

Evaluating Seeking Safety for Women in Prison: A Randomized Controlled Trial

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Abstract

Objective: This study assessed the effectiveness of Seeking Safety on depression and post-traumatic stress disorder (PTSD) with incarcerated women. **Method:** A randomized controlled trial ($N = 40$) was used to analyze Seeking Safety's effectiveness compared to a treatment-as-usual control group. Analyses of covariance were used to assess differences at posttest ($n = 33$) and 4-month follow-up ($n = 29$) while repeated measures analysis of variance was used to assess the influence of the intervention on changes over time ($n = 29$). The researchers also analyzed individual participants' scores from pretest to 4-month follow-up ($n = 29$). **Results:** Both groups decreased their scores on the Center for Epidemiology Studies–Depression Scale and the PTSD Checklist, although improvement was greater for treatment group participants except for depression at 4-month follow-up. **Conclusion:** Results support the continued use of Seeking Safety as a helpful corrections-based intervention for women, but more research with larger sample sizes is needed to consider it an effective intervention.

Keywords

women in prison, Seeking Safety, RCT, outcome study, PTSD, depression

Background

Incarcerated women have distinctly gendered pathways to criminal offending, often beginning with experiences of interpersonal violence and victimization in childhood that continues throughout adolescence and into adulthood (Dehart, 2008; Salisbury & Van Voorhis, 2009; Tripodi & Pettus-Davis, 2013). An estimated 65–80% of incarcerated women report having experienced some form of childhood victimization (Carlson & Shafer, 2010; Kennedy, Tripodi, Pettus-Davis, & Ayers, 2016; McDaniels-Wilson & Belknap, 2008), compared to 35–45% of nonincarcerated women (Asberg & Renk, 2013; Briere & Elliott, 2003; Severson, Postmus, & Berry, 2005) and 15% of incarcerated men (Drapalski, Youman, Stuewig, & Tangney, 2009; Messina, Burdon, Hagopian, & Prendergast, 2006). The majority of incarcerated women who report physical and sexual abuse also experience a range of interpersonal, mental health, and substance misuse issues (Tripodi & Pettus-Davis, 2013)—all challenges that pose unique threats to women's well-being while incarcerated and ultimately upon release, indicating the importance of gender-responsive programming.

Gender-responsive programming considers the gendered context of female offending and their victimization and trauma histories (Gobiel, Blanchette, & Steward, 2016; Harris & Falot, 2001; Tripodi & Pettus-Davis, 2013). Specifically, gender-responsive programs aim to consider women's trauma histories and associated challenges by addressing previous victimization without triggering traumatic reactions (Calhoun, Messina,

Cartier, & Torres, 2010). Trauma-informed care is often a primary component of gender-responsive programming especially in prisons for women (Calhoun et al., 2010).

Trauma exposure is associated with a range of mental health and substance abuse issues for women in prison, including post-traumatic stress disorder (PTSD) and depression (Kennedy, Tripodi, Pettus-Davis, & Ayers, 2015; Lynch, Fritch, & Heath, 2012). Many incarcerated women simply lack the coping skills necessary to deal with trauma in healthy and effective ways, often compounded by their victimization histories and related substance misuse (Calhoun et al., 2010; Wright, Van Voorhis, Salisbury, & Bauman, 2012). Victimized women in prison are, therefore, more likely to present with serious mental health issues and substance abuse but rarely receive adequate trauma-informed programming while incarcerated (Owen, Wells, Pollock, Muscat, & Torres, 2008). This signifies the importance of implementing and evaluating corrections-based gender-responsive programming for women to improve mental health symptoms and substance misuse. Two recent meta-analyses on

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interventions for incarcerated women found services to generally be effective. One reports that corrections-based interventions targeted for women are useful in reducing substance relapse and recidivism (Tripodi, Bledsoe, Kim, & Bender, 2011), whereas a more recent meta-analysis suggests that gender-responsive programs including trauma-informed programming significantly reduce the odds of recidivism (Gobiel et al., 2016). A recent randomized control trial (RCT) found a gender-specific and trauma-informed intervention (beyond violence) developed for women in criminal justice settings who have experienced and perpetrated violence to be promising in reducing the severity of short-term mental health problems (Day, Zahn, & Tichavsky, 2015; Saxena, Messina, & Grella, 2014) and long-term recidivism (Kubiak, Fedock, Kim, & Bybee, 2016).

