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A pilot study of the MARST program**

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PRELIMINARY OUTCOMES OF FEASIBILITY AND EFFICACY OF BRIEF RESILIENCE STRESS TRAINING: A PILOT STUDY OF THE MARST PROGRAM

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Abstract

Human service professionals are at risk for stress-related psychological problems. Whilst there has been considerable research of the causes and effects of these problems, little research has been conducted on brief interventions to cultivate resilience in this at risk occupational group. Mindfulness-based interventions, which have shown promise in cultivating resilience, are also widely accepted as efficacious in the treatment of psychological disorders. The aims of this paper were to gather preliminary information regarding the feasibility of implementing a brief Mindful Awareness Resilience Skills Training program (MARST) to enhance resilience, mindfulness and positive emotions in human service professionals. The program consisted of resilience and mindfulness enhancement strategies. Twenty-two participants completed the two x one-day group training sessions over two weeks. Data were analyzed using repeated measures analysis of variance, which indicated a significant main effect of intervention. Post hoc analysis showed significant improvements between pre and post intervention scores on measures of resilience ($p = .02$) mindfulness ($p < .001$), positive reappraisal ($p = .01$) and positive emotions ($p = .03$). When comparisons were made between pre-MARST and one month follow up, positive effects of intervention were found on the measures

of resilience ($p < .001$), mindfulness ($p < .001$), positive reappraisal ($p < .001$) and the reduction of negative emotions ($p = .02$). The participants provided positive feedback on the content and delivery of the MARST program. The results from this study provide preliminary support for the MARST program to enhance resilience, mindfulness, positive reappraisal and positive emotions and amongst human service professionals.

Keywords: Mindfulness; resilience; positive reappraisal; positive and negative emotions

Background

Human service professionals obtain much satisfaction from their work with clients, and are committed to making a difference to people's lives (Huxley et al., 2005). As an occupational group, human service professionals are concerned with the intervention and empowerment of clinical and otherwise vulnerable social populations. As a result, the human services are by their very nature laden with employment-related stressors and emotionally demanding interactions (Putnik, de Jong & Verdonk 2011). Researchers who have examined the occupational hazards of human service professions have stressed that the process of caring itself, may come at significant personal and psychological costs (Harr, 2013). Some human service professionals persist, endure and thrive in their careers, while others experience mental health problems and sometimes leave the profession (Maslach, Schaufeli, & Leiter, 2001). Hence, there is an emphasis on strengthening the capacity of human service professionals to effectively respond and recover from continual exposure to these work stressors (Michie & Williams, 2003).

Resilience described as the general capacity for flexible and resourceful adaptation to external and internal stressors, includes the ability to handle environmental difficulties, demands and high pressure without experiencing negative effects (Kinman & Grant, 2011). Positive emotions and positive reappraisal amidst negative events are further important elements in the psychological resilience of workers (Collins, 2007). Debate over the development of resilience continues, with theories ranging from resilience as an innate ability, to one that is learned, while others point to a combination of both (Ginsburg & Jablow, 2006; Jacelon, 1997). Current research suggests that while some individuals may possess an innate resilience, others have learned to develop and maintain a high degree of resilience through experience and learning. A resilient person can learn to achieve positive outcomes through skilled preparation, confidence and perseverance, despite the existence of possible threats (Phillips, 2008). Resilient individuals are characterized by being optimistic with high positive

emotionality, open to new experiences and have the capacity to rebound from negative circumstances (Lazarus, 1993; Masten, 2001).

Tugade and Frederickson's (2004) research on the broaden and build model surrounding the function of positive emotions in understanding resilience, posits that positive emotions broaden a person's individual focus and behavioural repertoire. In turn, this generates enhanced flexibility, creativity, openness and creates solutions, which become integral in coping and thriving in spite of adversity. Repeated experiences of positive emotions leads to broad minded coping becoming habitual and a personal resource, which is characteristic of a resilient person (Frederickson, Tugade, Wugh, Larkin, 2003). Positive emotions also have significant adaptational functions in the coping process. Positive emotions can be generated to effectively cope with the stress and adversity through positive reappraisal (Folkman & Moskowitz, 2000). Positive reappraisal involves using cognitive strategies to appraise a difficult situation more positively to view it in a more favourable light (Frederickson et al., 2003).

