BRIEF REPORT

Significant Reductions in Posttraumatic Stress Symptoms in Congolese Refugees Within 10 days of Transcendental Meditation Practice

Brian Rees,¹ Fred Travis,² David Shapiro,³ and Ruth Chant⁴

¹Medical Corps, U.S. Army Reserve, 63d Regional Support Command, Moffett Field, California, USA
²Center for Brain, Consciousness and Cognition, MUM Research Institute, Fairfield, Iowa, USA
³Institute of Science, Technology and Public Policy, Fairfield, Iowa, USA
⁴MUM Netherlands, Station 24, Vlodrop, The Netherlands

This brief report follows 11 of the initially waitlisted control refugees after they learned TM. These individuals had already been tested three times over a 90-day period, and so served as their own control. They were among those waitlisted who were not matched in the previous study, thus were not required to complete the study and were able to practice TM.

Posttraumatic stress (PTS) results when a situation of extreme stress overwhels an individual’s ability to cope, inflicting psychological trauma. The situation may involve the threat of death, or of violation of physical, sexual, or psychological integrity, to oneself or to someone else (American Psychiatric Association, 1994). Meditation practices lead to experiences that could help deal with PTS symptoms. Focused attention meditations lead to improved emotional regulation (Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008; Lutz, Slagter, Dunne, & Davidson, 2008). Automatic self-transcending meditation, such as Transcendental Meditation® (TM), can lead to a stable inner sense of self (Mahesh Yogi, 1967; Travis & Pearson, 2000).

Three studies have reported that practice of TM reduces PTS symptoms. A random assignment study of 18 Vietnam veterans reported that TM was more effective than psychotherapy in reducing anxiety, depression, insomnia, alcohol abuse, PTS symptoms, and stress reactivity (Brooks & Scarano, 1985). A pilot study with five veterans from Iraq and Afghanistan reported significant reductions in anxiety, depression, and PTS symptoms after 3 months’ TM practice (Rosenthal, Grosswald, Ross, & Rosenthal, 2011). Our recent matched-control study with 42 subjects reported significant reductions in PTS symptoms in a refugee population. All subjects had baseline Posttraumatic Stress Disorder Checklist–Civilian (PCL-C; Weathers, Litz, Huska, & Keane, 1994) scores greater than 43 with an average for both groups of 66. All subjects in the TM group had clinically significant improvements in their PCL-C scores; none of the controls did. (A drop of 11 points on this scale is considered clinically significant.) Thirty days after learning TM, PCL-C scores had dropped an average of 36 points with 90% of TM subjects dropping to a nonsymptomatic level (nonsymptomatic being a score below 35 on a scale of potential scores from 17 to 85). PCL-C levels continued to drop at the 135-day posttest for the TM group. PCL-C scores for the controls increased from baseline to the 30-day and the 135-day posttests. None of the control subjects reached the nonsymptomatic level (Rees, Travis, Shapiro, & Chant, 2013). The effect size was very large at > 5.0.

This follow-up pilot study tested whether Transcendental Meditation® (TM) practice would significantly reduce symptoms of posttraumatic stress in Congolese refugees within 10 days after instruction. The Posttraumatic Stress Disorder Checklist–Civilian (PCL-C) was administered to nonmatched waitlist controls from a previous study 3 times over a 90-day period. Within 8 days of the third baseline measure, 11 refugees were taught TM, then retested 10 days and 30 days after instruction. Average PCL-C scores dropped 29.9 points from 77.9 to 48.0 in 10 days, then dropped another 12.7 points to 35.3 at 30 days. Effect size at 10 days was high ($d = 4.05$). There were no adverse events. All participants completed the study and were able to practice TM.
to remain as controls through the 135 days, and were free to learn TM after their 90-day test. They were retested 10 days and 30 days after learning TM. This study primarily investigated whether TM practice significantly affected PTS symptoms within as little as 10 days, and secondarily sought to replicate the previous study’s 30-day posttest results.

Method

Participants

Eleven Congolese refugees, part of the control group for the aforementioned larger TM study, chose to learn the TM practice after the third test in that study. These individuals, from the Democratic Republic of the Congo, were currently staying around Kampala, Uganda in temporary shelters. They had been exposed to combat, sexual assault, torture, and/or forced to witness the abuse or killing of loved ones. There were three females and eight males; average age was 33.18 years (SD = 6.82 years), ranging from 21 to 44. All had PCL-C scores greater than 46 at the three baseline tests. The study was approved by the MUM Research Institute Institutional Review Board.

