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An Investigation of Mindfulness Training As a Self-Care Strategy for Trauma Counsellors

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ABSTRACT

Trauma counselors are vulnerable to negative impacts such as secondary traumatic stress and vicarious traumatization. This study investigated Mindfulness Training as a self-care strategy for counselors in South Africa, examining the effect of MT on negative and positive secondary trauma impacts (STI), and employing a quasi-experimental embedded mixed methods research model to investigate the impact of MT and areas of greatest post-intervention change. The study compared pre- and posttest scores across an MT intervention group and an active control group. A mixed Between-Within Subjects ANOVA was tested for mean differences between the two independent groups, while simultaneously subjecting participants to repeated measures, to establish whether mean changes in the outcome scores on the dependent variables from pretest to posttest differed significantly for individuals over time within the groups. Results indicated that MT was effective in reducing negative STI and in increasing trait mindfulness. Benefits were sustained three months post-intervention. MT was associated with variable rates of change on each outcome measure. The evidence supports the role of MT in reducing negative STIs in trauma counselors.

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Mindfulness; trauma counseling; compassion fatigue; mindfulness training

Introduction

Studies provide evidence that individuals who provide psychological counseling services to traumatized clients become vulnerable to developing secondary traumatic stress impacts (STI) as a direct consequence of their work (Figley, 2002). It is now well established that Mindfulness-Based Interventions (MBI), such as Mindfulness Training (MT), are helpful in ameliorating trauma-related sequelae in direct trauma victims/survivors (Goldberg et al., 2020). It is reasonable to anticipate that MBI may also prove beneficial in assisting trauma counselors to manage the negative impacts associated with occupational exposure to trauma-related content. This article reports on the results of a quasi-experimental study designed to investigate whether MT assisted in ameliorating negative STI and improving positive STI in a group of counselors engaged in trauma counseling in the high violence exposure context of South Africa.

Secondary traumatic stress impacts for counsellors and psychotherapists

The literature on STI suggests the need for a comprehensive approach to the phenomenon as several distinct and inter-related dimensions have been identified as components of STI (Russell & Cowan, 2018). In the present study, four related concepts were selected for investigation, each emphasizing an important aspect of secondary exposure effects. Burnout (BO) (Maslach & Jackson, 1981) highlights the impact of environmental and organizational stressors and is defined as a progressively developing pattern of emotional and physical exhaustion in response to chronic work-related stressors. Secondary Traumatic Stress (STS) (Figley (2002) refers to the counselor's reactions to exposure to client trauma that may approximate the symptoms of post-traumatic stress. In keeping with recent refinement of the construct of Compassion Fatigue (CF) (Stamm, 2010), CF was employed as an umbrella term referring to both symptoms of burnout (BO) and secondary traumatic stress (STS). A third element of STI is what is referred to as Vicarious Traumatization (VT) (McCann & Pearlman, 1990). VT is understood to arise because of in-session exposure to trauma-related material that disrupts core cognitive schemas (i.e., core beliefs about self, others, and the world) of counselors, in many instances undetected over time and translating into more negative cognitions, for example regarding personal safety and the motivations of others (McCann & Pearlman, 1990).

In addition to negative sequelae, McCann and Pearlman (1990) also noted that Compassion Satisfaction (CS) may arise in conducting trauma counseling in that counselors may experience benefits such as increased capacity for empathy, increased self-esteem, and greater hopefulness in human endurance. CS, reflecting the positive or growth-related aspects of trauma counseling, was investigated as a fourth dimension of impact in the study. All four indicators of STI: Burnout and STS (encompassed together under CF), VT, and CS, are included in the Professional Quality of Life questionnaire (ProQOL) (Stamm, 2010), a well-respected assessment instrument that is extensively used to assess counselor responses to their work (Wang et al., 2023). Given that negative STI may contribute to compromised mental health and well-being among those delivering trauma interventions and may lead to deficits in service provision, alienation, and diminished work commitment (Orrù et al., 2021), it is important to establish effective mechanisms for ameliorating such effects.

Mindfulness training as a secondary trauma self-care intervention for counsellors

MT was first introduced to western clinical practice by Kabat-Zinn (1982) in 1979 as a secularized version of ancient Buddhist meditation practices in the form of the eight-week Mindfulness-Based Stress Reduction (MBSR) program. There is currently a large body of peer-reviewed research demonstrating that MT is an effective intervention for a wide variety of medical and psychological conditions (Bernstein et al., 2019), including traumatic stress-related impacts. The increasing interest in Mindfulness-Based Interventions (MBI) is evident in the exponential growth of published work on the topic. While there were around 39 studies published prior to 2000, in 2019 there were close to 6000 scientific publications available on MT (Bernstein et al., 2019). This upward trend in published research provides evidence for the acceptance and practice of MT in academic and clinical settings since its introduction to Western scholars and practitioners.

Kabat-Zinn's (1994) definition of mindfulness as being "the awareness that emerges through paying attention, on purpose, in the present moment, and non-judgementally to the unfolding of experience moment by moment" (p.145) is prominently quoted in the literature. This definition seems to capture the fundamental nature of the construct. Siegal (2010) expanded on this description by proposing that mindfulness promotes a meta-awareness or "reperceiving" (Shapiro et al., 2005) which facilitates the development of a set of skills or "Mindsight." Mindsight refers to the learned ability to develop insight into the mechanisms of the mind, to "see" the mind, and thus to expand the ability to modulate the flow of the contents of mind (Siegal, 2010).

