



EFFECT OF A BRIEF MINDFULNESS-BASED STRESS REDUCTION PROGRAMME ON PARENTING STRESS IN MOTHERS OF CHILDREN WITH AUTISM: DIFFERENTIAL INFLUENCE OF SELF-EFFICACY

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ABSTRACT:

The study explored the differential influence of self-efficacy on reducing parenting stress in mothers of children with autism spectrum disorder (ASD) by employing the Brief Mindfulness-Based Stress Reduction Programme (BMBSRP). The pre-test post-test control group design was adopted for the study, wherein two convenient groups of mothers of children diagnosed with ASD were designated as control group and experimental group. The participants were pre-tested for their self-efficacy and separated into high-, average-, and low self-efficacy groups. The parenting stress of the participants in both the control and experimental groups were measured before and immediately after the experimentation. The experimental group was intervened with the BMBSRP for 4-weeks at the rate of two 1.5 hours sessions per week. Result of the analysis revealed that the BMBSRP is effective in alleviating the parenting stress of mothers of children with ASD, which is a function of their self-efficacy.



KEYWORDS: Parenting stress, Autism spectrum disorder, Self-efficacy, Mindfulness.

INTRODUCTION

Caring for a family member who suffers a long-term pathology can be a challenge, which may be experienced as a powerful and persistent stressful situation. Raising a child with autism spectrum disorder (ASD) can be more stressful and challenging than parenting typically developing children or those diagnosed with other developmental disorders (Boyd, 2002; Dunn, Burbine, Bowers, & Tantleff-Dunn, 2001; Mancil, Boyd,

& Bedesem, 2009). Across the literature, parents of children with ASD frequently reported higher levels of anxiety (e.g., Falk, Norris, & Quinn, 2014), depression (e.g., Weitlauf, Vehorn, Taylor, & Warren, 2014), and stress (e.g., Hayes & Watson, 2013). Alleviating the parenting stress in mothers of a child affected by ASD is necessary in order to optimise the developmental progress of the disabled child and also to improve the overall health and quality of life of the mother, as well as those of other family members (Jellett, Wood, Giallo & Seymour, 2015).

There is growing evidence to indicate that increasing mindfulness, or a person's focused awareness in the here and now, may be a worthwhile therapeutic goal in order to reduce stress. The use of techniques to increase mindfulness has become somewhat mainstream in the clinical literature (Hayes, Strosahl & Wilson, 2012) as a way to increase awareness of emotions and reframe emotions in a more adaptive fashion (Bishop, Lau, Shapiro, Carlson, Anderson & Carmody,

2004), with a growing research base to support applicability and utility. Mindfulness-Based Stress Reduction (MBSR) is an evidence-based stress-reduction intervention program supported by over two decades of extensive research showing its effectiveness in reducing stress, anxiety, and depression, and promoting overall wellbeing (Chiesa&Serretti, 2010; Fjorback, Arendt, Ornbol, Fink&Walach, 2011; Grossman, Niemann, Schmidt, &Walach, 2004).Benzies and Mychasiuk (2009) reported the protective ability of self-efficacy against stress experienced by parents of children with autism. No studies, however, has been reported in the literature to know how far self-efficacy as a psychological factor influence the effectiveness of a mindfulness based psycho-educational intervention like MBSR in reducing stress in parents of children with developmental disabilities. This investigation, therefore, aims to find out the differential role of self-efficacy in the effectiveness of a Brief Mindfulness-Based Stress Reduction Programme (BMBSRP) in alleviating the parenting stress in mothers of children with autism spectrum disorder.

OBJECTIVE OF THE STUDY

The main objective of the study is to find out the differential effect of self-efficacy on the effectiveness of the BMBSRP in alleviating the parenting stress of mothers of children with autism spectrum disorder.

HYPOTHESIS OF THE STUDY

The null hypothesis formulated for the study is stated as follows: "There will be no significant difference among mothers with high-, average-, and low self-efficacy with regard to the effectiveness of the BMBSRP in alleviating the parenting stress of mothers of children with autism spectrum disorder".

METHODOLOGY

Method

The study adopted a quasi-experimental (non-equivalent pre-test post-test control group) design.