Measures

The PCL-C is a 17-item self-report questionnaire of PTS symptoms using a 5-point Likert scale (McDonald & Calhoun, 2010) with possible scores ranging from 17 = not bothered by any symptoms to 85 = reflecting extreme symptoms in all areas. PCL-C scores correlate highly with scores on the CAPS (Clinician Administered PTSD Scale), r = .93 (Forbes, Creamer, & Biddle, 2001). The PCL-C has high levels of validity (Wilkins, Lang, & Norman, 2011), test-retest reliability (r = .96), and high internal consistency (coefficients α = .97). A drop of 11 points on this measure is considered clinically significant (Reger et al., 2011). A score of 34 or below is considered nonsymptomatic (Weathers, et al., 1994). The PCL-C was administered in Swahili, French, Lingala, or English.

Procedure

The Transcendental Meditation (TM) technique is practiced with eyes closed, sitting comfortably. The individual begins silently appreciating a mantra, a sound without meaning given by a qualified TM teacher. The mantra is experienced at increasingly finer levels; in this process awareness goes beyond or “transcends” thought (Maharishi, 1969; Travis & Pearson, 2000; Travis & Shear, 2010). This technique is a secular practice without a strong cultural component, so people from all major religions have learned and practice TM (Rosenthal, 2011).

A manualized treatment protocol was not used. TM is trademarked and all the teaching materials used in TM instruction are proprietary. Prospective TM teachers must attend a 6-month in-residence teacher training course (TTC), within which much of the teaching procedure is committed to memory. After successful completion of the TTC, teachers are certified by the TM organization, and may teach TM. TM is taught in this standardized format: introductory lectures (1 hour), personal instruction (1½ hours), three daily follow-up meetings of 2 hours each, with optional subsequent follow-up meetings (1–2 hours). Recertification courses for teachers assure consistent standardization of TM instruction worldwide.

These individuals attended meetings at a local rented facility to learn about the study. They filled out a demographic form, a consent form, and the PCL-C. Inclusion criteria were (a) not practicing any other Eastern or Western system of meditation; (b) free of severe mental problems that would interfere with practicing TM, as assessed by the medical doctor on the team; (c) able to spend 20 minutes morning and afternoon practicing TM; (d) a score greater than 40 on the PCL-C (in practice > 46); and (e) available for all posttests. Other issues, such as injuries, nutrition, finances, and religion, were not investigated. We did not systematically assess for other treatments for PTS as access to mental health facilities was minimal to nonexistent.

These 11 waitlisted refugees completed the PCL-C at baseline, then 30 and 90 days later. At none of those times did any participant’s PCL-C score dip below 47. Within 8 days after the third test, they were instructed in the TM technique by certified African TM teachers in the standardized format and then were retested after 10 and 30 days of TM practice. Adherence to regular (twice daily) meditation practice was not systematically assessed; however, assurance of both adherence to, and competence in, meditation practice are routine aspects of TM instruction and were emphasized by these TM instructors. Optional weekly follow-up group meetings (around 1 hour) were available in the facility in Kampala. The first weekly follow-up session, 10 days after instruction, was the occasion of the 10-day posttest. Data were collected from all 11 participants 10 and 30 days after instruction. No adverse events were reported by these 11 newly instructed meditators nor were any noted by their teachers. The Ugandan teachers used the services of Congolese translators if needed.

Data Analysis

The PCL-C scores were first tested for normality, outliers, and homogeneity of variance. Two analyses were conducted. Repeated measure analyses of variance assessed changes over the first three baseline measures, and then from the last baseline to the assessments done after 10 and 30 days’ TM practice.

Results

The PCL-C baseline and posttest scores were normally distributed—skewness and kurtosis were between −1.0 and 1.0. Levene’s test of homogeneity of variance was not significant. The coefficient alpha for these data was high (coefficient α = .80).

The PCL-C scores increased over the 90 days before learning TM. The first repeated-measures analysis, which tested the
change in scores over the three baseline measures, yielded a significant main effect with PCL-C scores increasing over the 90 days before learning TM, Greenhouse-Geisser $F(2, 20) = 4.6, p = .024$.