Mindfulness Training (MT) may be formally mediated by a trainer, where focused time is devoted to learning how to be mindful through exercises such as breathing meditation and/or sitting meditation. MT may also be practised informally, where mindfulness practice is infused into daily activities such as walking, doing chores, or eating. Kabat-Zinn (1982) views formal MT practices as the foundation for developing mindful states during daily activities and consequently cultivating enduring mindfulness traits in daily life.

There is a growing evidence base (including systematic reviews and meta-analytic studies) that validates the positive impact of MT as a self-care strategy for diminishing secondary trauma impacts and enhancing the well-being of psychological counselors (Lomas et al., 2019; Panjwani & Calhoun, 2022; Posluns & Gall, 2020). For example, a systematic review investigating the impact of MT on general healthcare workers (HCW) found beneficial impacts on reducing burnout, stress, depression, and anxiety and on improving positive outcomes such as increased empathy, compassion, and life satisfaction (Lomas et al., 2019). In relation to mental health professionals more specifically, through their review of available studies, Panjwani and Calhoun (2022)

validated that MT can play a significant role in self-care and reducing STIs. Similarly to Rudaz et al. (2017), Panjwani and Calhoun (2022) note, however, that the quality of research studies is inconsistent and call for ongoing research in the area, particularly studies utilizing rigorous methods of investigation. While research results on the impact of MT on STIs in HCWs are promising, MacRitchie and Leibowitz (2010) note the paucity of studies that focus specifically on trauma counselors. A review of more recent literature substantiates this claim. In particular, and relevant to this study, there is a notable dearth of research which focuses on the experience of counselors working within the context of the Global South.

The context of trauma counseling in South Africa

To date, much of the published research on MT has been conducted in the Global North in high- and middle-income countries (HMIC). However, trauma exposure in many Low- to Middle-Income Countries (LMIC), largely situated in the Global South, is often elevated, associated with social instability, civil conflict, and wealth inequalities (Al-Tamimi & Leavey, 2021). Trauma counselors working in such contexts that are characterized by poly-victimization, multiple and continuous traumatic stress exposure (Eagle & Kaminer, 2013), and limited mental health resource provision, face many occupational risk factors and are vulnerable to negative STI. It is therefore important that interventions designed to assist counselors working in such contexts are well researched and documented.

Post-transition South Africa, as LMIC, has a history of politically motivated violence and current crime levels that fall among the highest global averages in relation to both inter-personal and collective forms of violence, such as homicide, rape, and violent service-delivery protests (Brankovic, 2019).

Consequently, the population faces elevated rates of trauma exposure and vulnerability to a range of trauma-related conditions. An epidemiological national survey (Atwoli et al, 2016), reported a South African lifetime traumatic event prevalence rate of 73%, a figure markedly higher than those found in WHO surveys conducted in Europe and Asia (Padmanabhanunni, 2020). Trauma counselors who offer services in this context, are, inevitably, exposed to high levels of both direct and secondary traumatization. Additionally, mental-health provision resource constraints and the limited number of counselors available to treat the population (South African Human Rights Commission, 2019) places added strain on those few personnel delivering mental health and trauma intervention services. While the mental health of South African trauma counselors has received some attention (MacRitchie & Leibowitz, 2010; Padmanabhanunni, 2020), generally, there is a paucity of research on interventions that may prevent, or buffer negative trauma impacts and increase positive STI.

Pillay and Eagle (2021) present a conceptual argument for implementation of MT as an appropriate intervention for trauma survivors in LMIC contending that MT “may offer an evidenced-based, comprehensive, contextually relevant, and holistic approach to addressing the individually intensive and socially extensive impact of psychological trauma in South Africa and other similar settings characterized by high levels of violence and limited professional intervention resources” (Pillay & Eagle, 2021, p. 2400). The present study aimed to empirically validate this theoretical proposition, with a focus in this instance on the experiences of trauma counselors and the traumatic impact of their work in such contexts. Given that it is established that trauma counselors are vulnerable to developing negative forms of STI and that they play a crucial role in meeting the needs of direct victims and survivors, it is important to advance effective and accessible interventions for ameliorating counselor distress and for building resilience.

The purpose of the research study reported upon in this article was to explore the effect of MT on both negative and positive STI by testing the hypothesis that an MT intervention may both reduce negative trauma impacts of Burnout (BO), Secondary Traumatic Stress (STS), and Vicarious Trauma (VT) and increase the positive trauma impact of Compassion Satisfaction (CS) in trauma counselors. It was also hypothesized that mindfulness capabilities would increase in conjunction with shifts in STI, consequent on taking part in such training.

Method¹

Participants

The research sample, comprising 58 practicing trauma counselors, was drawn from counselors in the Gauteng region of South Africa. The majority ($N = 52$) self-identified as female (six as male) and the age of participants ranged from 22 to 69 years ($M = 40.47$, $SD = 11.65$). Number of years in practice varied quite widely from 1 to 26 years ($M = 9.55$, $SD = 10$), as did the average number of trauma clients counseled per week, which ranged from a minimum of two to a maximum of 35 ($M = 7.8$, $SD = 7.2$). The group included 24 (41.3%) registered counseling and clinical psychologists, 18 (31%) registered social workers, 13 (22.4%) registered counselors registered with the Health Professions Council of South Africa, two (3.4%) volunteer counselors, and one (1.7%) church counselor. Most (47) participants (79.3%) reported no previous experience with self-care training, and the majority 37 (63.7%) reported no previous exposure to any MT, while 21 (36.2%) had some familiarity with MT.

