



Cognitive Behavioral Intervention for Trauma in Schools (CBITS): Improving academic performance among college students with PTSD symptoms

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2015

BSc in Psychology

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Abstract

Children from the age of 10-15 years old receiving the Cognitive Behavioral Intervention for Trauma in Schools (CBITS) have shown reduction in PTSD symptoms, and in some cases improvements in academic performance. Potentially, CBITS could also be effective to improve academic performance among university students. This study aims to test that hypothesis with a sample of 28 students from Methodist University, Fayetteville North Carolina. Students were randomly assigned to either experimental group, which received CBITS, or control group who did not receive therapy. The effectiveness was measured with self-reports and teacher evaluations using the Weiss Functional Impairment Rating Scale – Self Report (WFIRS-s) before and after the therapy, as well as through comparing participant's midterm and final grades. The results suggest that CBITS can improve academic performance among college students with PTSD symptoms, according to their self-reports ($p < 0,05$) and teacher evaluations ($p < 0,05$). However, no significant improvements were detected for student's GPA ($p > 0,05$). The differences between the experimental group and the control group were significant for GPA and self-reports but not for teacher evaluations. These findings indicate that CBITS can be effective to increase academic performances, but it is important to examine this relationship further.

Key words: The Cognitive Behavioral Intervention for Trauma in Schools (CBITS), PTSD, college students, academic performance

Útdráttur

Börn á aldrinum 10-15 ára sem hljóta Cognitive Behavioral Intervention for Trauma in Schools (CBITS) hafa sýnt fram á færri einkenni áfallastreituröskunar og í sumum tilfellum betri námsárangur eftir meðferðina. Hugsanlega getur CBITS einnig reynst áhrifarík til þess að auka námsárangur háskólanema með einkenni áfallastreituröskunar. Tilgangur rannsóknarinnar var að skoða þau mögulegu áhrif með úrtaki sem innihélt 28 háskólanema frá Methodist University í Fayetteville, Norður Karólínu. Námsárangur nemendanna var mældur fyrir og eftir meðferðina með sjálfsmati og kennaramati, auk samanburðar á miðannar- og lokaeinkunnum. Niðurstöðurnar benda til þess að CBITS geti aukið námsárangur meðal háskólanema með einkenni áfallastreituröskunar samkvæmt sjálfsmati þeirra ($p < 0,05$) og kennslumati ($p < 0,05$). Hins vegar var ekki marktækur munur á einkunnum nemenda fyrir og eftir meðferðina ($p > 0,05$). Marktækur munur var á milli tilrauna- og samanburðarhóps samkvæmt einkunnum og sjálfsmati ($p < 0,05$), en ekki kennslumati ($p > 0,05$). Þrátt fyrir að núverandi rannsókn sýni fram á að CBITS geti mögulega aukið námsárangur háskólanema eru frekari rannsóknir á þessu sviði mikilvægar.

Lykilhugtök: The Cognitive Behavioral Intervention for Trauma in Schools (CBITS), áfallastreituröskun, háskólanemendur, námsárangur

Cognitive Behavioral Intervention for Trauma in Schools (CBITS): Improving academic performance among college students with PTSD symptoms

Exposure to trauma is a common occurrence for children and youth. The majority of children have encountered at least one traumatic event during their lifetime, before the age of 18 (Finkelhor, Turner, Ormrod, & Hamby, 2009). When individuals are exposed to death, serious injury or sexual violence, they can develop post-traumatic stress disorder (PTSD) (American Psychiatric Association, 2013). PTSD can also be developed through others experiencing a traumatizing event. This may result in distressing memories, recurrent dreams, flashbacks, internal or external cues that symbolize the event and avoidance of associated stimuli. Exposures to traumatic events do not always lead to development of PTSD, and individuals can experience symptoms without fulfilling diagnosis criteria (Feinstein & Dolan, 1991).

Personality, regulation, coping, ego defenses, utilization of protective factors and access to aid are factors that can predict if an individual is likely to develop PTSD (Agaibi & Wilson, 2005). If PTSD is developed it can have long-term psychological effects (Yule et al., 2000), cause impaired behavioral functioning among children (Saltzman, Pynoos, Layne, Steinberg, & Aisenberg, 2001) and increase academic difficulties (Finkelhor & Browne, 1985; Garnefski & Arends, 1998; Horn & Trickett, 1998). Overall, PTSD sufferers have been shown to have worse memory performance (Moradi & Neshat Doost, 1999), lower levels of academic self-efficacy, higher test anxiety (Tobias, 1985) and receive lower grades than their peers (Holt, Finkelhor, & Kantor, 2007). Thus, it is possible that students with PTSD are less motivated for academic success and adopting new learning strategies.

