
SYSTEMATIC REVIEW AND META-ANALYSIS OF THE RELATIONSHIPS BETWEEN THE ADEQUACY OF FAMILY RESOURCES AND PARENTING STRESS

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ABSTRACT: *The birth and rearing of a child with a developmental disability or chronic medical condition is often a stressful life event for parents. Family system theory includes the tenet that the presence of family strengths, resources, and supports can buffer parents and other primary caregivers from the adverse effects of stressful life events. The aim of this systematic review and meta-analysis was to evaluate the relationships between the adequacy of family resources and three types of parenting stress (parental distress, difficult child-related stress, and dysfunctional parent-child interactions). Eleven studies including 14 independent samples of study participants met the inclusion criteria (N = 3030 parents and other primary caregivers). Ten studies were conducted in the United States and one study was conducted in South Africa between 1994 and 2018. The participants' children had either identified disabilities (N = 8 samples) or medical diagnoses (N = 6 samples). Meta-Essentials was used to perform the systematic review and meta-analysis and included forest plot analysis, publication bias analysis, effect size aggregation, between type of parenting stress subscale comparisons, and moderator analysis. The adequacy of family resources was significantly related to less parental distress, less child-related stress, and less difficult parent-child interactional patterns. The directions of effect were the same in every study and every sample of study participants. The size of effect between the independent and dependent measures was larger for parental distress ($r = -.48$, 95% CI = $-.51$ to $-.44$, $p < .001$) compared to both child-related stress ($r = -.31$, 95% CI = $-.42$ to $-.19$, $p < .001$) and dysfunctional parent-child interactional patterns ($r = -.24$, 95% CI = $-.29$ to $-.20$, $p < .001$). There were no differences in the sizes of effect for parents of children with identified disabilities or medical diagnoses. The pattern of results is consistent with the hypothesis that the adequacy of family resources would lessen parenting stress related to the birth and rearing of a child with a developmental disability or chronic medical condition.*

KEYWORDS: family resources, parenting stress, family systems theory, systematic review, meta-analysis

INTRODUCTION

This brief report includes findings from a systematic review and meta-analysis of the relationships between the adequacy of family resources and the different parenting stress-related domains of the Parenting Stress Index (Abidin, 1997). The research synthesis is part of

a larger integrative analysis of the relationships between the adequacy of family resources and different domains of personal, parenting, family, and functioning (Dunst, 2021c).

The adequacy of family resources was measured using the Family Resource Scale (FRS; Dunst & Leet, 1985, 1987) or one or more adaptations of the scale (Dunst, 2021c, 2021d). The original version of the FRS includes 30 items measuring different types of family resources (basic resources, financial resources, healthcare, childcare, availability of time, etc.). The scale items are each rated on a 5-point scale ranging from not-at-all adequate to almost always adequate. A total scale score (sum of the item ratings) is used as a global measure of the adequacy of family resources. The psychometric properties of the FRS have been examined in multiple studies and found to be both a reliable and valid instrument (e.g., Almasri et al., 2014; Patwardhan et al., 2019; Taylor, 1999; Van Horn et al., 2001).

The Parenting Stress Index (PSI) is one of the most widely used measures for assessing the presence of parenting stress among caregivers of young children birth to 12 years of age (Holly et al., 2019). There are both long-form (Abidin, 2012a) and short-form (Abidin, 2012b) versions of the PSI. The long-form version assesses two parenting stress domains: Parental distress and difficult child-related stress. The short-form version of the scale assesses, in addition to parental distress and difficult child-related stress, dysfunctional parent-child interactions. Both versions of the PSI have been found to be reliable and valid instruments for measuring different domains of parenting stress (e.g., Barroso et al., 2016; Holly et al., 2019; Reitman et al., 2002; Whiteside-Mansell et al., 2007).

The PSI is based on a parenting stress model where child-related stressors are hypothesized to be a primary source of heightened caregiver stress levels (Abidin, 1992). Nearly all research syntheses of the determinants of parenting stress compare the stress levels of parents of children with and without developmental disabilities or chronic medical conditions (e.g., Hayes & Watson, 2013; Pinquart, 2018) or between parents of children with different clinical diagnoses or conditions (e.g., Barroso et al., 2018; Cousino & Hazen, 2013). Family systems theory, in contrast, emphasize the role family-related factors (resources, supports, strengths, hardiness, etc.) play in buffering parents and other caregivers from the negative effects of stressful life events such as rearing a child with a disability or medical condition (e.g., Ferrari & Sussman, 2016; Seligman & Darling, 2016).