Population

Mothers of children (in the age range 4-14) with ASD, residing within the revenue boundaries of Kerala (India) constituted the research population.

Participants

The participants of the study was two convenient groups of mothers of children with ASD enrolled to two district level Centres for Research and Development of Autistic Children (CRDAC), one at Thrissur (the control group; n = 58) and the other at Kozhikode (the experimental group; n = 63).

Tools Used

- a) **Stress Inventory for Mothers of Children with Autism Spectrum Disorders:**Parenting stress of the participants were measured by administering the Stress Inventory for Mothers of Children with Autism Spectrum Disorders (SIM-CASD) developed by **Bindu and Arjunan (2014)**. It is a standardised 30 item five-point Likert-type scale covering three domains of parenting stress, viz.,child characteristics, parent characteristics, and social/family life stress. The SIM-CASD has a concurrent validity of 0.73 and split-half reliability of 0.83.
- b) **General Self-efficacy Scale:**The self-efficacy of the participants was measured by using the General Self-Efficacy Scale(GSS) developed by **Schwarzer& Jerusalem (1979)**. It is a 4-point scale consisting of 10 items where responses are rated from 'not at all true' to 'exactly true'. The scale measures one's perception of his/her abilities for organizing and executing the courses of action required to attain designated types of performance. TheCronbach's alpha reported for the scale ranged from 0.76 to 0.90.

EXPERIMENTAL INTERVENTION

The experimental group was intervened with a mindfulness meditation based stress reduction programme named as 'the Brief Mindfulness Based Stress Reduction Programme (BMBSRP)'. The BMBSRP is modelled on the Mindfulness-Based Stress Reduction (MBSR) program developed at the University of Massachusetts Medical Center by **Kabat-Zinn(1991)**. The MBSR is an 8-week evidence-based programme that offers secular, intensive mindfulness training to support people with pain, anxiety, stress and depression. It employs a blend of mindfulness meditation, body awareness, yoga and exploration of patterns of behaviour, thinking, feeling and action. The BMBSRP consisted of four 1.5 hours sessions, spread over 4-weeks, which incorporated formal techniques utilized in MBSR, such as body scan meditation, sitting meditation, *hatha yoga*, walking meditation, and loving-kindness meditation.

PROCEDURE

The participants in both the control group and experimental group were subjected to pre-test measurement of parenting stress and self-efficacy before the commencement of the experimentation. Strict control condition was maintained for the participants in control group, while the experimental group was exposed to BMBSRP intervention for four weeks at the rate of one session of 1.5 hours duration per week and a homework of 20-25 minutes formal meditation daily for 6 days per week. Post-test measurement of the parenting stress was done in both control group and experimental group immediately after the experimentation. The participants in both the control group and the experimental group were divided in to high-, average-, and low self-efficacy groups based on the GSS scores by following the $M \pm \sigma$ principle, and the change happened in the parenting stress of the groups as a result of the experimental intervention was compared statistically.

ANALYSIS AND INTERPRETATION

Table 1 presents the result of the one way ANOVA performed to compare the parenting stress scores of mothers with high-, average-, and low self-efficacy in the experimental group before the intervention.

Table 1: Comparison of the Pre-test Scores of Parenting Stress in Mothers with High-, Average- and Low Self-efficacy in the Experimental Group (Summary of ANOVA)

SEF	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2806.387	2	1403.194		
Within Groups	5202.597	60	86.710	16.183	.000
Total	8008.984	62			

The F-value obtained is significant ($F = 16.183$; $p < .001$) showing that mothers with high-, average-, and low self-efficacy differ significantly in their parenting stress. The result of the Scheffe's post hoc test of multiple comparisons performed in the context is given in Table 2.

Table 2: Post hoc tests for comparison of high-, average-, and low self-efficacy groups with regard to their pre-test scores of parenting stress (Experimental Group)

(I) SEF	(J) SEF	(I-J) Difference	Mean Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	2.282	2.982	.747	-5.20	9.77
	High	19.133*	3.815	.000	9.56	28.71
AVERAGE	Low	-2.282	2.982	.747	-9.77	5.20
	High	16.851*	3.179	.000	8.87	24.83
HIGH	Low	-19.133*	3.815	.000	-28.71	-9.56
	Average	-16.851*	3.179	.000	-24.83	-8.87

* The mean difference is significant at the 0.05 level.