For the last two decades schools have become one of the main support mechanisms for children with mental health issues (Burns et al., 1995). Due to a high

prevalence of traumatic events at young ages, it is important to have resources that children can easily access regardless of their family's economic status. Having resources available in school settings can halt parental worries regarding transportation and other expenses related to mental health care (Wu et al., 1999). Additionally, making mental health care visible contributes to normalizing the experience of searching for help; this can increase the likelihood of students seeking treatment (Nabors & Reynolds, 2000). In group therapies, children realize that their experiences and struggles are similar to those of their peers which increases interest in school, decreases emotional stress and is a positive predictor of prosocial goal pursuit (Barry & Wentzel, 2006).

One promising therapy for children displaying signs of significant PTSD symptoms and depression is the Cognitive Behavioral Intervention for Trauma in Schools (CBITS). It is designed to help children from the age of ten to fifteen years old through a ten-session group intervention which takes place in a school environment (Jaycox, 2004). The intervention consists of a one-hour group session, once a week for ten weeks. In addition, there are three hours of private classes, two hours of education for parents and one hour of education with a teacher. The intervention is comprised of cognitive therapy, relaxation training, trauma exposure, psychological education, adaptive coping skills and problem solving skills. It has shown to be more effective among students who have less severe symptoms of PTSD (Reece, Hanson, & Sargent, 2014).

Two randomized controlled trials have supported the benefit and effectiveness of CBITS among students who have experienced community violence (Kataoka et al., 2003; Stein, Jaycox & Kataoka, 2003). Kataoka and colleagues (2003) provided CBITS for 198 Latino immigrant students. In a three-month follow up, a significant

reduction of PTSD and depressive symptoms was noticed among students who underwent the therapy in comparison to the waitlisted control group. Similarly, Stein, Jaycox and Kataoka (2003) conducted an experiment among 126 English speaking sixth graders with Latino heritage. After three months, the CBIT group showed significantly lower signs of PTSD symptoms, depression and psychosocial dysfunction in comparison to the control group. However, there was no significant difference in problematic behavior and academic achievement in the classroom. Furthermore, there was no significant difference between the two groups following another six-month period, indicating that the effectiveness of the therapy was only temporary. Morsette and colleagues (2009) extended the study of Stein, Jaycox and Kataoka (2003) by examining 46 sixth-grade students from the American Indian population. After the intervention, PTSD and depressive symptoms had reduced for three out of every four students in the study who underwent the therapy.

According to Kataoka and colleagues (2011) receiving CBIT can also result in better school grades. A total of 123 sixth-grade students who had been exposed to violence were screened positive for PTSD symptoms. They were randomly split to either an early intervention (receiving CBIT directly after screening) or delayed intervention (receiving CBIT later that school year). The students in the early intervention earned significantly higher grades in math but not in language arts. Also, they were more likely to pass language arts than students who were in the delayed intervention.

CBIT has also been shown to be the preferable choice for children and youth. In a study by Jaycox and colleagues (2010), CBIT was compared to Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT). The two interventions are very similar in terms of methods. The main difference is that TF-CBT is a clinic-based

twelve-session therapy involving students and parents. The results showed that both therapies were efficient. Approximately 60% of the students showed significantly less PTSD symptoms following the therapies. On the other hand, CBITS proved to be more accessible, since 98% of the students assigned to that intervention completed it, compared to a 23% completion rate in TF-CBT. CBITS was more suitable for students who had acknowledged their traumatic experiences and felt prepared to move forward by learning new coping skills. In contrast, TF-CBT was more helpful for students avoiding their traumatic experiences as the therapist could design the intervention specifically based on the individual student.

Even though parents and students are satisfied with CBITS, the school faculties have found many difficulties with its implementation (Langley, Nadeem, Kataoka, Stein, & Jaycox, 2010). A total of 35 faculties were interviewed, including social workers, clinicians, family- and school-psychologists, counselors and a school nurse. They noted that the main barrier was time constraints, due to their other duties within the school. They also reported that it was difficult to receive consent from parents and support from the school principal. Approximately 60% of faculty found CBITS useful, but they recommended that follow up sessions be more consistent.

The literature on CBITS is not conclusive and further research is needed to determine the effectiveness of the therapy. Several studies have shown that CBITS reduces PTSD and depressive symptoms (Jaycox et al., 2010; S. H. Kataoka et al., 2003; Morsette et al., 2009; Stein, Jaycox & Kataoka., 2003), and enhances academic performance (S. Kataoka et al., 2011; Stein, Jaycox & Kataoka., 2003), but these effects are not always shown to be long-term (Stein, Jaycox and Kataoka., 2003).

CBITS is primarily designed for children and youth in middle school; thus it is important to see if the therapy can be adjusted to benefit college students. The main

emphasis has been on reducing PTSD and depressive symptoms; meanwhile, feelings towards school and academic performances have been secondary concerns. Since PTSD has been linked to decreased academic performance (Finkelhor & Browne, 1985; Garnefski & Arends, 1998; Holt et al., 2007; Horn & Trickett, 1998; Moradi & Neshat Doost, 1999; Tobias, 1985) the aim of this study is to examine the effectiveness of CBITS among college students, emphasizing improvement in academic performance. Based on the previously reviewed literature, it was hypothesized that: 1) The experimental group would raise their GPA after receiving CBITS. 2) The experimental group would evaluate themselves more positively in the school environment after receiving CBITS. 3) The experimental group would get more positive evaluations from their teacher after receiving CBITS. 4) There would be a significant difference between the experimental group and the control group in respect to GPA, students' self-reports and teacher evaluations.

