different error distributions were found in two cases: in the Inadequate-Self in the experimental and the control groups, where the values were p = 0.003 and p=0.005, and also in the Hated-Self dimension in the control and the experimental groups with values of p=0.007 and p=0.001.

As is apparent from Table 4, all the variables had a normal distribution except for posttest measurements in the experimental group, where the values reached p=0.007. Outliers occurred in three cases out of six. Different error distributions occurred in two cases, in the control and the experimental group in pretest, where the values were p=0.032, and also in the follow-up with values of p=0.029. Since the assumption of normal distribution was violated in case of both the FSCRS and the SCS, we always did the ANOVA test as well as the nonparametric Brunner test in the statistical program R. If the results of the

Table 3
Assumption tests for the experimental and control groups for the FSCRS
Таблица 3
Проверка гипотез для экспериментальной и контрольной групп (FSCRS)

Variable	Shapiro – Wilk	Boxplot	Levene
IS pretest CG	0.97 (p=0.772)	0	0.02 (p=0.897)
IS pretest EG	0.97 (p=0.541)	0	
IS posttest CG	0.95 (p=0.293)	1	9.76 (p=0.003)
IS posttest EG	0.93 (p=0.082)	2	
IS follow-up CG	0.91 (p=0.037)	0	8.87 (p=0.005)
IS follow-up EG	0.97 (p=0.722)	0	
HS pretest CG	0.91 (p=0.043)	0	2.69 (p=0.108)
HS pretest EG	0.90 (p=0.019)	0	
HS posttest CG	0.94 (p=0.154)	0	7.94 (p=0.007)
HS posttest EG	0.92 (p=0.046)	4	
HS follow-up CG	0.92 (p=0.045)	0	12.26 (p=0.001)
HS follow-up EG	0.95 (p=0.210)	0	

Note: IS – Inadequate-Self, HS – Hated-Self, EG – Experimental group, CG – Control group.

Table 4
Assumption tests for the experimental and control groups for the SCS
Таблица 4
Проверка гипотез для экспериментальной и контрольной групп (SCS)

Variable	Shapiro – Wilk	Boxplot	Levene
COMP pretest CG	0.96	0	4.87 (p=0.032)
	(p=0.487)		
COMP pretest EG	0.96	0	
	(p=0.391)		
COMP posttest CG	0.95	3	1.04 (p=0.314)
	(p=0.266)		
COMP posttest EG	0.88	4	
	(p=0.007)		
COMP follow-up CG	0.98	0	5.09 (p=0.029)
	(p=0.898)		
COMP follow-up EG	0.93	4	
	(p=0.080)		

Note: COMP – Compassionate Responding, EG – Experimental group, CG – Control group.

tests were approximately the same (the violation of the assumptions was not significant to the degree as to distort ANOVA test results, since it has more statistical power), we present the results of the ANOVA test. On the other hand, if we considered the violation of the assumption to be significant, we then present only the results of the nonparametric Brunner test. We tested the effectiveness of the intervention for three dimensions. Two dimensions of the FSCRS: Inadequate-Self (IS) and Hated-Self (HS) and one dimension of the SCS: Compassionate Responding (COMP).

■ FSCRS

Inadequate-Self

In case of the Inadequate-Self dimension, the ANOVA test showed that the differences interaction between the experimental and control groups and also between the pretest, posttest and the follow-up were not significant: F=0.01; p=0.907. Moreover, not even in the Brunner nonparametric test did we find significant differences interaction: F=0.04; p=0.952. Based on these results, we can state that the test result is not distorted by assumption violation. The size of the effect proved to be inconsequential (partial $\eta^{2=}$0.001), as did the statistical power (0.05). For illustration, see Figure 1, which clearly shows that the participants' responses follow the same line. That means that participants' responses are parallel for the control and experimental group.