Another trauma-informed and gender-responsive intervention is Seeking Safety, which focuses on the relationship between trauma, mental health issues, and substance abuse while providing psychoeducation on the consequences of trauma (Najavits, 2002). Content modules teach coping skills relevant for incarcerated women's experiences. Seeking safety is a cognitive-behavioral-based intervention with relatively strong evidence of effectiveness (Najavits & Hien, 2013) and was identified as a promising treatment for co-occurring PTSD and substance abuse by the Society for Traumatic Stress Studies. Seeking Safety has been implemented, tested, and generally found useful among samples of women who meet diagnostic criteria for both PTSD and substance abuse, and slight improvements in coping strategies from pretest to posttest have been documented (Hien, Cohen, Miele, Litt, & Capstick, 2004; Najavits, Weiss, & Liese, 1996). Pre- and quasi-experimental studies (Lynch et al., 2012; Zlotnick, Najavits, Rohsenow, & Johnson, 2003) suggest that the Seeking Safety intervention for incarcerated women is associated with reductions in PTSD symptoms, depression, and recidivism. An RCT investigation of Seeking Safety (Zlotnick, Johnson, & Najavits, 2009) found no significant differences between Seeking Safety participants and women in a treatment-as-usual control group on PTSD and substance abuse. Both groups improved from pretest to posttest and pretest to follow-up. However, the RCT was implemented within a residential substance abuse treatment program, which reduces the ability to draw conclusions about the effectiveness of Seeking Safety when implemented with women not receiving other intensive treatment services. Therefore, an experimental evaluation of Seeking Safety outside of a therapeutic treatment center is warranted to determine if it is a useful intervention for incarcerated women with a history of both victimization and substance abuse, especially when compared to similar women receiving no treatment or treatment as usual.

Research Purpose

The primary purpose of this pilot RCT is to explore the utility of Seeking Safety for incarcerated women by comparing Seeking Safety participants to a treatment-as-usual control group on

depression and PTSD at posttest and again at 4-month follow-up. The specific aims for this research study are to determine whether women in prison who participate in Seeking Safety are more likely to exhibit (1) less severe depression symptomology as compared to women in a control group and (2) less severe PTSD symptomology as compared to the control group. The two hypotheses examined in the study are:

Hypothesis 1: Incarcerated women who complete Seeking Safety will have significantly less severe symptoms of depression from pretest to posttest and from pretest to follow-up as compared to the control group.

Hypothesis 2: Incarcerated women who complete Seeking Safety will have significantly less severe symptoms of PTSD from pretest to posttest and from pretest to follow-up as compared to the control group.

Method

Design

This study employed an RCT design with an intended treatment-to-control allocation of 1:1 in order to meet the specific aims and test the hypotheses. A certified Seeking Safety facilitator delivered the intervention to the treatment group (two groups of Seeking Safety), and the control group did not receive Seeking Safety but continued treatment as usual. Treatment-as-usual programming included residential substance abuse, psychological services, mindful meditation, group intervention, and/or anger management. The treatment-as-usual programming does not include gender-responsive and trauma-focused interventions. Most women participated in treatment-as-usual programming before this study was implemented. Two members of the research team administered the scales at posttest and again 4 months after the intervention ended. The research team members who collected posttest and follow-up data did not know whether the women were in the treatment group or in the control group.

Sample

The study took place at a medium/maximum-level security prison in North Carolina. All women at the prison were invited to be screened for eligibility if they had experienced trauma and had substance misuse problems. Inclusion criteria for participation included (1) meeting the diagnostic criteria for a substance use disorder (as determined by the Mini International Neuropsychiatric Interview [MINI]), (2) past experience with a traumatic event, and scoring above the threshold for PTSD on the PTSD Checklist-Civilian (PCL-C; i.e., a score of 30 or above), and (3) remaining in custody for at least 4 months after the intervention's conclusion. The desired sample size was 40 women, with 20 assigned to the treatment group and 20 assigned to the control group. Random assignment was conducted using SPSS software version 22.0 (IBM Corp, 2013).

Recruitment and Screening

Participants were recruited to the study through the use of fliers, case manager referrals, and recruitment talks about the research project conducted by two members of the research team. Interested participants were screened for eligibility between July 20 and July 23, 2015. Prior to full screening, participants were asked to indicate whether they had experienced a traumatic event in their past and whether they had used substances in the year prior to incarceration. Volunteers who answered yes to both questions were then screened using the PCL-C and the MINI. Those who scored higher than a 30 on the PCL-C (cutoff for PTSD) and who met the criteria for a substance use disorder according to the MINI were eligible for the study.

Procedures

Intervention description. Seeking Safety is a short-term, manualized, cognitive-behavioral intervention that simultaneously addresses trauma and substance abuse (Najavits, 2002). The intervention is present-focused, designed to promote trauma recovery, increase coping strategies, reduce drug and alcohol use, and address mental health issues such as depression and PTSD that stem from traumatic exposure. Seeking Safety can be delivered in an individual or group format, although previous in-prison applications of Seeking Safety use a group format to reduce costs and promote universality among participants (Wolff, Frueh, Shi, & Schumann, 2012; Zlotnick et al., 2009). This study implemented Seeking Safety in a group format. The Seeking Safety program consists of 25 modules that cover a range of cognitive-behavioral and interpersonal skills (e.g., detaching from emotional pain, healthy relationships). The program allows group leaders to tailor topics to the specific needs of participants and not all 25 modules need to be covered during the course of the group (Najavits, 2002; Wolff et al., 2012). Groups are designed to meet for 90 min, twice a week, for 12 weeks. The 20 treatment participants were divided into two groups consisting of 10 women in each group. The two groups met weekly on Wednesdays and Fridays for 12 weeks from September 2, 2015, through November 20, 2015.