Procedure and study design

Invitations to participate in a self-care program were sent out by the researcher (first author²) to organizations known to offer trauma counseling services in the Johannesburg region. In response to expressed interest, a participant information sheet was sent to potential participants detailing inclusion criteria (e.g., being over the age of 18, fluent in English and undertaking counseling with at least two trauma-related cases per week), and what engagement in the study would entail (e.g., attendance of a free eight-week self-care focused training program and completion of questionnaires, as further detailed below). Initially, 68 suitable counselors were enrolled in the study based on signed consent³ to participate.

Once participants had been recruited, the selection process into cohorts for training was nonrandom as participants self-selected, depending on their availability during the year, into four roughly equally smaller groups (allowing for adequate individual attention from the single trainer). Participants were required to attend the two facets of the self-care program (detailed below), one following the other, at two different starting points in the year. To minimize expectations about program efficacy, they were not told which component of the self-care intervention was the MT “experimental condition” and which was the control condition.

During phase 1 of the intervention, Group A participated in the mindfulness training intervention (MT), while Group B participated in the psycho-education intervention (PE) active control condition. Thereafter, each group received the other component of the program. The rotating of components was designed to mitigate against recency or order of delivery effects. The identical process was repeated during phase 2, when Group C received the MT intervention and Group D received the PE as the first component of their intervention. For statistical analysis, group data were combined as follows: Group 1 (scores of groups A and C) and Group 2 (scores of groups B and D). For phase 1 of the intervention, Group 1 acted as the treatment group, and Group 2 was the active control group. For Phase 2, this order was reversed. The combined sample size initially for Group 1 was 35 and for Group 2 it was 33. After some attrition related to the inability to commit to full attendance, the Group size for Group 1 was 29 and for Group 2 was 29, yielding a total sample size of 58 available for data analysis.

A Pre-test-, Post-test, non-equivalent groups, quasi-experimental, embedded mixed methods research model was employed. Only the results of the quantitative component of the study are reported here. The design enabled both between groups comparison (intervention vs control groups) and within groups comparison (pre- and post-intervention scores for individuals and groups). The initial process (Phase 1) was repeated (Phase 2) to increase the

sample size, improve internal validity, and to attempt to control for nonspecific effects, such as level of group cohesion and support.

Baseline assessments on all measuring instruments were obtained at Time 1 (t1). Additionally, a brief demographic questionnaire and a measure of personal trauma history, the Life Events Checklist for DSM-5 (LEC-5), were administered at t1 to assess for possible group differences. Post-intervention assessments were conducted again on the intervention groups and the active control groups at t2 (post exposure to component one of training) and t3 (post exposure to component two of training). Additionally, a three-month follow-up post-intervention (t4) was conducted on Group 2 (the group that had most recently received the MT intervention) to determine the sustainability of the impact of MT.

The MT intervention program and PE control program content

The MT program was constructed and delivered by the first author based on guidelines relating to content, process, and intervention integrity (Crane, 2019), incorporating the critical components of the MBSR with adaptations to suit the context. The program combined the three core components of MBSR: formal practice, such as the body scan, breathe awareness, and mindful movement; informal practice, entailing performing daily tasks such as eating and washing dishes with mindfulness, and thirdly, mindful enquiry into subjective experience. The eight-week MT program was conducted once weekly for approximately 3 h per week and in addition included one eight hour “silent retreat” training session. CDs of formal MT practices were provided to participants for self-regulated exercises between formal classes. Homework exercises comprising diary keeping and regular practice of informal and formal MT were encouraged. Participants provided weekly feedback through evaluation reports and group discussion.

The active control condition was a group psycho-educative (PE) intervention designed and facilitated by the first author. Participants met fortnightly for four 3-h sessions. They were requested to read prescribed material for each session and to engage in group discussions stimulated by the material. The content of the PE program was primarily shaped by Mescia and Gentry (2004) recommendations on relevant information required for understanding STI – including identifying STI, prevention factors, and self-care guidelines. The second author was consulted on the design of both self-care training components.

Measures

Life events checklist for DSM-5 (LEC-5) (Weathers et al., 1993)

The LEC-5, used as a baseline assessment of personal trauma history, is a self-report measure that assesses exposure to 16 events that may result in

psychological distress. The LEC has demonstrated adequate psychometric properties as a stand-alone assessment of traumatic exposure (Weathers et al., 1993). For each item, the respondent may check one of five options: “happened to me, witnessed it, learned about it, part of my job, not sure, doesn’t apply.” The scores are added to yield a total that represents the number of diverse types of traumatic events that the respondent may have experienced.

Mindfulness: the five facet mindfulness questionnaire- FFMQ (Baer et al., 2006)

The FFMQ self-report, 39-item, mindfulness questionnaire, rated on a 5-point Likert-type scale (1 = never or very rarely true, 5 = very often or always true), was selected as the most comprehensive measure of mindfulness as it is based on the factor analysis of combined items from five independently developed, mindfulness questionnaires. The five factors, Observing, Describing, Acting with awareness, Non-judging, and Non-reacting, constitute the sub-scales of the FFMQ (Baer et al., 2006). The instrument yields a total FFMQ score and scores for each of the five sub-scales.