It is obvious from Figure 1 that following the intervention, participants in the experimental group scored lower in the Inadequate-Self (IS) dimension, however, the same decrease in the IS score occurred in the control group, which did not undergo intervention. These results confirm our assumption expressed in Hypotheses 1 and 4 (H1, H4), since participants from the experimental group did score lower in self-criticism even in the follow-up test. However, same results occurred in the control group. Figure 1 clearly shows that this decrease in self-criticism in the experimental group continues even after the completion of the intervention, i.e. in the follow-up test. The decrease in score,

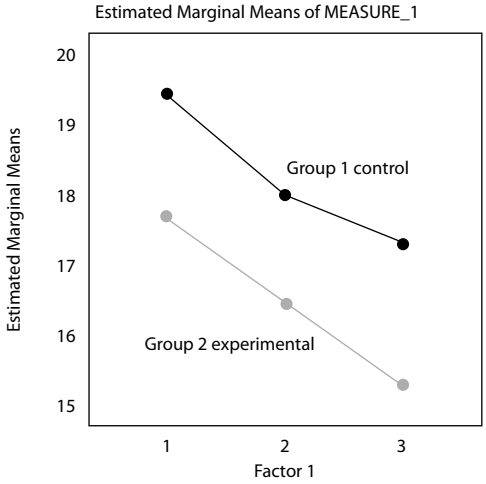

Fig. 1. IS score for the control and experimental groups
Рис. 1. Показатели по шкале «Неадекватное Я» (IS) в контрольной и экспериментальной группах

though, persisted through the follow-up in the control group as well. We can clearly see that the control group is parallel to the experimental one.

Hated-Self (HS)

In case of the Hated-Self (HS) dimension, the assumption of parametric tests was also violated and that is why we used Brunner's nonparametric test, however, for the sake of a comparison, we are presenting the ANOVA results as well. Brunner's nonparametric test showed that the interaction of differences between the experimental and the control group as well as between the pretest, posttest and follow-up is significant, F=5.72; p=0.005. For results comparison, the ANOVA test showed that the interaction between the two groups and between the pretest, posttest and follow-up measurements is not

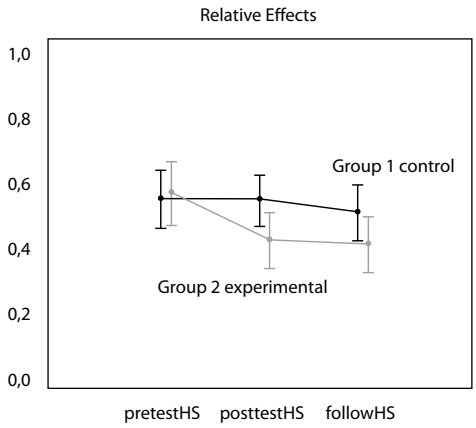

Fig. 2. HS score for the control and experimental groups
Рис. 2. Показатели по шкале «Самоненависть» (IS) в контрольной и экспериментальной группах

significant, F=2.85; p=0.098. Based on this, we can claim that using classic parametric tests in case of assumption violation leads to fundamental distortions. To illustrate this, we present Figure 2, which shows that the experimental group's score following intervention kept decreasing in the HS dimension, remaining at a lower value even two months after the completion of the intervention. The control group, on the other hand, kept a more even line, decreasing only slightly between the posttest and follow-up test.

■ SCS

Compassionate Responding (COMP)

In case of SCS, Compassionate Responding dimension, the assumption of parametric tests was violated and that is why we used the Brunner's nonparametric test, however, for the sake of a comparison, we are presenting the ANOVA results as well. Brunner's nonparametric test showed that the interaction between the experimental and the control group as well as between the pretest, posttest and follow-up is significant, F=5.57; p=0.004. For results comparison, the ANOVA test showed that the differences interaction between the two groups and between the pretest, posttest and follow-up measurements is not significant, albeit the values are approaching significance F=4.02; p=0.051. This proves, just like in the FSCRS results, that using the classic parametric tests when the assumption is violated leads to fundamental distortions. To illustrate this, we present Figure 3, which shows that the experimental group's score following intervention increased in the COMP dimension, remaining at a higher value even two months after the completion of the intervention. The results from the control group, on the other hand, show an even line, with the participants' score remaining almost unchanged.