Intervention fidelity. One member of the research team was certified as a Seeking Safety fidelity rater by the Seeking Safety development team. This research team member observed two sessions from each group to assess the fidelity of treatment. Fidelity scores from the first observation midway through the group were strong but were lower at the second checkpoint.

Measures

Depression symptomology. The 20-item *Center for Epidemiology Studies-Depression Scale* (CES-D; Radloff, 1977) was used to assess depressive symptomology at pretest, posttest, and 4-month follow-up. The CES-D measures depression by asking the respondent to respond to each item on a 4-point scale asking

about depressive symptoms over the past 1 week ranging from “not at all” to “almost every day.” The CES-D is used as an aid in identifying individuals at-risk for clinical depression. The cutoff score is 16, meaning that individuals who score higher than 16 on the measure are at-risk for clinical depression (Knight, Williams, McGee, & Olan, 1997; Radloff, 1977; Zich, Attkisson, & Greenfield, 1990). The CES-D has shown strong reliability and validity with α s ranging from .89 to .90 (Hann, Winter, & Jacobsen, 1999). Additionally, Hann, Winter, and Jacobsen (1999) found the CES-D to have strong construct validity, which was determined by assessing its correlation with other validated assessment scales. Cronbach’s α for the 20 items on the CES-D with the sample for this study was .896.

Trauma symptomology. The 17-item *PCL-C* (Weathers, Litz, Huska, & Keane, 1994) was used to identify women who met diagnostic criteria for PTSD in the 1 month prior to data collection. Each item was scored on a Likert-type scale ranging from 1 (*not at all*) to 5 (*extremely*). Respondents who scored between 17 and 29 on the PCL-C were considered to have some PTSD, respondents who scored between 30 and 44 were considered to have moderate PTSD, and respondents who scored above 44 were considered to have severe PTSD. Research has found the PCL-C to have strong reliability and validity with the α s ranging from .85 to .94 (Ruggiero, Del Ben, Scotti, & Rabalais, 2003). Additionally, the PCL-C has high test-retest validity with an α score of .88 for participants who took the PCL-C 1 week apart and .68 for participants who took the PCL 2 weeks apart (Ruggiero et al., 2003). Cronbach’s α for the 17 items on the PCL-C with the sample for this study was .936.

Analytic plan. Analysis of covariance (ANCOVA) was used to assess for differences between the treatment group and control group at posttest and at 4-month follow-up while controlling for pretest scores as a covariate. Repeated measures analysis of variance (ANOVA) were used to assess for differences between the treatment and control group over time and to determine whether differences are due to group assignment.

Results

Participant Flow

See Figure 1 for a breakdown of the participant flow. A total of 70 women were assessed for eligibility. Eleven women were initially screened out because they reported never having drunk alcohol or used drugs, or not having experienced trauma/victimization. An additional 13 women were screened out because they did not meet the eligibility criteria based on scores on the PCL-C and/or MINI. This yielded a total of 46 eligible women. Our desired sample size was 40 due to intervention group size recommendations and study resources, so six women were randomly screened out using computer-generated procedures. Twenty of these women were randomly allocated to one of the treatment groups (two groups of 10 participants), and 20 were

