

Moderators of Stress in Parents of Children with Autism

Michael E. Dunn, Ph.D.

Tracy Burbine, M.S.

Clint A. Bowers, Ph.D.

Stacey Tantleff-Dunn, Ph.D.

ABSTRACT: Parents of children with autism experience more stress and are more susceptible to negative outcomes than parents of children with other disabilities. The present work examines the relationship between stressors, social support, locus of control, coping styles, and negative outcomes (depression, social isolation, and spousal relationship problems) among parents of children with autism. Fifty-eight parents completed surveys. Results indicated that several coping styles corresponded to negative outcomes. Furthermore, the relationship between stressors and negative outcomes was moderated by social support and coping style. Results are discussed in relation to applications for clinical practice.

KEY WORDS: autism; parents; stress.

Parents who have children with autism endure more stress than parents with non-disabled children (McKinney & Peterson, 1987) and parents of children with other disabilities (Holroyd & McArthur, 1976; Bouma & Schweitzer, 1990), heightening negative health outcomes like depression and marital dissatisfaction (DeMyer, 1979). In addition, mothers of children with autism report less parenting competence, less marital satisfaction, and less family adaptability than mothers of children with Down's syndrome or mothers with typically developing chil-

Michael E. Dunn, Tracy Burbine, Clint A. Bowers, and Stacey Tantleff-Dunn are affiliated with the Department of Psychology, University of Central Florida.

Address correspondence to Michael E. Dunn, Ph.D., Department of Psychology, P.O. Box 161390, University of Central Florida, Orlando, FL 32816-1390; e-mail: mdunn@pegasus.cc.ucf.edu.

dren (Rodrigue, Morgan, & Geffken, 1990). Mothers with an adolescent with autism report more parent and family problems, more behavior difficulties, and more limitations of physical abilities and self-help skills than mothers with adolescents with mental retardation (Donovan, 1988). The most stressful symptoms appear to be impairment in verbal communication, unevenness in cognitive functioning, and impairments in human relations (Konstantareas & Homatidis, 1989). It is not surprising, then, that the marriage is often adversely affected (DeMyer, 1979). Parents of children with autism report greater levels of stress and depression and lower levels of marital intimacy than parents of children with typical development, or parents of children with Down's syndrome (Fisman, Wolf, & Noh, 1989). Other work has found parents of autistic children to be at high risk for marital discord (DeMyer, 1979; Rodrigue et al., 1990; Donovan, 1988), depression (DeMyer, 1979) and social isolation (Marcus, 1977). The more severe the child's symptoms, the greater the degree of parental stress.

Many factors can exacerbate stress levels. Mothers of adolescents with autism are less likely to cope by maintaining their social support system, self-esteem and psychological stability, and are less able to cope than mothers of adolescents with mental retardation (Donovan, 1988). Feelings of incompetence are common (Rodrigue et al., 1990), and parents often choose isolation over the frustrations of taking their child out in public. Mothers appear to be the most severely affected member of the family, with almost one-third exhibiting depressive symptoms (DeMyer, 1979).

COGNITIVE APPROACHES TO STRESS REDUCTION

Cognitive mediation plays a significant role in stress reactions (Grinker & Spiegel, 1945; Janis, 1954; Lazarus, 1993a, 1993b) and can be conceptualized in terms of two interacting processes: appraisal and coping (Holroyd & Lazarus, 1982). Because appraisal may determine whether or not a situation or encounter is personally stressful, altering one's cognitive appraisal can reduce stress (Lazarus & Alfret, 1964). The impact of events still perceived as stressful can be minimized through effective coping skills (Lazarus & Alfert, 1964; Speisman, Lazarus, Mordkoff, & Davidson, 1964).

SOCIAL SUPPORT, STRESS, AND PERSONALITY FACTORS

Social support is one type of coping mechanism that has been found to be a buffer against stress (Bailey, Wolfe, & Wolfe, 1994; Bowers &

Gesten, 1986; Bristol & Schopler, 1983; Chay, 1993). Social support has differentiated high and low stressed mothers of children with autism (Bristol & Schopler, 1983), and mothers who perceive social support as more accessible report fewer stress-related somatic problems and depressive symptoms (Gill & Harris, 1991). Gray and Holden (1992) found social support to be inversely related to depression and anxiety. Support within the marital relationship has been found to be related to better personal and marital adaptation in families with young developmentally disabled boys (Bristol, Gallagher, & Schopler, 1988) and to life satisfaction among parents of children with autism (Milgram & Atzil, 1988).