The psychometric properties of the FFMQ indicate adequate to good internal consistency (alpha coefficients range from .72 to .92) and good construct validity, with meditation experience being significantly positively correlated with four of the five mindfulness factors (Brown et al., 2013). Construct validity is further evidenced by the fact that the scores on the five questionnaires from which it was composed correlate significantly with each other and the FFMQ (Baer et al., 2008).

The following alphas were computed for the FFMQ subscales on this sample: Observe ($\alpha = .82$), Describe ($\alpha = .72$), Act with awareness ($\alpha = .84$), Nonjudgment ($\alpha = .83$), and Non-reactivity ($\alpha = .78$), indicating acceptable or good internal consistency.

Compassion fatigue and compassion satisfaction: the professional quality of life scale (ProQOL) (Stamm, 2010)

The Professional Quality of Life Scale (ProQOL), a widely utilized 30-item self-report measure developed by Stamm (2010), was chosen as an appropriate tool to assess both the positive and negative trauma impacts of providing trauma counseling. The ProQOL comprises three discrete sub-scales of 10 items, measuring burnout (BO), secondary traumatic stress (STS), and compassion satisfaction (CS). Participants are requested to consider their experiences over the last 30 days and rate whether each item was experienced using a 6-item Likert scale (0 = never, 5 = very often). The ProQOL showed good reliability for the sample of participants as evidenced in the following alphas: CS ($\alpha = .89$), BO ($\alpha = .86$) and STS ($\alpha = .94$).

Vicarious trauma: The traumatic stress institute belief scale (TSI-BLS) Pearlman (1996)

The Traumatic Stress Institute Belief Scale (TSI-BLS) is designed to measure disruptions in cognitive schemas that may result from direct exposure to psychological trauma or vicarious trauma exposure (Pearlman, 1996). Trauma-related disruptions in cognitive schemas relating to self and others are assessed in five areas: safety, trust, esteem, intimacy, and control (Pearlman, 1996). The TSI-BLS scoring system produces a sub-score for each of the 10 subscales (self-safety, other-safety, self-trust, other-trust, self-esteem, other-esteem, self-intimacy, other-intimacy, self-control, and other-control), as well as a TSI-BLS Total score which combines the scores of the five sub-scales. There are 80-items linked to a 6-point Likert scoring scale ranging from 1 (disagree strongly) to 6 (agree strongly). Higher scores indicate more significant disruptions or negativity in cognitive schemas (Pearlman, 1996).

For the present sample, all 10 subscales showed adequate to good internal consistency, ranging from $\alpha = .75$ to $.89$. The following alphas were computed: Self-safety ($\alpha = .87$), Other-Safety ($\alpha = .86$), Self-Trust ($\alpha = .81$), Other-Trust ($\alpha = .76$), Self-esteem ($\alpha = .89$), Other-Esteem ($\alpha = .86$), Self-Intimacy ($\alpha = .75$), Other-Intimacy ($\alpha = .83$), Self-Control ($\alpha = .84$), and Other-Control ($\alpha = .89$).

Data analysis

Descriptive statistics and inferential analyses were conducted with SPSS, version 22.0.0, which removes cases with missing data by default. All 58 cases were available for analysis. Descriptive statistics including means, standard deviations and frequencies were computed to describe features of the sample and to compare the demographics of the two groups. For the inferential analyzes, independent *t*-tests, chi-square tests, and repeated measures between-within groups Analysis of Variance (ANOVA) were employed. To compare the means between the intervention and control groups, ANOVA was chosen above *t*-test calculation as ANOVA is considered more robust against type one errors (Pallant, 2016).

Testing of meeting of assumptions

The data were first examined for the required assumptions for a repeated-measures ANOVA (Pallant, 2016). The Shapiro–Wilk test was used to test for normal distribution, Levene’s test for homogeneity of variances, and Mauchly’s test for sphericity. All 20 of the scales and sub-scales were found to be normally distributed except for two of the TSI-BLS subscales and two of the FFMQ subscales. For the scales that were not normally distributed, the skewness (*S*) and kurtosis (*SE*) were examined. The values of skewness and kurtosis were found to be within the range of -2 and $+2$ and were considered

acceptable to establish normal univariate distribution (George & Mallery, 2001).

In cases where the data did not meet the other assumptions of the ANOVA, the non-parametric equivalents, Friedman's test for within-group comparisons and Mann-Whitney U tests for between-group comparisons, were utilized (Pallant, 2016). For data sets when assumptions of sphericity were violated, Greenhouse Geisser corrected values were reported.

Main analysis

A mixed between-within subjects Analysis of Variance (ANOVA) (Pallant, 2016) was conducted to analyze the effect of MT (as the independent variable) on the outcome variables, over time, by comparing the questionnaire scores of the intervention and control groups. The mixed ANOVA tested for mean differences between the independent groups, while simultaneously subjecting participants to repeated measures, and assessed whether the mean changes in the outcome scores on the dependent variables from pretest to posttest differed significantly for individuals over time within the two groups. The time $\times$ group interaction ANOVA result was used to determine if there were significant post-intervention differences in the mean changes in the dependent variable outcome scores of the two groups.

Statistical significance was interpreted by the p value when $p < .05$. Partial eta-squared value (η^2_{partial}) was used as an index of effect size and was interpreted using Cohen's (2013) guidelines where .01 = small, .06 = Medium, and .14 = Large. It is noted that effect size statistics might be influenced by factors such as sample size and that non-randomized samples may impact on the estimates of effect size and should therefore be interpreted with some caution.