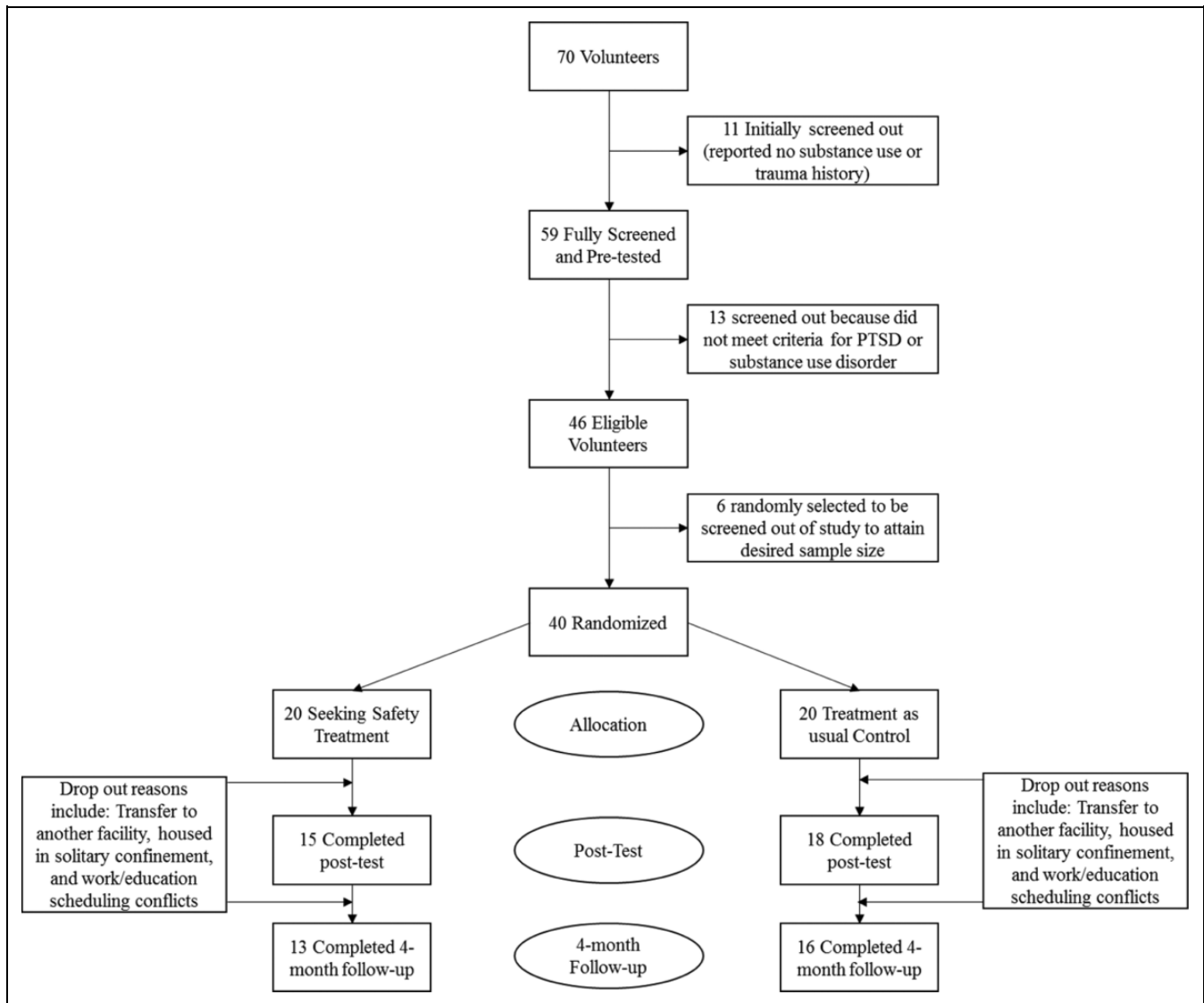


Figure 1. QUOROM flow chart of participant flow.

randomly allocated to the control group, for an allocation ratio of 1:1. Five participants from the treatment group and two participants from the control group were dropped by posttest for reasons including transfer to another facility, being housed in solitary confinement, and work/education scheduling conflicts ($n = 33$). An additional four women dropped out after posttest and before follow-up (two from treatment group and two from control group), yielding a sample size of 29 for 4-month follow-up analyses and the two repeated measures ANOVA. This resulted in a retention rate of 65% for the treatment group and 80% for the control group (73% for the entire study).

Sample Characteristics

Table 1 portrays demographics of the sample. Despite the randomization, there were differences between participants assigned to the treatment group and participants assigned to

the control group. The women in the treatment group were older, served more time in prison, had more previous incarcerations, and a higher percentage identified their race as White. Moreover, as indicated in Table 2, women in both the treatment group and control group had severe levels of PTSD (>44 score on PCL), but women in the treatment group scored lower on average at pretest as compared to women in the control group. Women in the treatment group also had less severe depression at pretest as compared to women in the control group.

Depression Results

The researchers conducted ANCOVA to predict CES-D posttest scores and CES-D follow-up scores as a function of group condition, with pretest scores used as a covariate, which is particularly important because of pretest differences between the two groups. The first hypothesis is that women in prison who complete Seeking Safety will have significantly less

Table 1. Demographics.

Group Assignment	Race of Participant	Age of Participant (Mean, SD)	Length of Incarceration, Years (Mean, SD)	Number of Previous Incarcerations (Mean, SD)	Age at First Arrest (Mean, SD)	Age at First Incarceration (Mean, SD)
Control	66% White 17% Black 17% Other	37.33 (8.94)	23.51 (21.43)	0.67 (1.19)	22.11 (6.94)	26.17 (7.57)
Treatment	74% White 13% Black 13% Other	43.07 (8.63)	36.22 (30.82)	1.00 (1.41)	22.13 (8.31)	26.33 (7.27)

Table 2. Pre-, Post-, Follow-Up Scores for PTSD and Depression.

