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Original Research

High Depressive Symptoms, Low Family Functioning, and Low Self-Efficacy in Mothers of Children With Autism Spectrum Disorder Compared to Two Control Groups

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Abstract: Parents of children with autism spectrum disorder (ASD) face unique challenges in raising their children, and they are at higher risk for depression compared to parents of children with typical development (TD) and other disabilities. **AIMS:** (1) To compare prevalence of depressive symptoms among mothers of children with ASD (n = 101), Down syndrome (DS, n = 101), and TD (n = 43) and (2) to describe the relationships among depression, self-efficacy, and family functioning, and describe the mediating role of maternal child care self-efficacy between depressive symptoms and child behavior. **METHODS:** In this cross-sectional study, mothers completed the Social Communication Questionnaire, Aberrant Behavior Assessment Device General Functioning Scale, and Parent Stress Assessment. **RESULTS:** Mothers of children with ASD had significantly higher mean PHQ-9 scores (p < .001), and lower family functioning (p < .001), better self-efficacy, and less severe ASD symptoms and behavior than mothers of children with TD. Maternal child care self-efficacy was protective against depression, self-efficacy, and family functioning. Interventions may be helpful in addressing depression in mothers of children with ASD.

Keywords: autism spectrum disorder, mothers, depression, self-efficacy

Families of children with autism spectrum disorder (ASD) face unique challenges in raising their children and health providers, including nurses and psychiatric nurse practitioners endeavor to provide care and support. There has been increased access to services, public awareness, and community acceptance of the ASD diagnosis over the past two decades. Despite this, parents of children with ASD continue to have greater levels of stress, anxiety, and depression, as compared to parents of children with typical development (TD) and parents of children with chronic conditions, such as Down syndrome (DS), fragile X, cerebral palsy, and intellectual disability. Studies revealed that clinically significant depressive symptoms are present in 10% to 70% of mothers of children with ASD, with the median of 10% to 15% for ASD, 18% for DS, and 10% for TD, respectively.

The specific aims of this study are to (1) compare mean depression score and prevalence of depressive symptoms in mothers of children with ASD to mothers of children with TD, and with DS without ASD and (2) examine the mediating role of maternal self-efficacy in the relationship between maternal depressive symptoms and child symptom severity and aberrant behavior, controlling for family functioning and other risk factors for depression. We hypothesized that mean depression score and prevalence of depressive symptoms would be higher among mothers of children with ASD compared to the comparison groups; family functioning would be associated with maternal depressive symptoms, maternal self-efficacy, and child behaviors;

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Table 1. Sample Demographics.

Demographics	Total sample, n = 245	ASD group, n = 101	DS group, n = 101	TD group, n = 43
Mother characteristics				
Age (mean)	39.6	40.2	40.0	37.5
Race				
White	188 (77.0%)	73 (72.3%)	81 (81.0%)	34 (79.1%)
Black/African American	27 (11.1%)	14 (13.9%)	9 (9.0%)	4 (9.3%)
Hispanic	12 (4.9%)	6 (5.9%)	3 (3.0%)	1 (2.3%)
Asian	9 (3.7%)	3 (3.0%)	5 (5.0%)	1 (2.3%)
Other	8 (3.3%)	5 (5.0%)	2 (2.0%)	1 (2.3%)
Marital status				
Now married	198 (82.2%)	78 (77.2%)	86 (88.7%)	34 (79.1%)
Never married	25 (10.4%)	13 (12.9%)	6 (6.2%)	4 (10.0%)
Divorced	12 (5.0%)	6 (5.9%)	4 (4.1%)	2 (4.7%)
Separated	6 (2.5%)	4 (4.0%)	1 (1.0%)	1 (2.3%)
Education				
High school diploma	17 (6.9%)	9 (8.9%)	7 (6.9%)	1 (2.3%)
2-year college	40 (16.3%)	20 (19.8%)	18 (17.8%)	2 (4.7%)
Bachelor's degree	97 (39.6%)	38 (37.6%)	39 (38.5%)	20 (46.5%)
Graduate degree	91 (37.1%)	34 (33.1%)	37 (36.6%)	20 (46.5%)
Employment				
Employed full-time	147 (60.0%)	60 (59.4%)	58 (57.4%)	29 (67.4%)
Employed part-time	45 (18.4%)	18 (17.8%)	19 (18.8%)	8 (18.6%)
Homemaker	44 (18.0%)	17 (16.8%)	22 (21.8%)	5 (11.6%)
Care of work or unable to work	9 (3.6%)	6 (5.9%)	2 (2.0%)	1 (2.3%)
Annual household income				
Under US\$24,999	13 (5.4%)	6 (6.0%)	5 (5.1%)	2 (4.7%)
US\$25 to 49,999	25 (10.3%)	11 (11.0%)	8 (8.1%)	4 (10.0%)
US\$50 to 74,999	35 (14.5%)	20 (20.0%)	5 (5.1%)	2 (4.7%)
US\$75 to 99,999	31 (12.8%)	13 (13.0%)	8 (8.1%)	4 (10.0%)
US\$100,000 or more	18 (7.0%)	9 (9.0%)	5 (5.1%)	2 (4.7%)
Child characteristics				
Age (mean)	179 (73.1%)	64 (63.4%)	20 (20.0%)	7 (6.9%)
Sex				
Male	177 (72.5%)	71 (70.3%)	15 (14.9%)	9 (8.9%)
Female	27 (11.1%)	13 (12.9%)	3 (3.0%)	1 (2.3%)
Other	8 (3.3%)	3 (3.0%)	2 (2.0%)	1 (2.3%)
Nonverbal	157 (64.5%)	78 (78.0%)	21 (21.0%)	1 (2.3%)
Verbal	85 (35.0%)	1 (1.0%)	1 (1.0%)	1 (2.3%)
Down syndrome	26 (10.6%)	16 (15.8%)	8 (8.0%)	2 (4.7%)
Typical development	210 (85.9%)	8 (7.9%)	2 (2.0%)	2 (4.7%)

TD = typical development; ASD = autism spectrum disorder; DS = Down syndrome.