Method

Participants

The sample consisted of 100 American undergraduate students who were recruited from a mandatory psychology class at Methodist University in Fayetteville, North Carolina. A total of 73 students filled out the screening questionnaires resulting in a response rate of 73%. However, merely 28 students were eligible to participate in the study, thereof 9 men and 19 women. The students did not report their age, but to be permitted to participate they had to be at least 18 years old. Participation was voluntary but extra credit was offered. Of the 28 students, 21 had some missing data. Due to small sample size they were not excluded from the study. Instead, students with matching data from the experimental group and the control group were compared to each other in GPA, self-reports and teacher evaluations.

Design and measures

The study design was a randomized control trial with one experimental group receiving CBITS and one control group without therapy. One predictor variable (CBITS) and three outcome variables (GPA, students' self-reports and teacher evaluations) were used to test the main hypothesis.

Demographic questionnaire

The students answered five demographic questions about their gender, class standing (freshman, sophomore, junior, senior), if they had been diagnosed with PTSD and their availability to participate in the experiment.

Identification of trauma

To identify experienced trauma participants filled out a Trauma History Screen (THS), a self-report questionnaire comprised of 13 items (Appendix A; Carlson et al., 2011). The screening examined traumatic events experienced such as accidents, abuse, death and war, through "yes or no" questions. When an item was endorsed, participants listed their age at which the trauma occurred and provided a brief summary of the event. They answered if lives were threatened, whether they were afraid of someone being hurt or killed and if they had a feeling of dissociation or helplessness. Using a four-point scale, participants disclosed how long they were bothered by the event (not at all - a month or more). Furthermore, a five-point scale was used to measure the extent to which the event bothered the participants emotionally (not at all – very much). According to Carlson (2011) measures of experiences do not necessarily have high internal consistency; therefore there is no such measure for this questionnaire. The internal consistency for the present study was relatively high, Cronbach's $\alpha = .72$.

Frequency and intensity of PTSD symptoms

Participants completed the PTSD symptom scale self-report (PSS-SR), a scale designed specifically for individuals with a known trauma history (Appendix B; Sin, Abidin, & Lee, 2012). PSS-SR is a 17-item self-report questionnaire, which assesses PTSD symptoms experienced in the last two weeks. The PTSD symptoms addressed corresponded to the DSM-IV diagnostic criteria for posttraumatic stress disorder. The items were rated on the frequency and intensity using a Likert scale ranging from zero (not at all) to three (five or more times per week/very much). A total score was calculated which ranged from zero to 15. If the score was higher than 13, the participant was very likely to suffer from PTSD. Additionally, participants were asked if the symptoms detected through the PSS-SR interfered with their personal life using a “yes or no” format. According to Foe et al (1993) the PSS-SR has shown to have sufficient internal consistency, good concurrent validity and high-test-retest reliability. In the present study the list had high internal consistency, Cronbach’s $\alpha = .90$.

Problematic behavior in school

The Weiss Functional Impairment Rating Scale – Self Report (WFIRs-s) addressed problems involving students’ lives (Appendix C, Kollins, Sparrow, & Conners, 2011). The questionnaire consisted of seven different domains including self, school, family, work, life skills, social and risk. A four-point Likert scale was used for scoring, where zero corresponded to “never or not at all” and three to “very often or very much”. Both students and the teacher answered the questionnaire before and after the therapy. However, the answers for the school section were only used in this study. The school section had ten questions to identify what field the students had problems with: taking notes, completing assignments, getting work done efficiently, with teachers, school administrators, meeting minimum requirements to stay in

school, attendance, being late, working to their own potential and with inconsistent grades. From the school section the highest attainable score was 30 and the minimum score was 0. The scale has an internal consistency of >0.8 as a whole (Kollins et al., 2011). Internal reliability for the present study was relatively high among students' self-reports, Cronbach's $\alpha = .78$ and among the teacher evaluations, Cronbach's $\alpha = .74$. The WFIRs-s was administered at baseline and after the therapy.

Procedure

The study was part of an ongoing research program on PTSD at Methodist University and was approved by the ethics committee of the Methodist University Institutional Review Board (IRB).

The nature of the study was described to 100 psychology students during school hours. Students were told that all their data would be untraceable and disposed of after the therapy. A total of 73 students filled out the question forms for Trauma History Screening and the PSS-SR. Participants were chosen based on the severity of their symptoms and recency of the trauma. The traumatic event had to have occurred within five years and students had to have at least a score of 10 from the PSS-SR. Merely 28 of the participants were eligible to participate and the other 45 were excluded from the study. Following this, the 28 participants filled out the WFIRs-s questionnaires for a baseline. A clinical psychologist provided a detailed description of the therapy whilst also responding to the questions and concerns of the students. All participants were provided with office hours and contact information of the clinical psychologist. The participants signed an informed consent form, a confidentiality agreement to certify that information about other participants would be held confidential, and a document that allowed researchers to access the participant's midterm and final grades from the school system. Students kept one copy of the

informed consent for themselves and returned another one to the clinical psychologist. Finally, the students were informed that they could exit the therapy at any time.

