

Differential Influence of Locus of Control on the Efficacy of Mindfulness Meditation in Reducing Parenting Stress in Mothers of Children with Autism Spectrum Disorder

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Abstract: The study explored the differential influence of locus of control 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 locus of control and separated into internals and externals. 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 both mothers with internal and external locus of control, but it is more effective with mothers with external orientation than their counterparts with internal orientation.

Key words: Parenting stress, Locus of control Autism spectrum disorder, Mindfulness.

1. INTRODUCTION

Autism Spectrum Disorder (ASD) is a range of pervasive neurodevelopmental disorder characterised by persistent impairment in social reciprocity, communication deficits, and the presence of stereotyped, repetitive behaviours or interests (American Psychiatric Association, 2013). Parenting is inherently challenging, even in relation to normative events experienced by every parent (Glasberg, Martin & Harris, 2006), and potentially more so for parents of children with developmental disabilities (Boyd, 2002; Dunn, Burbine, Bowers & Tantleff-Dunn, 2001). Previous researches has consistently reported higher levels of parenting stress among parents of children with Autism Spectrum Disorder (ASD) than parents of typically developing children and children with other disabilities (Hayes & Watson, 2013; Mancil, Boyd, & Bedesem, 2009). Studies have revealed that parenting stress may increase the risk for development of dysfunctional parenting behavior and affective disturbances in both parent and child (Duarte, Bordin, Yazigi & Mooney, 2005; Phetrasuwan & Miles, 2009; Rodrique, Morgan & Geffken, 1990; Tomanik, Harris, & Hawkins, 2004). 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). Realising the therapeutic potential of mindfulness in reducing stress, this investigation aims to find out the differential effect of internal and external Locus of Control (LOC) on the effectiveness of a Brief Mindfulness-Based Stress Reduction Programme (BMBSRP) in alleviating the parenting stress of mothers of children with autism spectrum disorder.

2. OBJECTIVE OF THE STUDY

The main objective of the study is to find out the differential effect of internal and external locus of control on the effectiveness of the BMBSRP in alleviating the parenting stress of mothers of children with autism spectrum disorder.

3. HYPOTHESIS OF THE STUDY

The null hypothesis formulated for the study is stated as follows: "There will be no significant difference between mothers with internal and external locus of control regarding the effectiveness of the BMBSRP in alleviating their stress in parenting a child with autism spectrum disorder".

4. METHODOLOGY

4.1 Method

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

4.2 Population

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

4.3 Participants

The participants of the study were 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; $n = 63$).

4.4 Tools Used

- 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.
- Malayalam Version Rotter's Internal-External Locus of Control Scale:** The locus of control of the mothers of children with autism was measured using the Malayalam Version Rotter's Internal-External Locus of Control Scale (I-E Scale), developed originally by Rotter (1966), and adapted to Indian context by Arjunan & Abraham (2003). The 32-item adapted scale was found to have an external validity of 0.93 (correlation with the original scale in a bilingual sample) and a test-retest reliability (four weeks interval) of 0.88.

4.5 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.

4.6 Procedure

The participants in both the control group and experimental group were subjected to pre-test measurement of parenting stress and locus of control 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 internal and external locus of control groups based on the norms of I-E Scale, and the change happened in the parenting stress of the groups as a result of the experimental intervention was compared statistically.

5. ANALYSIS AND INTERPRETATION

Table 1 presents the result of the independent sample t-test performed to compare the pre-test parenting stress scores of mothers with internal and external locus of control in the experimental group.

Table 1: Comparison of the pre-test maternal stress scores of mothers with internal and external locus of control in the experimental group

LOC	Statistical Indices				t	Sig.
	N	M	SD	SE _M		
Internals	26	99.50	10.58	2.075	2.115	.05
Externals	37	105.49	11.38	1.871		

The t-value estimated is significant ($t = 2.115$; $p < .05$), showing that there is significant difference between mothers with internal and external locus of control with regard to their pre-test scores of parenting stress. The mean estimates indicate that mothers with external locus of control experience greater parenting stress than their counterparts with internal locus of control. The comparison of the parenting stress in mothers with internal and external locus of control in the control group is given in Table 2.

Table 2: Comparison of the pre-test maternal stress scores of mothers with internal and external locus of control in the control group

LOC	Statistical Indices				t	Sig.
	N	M	SD	SE _M		
Internals	25	95.76	11.125	2.225	3.816	.01
Externals	33	107.42	11.822	2.058		

In control group also, the t-value obtained is significant ($t = 3.816$; $p < .01$) indicating the presence of true difference between mothers with internal and external locus of control regarding their parenting stress; the externals surpassing the internals. Table 3 presents the result of the comparison of the pre-test and post-test scores of parenting stress of mothers with internal and external locus of control in the experimental group.