Figure 1. The Maternal Self-Efficacy Model.

Figure 2. Box and Whisker Plot of PHQ-9 Score Across Three Groups.

Table 2. Comparing PHQ-9 Results Across the Groups.

Outcome	Measurement	ASD group	DS group	TD group
Prevalence of positive depression screens	Proportion of PHQ-9 scores ≥ 10	24 (23.8%)	12 (11.9%)	0 (0%)
Depressive symptom burden	Raw PHQ-9 mean score	6.6 (5.82)	4.0 (4.67)	2.0 (1.91)
Model-based means (SE)	Adjusted PHQ-9 mean score	6.62 (1.68)	6.08 (1.72)	4.07 (1.81)
Pairwise comparisons of model-based means (SE)	Estimated difference in means vs. ASD	—	2.54 (2.77)**	4.54 (3.91)**
	Estimated difference in means vs. DS	—	—	2.01 (1.91)*

Note. PHQ-9 = Patient Health Questionnaire-9; DS = Down syndrome; TD = typical development; SE = standard error. *Significant at the .05 level. **Significant at the .01 level. ***Significant at the .001 level.

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Table 3. Comparing Raw Scores Across the Groups.

Variable	Measurement	ASD group	DS group	TD group
Family functioning	FAD mean score	1.9 (1.55)	1.6 (1.49)	1.5 (1.43)
Prevalence of low family functioning	Proportion of FAD scores ≥ 2	43 (42.6%)	20 (19.8%)	8 (18.6%)
Maternal self-efficacy	MES mean score	32.4 (5.24)	35.1 (3.48)	35.0 (3.41)
Child behavior	ABC subscales			
	Irritability	11.0 (9.53)	3.8 (5.20)	3.4 (5.24)
	Social withdrawal	10.0 (8.33)	2.6 (4.67)	2.6 (4.67)
	Stereotypic behaviors	4.5 (4.90)	1.2 (2.65)	1.1 (2.1)
Child ASD symptoms	Inappropriate speech	16.0 (11.52)	4.8 (8.51)	3.9 (6.83)
	SCQ mean score	2.8 (2.81)	1.0 (1.91)	1.0 (1.10)
	Nonverbal	20.5 (7.38)	9.7 (5.36)	43 (3.71)
	Verbal	22.1 (6.19)	11.5 (6.62)	7.2 (4.55)

Note. DS = Down syndrome; TD = typical development; FAD = family assessment device; MES = maternal efficacy scale; ABC = Aberrant Behavior Checklist; SCQ = Social Communication Questionnaire.

Table 4. Pearson Correlations Among Variables.

Variable	FAD	MES	Irritability	Social withdrawal	Stereotypic behavior	Inappropriate speech	SCQ verbal	SCQ nonverbal
PHQ-9	.41**	-.46**	.49**	-.53**	.46**	.38**	.46**	.60**
FAD	—	-.41**	.25**	.11**	-.24**	.22**	.16*	.33**
MES		—	-.58**	-.53**	-.44**	-.52**	-.35**	-.40**

Note. FAD = family assessment device; MES = maternal efficacy scale; SCQ = Social Communication Questionnaire; PHQ-9 = Patient Health Questionnaire-9. *Significant at .01 level. **Significant at .001 level.

Table 5. Baron and Kenny Regression Model F-Values With ASD Symptoms as the Outcome.

Step	Predictor	ASD symptoms Verbal	ASD symptoms Nonverbal	Self-efficacy
Step 1	Depressive symptoms	20.57**	12.45**	29.59**
Step 2	Maternal self-efficacy	6.70*	1.46	9.19**
Step 3	Depressive symptoms, adjusted for self-efficacy	10.82**	1.46	9.19**
Step 4	Depressive symptoms, adjusted for self-efficacy	2.91**	1.46	9.19**
Percent mediated		24.7%		

*Significant at .05 level. **Significant at .01 level.

Table 6. Mediation Analysis Results.

Step	Predictor	ASD symptoms Verbal	ASD symptoms Nonverbal	Self-efficacy
Step 1	Depressive symptoms	20.57**	12.45**	29.59**
Step 2	Maternal self-efficacy	6.70*	1.46	9.19**
Step 3	Depressive symptoms, adjusted for self-efficacy	10.82**	1.46	9.19**
Step 4	Depressive symptoms, adjusted for self-efficacy	2.91**	1.46	9.19**

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Given that parents of children with ASD are at increased risk for depression, and that ASD cannot be diagnosed until 12 to 18 months with the average age of diagnosis at 4 years old, regular parental depression screening beyond the first year of life is warranted and can be incorporated into the child's ongoing care.

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