Based on these results, we can claim that our assumption as expressed in Hypothesis 2 (H2) has been confirmed, since following intervention participants from the experimental group scored higher in self-compassion than the control group. At the same time, our Hypothesis 3 (H3) was also confirmed, since this increased score on the part of the experimental group persisted even in the follow-up measurements.

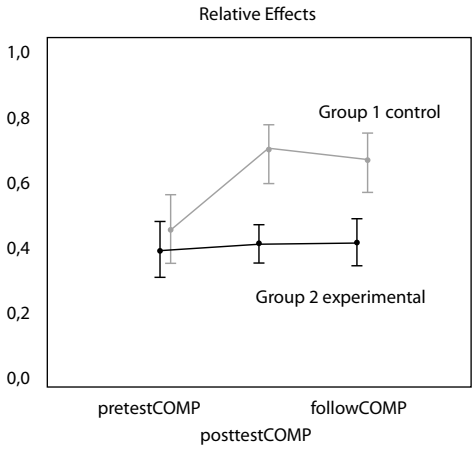

Fig. 3. Compassionate Responding score for the control and experimental groups
Рис. 3. Показатели по шкале «Сострадательное реагирование» (COMP) в контрольной и экспериментальной группах

■ DISCUSSION

The aim of this study was to analyze the short- and long-term effect of The Compassion Cultivation Training, a 14-day online intervention, on the level of self-criticism and self-compassion in an available sample of participants.

We expected that after the completion of the intervention the participants will reach lower values in self-criticism and that this effect will last for more than 2 months. In the Inadequate-Self dimension, the experimental group reached lower scores and even after the follow-up test this value remained low. However, it is interesting that the control group also reached lower levels of self-criticism, in spite of the fact that the participants in this group did not undergo the intervention. In this case, we cannot exactly claim that the CCT intervention was effective in the case of Inadequate-Self dimension, because the result is distorted by the so-called test sensitivity. The pretest sensitization effect means that when using preliminary tests the results may be wrongly interpreted [25]. Filling out the battery tests during the pretest may have led the participants in the control group to give lower values in the posttest and the follow-up measurements. However, the fact remains, that participants in the CCT program did reach lower values in self-criticism, even long-term. At the same time, the values of the second dimension of self-criticism – the Hated-Self – decreased significantly immediately after the intervention and they remained lower even two months later, compared to the control group. These findings support the results of a study [25] where the authors found that the development of compassion leads to significant decrease in self-criticism as well as depression, anxiety, and feeling inferior, and on the other hand, it helps to focus on feelings of security and self-confidence towards oneself. Our results are also identical to the results found in a study [26] where the authors confirmed a positive effect of exercises and meditation focused on compassion cultivation. They found that training in compassion can lead to an increase in self-compassion and decrease in self-criticism and in negative judgment of oneself.

Self-criticism is associated with negative attitudes, thoughts, feelings of guilt, and inadequacy, which are often connected with various psychological disorders or even pathopsychological ones [7, 27, 28]. We are of the opinion that on account of these exercises of the CCT intervention, the participants changed their perception of self in a positive way, which resulted in the reduction of negative thoughts and self-judgment as well as learning to approach oneself in a more supportive and accepting way (e.g., exercises such as Mindful affection, Compassionate reasoning, Forgiving oneself, and self-kindness). The positive influence and effect of the exercise has also been confirmed by a study [29] developing the compassion, which is a decisive factor in successful social interactions, leads to the improvement of the ability to confront stressful life events. That is why our findings are in line with these results [29]. Because, while before the compassion training, participants reacted rather negatively and critically to their own life difficulties, after the training there was an increase in their positive perception of critical events, such as when they were failing or when things were not going in a desirable direction.