While social support has typically been related to positive outcomes, there are some findings to the contrary (e.g., Hynes, Callan, Terry, & Gallois, 1992). Efforts to resolve the discrepancies have found that support may be moderated by personality factors. For example, Type A personality has been found to moderate the relationship between coronary artery disease and social support, and hardiness has been found to moderate the relationship between social support, stress, and illness (Blumenthal, Burg, Barefoot, Williams, Haney, & Zimet, 1987; Kobasa & Pucetti, 1983). In both cases, external locus of control corresponded to a failure to benefit from social support.

LOCUS OF CONTROL AND STRESS

Locus of control may help explain the complex effects of social support. Non-depressed mothers with an internal locus of control reported fewer parent and family problems (Friedrich, Wiltturner, & Cohen, 1985). Similarly, families who used an internal approach to coping were less stressed by raising a child with a disability (Bristol & Schopler, 1983). In contrast, external locus of control correlates with job stress (Cooper, Kirkcaldy, & Brown, 1994), and has been linked to depression and anxiety in response to negative life changes (Johnson & Sarason, 1978). Reminiscent of learned helplessness, individuals who experience stress and view themselves as having no control over events may be most susceptible to the influences of life stress.

PURPOSE AND HYPOTHESES

The present work attempted to assess the relationship between stressors, social support, locus of control, coping style, and negative outcomes

in parents of children with autism. It was hypothesized that lack of social support, external locus of control, and ineffective coping styles would predict negative outcomes. Furthermore, it was hypothesized that the relationship between stressors and negative outcomes would be moderated by social support, locus of control, and coping style. Finally, it was hypothesized that locus of control would moderate the relationship between social support and negative outcomes. Hypotheses were tested in relation to three outcome measures: depression, social isolation, and spousal relationship difficulties.

METHOD

Participants

Participants were recruited from southeast divisions of both the Florida Autism Society and Autism Societies of America. All parents with an autistic child between the ages of 3 and 15 years were asked to participate. Those who completed measures included 39 mothers and 19 fathers ranging in age from 25 to 67 years (mean = 36.84, $SD = 9.21$). Mean age of children was 7.47 years, $SD = 3.31$. Parents were 81% Caucasian, 8% African American, 8% Hispanic, and 3% percent "other." Education level of parents was 3% partial high school, 21% high school graduate, 30% partial college, 33% college graduate, and 13% partial or completed graduate school.

Measures

The Inventory of Socially Supportive Behaviors (ISSB). The ISSB (Barrera, Sandler, & Ramsay, 1981) is a 40-item self-report questionnaire that was used to assess the type and amount of social support received by parents. Test-retest reliability for the ISSB = .88, internal consistency (α) = .93. The ISSB has been found to correlate significantly with the Arizona Social Support Interview Schedule (Barrera et al., 1981).

Ways of Coping Questionnaire—Revised (WOC). The WOC (Folkman & Lazarus, 1985) is a 66 item coping style checklist that consists of eight subscales: Confrontive Coping, Distancing, Self-controlling, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem-solving, and Positive Reappraisal. Internal consistencies for the subscales ranged from $\alpha = .61$ to $.79$ (Folkman & Lazarus, 1985).

Parenting Stress Index (PSI). The PSI (Abidin, 1995; Loyd & Abidin, 1985) is a 120-item self-report measure that assesses negative outcomes associated with the parent-child relationship and identifies the source of the stress. Three subscales of the parent domain were selected for the present study: parental depression, social isolation, and spousal relationship. Test-retest reliability ranged from $.69$ to $.96$ for the total stress score and $.69$ to $.91$ for the parent domain. Alpha internal consistency coefficient = $.95$ for the total stress score. The total score on the PSI significantly correlated with trait anxiety ($r = .84$) and state anxiety ($r = .71$), as measured by the State-Trait Anxiety Inventory (Loyd & Abidin, 1985).