Group Assignment		Depression			PTSD		
		Pretest	Posttest	Follow-Up	Pretest	Posttest	Follow-Up
Control group	Mean	35.78	29.06	27.32	59.83	46.17	41.81
	SD	11.32	10.19	8.88	15.04	12.98	12.30
	Unit change from pretest		6.72	8.46		13.66	18.02
Treatment group	Mean	27.67	17.53	15.85	53.87	34.33	30.46
	SD	10.75	11.31	10.57	14.95	11.20	6.80
	Unit change from pretest		10.14	11.82		19.54	23.41

Note. PTSD = post-traumatic stress disorder.

Table 3. Differences in Depression Scores Form Pre to Post, Pre to Follow-Up, and Group × Time.

Time	Variable	F	Sig.	Partial η^2
Posttest	Pretest scores	5.57	.03	.16
	Group assignment	5.08	.03	.15
Follow-up	Pretest scores	5.12	.03	.17
	Group assignment	4.03	.06	.13
Repeated measures	Time	11.31	.00	.30
	Time × Group	0.15	.84	.005

severe symptoms of depression from pretest to posttest and from pretest to follow-up as compared to women in the treatment-as-usual control group. Descriptive statistics are provided in Table 2. There was a statistically significant difference in pretest depression scores between the treatment group ($M = 27.67, SD = 10.75$) and the control group ($M = 35.78, SD = 11.32$) conditions, $t(31) = 2.10, p = .044$. Both groups' depression scores improved from pretest to posttest and from pretest to follow-up. The treatment group's depression scores improved by 10.14 points from pretest to posttest and by 11.82 points from pretest to follow-up, whereas the control group's scores improved by 6.72 points from pretest to posttest and by 8.46 points from pretest to follow-up.

Summary of the ANCOVA findings are located in Table 3. Results show significant differences in posttest scores between conditions after controlling for pretest scores, $F(2, 1) = 5.57, p = .03$, partial $\eta^2 = .16$. The researchers then conducted another ANCOVA to assess differences of CES-D scores at 4-month follow-up while controlling for pretest scores, as displayed in

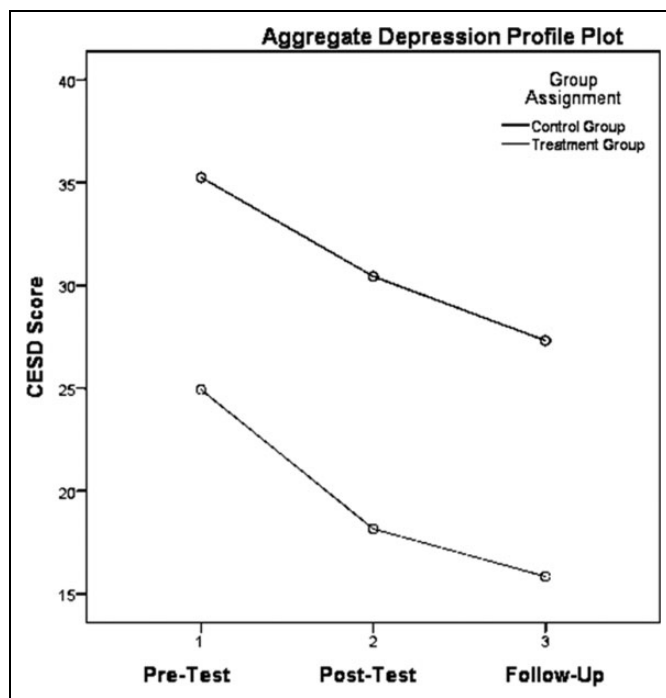


Figure 2. Aggregate depression scores over time by group.

Table 3. Differences were not significant at 4-month follow-up scores with an α set at .05, $F(2, 1) = 4.03, p = .055$, partial $\eta^2 = .13$. Aggregate changes over time are displayed in Figure 2.

The researchers conducted repeated measures ANOVA to assess depression symptom changes over time and to determine whether those changes are likely due to group assignment.