The results of the *post hoc* test show that there exists significant difference between Low-High and Average-High group pairs compared. No significant difference was observed between Low-Average group pair. Inspection of mean difference estimated for the different groups show that higher self-efficacy goes with lower parenting stress in mothers of children with autism. The comparison of the parenting stress in mothers having high-, average-, and low self-efficacy in the control group is given in Table 3.

Table 3: Comparison of the Pre-test Parenting Stress Scores of Mothers with High-, Average-, and Low Self-efficacy in the Control Group (Summary of ANOVA)

SEF	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3367.962	2	1683.981		
Within Groups	6009.917	55	109.271	15.411	.000
Total	9377.879	57			

The F-value obtained is significant beyond 99% confidence interval ($F = 15.411$; $p < .001$), revealing the presence of a true difference in the parenting stress of mothers in the control group in accordance with the level of their self-efficacy. The result of the *post-hoc* test of multiple comparison made in this regard is given in Table 4.

Table 4: Post Hoc Tests for Comparison of High-, Average-, and Low Self-efficacy Groups with regard to their Pre-test Score of Maternal Stress (Control Group)

(I) SEF	(J) SEF	(I-J) Difference	Mean Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	-7.415	3.590	.128	-16.45	1.62
	High	13.009*	4.567	.023	1.52	24.50
AVERAGE	Low	7.415	3.590	.128	-1.62	16.45
	High	20.424*	3.726	.000	11.05	29.80
HIGH	Low	-13.009*	4.567	.023	-24.50	-1.52
	Average	-20.424*	3.726	.000	-29.80	-11.05

* The mean difference is significant at the 0.05 level.

The mean differences estimated for the Low-High group pair and the Average-High group pair are significant, but no true difference exists between Low and Average groups. As in the case of experimental group, in control group also the high self-efficacy goes with low parenting stress. Table 5 presents the result of the comparison of the pre-test and post-test scores of parenting stress of mothers having high-, average-, and low levels of self-efficacy in the experimental group.

Table 5: Comparison of Pre-test and Post-test Parenting Stress Scores of Mothers in High-, Average-, and Low Self-efficacy Groups (Experimental Group)

Self-efficacy	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ_1	N ₂	M ₂	σ_2		
High	11	88.64	5.09	11	82.09	5.47	8.05	.001 Level
Average	39	105.49	9.81	39	97.67	9.80	19.95	.001 Level
Low	13	107.77	10.35	13	96.31	8.86	7.37	.001 Level

The result of the paired t-tests, presented in Table 5, shows that there is a significant difference between pre-test and post-test mean scores of parenting stress of mothers in all the three levels of self-efficacy. Inspection of mean scores estimated for the groups reveals that post-test scores of maternal stress are considerably lower than that of the pre-test condition. Table 6 presents the result of the comparison of the pre-test and post-test scores of parenting stress of mothers having high-, average-, and low levels of self-efficacy in the control group.

Table 6: Comparison of Pre-test and Post-test Parenting Stress Scores of Mothers in High-, Average-, and Low Self-efficacy Groups (Control Group)

Self-efficacy	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ_1	N ₂	M ₂	σ_2		
High	10	86.90	4.99	10	87.00	4.42	0.116	NS
Average	37	107.32	10.87	37	107.38	10.97	0.22	NS
Low	11	99.91	12.37	11	100.73	11.77	1.04	NS

The t-values obtained on comparing the pre-test and post-test scores of parenting stress for the high-, average-, and low self-efficacy groups in the control group are not significant. It shows that the effect of control conditions on the parenting stress of mothers in different levels of self-efficacy are alike. Table 7 presents the result of the comparison of the control group and experimental group regarding the mean gain scores of parenting stress of mothers in high-, average-, and low levels of self-efficacy.