In the end of October 2014, participants were randomly assigned to either the experimental or control group. The experimental group was split into three groups based on the availability to participate. The therapy conducted was a Cognitive Behavioral Intervention for Trauma in Schools (CBITS) comprised of cognitive therapy, relaxation training, trauma exposure, psychological education, adaptive coping skills and problem solving skills. In order to suit college students, the sessions were reduced from ten to six, once a week for up to one hour. Also, the individual based classes, two hours of education for parents and the one-hour of education with a teacher were excluded from the program. The therapy was scheduled in three different rooms in a facility on campus. After the therapy, students and their teacher were asked to fill out the WFIRs-s again. In addition, final grades were collected from the school system. Finally, the students' grades, self-reports and teacher evaluations were compared both within in the two groups and between them.

Statistical analysis

The data was analyzed using the software package IBM SPSS 20. First, Cronbachs alpha was calculated to indicate internal consistency for the PSS-SR and WFIRs-s for the sample. Second, descriptive statistics were calculated for the characteristics of the participants for each variable. Then a paired sample t-test was used to test for significant variation within each group after the therapy. Finally, an independent sample t-test was used to see if there was a statistical difference between the experimental group and the control group. The level of significance was $p < .05$ for all the analyses.

Results

There was missing data for every main variable in the study. To balance the experimental group and the control group, participants with matching data from the two groups were compared to each other in GPA, self-reports and teacher evaluations. Since the groups were not identical, sample characteristics were described for each variable.

Grade Point Average (GPA)

Sample characteristics of the groups measuring differences in GPA are shown in Table 1.

Table 1.

Sample characteristics of participants measuring GPA

Demographic variables	Control group	Experimental group
Gender		
Females	5	7
Males	0	2
Class standing		
Freshman	2	1
Sophomore	2	3
Junior	1	5
Senior	0	0

The experimental group consisted of nine participants and the control group of five participants. The majority of the participants were female (85.7%) and in their third year of college (42.9%).

The experimental group experienced abuse, accidents, bullying, family issues, wars, being held hostage and deaths. The traumatic events experienced in the control group were accidents, family issues and deaths. The events occurred in adolescence or early adulthood in both groups (ranging from the age of 14-27 years old in the

experimental group, and 13-22 years old in the control group).

Figure 1 displays the differences in average GPA among the groups before and after the therapy. Before the therapy, the difference between the average scores was 0.8, and 0.4 after the therapy.

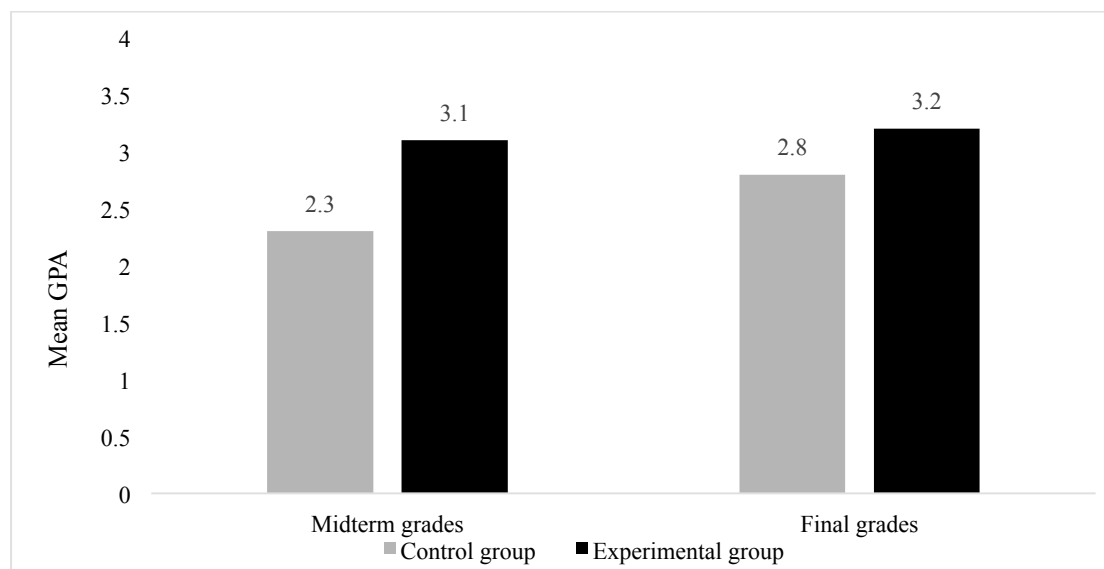


Figure 1. Differences in average GPAs before and after the therapy

In the experimental group, the lowest GPA after the midterm exams was 2.2 and the highest was 3.8. After the finals, the lowest GPA was 2.2 and the highest GPA 3.9. On average, participants in the experimental group did not show significantly higher GPA after receiving CBITS ($M = 3.2$, $SD = 0.6$) than before receiving therapy ($M = 3.1$, $SD = 0.6$), $t(8) = -1.53$, $p > .05$, $r = .90$.