Findings from a recently completed meta-analysis of the relationships between the adequacy of family resources and global measures of personal, parent, family, and child well-being showed that the total FRS score was related to nine different dimensions of well-being (Dunst, 2021c). In every analysis, the more adequate were family resources, the more positive were the study participants' judgments of their personal well-being and the well-being of their families and children.

Purpose of the Study

The research synthesis described in this paper extends existing research by examining the relationships between the adequacy of family resources and the different PSI parenting stress domains to determine if family resources are related to parenting stress in a manner consistent with family and social systems theories (e.g., Ferrari & Sussman, 2016; Seligman & Darling, 2016). The systematic review and meta-analysis is part of a line of research investigating the

relationships between different family systems intervention variables (Dunst, 2017) and personal, parenting, family, and child behavior and functioning (e.g., Dunst, 2021d; Dunst et al., 2021). The primary aim of the study was to determine if the adequacy of family resources is differentially related to different types of parenting stress.

METHOD

A systematic review and meta-analysis of Family Resource Scale (Dunst & Leet, 1985, 1987) studies conducted between 1985 and 2020 that included the Parenting Stress Index (Abidin, 1997) subscale domains as the dependent measures guided the conduct of the research synthesis. Five primary (e.g., PsycNET, PubMed, ProQuest Central) and six secondary (e.g., JSTOR, DOAJ, Google) databases were searched for studies. Natural language searches using “family resource scale,” “adequacy of family resources” and “adequacy of resources” AND “family” were used to locate studies since family resources is not a controlled vocabulary term in any of the databases used to locate family resource scale studies. The protocol for the research synthesis is described in a supplemental report (Dunst, 2021b).

Inclusion and Exclusion Criteria

Published and unpublished research reports including parents (mothers or fathers) or other primary caregivers of children birth to 12 years of age with identified disabilities or medical conditions were the focus of investigation. No limits were placed on the location of the studies or the language of the research reports.

Studies were included if the total FRS scale score was used as the independent measure, one or more PSI subscale scores were the dependent measures, the study participants completed both the FRS and PSI, and the correlations between family resources and one or more of the parenting stress domain subscale measures were reported. Studies were excluded if the total FRS scale score was not used as the predictor variable, parenting stress was not a study outcome, and the correlations between measures were reported as either not significant or only significant correlation coefficients were reported.

Independent and Dependent Measures

Adequacy of family resources was operationalized as the total FRS scale score (sum of the scale item scores). The Dunst and Leet (1985) FRS was used in 10 studies and the Taylor (1999) FRS was used in one study. Parenting stress was operationalized as the PSI domain subscale scores computed using the scoring procedures for the parenting stress measures (Abidin, 2012a, 2012b). The long-form PSI was used in five studies and the short-form PSI was used in six studies.

Data Preparation and Analysis

The data extracted from each research report meeting the inclusion criteria included the correlation coefficient between family resources and the parenting stress measures, the sample size in the studies, the parenting stress subscale in each analysis, and the moderator variables. The moderators included the study sample size, parent age, parent marital status, child age, and child condition (children with identified disabilities vs. children with medical complications).

Meta-Essentials was used to conduct the systematic review and meta-analysis (Suurmond et al., 2017; Van Rhee et al., 2015). This included forest plot data calculations, publication bias analyses, effect size aggregation, between types of parenting stress measure comparisons, and the analyses of the moderators the relationships between the adequacy of family resources and parenting stress. QBetween (QB) was used to test for between types of research report differences and between types of parenting stress differences. QB is a nonparametric version of a between-group F-test.

RESULTS

Eleven studies including 14 independent samples of study participants met the inclusion criteria (Appendix A). Most studies were excluded because the PSI was not the dependent measure or no correlations were reported between the FRS and PSI subscale scores.