Table 7: Comparison of Control Group and Experimental Group regarding the Gain Scores of Parenting Stress in Mothers with High-, Average-, and Low Self-efficacy

Self-efficacy	Control Group			Experimental Group			t	Sig.
	N ₁	M ₁	σ_1	N ₂	M ₂	σ_2		
High	10	0.10	2.73	11	-6.55	2.69	5.61	.001 Level
Average	37	0.05	1.53	39	-7.82	2.45	16.72	.001 Level
Low	11	0.82	2.60	13	-11.46	5.61	6.67	.001 Level

All the t-values obtained are significant, showing that the Brief Mindfulness-Based Stress Reduction Programme is effective in alleviating the parenting stress in mothers having different levels of self-efficacy. Table 8 presents the result of the comparison of the mean gain scores of parenting stress experienced mothers having high-, average-, and low levels of self-efficacy in the control group.

Table 8: Comparison of the mean gain scores of parenting stress in mothers with high-, average-, and low self-efficacy in the control group (Summary of ANOVA)

SEF	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.089	2	2.544		
Within Groups	218.428	55	3.971	.641	NS
Total	223.517	57			

The F-value estimated is not significant, showing that mothers with high-, average-, and low levels of self-efficacy in the control group do not differ significantly with regard to their mean gain scores of parenting stress. Table 9 presents the result of one way ANOVA performed to compare the mean gain scores of parenting stress experienced mothers having high-, average-, and low levels of self-efficacy in the experimental group.

Table 9: Comparison of the mean gain scores of parenting stress in mothers with high-, average-, and low self-efficacy in the experimental group (Summary of ANOVA)

SEF	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	172.616	2	86.308		
Within Groups	677.702	60	11.295	7.641	.000
Total	850.317	62			

The F-value estimated is significant beyond 99% confidence interval (F = 7.641; p<.001), showing that mothers with high-, average-, and low self-efficacy differ significantly with regard to the reduction in parenting stress happened as result of BMBSRP intervention. The result of the post-hoc

test performed subsequently to find out the groups which differ significantly from others in the reduction of maternal stress is given in Table 10.

Table 10: Post hoc tests for comparison of the mean gain scores of parenting stress in mothers with high-, average-, and low self-efficacy in the experimental group

(I) SEF	(J) SEF	(I-J) Difference	Mean Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
LOW	Average	-3.641*	1.076	.005	-6.34	-.94
	High	-4.916*	1.377	.003	-8.37	-1.46
AVERAGE	Low	3.641*	1.076	.005	.94	6.34
	High	-1.275	1.147	.543	-4.16	1.60
HIGH	Low	4.916*	1.377	.003	1.46	8.37
	Average	1.275	1.147	.543	-1.60	4.16

* The mean difference is significant at the 0.05 level.

The mean differences estimated for different paired groups reveal that, while the low self-efficacy group differ significantly from the high and average self-efficacy groups, no significant difference was observed between the high and average self-efficacy groups with regard to the mean gain scores. Inspection of the mean estimates reveals that compared to mothers with high and average self-efficacy, the mindfulness meditation was significantly more effective for mothers with low self-efficacy for alleviating their parenting stress. The null hypothesis formulated in this connection is, therefore, rejected.

CONCLUSIONS

The mothers with high-, average-, and low self-efficacy in both the experimental group and control group differed significantly with respect to the pre-test score of parenting stress. The observed significant difference was found limited between Low-High and Average-High group pairs and not between Low-Average group pair. Mothers with lower self-efficacy was found to experience greater stress while nurturing a child with autism. While significant difference between pre-test and post-test scores of parenting stress was observed in mothers at high-, average-, and low levels of self-efficacy in the experimental group, no significant difference was found between pre-test and post-test scores of parenting stress of mothers in any level of self-efficacy in the control group. The experimental group and control group were found to differ significantly with respect to the mean gain scores of parenting stress at all levels of self-efficacy. The BMBSRP intervention is effective in alleviating parenting stress of mothers in high-, average-, and low levels of self-efficacy. Whereas no significant difference exist among mothers having high-, average-, and low self-efficacy regarding the mean gain scores of parenting stress in the control group, mothers in different levels of self-efficacy in the experimental group showed significant difference in the mean gain scores of parenting stress. It reveals that the effectiveness of BMBSRP intervention in alleviating parenting stress in mothers of children with autism varied significantly according to the level of their self-efficacy. The result of the post-hoc test brought out that the Brief Mindfulness-Based Stress Reduction Programme was more effective in reducing the parenting stress of mothers with low self-efficacy than that of mothers with average or high self-efficacy.

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