For the control group, the lowest GPA after the midterm exams was 1.4 and the highest was 3.4. After the finals, the lowest GPA was 2.2 and the highest GPA 3.8. On average, participants in the control group showed significantly higher GPA after the CBITS ($M = 2.8$, $SD = 0.6$) than before receiving the therapy ($M = 2.3$, $SD = 0.8$), $t(4) = -3.47$, $p < .01$, $r = .95$.

When comparing the two groups, on average the GPA for participants was significantly different $t(12) = -2.36$, $p < .05$; it represented a medium-sized effect size

$r = .56$.

Self-reports for academics

Sample characteristics for participants' self-reports on academics are shown in Table 2.

Table 2.

Sample characteristics for participants' self-reports

Demographic variables	Control group	Experimental group
Gender		
Females	3	6
Males	0	3
Class standing		
Freshman	1	2
Sophomore	2	2
Junior	0	5
Senior	0	0

The experimental group consisted of nine participants and the control group of three participants. The majority of participants were female (66.7%) and most of them were in their third year of university (41.7%).

Traumatic events experienced by the experimental group were comprised of abuse, accidents, being bullied, injuries, wars and deaths. The control group experienced an accident, family issue and rape. The events occurred in adolescence or early adulthood in both groups (ranging from the age of 15-27 years old in the experimental group, and 14-22 years old in the control group).

Figure 2 displays the differences in average self-reports among the groups before and after the therapy. Before the therapy, the difference between the average scores was 6, and 9.1 after the therapy.

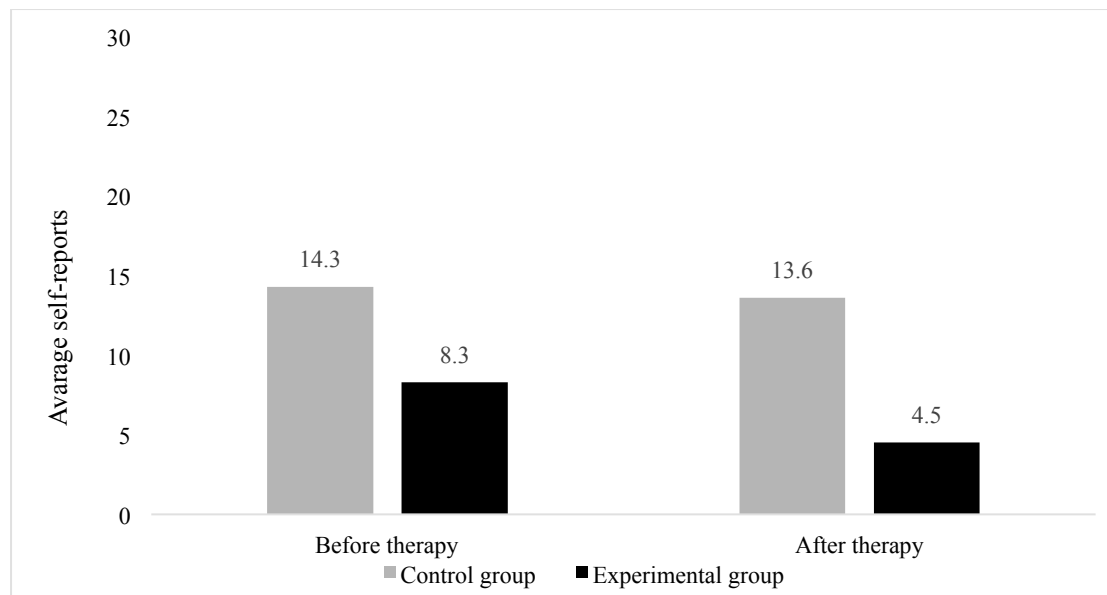


Figure 2. Differences in average self-reports before and after the therapy

The maximum attainable score on the WFIRs-s was 30. Before receiving therapy, the experimental group had a minimum score of 3, and a maximum score of 14. Afterwards, the minimum score was 0 and the maximum score was 9. On average, participants in the experimental group showed significantly lower scores on the self-reports for academics after the CBITS ($M = 4.5$, $SD = 2.9$), than before receiving therapy ($M = 8.3$, $SD = 4.1$), $t(8) = 3.00$, $p < .05$, $r = .46$.

For the control group, the minimum score prior to the therapy was 3 and the maximum score was 23. After the therapy, the minimum score was 2 and the maximum score was 23. On average, participants in the control group did not show significantly lower scores on the self-reports for academics after the CBITS ($M = 13.6$, $SD = 10.7$), than before receiving therapy ($M = 14.3$, $SD = 10.3$), $t(2) = 2.00$, $p > .05$, $r = .99$.