Demographic characteristics of the sample

The data were analyzed for baseline equivalence between the experimental and control groups in relation to socio-demographic variables, using t -tests for continuous variables and chi-square tests for the nominal variables. Demographic variables for Group 1 and Group 2 showed no significant differences for variables that were compared.

Descriptive findings at baseline

There were no significant differences in the baseline scores for the outcome variables (CS, BO, STS, and VT) at t1 for Group 1 and Group 2. The scores of both Group 1 and Group 2 reflected moderate levels of CS, moderate levels of

BO and moderate levels of STS. Average baseline levels of VT were found in both groups.

Results

Comparing the MT intervention and PE control group scores, there was a significant group difference for all variables assessed, except CS, as reflected in Table 1.

For BO, the time $\times$ group interaction of the ANOVA results with a Greenhouse–Geisser correction applied to the degrees of freedom indicated that the group differences were significant, $F(1.40, 78.17) = 12.61$, $p = .00$ ($\eta^2 = .18$). Post hoc pairwise comparisons using the Bonferroni correction showed that MT was associated with a statistically significant post-intervention decrease in BO in MT conditions. The effect size was large.

For STS, there was a greater decrease in scores under the MT condition. The time $\times$ group interaction of the ANOVA with a Greenhouse–Geisser correction applied to the degrees of freedom indicated that the group differences were significant, $F(1.81, 101.43) = 14.41$, $p = .00$ ($\eta^2 = .18$). Post hoc pairwise comparisons using the Bonferroni correction showed that MT was associated with a statistically significant post-intervention decrease in STS scores in MT conditions.

For TSI-BLS Total scores the time $\times$ group interaction effect of the ANOVA with a Greenhouse–Geisser correction applied to the degrees of freedom indicated that the group differences were significant, $F(1.36, 76.34) = 38.22$,

Table 1. Summary of ANOVA results.

Dependent Variable	MS Error (Between Subjects)	F (Group)	MS Error (Within Subjects)	F (Group * Time)	<i>p</i>	Partial Eta Squared
CS	24.71	3.82	7.40	3.32	.054	
BO	28.03	5.32	8.36	12.61	.00	.18
STS	59.04	1.99	10.66	1.41	.00	.18
PCL-5 Total	80.26	3.35	7.47	23.83	.00	.29
<i>Intrusion</i>	9.29	2.10	1.50	9.23	.00	.14
<i>Avoidance</i>	1.94	2.98	.34	4.61	.05	
<i>Negative Cognitions/Mood</i>	13.75	3.43	3.06	11.70	.00	.17
<i>Arousal/Reactivity</i>	6.75	1.02	1.26	9.83	.00	.15
TSI-BLS Total	55.09	0.24	2.79	38.22	.00	.40
<i>Self-Safety</i>	.67	.02	.06	22.76	.00	.28
<i>Self-Esteem</i>	.60	1.01	.10	7.85	.00	.12
<i>Other-Esteem</i>	.66	.00	.16	5.16	.00	.08
<i>Self-Trust</i>	.63	.62	.08	6.53	.00	.10
<i>Other-Trust</i>	.65	.04	.07	11.02	.00	.16
<i>Other-Intimacy</i>	.64	1.22	.11	9.05	.00	.14
<i>Self-Control</i>	.65	.04	.11	8.05	.00	.13
<i>Other-Control</i>	.99	.12	.09	10.59	.00	.16
FFMQ Total	138.67	2.91	47.95	74.07	.00	.57
<i>FFMQ Observing</i>	21.00	.04	4.87	30.76	.00	.36
<i>FFMQ Awareness</i>	15.88	.10	6.16	22.89	.00	.290
<i>FFMQ Non-Judging</i>	20.56	.84	3.94	21.92	.00	.28
<i>FFMQ Non-Reacting</i>	14.29	4.10	4.35	31.94	.00	.36
<i>FFMQ Describing</i>	11.37	3.30	5.86	23.39	.00	.29

$p = .00$ ($\eta^2 = .40$). Post hoc pairwise comparisons using the Bonferroni correction showed that MT was associated with a statistically significant post-intervention decrease in TSI-BLS Total score.

CS scores improved for both the intervention and active control (PE) conditions. While there was a greater increase in CS scores under the MT condition, this increase was not significant with reference to the ANOVA time $\times$ group interaction results, $F(1.51, 84.63) = 3.32$, $p = .054$.

There was a significant increase in posttest as compared with pretest mindfulness (M) scores. The time $\times$ group interaction of the ANOVA with a Greenhouse–Geisser correction applied to the degrees of freedom indicated that the differences between the intervention and control groups were significant, $F(1.79, 96.24) = 74.07$, $p = .00$ ($\eta^2 = .57$). Post hoc pairwise comparisons using the Bonferroni correction showed that MT was associated with a statistically significant post-intervention increase in FFMQ Total scores as well as in all five subscales of the FFMQ.

To ascertain if posttest decreases in scores on the BO, STS, VT and increase in scores in CS and mindfulness were sustained post-intervention, data analysis entailed-paired sample t -tests which compared scores on all outcome measures for t_3 with t_4 (three months post-intervention). It was found that of the 20 variables assessed, the scores on 14 variables did not change significantly from t_3 to t_4 . Scores on two variables increased and scores on four variables decreased, as reflected in [Tables 2 and 3](#).