Table 1 shows selected characteristics of the studies and samples that were the focus of analysis. Five studies were published in peer-reviewed journal articles and six studies were unpublished research reports. Eight samples included children with identified disabilities and six samples included children with different medical conditions.

Table 1. Study, Participant and Child Characteristics

Study	Study Characteristics			Participant Characteristics				Child Characteristics		
	N	Country	Research Report ^a	Parent ^b	% of Sample	M Age (Yrs.)	M Yrs. School	Percent Married	M Age (Yrs.)	Child Condition
Armans (2018)	46	USA	MT	M	83	39	15	77	9	Developmental disabilities
Burrell et al. (1994)	53	USA	JA	M	100	31	NR	69	3	Developmental disabilities
Cheesman (2011)	30	SA	HT	M	100	40	NR	80	9	Autism/ADHD
Levine (2010)	26	USA	HT	M	NR	NR	NR	NR	2.5	Autism
Macias et al. (2007) S1	71	USA	JA	M	93	39	NR	89	10	Neural tube defects
Macias et al. (2007) S2	71	USA	JA	F	86	40	NR	89	10	Neural tube defects
Paley et al. (2006)	100	USA	JA	M	100	NR	16	62	9	Fetal alcohol syndrome
Pratt (1992)	503	USA	DD	M	100	30	13	100	2	Developmental disabilities
Smith et al. (2001)	880	USA	JA	M	100	32	13	74	3	Developmental disabilities
Spratt et al. (2007) S1	70	USA	JA	M	100	35	13	79	8	Intraventricular hemorrhage
Spratt et al. (2007) S2	45	USA	JA	M	94	39	13	89	8	Neural tube defects
Spratt et al. (2007) S3	45	USA	JA	F	93	40	13	89	8	Neural tube defects
Taylor (1999)	990	USA	UR	M	100	30	13	79	2	Developmental disabilities
Vohr et al. (n.d.)	100	USA	UR	M	100	32	15	83	8	Hearing loss

NOTES. S = Study sample. SA = South Africa. NR = Not reported.

^aMT = Master's thesis, JT = Peer-reviewed journal article, HT = Honor's thesis, DD = Doctoral dissertation, and UR = Unpublished research report.

^bM= Mother and F = Father.

Forest Plot Data

Appendix B shows the studies including any of the three PSI subscale measures, the version of the PSI used to measure parenting stress, the correlations between measures, and the lower and upper confidence intervals for the correlation coefficients. The directions of effect were the same in every study and sample for each of the three PSI subscale scores. The adequacy of family resources was related to less parental distress, less difficult child-related stress, and less dysfunctional parent-child interactional patterns.

Publication Bias

The results of the publication bias analyses are shown in Table 2. The average Fisher's z scores were much the same for the observed and adjusted sizes of effect as were the associated confidence intervals for the average sizes of effect. Neither the Egger regression test nor the Begg-Mazumber rank-order correlation test was statistically significant for the parental stress domain. There also was no between type of research report (published vs. not published) difference in the sizes of parental distress effect sizes, QB = 0.15, df = 1,12, p = .703.

The analyses for the difficult child and dysfunctional interaction stress domains indicated potential publication bias. There was, however, no significant difference in the sizes of effect for the peer-reviewed publications vs. not published research reports, $QB = 0.68$, $df = 1,14$, $p = .410$.

Table 2. Results of the Publication Bias Analyses

Outcome Measures	Observed Average z		Adjusted Average z		Egger Regression Test		Begg-Mazumber Rank-Order Test	
	z	95% CI	z	95% CI	t -test	p -value	Z -test	p -value
Parental Distress	-.51	-.55, -.47	-.51	-.55, -.47	1.67	.120	0.88	.381
Child-Related Stress	-.28	-.32, -.24	-.26	-.30, -.23	1.90	.090	1.95	.052
Parent-Child Dysfunction	-.25	-.30, -.19	-.24	-.28, -.19	3.82	.020	1.88	.060

NOTE. z = Fisher's transformation of the correlation coefficients.

Effect Size Aggregation

Table 3 shows the average, weighted sizes of effect between the total FRS scale scores and each of the three PSI subscale scores and for all three parenting stress measures combined. The adequacy of family resources was related to each of the parenting stress measures. The higher the total FRS scores, the less parenting stress was reported by the study participants.