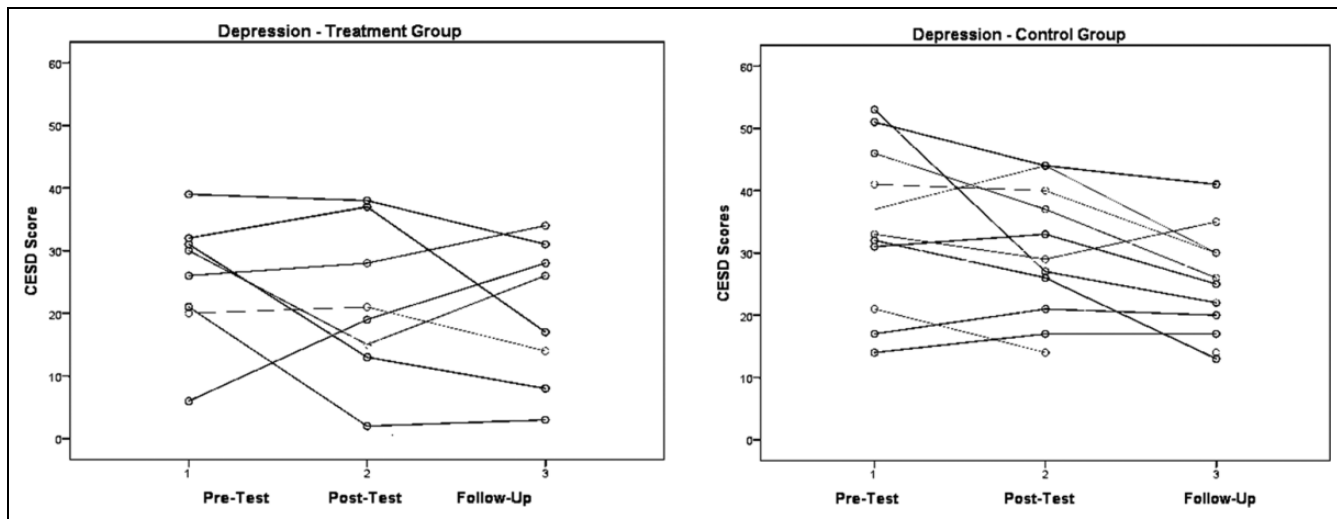


Figure 3. Individual depression scores over time between groups.

Mean changes for the treatment group and control group are portrayed in Figure 2, and ANOVA results are in Table 3. There were statistically significant differences over time, $F(2,1) = 11.31, p < .01$, partial $\eta^2 = .30$; however, the Time \times Group interaction was not significant.

Figure 3 highlights the individual change on CES-D scores for all treatment and control group participants for whom data were collected at all data points. Sixty-seven percent of the treatment group participants improved their CES-D scores from pretest to posttest and 72% of the control group participants improved their scores from pretest to posttest. Improvement was more pronounced for treatment group participants. Ninety-two percent of the treatment group improved their CES-D scores from pretest to follow-up and 62% improved from posttest to follow-up, and 81% of the control group improved their CES-D scores from pretest to posttest and 63% improved from posttest to follow-up. This may be partially due to the pretest differences in depression scores at pretest.

PTSD Results

The researchers conducted an ANCOVA to predict PCL-C posttest scores and PCL-C follow-up scores as a function of group condition, again with pretest scores used as a covariate. Hypothesis 2 is that women in prison who complete Seeking Safety will have significantly less severe PTSD symptoms from pretest to posttest and from pretest to follow-up as compared to women in the treatment-as-usual control group. Descriptive statistics for the treatment group and the control group are provided in Table 2. There was not a statistically significant difference in pretest PTSD scores between the treatment group ($M = 53.87, SD = 14.95$) and the control group ($M = 59.83, SD = 15.04$) conditions, $t(31) = 1.14, p = .264$. Both groups reduced their PTSD scores from pretest to posttest and from pretest to follow-up. The treatment group improved their PTSD scores by 19.54 points from pretest to posttest and by 23.41 points from pretest to follow-up, whereas the control

Table 4. Differences in PTSD Scores Form Pre to Post, Pre to Follow-Up, and Group \times Time.

Time	Variable	F	Sig.	Partial η^2
Posttest	Pretest scores	3.05	.09	.09
	Group assignment	6.03	.02	.17
Follow-up	Pretest scores	1.62	.21	.06
	Group assignment	6.99	.01	.21
Repeated measures	Time	31.49	.00	.54
	Time \times Group	0.56	.52	.02

Note. PTSD = post-traumatic stress disorder.

group improved their scores by 13.66 points from pretest to posttest and by 18.02 points from pretest to follow-up. The treatment group’s mean PTSD scores went from “severe PTSD” to “moderate PTSD” while the control group improved their scores but remained in the “severe” range.

Summary of the ANCOVA findings are located in Table 4. Results show significant differences in posttest scores between conditions after controlling for pretest scores, $F(2, 1) = 6.03, p = .02$, partial $\eta^2 = .17$. Next, the researchers conducted ANCOVA to assess differences of PCL-C scores at 4-month follow-up while controlling for pretest scores as a covariate, depicted in Table 4. Results indicate significant differences in 4-month follow-up scores between the treatment group and the control group after controlling for pretest scores, $F(2, 1) = 6.99, p = .01$, partial $\eta^2 = .21$.