The statistical analysis indicated that the posttest decrease in BO, STS, and VT and posttest increase in CS and Mindfulness scores were generally sustained over three months after the intervention. In some instances, there were improvements over this period in that CS and FFMQ – Acting with awareness further increased and BO, STS, and TSI-BLS Self-intimacy further decreased. One result that ran counter to what was anticipated was the decrease in FFMQ Observing subscale scores.

A further level of analysis was conducted to provide a more complex understanding of where the MT intervention appeared most effective. The averaged percentage of change in scores from baseline to post-intervention for each of the 20 variables was calculated and ranked. [Figure 1](#) graphically presents the comparative mean percentage rate of change in increasing order for all variables.

Table 2. Summary of t -tests for variables with scores that increased significantly from t_3 to t_4 .

Variable	Time 3 (t_3)	Time 4 (t_4)
ProQOL: CS	$M = 39.30$, $SD = 4.61$	$M = 40.44$, $SD = 3.51$
$t(26) = -2.59$, $p = .02$		
FFMQ - Acting with awareness	$M = 28.70$, $SD = 5.1$	$M = 29.44$, $SD = 4.3$
$t(26) = -2.56$, $p = .02$		

Table 3. Summary of t-tests for variables with scores that decreased significantly from t3 to t4.

Variable	Time 3 (t3)	Time 4 (t4)
ProQOL: BO $t(26) = 4.59, p = .00$	$M = 22.74, SD = 5.39$	$M = 21.22, SD = 5.17$
ProQOL: STS $t(26) = 3.88, p = .00$	$M = 25.33, SD = 7.24$	$M = 23.56, SD = 6.81$
TSI-BLS: Self intimacy $t(26) = 2.74, p = .01$	$M = 2.59, SD = 0.69$	$M = 2.51, SD = 0.61$
FFMQ- Observing $t(26) = 3.32, p = .00$	$M = 31.37, SD = 3.36$	$M = 30.56, SD = 3.16$

Figure 1 shows that MT appeared to contribute to the greatest impact in increasing FFMQ scores on Nonreactivity, Awareness, and Observing (all over 20%). There was a comparatively greater impact of MT in reducing BO and STS than in increasing CS. TSI scores in general demonstrated lower levels of change.

Discussion

The findings indicate that MT was effective in reducing negative STI in trauma counselors and in increasing trait mindfulness and that these outcomes were largely sustained over three months post-intervention. MT was associated with variable rates of change on each of the outcome variables assessed. The most significant positive impacts were, in decreasing order, on the Non-Reactivity and Awareness facets of mindfulness, followed by STS and BO. There was a relatively smaller impact on VT and a non-statistically significant impact on CS. While MT was associated with a trend in increased levels of CS, supporting conclusions that mindfulness is positively correlated with CS (Martin-Cuellar et al., 2018), findings on the causal impact of MT on CS in this study were not conclusive.

MT had a relatively greater effect on decreasing negative STI trauma impacts than increasing positive STI as evidenced by statistically significant decreases in BO, STS, and TSI scores and by the medium-to-large effect sizes in relation to all the outcome variables. The results support the findings of Shapiro et al. (2005) who concluded that MBSR interventions enhanced quality of life and decreased stress in a variety of health professionals. The findings support conclusions from a recent systematic review of 31 RCTs which reported that MT has a positive impact on many aspects of quality of life for a range of target groups, including improved mental health, empathy, coping, and mindfulness capacities, and enhanced physical health (Burton et al., 2017).

In comparing the variable impact of MT on negative trauma impacts, MT showed the most significant impact on STS with a 20.5% average decrease in STS scores. The findings of the current study suggest that MT may effectively