Table 3. Average Weighted Effect Sizes for the Relationships Between Adequacy of Family Resources and Parenting Stress

Parenting Stress Domains	k	N	r	95% CI	Z -Test	p -value
All Stress Measures Combined	31	8038	-.40	-.45, -.34	12.25	<.001
Parental Distress	14	3030	-.48	-.51, -.44	22.02	<.001
Difficult Child-Related Stress	11	2870	-.31	-.42, -.19	5.62	<.001
Dysfunctional Parent-Child Interactions	6	2138	-.24	-.29, -.20	13.59	<.001

Between Parenting Stress Domain Comparison

A 3-Between Type of Parenting Stress Domain comparison was statistically significant, $QB = 68.02$, $df = 2,28$, $p < .001$. The average size of effect for the parental distress domain was larger than the sizes of effect for both the difficult child-related and dysfunctional parent-child interaction stress domains (Table 4).

Follow-up tests showed that the size of effect for the parental distress domain was larger than the effect sizes for both the difficult child-related stress, $QB = 17.20$, $df = 1,23$, $p < .001$, and parent-child dysfunctional interaction, $QB = 67.70$, $df = 1,17$, $p < .001$, domains. The sizes of effect for the difficult child and dysfunctional interaction patterns domains did not differ significantly, $QB = 2.69$, $df = 1,15$, $p = .101$.

Moderator Analyses

The moderators included study sample size, study participant average age, marital status (percent of sample married or living with a partner), average child age, and child condition (children with identified disabilities vs. children with medical conditions). None of the variables moderated the sizes of effects between the total FRS scores and either parental distress or difficult child-related stress. The study sample size and the percent of the sample who were married or living with a partner moderated the sizes of effects between the total FRS scores and the dysfunctional parent-child interaction stress scores. Studies with larger sample sizes were associated with larger sizes of effect, $B = .68$, Z -test = 8.50, $p < .001$, and studies

with a larger percentage of the samples married or living with a partner were associated with smaller sizes of effect, $B = -.97$, $Z\text{-test} = 4.06$, $p < .001$.

DISCUSSION

Results showed that the adequacy of family resources were related to less parental distress, less difficult child-related stress, and less dysfunctional parent-child interaction stress. The pattern of results is consistent with the hypothesis that the more adequate were family resources, the more the resources would buffer parents and other primary caregivers from the stressful effects of rearing a child with an identified disability or medical diagnosis. The findings are consistent with a basic tenet of family systems theory that family resources are a family-related variable that lessens the negative effects of stressful life events (e.g., Emery, 2014; Ferrari & Sussman, 2016; Seligman & Darling, 2016).

The strength of the relationships between the adequacy of family resources and the three types of parenting stress was not the same. The size of effect between family resources and parental distress was larger than the sizes of effects between family resources and both difficult children and dysfunctional parent-child stress. Findings from a meta-analysis of the relationships between the adequacy of family resources and global dimensions of personal well-being (including parenting stress) indicated no differential relationships with five domains of psychological health and well-being (Dunst, 2021d). Results from the research synthesis described in this paper indicate the importance of examining the effects of family resources on different domains of parenting stress to identify the differential effects of the adequacy of family resources as has also been found in other meta-analyses of family systems variables (Dunst, 2021a, 2021d).

The relationship between the adequacy of family resources and the three parenting stress domains was not moderated by child condition. This indicates that family resources had similar buffering effects on parenting stress for parents of children with identified disabilities or medical conditions. Provision or mobilization of family resources may therefore be indicated as part of interventions to improve parents' psychological health and parents' relationships with their children (Auslander et al., 1993; Dunst et al., 1988).

Contributions to Research and Practice

The systematic review and meta-analysis were guided by family systems theory which includes the tenet that different family-related factors are important determinants of parenting psychological functioning (Kerig, 2019). The adequacy of family resources is one of several family-related factors that are hypothesized to be related to parenting-related outcomes. Walsh (1994), for example, noted that family systems theory and research "seeks to identify the family strengths and resources that are critical for mastering life challenges and promoting the well-being and healthy development of individual family members" (p. 175, emphasis added). The role family strengths and resources play in decreasing stress and improving well-being may be especially important for parents rearing a child with an identified disability or medical condition (Algood et al., 2013). Findings reported in this paper and elsewhere support the contention that family resources are one family-related factor that explains variations in healthy psychological functioning (Dunst, 2021a, 2021c, 2021d).