One internal mechanism, which has received a growing base of empirical support as a skill to enhance adaptive coping to stress, is the practice of mindfulness (Baer, 2010; Kabat-Zinn, 2003). Bishop et al., (2004) argues that mindfulness, as a state of being comprises two components: self-regulation of attention to an immediate experience, and maintenance of a specific orientation towards the immediate experience. Self-regulation of attention to an immediate experience involves sustained attention, attention switching, and the inhibition of elaborative processing. The maintenance of a specific orientation incorporates curiosity, experiential openness, and acceptance regardless of the emotion, thought or sensation present. This practice allows for an accepting and non-judgmental view of one's internal (e.g. thoughts, feelings and physiological symptoms) and external (e.g., sounds and sights) present moment experience. As mindfulness allows for present moment awareness while letting go of the past and future, it promotes a sense of non-attachment and the ability to let go of the ego, therefore, demonstrating the potential to foster resilience (Shapiro, Carlson, Astin, & Freedman, 2006). In addition, recent research suggests that mindfulness is associated with and predicts resilience (Keye & Pidgeon, 2013; Pidgeon & Keye, 2014).

Neurobiological research has shown that mindfulness may be beneficial in increasing resilience and reducing the impact of trauma through left prefrontal cortex (PFC) activation and neutralizing amygdala activity. According to Davidson et al. (2003) the left PFC inhibits the stress response in the amygdala, which is attributed to encoding memories of fearful or anxious experiences. Consequently, interventions that increase left PFC activation will diminish the stress response in the amygdala and therefore

reduce the time an individual needs to recover from traumatic stress, thus potentially increasing resilience to compassion fatigue (Feder, Nestler & Charney, 2009). Research suggests that experienced mindfulness mediators tend to experience more positive emotions, and that this experience is correlated with high left PFC activation (Davidson et al., 2003).

With resilience being amenable to change, life experiences in particular work-stress can deplete resilience (Cooper, Flint-Taylor & Pearn, 2013). Resilience skills training implemented in work places has shown to not only enhance an employee's work performance, but also enhance the worker's social and psychological wellbeing (Waite & Richardson, 2004; Burton, Pakenham & Brown, 2010). Although research remains limited, mindfulness-based interventions implemented in the work place have also demonstrated efficacy in increasing resilience and fostering psychological well-being among workers (Pidgeon, Ford, & Klaassen, 2014; Stanley, Schaldach, Kiyonaga, & Jha, 2011). These interventions have included a Mindfulness-Based Mind Fitness Training for improving resilience and performance among soldiers (Stanley et al., 2011); and a Mindfulness with Metta Training program which cultivated resilience in human service professionals (Pidgeon et al., 2014). Brief mindfulness-based interventions also have shown to be effective for reducing stress in health practitioners (Mackenzie, Poulin, Seidman-Carlson, 2006) and increasing positive emotions and decreased negative emotions (Erisman & Roemer, 2010).

The current study examined the feasibility and efficacy of the brief MARST program to cultivate resilience, mindfulness, positive reappraisal and positive emotions in human services workers. It was predicted that from pre to post MARST training and follow up, human services professionals attending the MARST program would report significant improvements in levels of resilience, mindfulness, positive reappraisal and positive and negative emotions.

Method

This study was a single group pre-post MARST training with outcome measures that assessed participant's levels of resilience, mindfulness, positive reappraisal and positive and negative emotions pre, post and one-month follow up. Outcome assessments included qualitative and quantitative self-report questionnaires. The study protocol was approved by Bond University Research Ethics Committee.

Participants

Twenty-two human services professionals recruited from a not-for-profit community organisation in rural Queensland participated in this study. The participants ranged from 23 to 60 years of age ($M=38.14$, $SD=11.40$).

The sample comprised of 18 females (82%) and 4 males (18%). Due to reported time pressures and absence due to annual leave, 19 participants completed the questionnaires at all measurement points.