The researchers then conducted repeated measures ANOVA to assess changes over time and to determine whether those changes are likely due to group assignment. Mean changes for the treatment group and control group are portrayed in Figure 4, and ANOVA results are in Table 4. There were statistically significant differences over time, $F(2, 1) = 31.49, p < .01$, partial $\eta^2 = .54$; however, the Time \times Group interaction was not significant, indicating that the group assignment is not likely to be the reason there was change over time from pretest

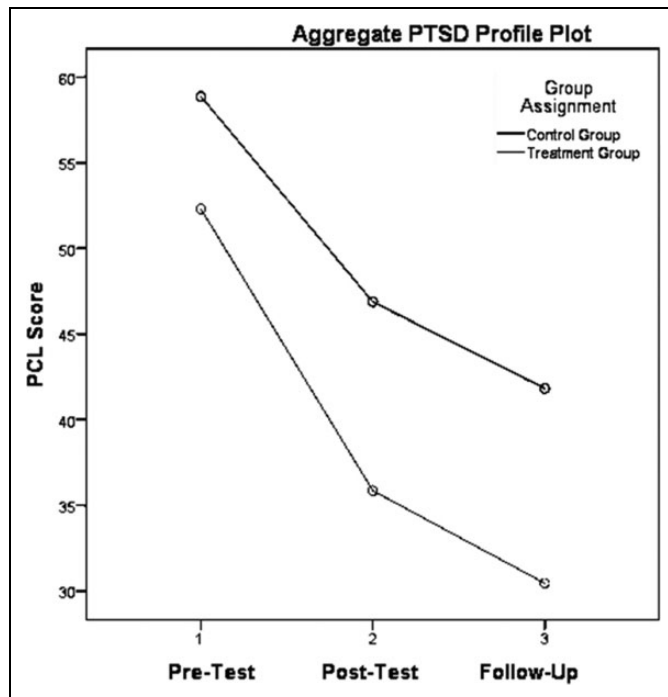


Figure 4. Aggregate post-traumatic stress disorder scores over time by group.

to 4-month follow-up. This may be partially due to pretest differences in PTSD scores, although those differences were not statistically significant.

Figure 5 shows the individual change on PCL-C scores for all treatment and control group participants for whom data were collected at all data points. Ninety-three percent of these treatment group participants improved their PCL-C scores from pretest to posttest, whereas 83% of the control group participants improved their scores from pretest to posttest. Improvement was more profound for treatment group participants. One hundred percent of the treatment group improved their PCL-C scores from pretest to follow-up.

Discussion

This study examined the effectiveness of Seeking Safety—a trauma-focused and cognitive-behavioral-based intervention—on depression and PTSD symptoms for incarcerated women. The effect sizes comparing the treatment group and control group on depression and PTSD scores were large at both posttest and 4-month follow-up (Cohen, 1988). Both the treatment and control groups improved their depression scores from pretest to posttest and pretest to follow-up. Significant differences were found at posttest but not at follow-up with α set at .05 ($p = .055$). However, considering the cutoff for risk of clinical depression on the CES-D is 16, these results may be clinically significant because the mean for the treatment group fell below the cutoff (15.85), while the mean for the control group did not. Future research with larger sample sizes may have enough power to detect statistical differences and reduce the chances of

committing a Type II error. Repeated measures ANOVA results indicated significant differences between the two groups over time, but the Group \times Time interaction was not significant, again, perhaps because of the differences between the groups at pretest or small sample size. A higher percentage of the control group participants improved their scores from pretest to posttest, but the mean change was higher for treatment group participants. More treatment group participants improved from pretest to follow-up than control group participants.

Regarding PTSD, both Seeking Safety participants and the control group improved from pretest to posttest and from pretest to 4-month follow-up. Seeking Safety participants' scores improved from an average considered severe according to the PCL-C to an average score considered "moderate," while the control group's mean PTSD scores remained severe. ANCOVA results indicate significant differences between the two groups at posttest and at 4-month follow-up, but although the repeated measures ANOVA also revealed differences between groups, the Group \times Time interaction was not significant. Additionally, we were able to analyze individual pathways from pretest to follow-up thanks to the small sample size, allowing us to analyze the data without relying on the aggregate. A higher percentage of participants from the treatment group improved their PTSD scores from pretest to posttest (93%) and from pretest to follow-up (100%) than did the control group. Changes in PTSD scores over time and between groups were more robust than changes in depression scores. Although the concerns outlined herein repeatedly highlight the limitations of the small sample size of this study, it is rather promising that there were statistically significant decreases in PTSD for the treatment group from pretest to posttest and pretest to follow-up as well as decreases in depression from pretest to posttest.

This is the first experimental study assessing the effectiveness of Seeking Safety with women selected from a prison's general community. Although three quasi- or preexperimental studies found significant reductions in PTSD and depression for Seeking Safety completers in prison (Lynch et al., 2012; Wolff et al., 2012; Zlotnick et al., 2003), the one other RCT did not indicate significant differences on PTSD scores between the treatment group and the control group (Zlotnick et al., 2009). However, both the treatment group and control group were recruited from an evidence-based substance abuse treatment ward of a women's prison, which could explain the lack of difference. The results of the current investigation are not conclusive partially because pretest differences between the groups on the outcome variables make it difficult to compare the treatment and control group, particular with depression due to statistically significant pretest differences. However, it is convincing that the majority of women in the Seeking Safety group improved their depression and PTSD scores from pretest to posttest, and these improvements lasted over time as portrayed with the 4-month follow-up data analyses. Thus, Seeking Safety has potential long-term positive impact, sustainability, and potential cost-effectiveness considering these improved mental health variables are related to recidivism.