Family systems intervention models and practices include an emphasis on family-related factors that can be used to improve parent, family, and child behavior and functioning (e.g., Cowan et al., 1998; Dunst, 2017; Kazak et al., 2002). The provision or mobilization of different types of family resources to affect changes and improvements in the lives of children with disabilities or medical conditions and their family members is a component of a number of family systems intervention models (e.g., Dunst, 2017; Guralnick, 2017). The results described in this paper are consistent with the use of family resources as an intervention practice for decreasing poor outcomes and improving parenting psychological health and parent-child interactions.

Limitations

There are several limitations of the systematic review and meta-analysis. First, the data that was the focus of analysis was correlational and statements about causal relationships may not be warranted. Second, the number of studies including the PSI dysfunctional parent-child interaction domain subscale ($N = 5$) was much smaller than the number of studies including the PSI parental distress domain ($N = 11$) or difficult child ($N = 10$) subscales. Third, moderators other than the ones examined in the research synthesis may have affected the relationships between the adequacy of family resources and parenting stress.

CONCLUSION

The adequacy of family resources is an important source of variation in parental distress, difficult child-related stress, and dysfunctional parent-child interactions. Adequacy of family resources was associated with less parental distress, less difficult child-related stress, and less dysfunctional parent-child interactional patterns.

Future Research

A next step in this line of research is to determine if different types of family resources (Dunst, 2021a) are related to different types of parenting stress to determine if certain types of resources ought to be the focus of family-systems interventions (Dunst, 2017) to lessen any stress related to the birth and rearing of a child with a developmental disability or chronic health condition. Results from this type of study would provide evidence to support or refute contentions that one would expect to find different types of family resources differentially related to different types of parenting stress (Dunst, 2021a).

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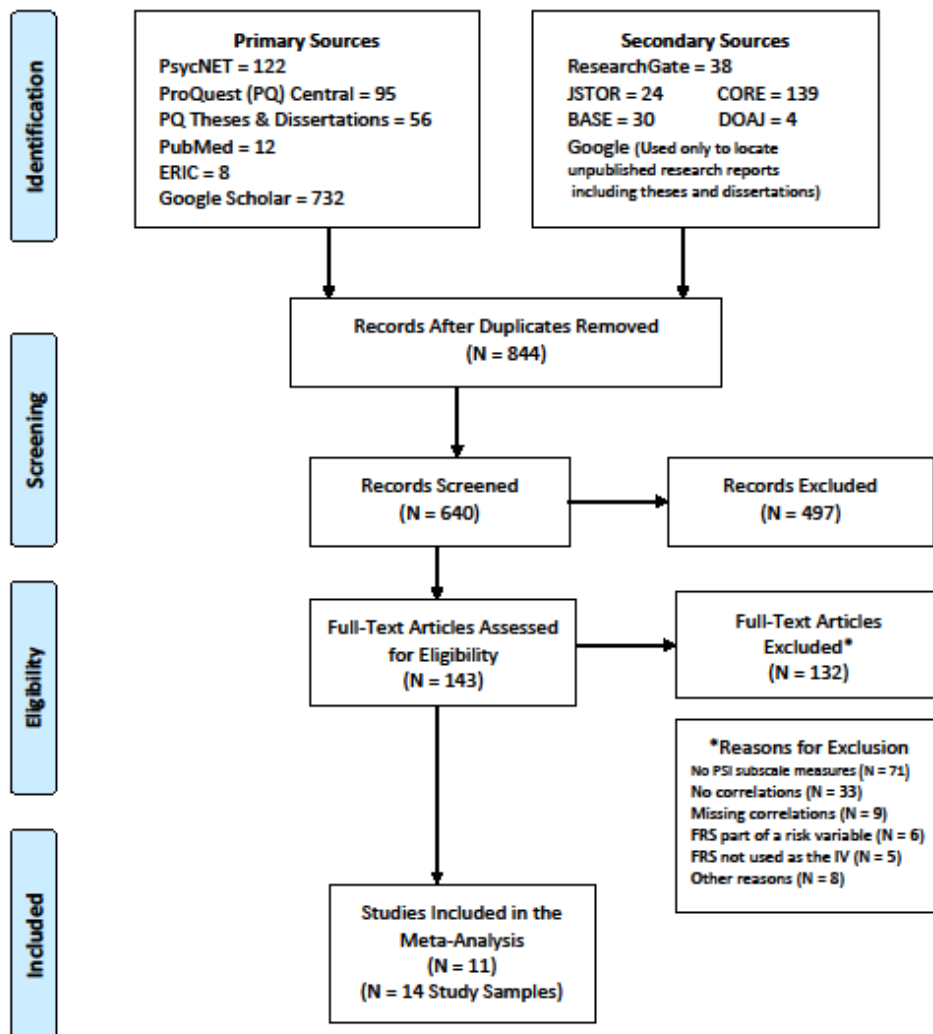
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Appendix A
Flow Chart for the Identification of Studies Reporting the Correlations Between the Adequacy of Family Resources (FRS) and the Three Types of Parenting Stress Index (PSI) Subscale Measures
 (Adapted from Moher et al., 2009).