The intervention

Participants attended the two x one-day MARST program over a two-week period. The participants were required to complete self-report measures of resilience, mindfulness, positive reappraisal, positive and negative emotion pre, post and one-month following the MARST training. The MARST program targeted core aspects of mindfulness, resilience and positive reappraisal. The program consisted of resilience and mindfulness enhancement strategies that included change and acceptance techniques based on cognitive behavior therapy and mindfulness meditation practices. Sessions involve psycho-education, interactive discussion, skills training in everyday mindfulness tools and mindfulness meditation, identifying non-resilient and resilient thinking styles, experiential exercises and home activities.

Measures

Self-report questionnaires were used to collect participant's demographics, evaluation of the MARST program, levels of resilience, mindfulness, positive reappraisal, positive and negative emotions. The measures included: (i) Resilience: the Resilience Questionnaire (RQ; Reivich & Shatte, 2002) which is a 60-item scale to measure resilience. Higher RQ scores are indicative of higher levels of resilience; (ii) Mindfulness: the Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Büttenmüller, Kleinknecht & Schmidt, 2006) a 14 item scale which assesses levels of mindfulness; (iii) Positive and negative emotions: the Positive and Negative Schedule (PANAS; Watson, Clark & Tellegan, 1988) which measures the experience and frequency of positive and negative emotions; and (iv) Positive reappraisal: the Cognitive Distortions Questionnaire (De Oliveira & Schwartz, 2014) which is a 15-item self-report questionnaire designed to simultaneously measure cognitive distortions across the two dimensions of frequency and intensity, and to provide a weighted summation of the overall experience for the individual.

Results

The demographic characteristics of participants are presented in Table 1. Prior to analyses, the data was screened and assumptions were met. A repeated measures analysis of variance (RM-ANOVA) was performed to compare the effect of MARST training pre-post-follow up, on measures of resilience, mindfulness, positive reappraisal and positive and negative emotions. The results showed a significant main effect of intervention,

Wilks' Lambda = 0.13, $F(10,9) = 5.94$, $p = .007$, with paired samples t-tests showing a significant difference ($p < 0.05$) between pre-post MARST on measures of resilience, ($t[21] = -5.90$, $p = 0.02$), mindfulness, ($t[21] = -6.63$, $p < .001$), positive reappraisal, ($t[21] = 5.44$, $p = 0.01$) and positive emotion, ($t[21] = -2.90$, $p = 0.03$). These results suggest that human service professionals reported significant improvements in their levels of resilience, mindfulness, positive reappraisal and positive emotions when they had completed the MARST program. When post hoc comparisons were made between pre and one month following MARST, the significant increases remained stable on measures of resilience, ($t[21] = -8.47$, $p < .001$), mindfulness, ($t[21] = -7.42$, $p < .001$), positive reappraisal ($t[21] = 6.05$, $p < .001$), and in addition, significant decreases in negative emotions, ($t[21] = 2.16$, $p = 0.02$) were found. Specifically, these results indicate that human service professionals reported sustaining the significant improvements in their levels of resilience, mindfulness, and positive reappraisal with the addition of significant improvements in their negative emotions one-month after completing the MARST program.

Table 1 *Demographic Characteristics Of Sample*

	Study Sample % (n)
Gender	
Women	82(18)
Men	18(4)
Age Group (years)	
20-30	36(8)
31-40	32(7)
41-50	14(3)
51-60	18(4)
Highest Level of Education	
Year 10	-
Year 12	-
Undergraduate	73(16)
Postgraduate	27(6)
Occupation	
Supervisor	9(2)
Family support worker	4(1)
Foster care worker	27(6)
Counselor	14(3)
Case worker	27(6)
Other	14(3)
No. of years employed at current organization	
< 1	36(8)
1-2	41(9)
2-3	4(1)
3-4	4(1)
5+	15(3)

Standardized mean difference scores and 95% confidence intervals are displayed in Table 2 for each measure pre-post MARST. Table 3 illustrates standardized mean difference scores and 95% confidence intervals comparing pre-MARST-follow up. Cohen's standards (large [0.8], medium [0.5], and small [0.2]) were used to interpret the magnitude of intervention effects (Cohen, 1988). As this was a small-scale feasibility study, an alpha of .05 was used to determine statistical significance. There was a large favorable effect of intervention ($\eta^2 = .87$), with moderate favorable intervention effects on measures of resilience ($\eta^2 = .58$), mindfulness ($\eta^2 = .68$), and positive reappraisal ($\eta^2 = .53$); and small effects on measures of positive emotion ($\eta^2 = .17$) and negative emotion ($\eta^2 = .27$).