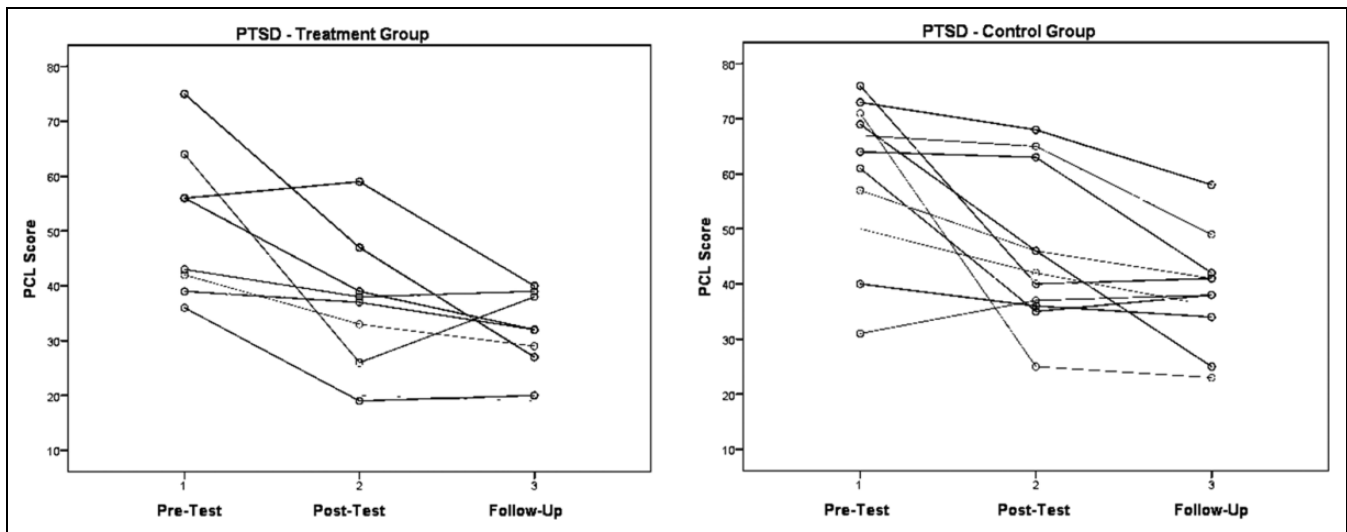


Figure 5. Individual post-traumatic stress disorder scores over time and between groups.

There are important limitations to this study. First, the sample size is small, which is particularly important for the following three reasons: (1) despite random assignment, there were differences between groups because of outliers at pretest, (2) less power increases the chances for Type II error, which may be the case for the group difference analysis at posttest for depression that yielded a nonsignificant p value result of .055, and (3) outliers affect the group's aggregate mean score. For example, as evident in Figure 3, there is an outlier in the treatment group, as one participant had clinically lower levels of depression than her peers, and she had a steep increasing slope (indicating increasing depression) over time, which could have contributed to the nonsignificant depression findings at follow-up. The second limitation for this project is attrition. Seven of the original 40 participants were unavailable by posttest (5 from the treatment group and 2 from the control group) and a total of 11 participants by follow-up (7 from the treatment group and 4 from the control group). Considering the small sample size, having data from all of the original participants would have increased power and potentially strengthened the results of the study. Attrition is inevitable when conducting prison research because of administrative decisions beyond the researchers' control, providing rationale that future research should be conducted with larger sample sizes to assuage the influence of attrition on the results.

The third limitation is fidelity of the intervention. Seeking Safety fidelity was stronger in the first evaluation compared to the second despite the group facilitator being certified as a Seeking Safety counselor. Supervision from another certified Seeking Safety counselor should be provided weekly in future evaluations of Seeking Safety with incarcerated women. Finally, the fourth limitation is the potential of control group contamination. The average length of stay for women in the study was approximately 30 years. Considering this and the small size of the prison, there is high likelihood that women who participated in the study knew each other well, increasing

the likelihood that women from the treatment groups shared information with women in the control group, particularly weekly handouts and homework assignments.

Conclusion

Results from this pilot RCT indicate that Seeking Safety with incarcerated women is a promising approach for reducing PTSD and depressive symptoms, but more research is needed to consider it an effective intervention with incarcerated women. The randomized control nature of this pilot study is a start to strengthening evidence of the intervention's utility in reducing mental health symptoms. Experimental studies with larger samples are needed to assure that the treatment and control groups are truly comparable and to analyze both short- and long-term changes. Finally, though future studies should assess Seeking Safety's influence on recidivism, we encourage researchers and practitioners to also consider the physical and psychological well-being of women not scheduled for upcoming release, such as the participants in this study. It is important to consider health outcomes beyond recidivism that affect incarcerated women.

Declaration of Conflicting Interests

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