Students' self-reports for academics were significantly different between the experimental group and the control group $t(10) = 1.38$, $p < .05$; it represented a medium-sized effect size $r = .39$.

Teacher evaluations for participants' academics

Sample characteristics for teacher evaluations are shown in Table 3.

Table 3.

Sample characteristics for teacher evaluations

Demographic variables	Control group	Experimental group
Gender		
Females	7	7
Males	2	7
Class standing		
Freshman	1	5
Sophomore	5	5
Junior	2	4
Senior	1	0

The experimental group consisted of 14 participants and the control group of nine participants. Females comprise 60.9% and most of the participants were on their second year of university (43.5%).

The traumatic events experienced by the experimental group were accidents, deaths, abuse, affairs, family issues, injuries, wars and deaths. The control group experienced accidents, family issues, being raped, deaths and witnessing a child near death. The events occurred in their adolescence or early adulthood in both groups (ranging from the age of 14-27 in the experimental group, and 15-27 years old in the control group).

Figure 3 displays the differences in average teacher evaluations among the groups prior to and after the therapy. Before the therapy, the difference between the average scores was 1.6, and 0.1 after the therapy.

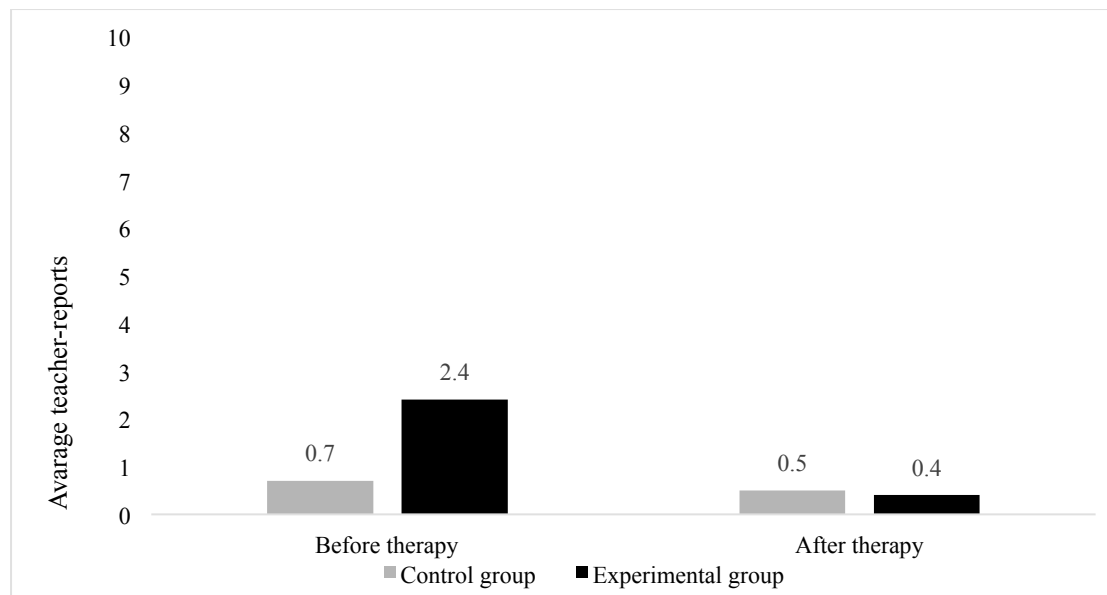


Figure 3. Differences in average teacher evaluations before and after the therapy

The possible range on the WFIRs-s was from 0 to 30. Before receiving therapy the experimental group had a minimum score of 0 and a maximum score of 11. After receiving therapy, they had a minimum score of 0 and a maximum score of 2. On average, participants in the experimental group showed significantly lower scores for the teacher evaluations after receiving CBITS ($M = 0.4$, $SD = 0.8$) than before the therapy ($M = 2.4$, $SD = 3.3$), $t(13) = 2.38$, $p < .05$, $r = .31$.

For the control group, the minimum score was 0 and the maximum score was 3 before the therapy. After the therapy, the minimum score was 0 and the maximum score was 2. On average, participants in the control group did not show significantly lower scores for teacher evaluations ($M = 0.5$, $SD = 0.8$) than before receiving therapy ($M = 0.8$, $SD = 1.3$), $t(8) = 1.51$, $p > .05$, $r = .99$.

Teacher evaluations was not significantly different when the two groups were compared $t(21) = 1.67$, $p < .05$; it represented a medium-sized effect size $r = .34$.

Discussion

The aim of this study was to examine if CBITS had a positive impact on students' academic performance in regards to their GPA, self-reports and teacher evaluations.

The findings did not support the first hypothesis; that the experimental group would significantly raise their GPA after receiving CBITS. This is inconsistent with the study of Kataoka et al. (2011), which showed that students earned higher grades after receiving the therapy. However, that was only the case for students who received an early intervention after they had been screened positive for PTSD symptoms. Students who got the delayed intervention later in the school year did not show improvements. Thus, it is possible that they didn't have as much time to internalize the skills from the CBITS. Similarly, the present study was conducted in late October and final grades were collected in early December. Therefore, a rise in GPA may be detected next semester, after the experimental group has had time to process the coping skills they have been taught.