Subsequently, participant feedback on the program was very positive and showed a high level of acceptability. On a seven-point Likert scale, the mean rating for the program quality was 6.50 (7 = excellent; 1 = poor) and the mean rating of overall satisfaction was 6.41 (7 = very satisfied; 1 = very dissatisfied). On a seven-point Likert scale (7 = yes definitely; 1 = definitely not), the mean rating for the ability to integrate the skills learnt into everyday practice was 5.60.

Table 2 Mean Differences In Measures Between Pre-MARST and Post-MARST.

Measure	Mean Difference (SD)	95% Confidence Interval*	<i>p</i>
Positive emotion	-2.90 (5.08)	-5.39 - 0.39	.03
Negative emotion	1.63 (4.60)	-0.52 - 3.80	.13
Resilience	-5.90 (10.08)	-10.87 - 0.92	.02
Mindfulness	-6.63 (5.20)	-9.08 - 4.18	<.001
Positive reappraisal	5.44 (7.05)	1.80 - 3.22	.01

Note: Negative mean difference implies favourable change.

*The 95% Confidence Interval refers to the amount of error/variation that can be expected for test scores.

Table 3 Mean Differences In Measures Between Pre-MARST and Follow-up.

Measure	Mean Difference (SD)	95% Confidence Interval*	<i>p</i>
Positive emotion	-2.53 (5.76)	-5.24 - 1.18	.07
Negative emotion	2.16 (3.75)	-.389 - 3.93	.02
Resilience	-8.47 (7.40)	-12.04 - 4.90	<.001
Mindfulness	-7.42 (5.18)	-9.91 - 4.93	<.001
Positive reappraisal	6.05 (5.88)	3.22 - 8.88	<.001

Note: Negative mean difference implies favourable change.

*The 95% Confidence Interval refers to the amount of error/variation that can be expected for test scores.

Discussion

The purpose of the current study was to examine the efficacy of a Mindful-Awareness and Resilience Skills Training (MARST) program to enhance mindfulness, resilience, positive reappraisal, and positive and negative emotions. The results provide preliminary support for the feasibility of the MARST program to be implemented as a brief group-based training in a workplace setting to enhance: resilience, mindfulness, positive reappraisal, positive and negative emotions. The results also suggest that resilience is a dynamic and modifiable construct, amenable to change and responsive to educational, cognitive transformational and personal growth processes (Jackson et al., 2007; Tebes et al., 2004). The finding provides preliminary support for studies, which suggest the efficacy of mindfulness-based interventions to replenish resilience and improve mindfulness and psychological well being (Pidgeon et al., 2014; Stanley et al., 2011). The MARST program also appears to be efficacious in producing sustainable outcomes over time. Participant positive feedback indicated a high level of acceptability for MARST, both in process and content of program. Future work could examine the efficacy of the MARST program in a controlled trial and also investigate the mechanisms of change.

A number of limitations for consideration when examining the results include, attrition contributed to the small sample size, which limits the generalisability of the findings; and the sample was predominantly female, well educated and recruited from the same not-for-profit organisation. Future studies should include a larger sample recruited from more diverse educational and socioeconomic backgrounds, and multiple human service employers.

In conclusion, the results shows promise for the feasibility of implementing the MARST program as a group-training program in a worksite setting to improve resilience, mindfulness, positive reappraisal, positive and negative emotions among human service professionals. Considering the important role that human service professionals perform within our society and the established risks associated with this work, the development of programs that can effectively develop resilience and protect against work-related stress not only benefits professionals, but also benefits organisations, clients, and the community at large.

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