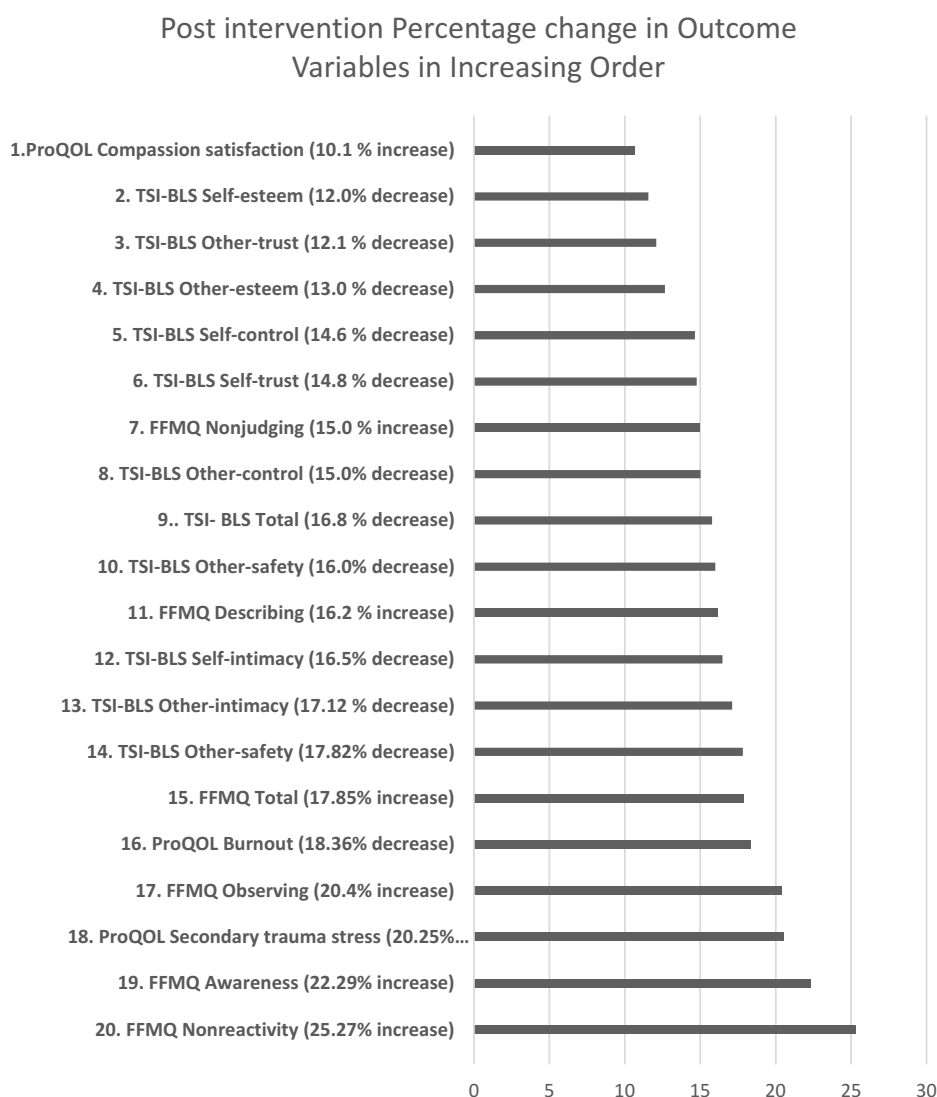


Figure 1. Post intervention percentage change in outcome variables.

reduce the empathic distress counselors experience, manifesting in parallel symptoms to those displayed by their traumatized clients. The results confirm the findings of Harker et al. (2016) who reported that mindfulness might be a preventative factor for psychological distress and STS in healthcare professionals.

BO scores also decreased significantly by 18% with a large effect size. The results support those of studies that have demonstrated a strong negative association between mindfulness and BO (Askey-Jones, 2018). The results also correspond with the findings of Goodman and Schorling (2012) who demonstrated in an intervention study that MT resulted in significant

improvements in BO levels for a broad range of healthcare providers. Given the high caseloads of many South African trauma counselors (MacRitchie & Leibowitz, 2010), which may pre-dispose counselors to BO, the reduction in BO in this sample is important to note and suggests that this form of intervention may be appropriate for contexts in which mental health workers experience strain related to client demand and resource constraints.

With regard to VT, MT resulted in a significant reduction of 16% in the total score with a large effect size. These findings correspond with related research on mental healthcare workers working with trauma survivors (Jacob & Holczer, 2016). It was evident that there was a smaller reduction in VT relative to the other STI variables, STS and BO. VT is conceptualized to occur based on cumulative shifts over time whereby the counselor's healthy cognitive schemas are gradually replaced by negative belief systems because of repeated exposure to client trauma (Pearlman, 1996). This gradual development contrasts with the relatively quick onset proposed for STS. It may then follow that shifting the negative belief systems associated with VT would require more lengthy MT intervention as compared with assisting with more externally observable symptoms, such as STS. Nonetheless, it is noteworthy that after an eight-week intervention, MT showed the potential to significantly reduce the negative cognitive schema associated with VT.

Although CS scores improved for participants from t1 to t2, and t2 to t3, the differences in scores on this variable were not statistically significant between the MT and PE intervention conditions. Figley (2002) suggests that a variety of self-care strategies, such as education, peer support, supervision, exercise, and improved work-life-balance, may all increase CS. For this study, the process and the content of the control condition, such as the group connection, facilitator support, and educational content on STI, may explain why both the control and MT conditions led to increased levels of CS. The results reflect that while MT does show potential benefit in increasing CS, it was not necessarily significantly better at improving CS than a group, psychoeducational program.

In addition to shifts in STI in the directions anticipated, it was also evident that Mindfulness capacity scores increased over time as would be expected. There was a significant post-intervention increase in Total trait mindfulness (18%), and there were significantly improved post-intervention scores on all five facets of mindfulness as measured by the FFMQ. However, FFMQ factors showed varying levels of increase as follows: Non-Reactivity (25%), Awareness (22%), and Observing (20%) facets showed the most substantial levels of positive change in comparison to Describing (16%), and Non-judging (15%). These findings concur with related research evidence that MT promotes significant improvements in all FFMQ scores for both brief and longer-term intervention periods and can produce moderate to large effect sizes with eight-week training interventions (Kiken et al., 2015). The present results showed

significant post-intervention improvements in all factors of the FFMQ scale consistent with other studies that have compared control and intervention groups following MT interventions (Pawar et al., 2016).

The literature indicates that there is diversity across studies in the kinds of change scores associated with different facets of the FFMQ. Patterns of response to the different facets seem to be dependent on contextual factors such as sample characteristics, length of meditation practice, properties of the instrument, and specific features of the MT training protocol used. Further research may assist in establishing links between aspects of change and some of these variables. Some further discussion on which aspects of mindfulness may be more or less easily cultivated and assessed is offered in the discussion as to whether effects were sustained over time.