When the self-reports were compared, the experimental group felt significantly better about their academic performance after receiving CBITS. This supports the second hypothesis of the study and is consistent with the research of Jaycox and colleagues (2010), where students reported less problematic behaviors in school after receiving the therapy.

In support of the third hypothesis, the experimental group performed better in school after receiving CBITS according to teacher evaluations. This is also consistent with the findings of Jaycox and colleagues (2010), where teachers reported less problematic behavior after the students received therapy. These results are also consistent with the findings of Stein, Jaycox and Kataoka (2003), which showed that students who received CBITS did improve academically, but the effects were short-term and non-existent in a six-month follow up.

Finally, the fourth hypothesis was not supported; that there would be a significant difference between the experimental group and the control group in respect

to GPA, students' self-reports and teacher evaluations. Even though the experimental group and the control group were significantly different for GPA and students' self-reports that was not the case for teacher evaluations.

At the end of December, the control group raised their GPA significantly despite not receiving treatment. However, it is important to note that both the experimental group and the control group increased their GPA. The mean GPA for the experimental group improved on average from 3.1 to 3.2, and from 2.3 to 2.8 for the control group. It might have been more difficult for the experimental group to raise their GPA since it was already considerably high. Class standing could also be influential because freshmen have taken fewer classes than students further into their studies. Therefore, a freshmen's GPA can change dramatically with each course that is taken. There were more freshmen in the control group than in the experimental group, which was comprised primarily of juniors and sophomores. In addition, the study was conducted in late October, lasted for six weeks, and the finals started in early December. Therefore, it is possible that the therapy was too short to affect the GPA of the experimental group or the changes have not occurred yet. Conceivably, their GPA could rise next semester like has been mentioned above.

According to self-reports, students who received CBITS felt significantly better about their academic performance after receiving the therapy than the control group, which hardly showed any change. Nevertheless, the control group rated themselves higher on the WFIRS-s (14.3) than the experimental group (8.3) for the baseline. Therefore, the therapy might be more beneficial to students with less problematic behaviors in school. Students with more severe PTSD symptoms might need more intensive and individualized therapy, like TF-CBT (Jaycox et al., 2010).

After the therapy, there was not a significant difference between the teacher evaluations for the experimental group and the control group. However, before the therapy the control group had more positive evaluations (0.77) than the experimental group (2.42). Despite that, the maximum score attainable was 30, so both groups had relatively low scores.

This is an innovative study within this area. To date, no reports were found where CBITS was adjusted to benefit university students primarily focusing on improving academic performance. Previously, CBITS has been shown to be effective for students exposed to natural disasters (Jaycox et al., 2010), community violence (Kataoka et al., 2003), socioeconomically disadvantaged students (Stein, Jaycox & Kataoka., 2003) from different ethnicities (Ngo et al., 2008) and in wide settings (Kataoka et al., 2006). The present study is a good addition to the literature as it examines American undergraduate students with various traumatic histories. A major strength for the study was that academic performance was measured in three different ways. It also had a blind evaluator because the teacher did not know if students belonged to the experimental group or the control group. Also, the same teacher evaluated every student so they measures were consistent.

Despite this, the conclusions need to be interpreted with caution based on the limitations of the study. Firstly, a convenience sample was used and the sample size was very small. That makes generalization difficult, affects the external validity and there might not have been enough statistical power to test the hypotheses.

Homogeneity also affects the external validity since all students were psychology undergraduate students. In addition, there was a lot of missing data that made the experimental and control groups even smaller. Previous studies on CBITS have also suffered from small sample sizes, missing data or high drop out rates (Kataoka et al.,

2006; Morsette et al., 2009). Additionally, it is a major limitation that there were different participants in the groups for GPA, self-reports and teacher evaluations, so the results could not be compared between the variables. It would also have been preferable to ask participants about their age to see the results in a bigger context. Finally, the therapy had a short duration without a follow-up so the long-term effect of the therapy could not be determined.

Despite these limitations the findings indicate that CBITS has a positive effect on self-perception in academics and teacher evaluations. Those are important findings, as they enable students with PTSD symptoms to feel better in school settings and perform better academically if they receive the therapy. These results highlight the importance of CBITS and are critically important for schools.

Further research is needed to investigate the relationship between CBITS and academic performance with a bigger sample, so that the results can be generalized and causal relationships can be analyzed. It is also important to conduct a follow-up to see if the results are long-term. Since CBITS is designed to reduce resistance and teach new coping skills, it could help students if they face a major traumatic event again. Therefore, it would be practical to ask students in the follow-up if they had faced such events after the intervention took place. Finally, it would be interesting to see if future researchers are able to determine what factors of the therapy contribute specifically to the improvements of the students.