Table 3: Comparison of pre-test and post-test parenting stress scores of mothers with internal and external locus of control (Experimental Group)

LOC	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ_1	N ₂	M ₂	σ_2		
Internal	26	99.73	9.90	26	92.96	9.72	10.45	.001
External	37	105.32	11.88	37	95.86	11.22	15.97	.001

The t-values obtained on comparing the pre-test and post-test parenting stress scores of mothers in the experimental group for the Internal LOC and External LOC groups are significant at .001 level. The mean estimates for the groups show that post-test scores of maternal stress are significantly lower than that in the pre-test condition. It reveals that the BMBSRP intervention has resulted in significant reduction in the parenting stress of mothers of children with autism irrespective of their locus of control orientation. Table 4 presents the result of the comparison of the pre-test and post-test scores of parenting stress of mothers with internal and external locus of control in the control group.

Table 4. Comparison of pre-test and post-test parenting stress scores of mothers with internal and external locus of control (Control Group)

LOC	Pre-test			Post-test			t	Sig.
	N ₁	M ₁	σ_1	N ₂	M ₂	σ_2		
Internal	25	95.76	11.13	25	96.52	11.11	1.89	NS
External	33	107.42	12.02	33	107.21	12.02	0.647	NS

The t-value estimated for neither the internals nor the externals is significant, revealing that the control condition has not contributed in considerable change in the parenting stress of mothers with internal and external locus of control in the control group. Table 5 presents the data and result of the comparison of the control group and experimental group with respect to the mean gain scores of parenting stress in mothers with internal and external locus of control.

Table 5. Comparison of control group and experimental group regarding the mean gain scores of parenting stress in mothers with internal and external locus of control

LOC	Control Group			Experimental Group			t	Sig.
	N ₁	M ₁	σ_1	N ₂	M ₂	σ_2		
Internal	25	.76	2.01	26	-6.77	3.30	9.79	.001
External	33	-.21	1.88	37	-9.46	3.60	13.22	.001

The t-values obtained on comparing the mean gain scores of control group and experimental group are significant for mothers with both internal as well as external locus of control. It shows that the BMBSRP intervention is effective for alleviating parenting stress of the mothers irrespective of whether they are internals or externals with regard to their locus of control. Table 6 presents the result of the comparison of the mean gain scores of parenting stress in mothers with internal and external locus of control in the control group.

Table 6. Comparison of the mean gain scores of parenting stress in mothers with internal and external locus of control in the control group

LOC	Statistical Indices				t	Sig.
	N	M	SD	SE _M		
Internal	25	.76	2.006	.401	1.89	NS
External	33	-.21	1.883	.328		

The t-value estimated is not large enough to be significant at least at 95% confidence interval, revealing that the control condition has not resulted in any significant difference between mothers with internal and external locus of control regarding their parenting stress. The result of the comparison of mean gain scores of parenting stress in mothers with internal and external locus of control in the experimental group is given in Table 7.

Table 7. Comparison of the mean gain scores of parenting stress in mothers with internal and external locus of control in the experimental group

LOC	Statistical Indices				t	Sig.
	N	M	SD	SE _M		
Internal	26	-6.77	3.302	.648	3.02	.01
External	37	-9.46	3.602	.592		

The t-value obtained on comparing mothers with internal and external locus of control in the experimental group with regard to the mean gain scores of parenting stress is significant ($t = 3.02$; $p < .01$). It reveals that the experimental intervention has significantly different influence on the parenting stress of mothers with internal and external locus of control. A closer observation of the mean estimates shows that the BMBSRP was more effective for alleviating the parenting stress of mothers with external locus of control than for their counterparts with internal locus of control. The null hypothesis formulated in this connection (there will be no significant difference between mothers with internal and external locus of control regarding the effectiveness of the BMBSRP in alleviating their stress in parenting a child with autism spectrum disorder) is, therefore, rejected.

6. CONCLUSIONS

The mothers with internal and external locus of control in both the experimental group and control group differed significantly with respect to the pre-test score of parenting stress; the externals surpassing the internals in parenting stress. While significant difference between pre-test and post-test scores of parenting stress was observed in both the mothers with internal and external locus of control in the experimental group, no such difference was found between pre-test and post-test scores of parenting stress in mothers 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 in mothers with internal and external locus of control. The BMBSRP intervention is effective in alleviating parenting stress of mothers with internal and external locus of control. Whereas no significant difference exist between mothers with internal and external locus of control regarding the mean gain scores of parenting stress in the control group, internals and externals in the experimental group showed significant difference in the mean gain scores of parenting stress. Compared to mothers with internal locus of control, the BMBSRP intervention was found to be more effective for alleviating the parenting stress of mothers with external locus of control.

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