As far as the self-compassion level following CCT intervention is concerned, we were able to prove that the experimental group reached higher scores in self-compassion, even in the long-term measurements, while the control group remained at almost the same level. Owing to these findings, we can confirm the effectiveness of the intervention in the Compassionate Responding (COMP) dimension. People with a higher degree of self-compassion are fully aware of their weaker points but they are able to react to them with

kindness and understanding, which helps them to better come to terms with negative life events [30]. In our opinion, carrying out the exercises indicated increased values in self-compassionate reactions in participants, which persisted all through to the third measurement, the follow-up. The authors [31] also studied the effects of compassion training (CCT) on constructs such as anxiety, stress, satisfaction with life, happiness, mindfulness, empathy, compassion towards others, and self-compassion. Similarly to our results, they also found that compared to the control group participants in the CCT manifested significant improvement in psychological well-being (decrease in depression and stress, increase in life satisfaction, happiness, compassion towards others and self-compassion). In the second part of the above mentioned study, the authors compared the effectiveness of the CCT and the Mindfulness-based stress reduction program (MBSR). The results showed that the CCT had greater influence on the development of compassion skills than did MBSR. These findings [31], like ours, support the claim that compassion training is effective in increasing overall self-compassion.

In another study [2], the compassion training was designed in similar way to ours, except for the length of the intervention itself. The results confirmed that compared to the control group participants, who took part in a CCT training and in formal meditation, manifested increased components of mindfulness and happiness, and moreover, CCT training lead to a decrease in fear and emotional suppression. In other words, CCT training positively influences cognitive and emotional factors, which support an individual's psychological well-being [2]. This is true for the shortened online version of CCT as well.

In the original studies, which verified the effectiveness of the CCT [1, 2], this program took place under the leadership of trained instructors in formal meditation practice, including various techniques in the area of compassion. Since all of our training took place online, we were able to test the effectiveness of this form of CCT program as well. We think that this flexibility and lack of time constraints, possible with this online form of training, allowed the program participants to comfortably go through the individual steps and exercises, since they could freely choose the time during the day to devote to the intervention. Based on the findings, which confirm the effectiveness of online training as a meaningful way of decreasing negative psychological factors such as stress and increasing psychological well-being [32] we can consider our research as a demonstration of the effectiveness of online intervention. We consider the greatest contribution of our study to be the verification of the effectiveness of the shortened version of the CCT program. Results indicate that even a version which includes 14 everyday exercises, i.e., takes two weeks to complete, can be an effective way to increase self-compassion and decrease self-criticism as similar shortened interventions [33–35].

Limitations of the research

In the original research on the CCT program [1, 2], the training was organized in the form of 2-hour long group exercises, led by an instructor trained in compassion development and well-being improvement techniques. Since all of our training took place online, the participants did not have the chance to take part in such group sessions. They did all the exercises at home on their own time. Group sessions have the advantage of receiving supplemental information from a qualified person in a given training. Also, there is greater chance that more participants will conscientiously work on the individual exercises since there is an increase in the motivation to complete them. In our case, the participants had

to work on the exercises alone and online. At the same time, we did want to compensate for the missing group sessions and so we included a psychoeducational introduction in each exercise, the aim of which was to familiarize the participant with each exercise and its progression. Another limitation could have been the method of available selection of our sample. The participants were recruited by means of internet portals and social networks; therefore, we did not know the motivation behind participating in our research. Moreover, they did the exercises on their own without trained leadership and it is possible that they were disturbed by outside influences, not having sufficient peace and quiet to concentrate on the course of the exercise.

■ CONCLUSION

The aim of this research was to analyze the effect of the Compassion Cultivation Training (CCT) intervention on levels of self-criticism and self-compassion. The program is focused on compassion development and, originally, it was designed in the form of group sessions lasting approximately 6 to 8 weeks [1, 2]. We created a shortened version of the intervention, in which participants sent the completed exercises in an online form every day for a period of 14 days. In this way, we wanted to verify the effectiveness of the shortened online version of the intervention on a nonclinical sample. We found a significant decrease in the level of self-criticism and increase in the level of self-compassion in participants who underwent the CCT intervention. In addition, we were able to confirm stability in time of the effectiveness of the CCT intervention, since the participants maintained the values of these levels even after the end of the training. The decrease in self-criticism in the Inadequate-Self dimension in the experimental group, however, occurred in the control group as well, which indicates the need for verification of this online 14-day version. It also indicates its effectiveness, mainly in case of the Hated-Self dimension as a more pathological form of self-criticism [7].

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