Consistent with the expected direction of change, CS and the Awareness facet of mindfulness scores were not only maintained but showed a significant increase after three months, and the BO and TSI-BLS Self-Intimacy scores continued to decline, indicating ongoing benefits. The improvements post-training in the Total Mindfulness score as well as in the Non-judging, Non-reacting, and Describing facets were sustained over three months post intervention. The decline in scores on the Mindfulness Observing scale at t4 was the only result that ran counter to expectation.

This study provides evidence for the sustainable impact of MT benefits, supporting other studies that have demonstrated the enduring impact of MT over time (Geary & Rosenthal, 2011). The findings substantiate an earlier qualitative study which reported that the positive effects of MT endured in both the personal and professional lives of counselors after conclusion of formal MT and that most continued to self-regulate MT practice many years into their careers (Christopher et al., 2011). While it is unlikely that trait mindfulness can develop fully over the kind of eight-week period that the training documented here entailed, it is gratifying to see benefit extend beyond the invention process.

Contrary to the findings for the rest of the FFMQ scale, scores for the Observing facet declined between t3 to t4. While this unforeseen finding was initially perplexing as Observing is seen as a crucial skill in theories of mindfulness, further examination of the literature reflected similar unexpected results for the Observing facet of the FFMQ (Stanley et al., 2019). Baer et al. (2008) found good construct validity for meditating and non-meditating samples on the FFMQ but noted that the Observing factor appeared to have different properties from the other four factors and might be more sensitive to changes in meditation practice. Other recent studies also found that the Observing sub-scale exhibited different psychometric properties or produced discrepant findings relative to the other four factors (Pang & Ruch, 2019). It appears that experienced meditators tend to score differently on this specific FFMQ facet as compared to novice meditators (Lilja et al., 2013). In the

present study, it seems that the other four facets of mindfulness were more easily sustained than the Observing component at the point at which participants were required to self-regulate their meditation practice without the support of regular group facilitation. The initial improvement in Observing (20%) suggested that the training had assisted in cultivating this capacity, but it is important to note that this facet may be harder to sustain without ongoing support. This finding is worth noting for future training and may require some reexamination of teaching processes.

The sustained and improved changes in most of the STI over the three-month post-intervention period suggest that MT may assist both in reducing immediate trauma impacts and in building longer term resilience. MT may potentially be an effective approach to the management, treatment, and prevention of negative STI as well as the promotion of sustainable wellbeing for trauma counselors.

Based on the comparative rank ordering of outcome variables by percentage of change, it can be inferred that the MT was most helpful in reducing the symptomatic dimensions of negative STI. In response to MT, counselors appeared to experience a substantial reduction in tension, anxiety, and the vigilance to threat, that is often associated with hyperarousal states. The evidence is in line with other studies that have established the strongly significant impact of MT on hyperarousal states associated with trauma (Follette & Vijay, 2009). Shifts in hyperarousal propensity may be especially important in contexts in which counselor's sense of personal safety may be compromised by contextual factors, such as the elevated levels of crime that affect the everyday lives of South African counselors alongside their clients. MT impacts on improving both awareness of states of arousal and the ability to modulate levels of hyperarousal, potentially benefitting counselors in their professional and personal lives.

Generally, extrapolations that can be drawn about the mechanisms of impact of MT from the study are consistent with findings from related empirical studies that have established that MT is associated with decreased hyper-arousal and stress reactivity, improved modulation, regulation, and awareness on various levels (cognitive, emotional, somatic, and physiological), acceptance and self-other compassion, transcendent perspectives on the self, and dis-identification with objects of awareness (Follette & Vijay, 2009).

In conclusion, some of the limitations and strengths of the study are highlighted. The sample size was relatively small, non-randomized, and comprised mostly women, and these factors limit the generalizability of the evidence. The study may have been prone to experimenter bias, as the researcher, an experienced mindfulness practitioner and trainer, presented the interventions. However, the literature repeatedly emphasizes that MT trainers should be theoretically knowledgeable and well practised in mindfulness (Crane, 2019) which was the case in this instance, and the same

trainer delivered both intervention programs. It was intended that the methodological rigor associated with employing a control group design, utilizing a range of measures of STI, and the sound psychometric properties of the instruments selected, would enhance the rigor of the study findings. Existing studies on trauma counselors investigating the impact of MT have generally been correlation-based or purely qualitative. This study employed more advanced statistical analysis to contribute to the evidence base, demonstrating a significant causal relationship between MT and decreased negative STI in counselors who are vulnerable to secondary trauma impacts by virtue of their work engagement.

Notes

1. The research was conducted in accordance with both the University of the Witwatersrand Code of Ethics for Research on Human Subjects and the ethical guidelines for professionals registered with the Health Professions Council of South Africa (HPCSA) (specifically the code for professional conduct of the Professional Board of Psychology). The proposal on which the research study was based was submitted and accepted unconditionally for ethical clearance by Wits University Human Research Ethics Committee (HREC – non-medical) of the University of the Witwatersrand prior to commencement of the study. The protocol number of the clearance certificate granted is H15/05/33.
2. The researcher is a Psychologist, registered with the Health Professions Council of South Africa.
3. The principle of informed consent is common to both the HPCSA and the HREC codes of ethics. Guidelines call for the participants to be furnished with comprehensive information about the nature and purpose and possible risks and benefits of the proposed research and to be allowed freedom of choice to agree or disagree to participate. The participants were requested to sign a voluntary consent form before they were able to participate in the study.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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