After 10 days’ TM practice, average PCL-C scores were 29.9 points lower, and an additional 12.7 points lower on the 30-day posttest. The second repeated-measures analysis, which tested the change in scores after learning TM, yielded a highly significant main effect with PCL-C scores significantly decreasing from the last baseline to the 30-day TM assessment Greenhouse-Geisser $F(2, 20) = 99.1, p < .001; d = 3.3$. The data are shown in Table 1.

Post hoc analyses showed the drop in scores on the PCL-C after 10 days TM practice was significant, Greenhouse-Geisser $F(1,10) = 257.0, p < .001; d = 4$, and the drop in PCL-C scores from 10 days to 30 days was also statistically significant, Greenhouse-Geisser $F(1,10) = 12.3, p = .006$.

### Discussion

During the three baseline measures, PTS symptoms rose with each recording. Aside from the ongoing stress associated with their status as refugees and their substandard living conditions, we have no clear information as to why their scores increased over the study period prior to TM instruction. Clearly though, the second and third baseline scores did not demonstrate any regression to the mean.

Within 10 days of learning TM, PCL-C scores had decreased significantly, and by the 30-day posttest they declined even further. These data replicate the findings of the earlier matched study that reported a 36-point drop in PCL-C score after 30 days TM practice, with the PCL-C scores remaining low after 135 days practice (Rees et al., 2013).

As this is a single-group only design with a small number of subjects, this study has limitations. The PCL-C, a self-report measure, was the single test employed. We are not aware of the PCL-C having been normed for this population nor validated in Lingala or Swahili. Adherence to regular meditation practice was not systematically assessed. These participants essentially selected themselves to learn TM after their time as waitlist controls. Their ability to be first among the waitlist controls to secure TM instruction may reflect a greater degree of help-seeking that predisposed them to have better outcomes than would have a random sample. The absence of an active control in this group allows the interpretation that results were due to placebo effect. There may have been experimental-demand effects among the TM participants to please the teachers.

These limitations, however, would not seem to invalidate the results. Although the PCL-C was the only test instrument used, it has been shown to be a valid and reliable measure of PTS symptoms. Experimental-demand effects and nonspecific effects may have affected the change, but seem unlikely to have caused a decrease approaching nonsymptomatic levels, particularly after the sustained high scores of the 90 days of baseline. The magnitude of change at 30 days in this study replicates the findings of the previous controlled study. Thus, a reasonable inference from this pilot study is that TM practice significantly reduced PTS symptoms in these refugees within the first 10 days of practice and further improved them through 30 days.

The theoretical underpinning of such rapid results relates to the experience of restful alertness during the meditation session. This practice cultures the nervous system to sustain settled mental functioning outside the meditative period, minimizing the intrusive thoughts, sleep disturbance, and other adverse symptoms associated with PTS (Brooks & Scarano, 1985; Rosenthal et al., 2011). These data replicate previous findings indicating that TM may compare favorably with cognitive processing therapy, biofeedback, virtual reality-delivered exposure therapy, and prolonged exposure therapy, in treating PTS (Rees, et al., 2013).

Individuals need 6 to 8 total hours over 4 consecutive days for instruction in TM, and then require 20 minutes twice per day for regular practice. Although these time requirements may be a barrier to implementation for some, among these refugees the technique appeared to be quickly mastered and readily sustained over time, even in their chaotic environment. They were then self-sufficient to practice TM wherever they could sit quietly and close their eyes. TM may represent a modality applicable across cultures, and may be suitable for refugee camps or other austere environments where mental health services are not readily available.

In conclusion, Transcendental Meditation practice may provide a prompt solution to PTS for those distressed by the trauma of war and violence. Further research to confirm these preliminary findings is warranted, utilizing larger groups with active controls.

### References


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Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Time</th>
<th>Mean score</th>
<th>SD</th>
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<tbody>
<tr>
<td>Baseline</td>
<td>Day 0</td>
<td>68.5</td>
<td>9.5</td>
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<tr>
<td></td>
<td>Day 30</td>
<td>69.2</td>
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<td>Day 90</td>
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<td>Postintervention</td>
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<tr>
<td></td>
<td>Day 30</td>
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Note. $N = 11$ Congolese refugees in Uganda: 8 male, 3 female; $M$ age = 33.2 years, $SD = 6.8$. Posttraumatic Stress Disorder Checklist–Civilian (PCL-C) scores possible range from 17–85.