Appendix B
Forest Plot Data for Conduction the Meta-Analysis

Parenting Stress Measure/Study	N	PSI	Weight	Correlation	Confidence Intervals (CI)	
					Lower CI	Upper CI
Parental Distress						
Armans (2014)	46	SF	2.14	-.31	-.56	-.01
Burrell et al. (1994)	53	LF	2.47	-.60	-.75	-.39
Cheesman (2011)	30	LF	1.36	-.28	-.59	.11
Levine (2010)	26	SF	1.17	-.66	-.84	-.35
Macias et al. (2007) Sample 1	71	SF	3.31	-.57	-.71	-.38
Macias et al. (2007) Sample 2	71	SF	3.31	-.44	-.61	-.23
Paley et al. (2006)	100	LF	4.61	-.47	-.61	-.30
Pratt (1992)	503	LF	17.71	-.45	-.52	-.38
Smith et al. (2001)	880	SF	25.10	-.45	-.50	-.40
Spratt et al. (2007) Sample 1	70	SF	3.27	-.55	-.70	-.36
Spratt et al. (2007) Sample 2	45	SF	2.09	-.50	-.70	-.23
Spratt et al. (2007) Sample 3	45	SF	3.09	-.58	-.75	-.34
Taylor (1999)	990	LF	26.75	-.46	-.51	-.41
Vohr et al. (n.d.)	100	SF	4.61	-.62	-.73	-.48
Difficult Child-Related Stress						
Armans (2014)	46	SF	5.23	-.22	-.49	.08
Burrell et al. (1994)	53	LF	5.83	-.44	-.62	-.15
Cheesman (2011)	30	LF	3.65	-.81	-.91	-.63
Levine (2010)	26	SF	3.20	-.57	-.79	-.21
Macais et al. (2007) Sample 1	71	SF	7.15	-.34	-.53	-.11
Macais et al. (2007) Sample 2	71	SF	7.15	-.19	-.41	.05
Paley et al. (2006)	100	LF	8.82	-.19	-.37	.01
Pratt (1992)	503	LF	15.72	-.28	-.36	-.20
Smith et al. (2001)	880	SF	17.10	-.23	-.29	-.17
Taylor (1999)	990	LF	17.33	-.28	-.34	-.22
Vohr et al. (n.d.)	100	SF	8.82	-.36	-.52	-.17
Dysfunctional Parent-Child Interactions						
Levine (2010)	26	SF	4.75	-.44	-.72	-.04
Macais et al. (2007) Sample 1	71	SF	10.07	-.35	-.54	-.12
Macais et al. (2007) Sample 2	71	SF	10.07	-.26	-.47	-.02
Smith et al. (2001)	880	SF	21.38	-.22	-.28	-.16
Taylor (1999)	990	LF	21.61	-.24	-.30	-.18
Vohr et al. (n.d.)	100	SF	12.16	-.33	-.50	-.14

NOTES. N = Study sample size and PSI = Parenting Stress Index (LF = Long form version of the scale and SF = Short-form version of the scale).