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Appendix A

Trauma History Screen

The events below may or may not have happened to you. Circle “YES” if that kind of thing has happened to you or circle “NO” if that kind of thing has not happened to you. **If you circle “YES” for any events:** put a number in the blank next to it to show how many times something like that happened.

Number of times something like this happened:

- | | | | |
|---|----|-----|-------|
| A. A really bad car, boat, train, or airplane accident | NO | YES | _____ |
| B. A really bad accident at work or home | NO | YES | _____ |
| C. A hurricane, flood, earthquake, tornado, or fire | NO | YES | _____ |
| D. Hit or kicked hard enough to injure-as a child | NO | YES | _____ |
| E. Hit or kicked hard enough to injure-as an adult | NO | YES | _____ |
| F. Forced to make or have sexual contact-as a child | NO | YES | _____ |
| G. Forced to make or have sexual contact-as an adult | NO | YES | _____ |
| H. Attack with gun, knife, or weapon | NO | YES | _____ |
| I. During military service-seeing something horrible or being badly scared | NO | YES | _____ |
| J. Sudden death of a close family or friend | NO | YES | _____ |
| K. Seeing someone die suddenly or get badly hurt or killed | NO | YES | _____ |
| L. Some other sudden event that made you feel very Scared, helpless, or horrified | NO | YES | _____ |
| M. Sudden move or loss of home and possessions | NO | YES | _____ |
| N. Suddenly abandoned by spouse, partner, parent, or family | NO | YES | _____ |

Did any of these things really bother you emotionally? NO YES

If you answered “YES”, fill out a box to tell about EVERY event that really bothered you.

Letter from above for type of event: _____ Your age when this happened: _____ Describe what happened:		
When this happened, did anyone get hurt or killed?	NO	YES
When this happened, were you afraid that you or someone else might get hurt or killed?	NO	YES
When this happened, did you feel very afraid, helpless, or horrified?	NO	YES
When this happened, did you feel unreal, spaced out, disoriented, or strange?	NO	YES
After this happened, how long were you bothered by it? Not at all/ 1 week/ 2-3 weeks/ a month or more		
How much did it bother you emotionally? Not at all/ a little/ somewhat/much/ very much		

Appendix B

PTSD Symptom Scale Self Report (PSS-SR)

Below is a list of problems that people sometimes have after experiencing a traumatic event. Please rate on a scale from 0-3 how much or how often these following things have occurred to you in the last two weeks:

0 -Not at all

1 -Once per week or less/ a little bit/ one in a while

2 -2 to 4 times per week/ somewhat/ half the time

3 -3 to 5 or more times per week/ very much/ almost always

1. Having upsetting thought or images about the traumatic event that come into your head when you did not want them to	0	1	2	3
2. Having bad dreams or nightmares about the traumatic event	0	1	2	3
3. Reliving the traumatic event (acting as if it were happening again)	0	1	2	3
4. Feeling emotionally upset when you are reminded of the traumatic event	0	1	2	3
5. Experiencing physical reactions when reminded of the traumatic event (sweating, increased heart rate)	0	1	2	3

6. Trying not to think or talk about the traumatic event	0	1	2	3
7. Trying to avoid activities or people that remind you of the traumatic event	0	1	2	3
8. Not being able to remember an important part of the traumatic event	0	1	2	3
9. Having much less interest or participating much less often in important activities	0	1	2	3
10. Feeling distant or cut off from the people around you	0	1	2	3
11. Feeling emotionally numb (unable to cry or have loving feelings)	0	1	2	3
12. Feeling as if your future hopes or plans will not come true	0	1	2	3
13. Having trouble falling or staying asleep	0	1	2	3

14. Feeling irritable or having fits of anger	0	1	2	3
15. Having trouble concentrating	0	1	2	3
16. Being overly alert	0	1	2	3
17. Being jumpy or easily startled	0	1	2	3

Please mark YES or NO if the problems above interfered with the following:

- | | |
|-----------------------------------|--------------------------------------|
| 1. Work: Yes No | 6. Family relationships: Yes No |
| 2. Household duties: Yes No | 7. Sex life: Yes No |
| 3. Friendships: Yes No | 8. General life satisfaction: Yes No |
| 4. Fun/leisure activities: Yes No | 9. Overall functioning: Yes No |
| 5. Schoolwork: Yes No | |

Appendix C



Weiss FUNCTIONAL IMPAIRMENT RATING SCALE – SELF REPORT (WFIRs-s)

Work: Full time ☐ Part time ☐ Other _____

School: Full time ☐ Part time ☐

Circle the number for the rating that best describes how your emotional or behavioural problems have affected each item in the last month.

C	SCHOOL					
1	Problems taking notes	0	1	2	3	n/a
2	Problems completing assignments	0	1	2	3	n/a
3	Problems getting your work done efficiently	0	1	2	3	n/a
4	Problems with teachers	0	1	2	3	n/a
5	Problems with school administrators	0	1	2	3	n/a
6	Problems meeting minimum requirements to stay in school	0	1	2	3	n/a
7	Problems with attendance	0	1	2	3	n/a
8	Problems with being late	0	1	2	3	n/a