Internal-External Locus of Control Scale (LOC). The Rotter LOC Scale (Rotter, 1966) is a 29-item self-report questionnaire that was used to measure locus of control. Internal consistency for the LOC Scale ranged from $\alpha = .69$ to $.73$. Test-retest correlations ranged from $.55$ to $.78$ (Rotter, 1966).

Life Experiences Survey (LES). The LES (Sarason, Johnson, & Siegel, 1978) is a 57-item self-report questionnaire that assesses the desirability and impact of events that have occurred over the previous year. Ten items pertaining only to students were not employed. Test-retest correlations were $.19$ and $.53$ for the positive change score, $.56$ and $.88$ for the negative change score, and $.63$ and $.64$ for the total change score. Negative change scores were computed and used as a measure of stressors for the present analyses because they have been found to predict state and trait anxiety (Sarason et al., 1978).

Procedure

After presenting the intent of the research, parents were given a packet containing the measures listed above and an addressed stamped return envelope. All forms were in the same order in each packet. Participants were given five days to complete the packet.

Analysis

Analyses were conducted in three steps. First, correlations were computed between each IV (stressors, social support, locus of control, & eight coping styles) and each DV (depression, social isolation, & spousal relationship problems) to assess simple relationships. Second, stepwise regressions were conducted with all IV's predicting each DV to assess the degree to which the IV's predict common variance. Third, moderator analyses were conducted using the procedure described by Baron and Kenny (1986). They asserted that moderation should be established by assessing the direct effects of a predictor (in this case stressors or social support), a potential moderator (social support, locus of control, or coping style), and the interaction product of the predictor and moderator. The moderator hypothesis is supported if the interaction term is significant. They also asserted that main effects for the predictor and the moderator may be significant, but are not directly relevant to testing the moderator hypothesis. Sample sizes vary among analyses due to incomplete data provided by some participants.

RESULTS

Correlations

Three variables correlated significantly with depression: locus of control ($r = -.30, p = .03$), Ways of Coping—Distancing ($r = .32, p = .02$), and Ways of Coping—Escape ($r = .50, p = .00$). Therefore, external locus of control, and use of distancing and escape as coping tools corresponded to increased depression. Locus of control ($r = -.36, p = .01$), and Ways of Coping—Escape ($r = .38, p = .00$) correlated significantly with social isolation. Therefore, external locus of control and use of escape as a coping tool corresponded to increased social isolation. Three variables

correlated significantly with spousal relationship problems, receipt of social support ($r = -.27, p = .04$), Ways of Coping—Seeking Social Support ($r = -.27, p = .04$), and Ways of Coping—Escape ($r = .43, p = .00$). Therefore, failure to receive and failure to seek social support, and use of escape to cope corresponded to increased levels of spousal relationship problems.

Stepwise Regressions

Three stepwise regressions were completed with ten IV's (social support, locus of control, and eight subscales of the coping measure) and three DV's (depression, social isolation, and spousal relationship difficulties). In predicting depression, the only IV's to enter the equation were the Ways of Coping subscales Escape-Avoidance and Confrontive Coping, $R(2,44) = .64$. Escape-Avoidance had a positive relationship with depression such that increased use of escape and avoidance as coping methods corresponded to increased depression (see Table 1). Confrontive Coping had a negative relationship with depression such that increased use of confrontive approaches to coping corresponded to decreased depression. Although locus of control and distancing as a coping tool had significant correlations with depression, they did not enter the equation. It is logical to conclude that escape-avoidance might account for variance shared by distancing as they are conceptually similar coping styles. In fact, the correlation between them was $r = .50, p = .00$. Although locus of control did not significantly correlate with either escape-avoidance or confrontive coping, these variables appeared to account for common variance to the extent that locus of control was not a significant predictor after the coping methods entered the equation.

TABLE 1

Stepwise Multiple Regression Predicting Depression

<i>Step</i>	<i>Predictor</i>	<i>b</i>	<i>Error</i>	β	<i>t</i>	<i>p</i>	<i>Cum. R</i>	<i>F</i>	<i>p</i>
1	Escape-Avoidance	.81	.19	.54	4.19	.00	.54	17.52	.00
2	Escape-Avoidance	.92	.18	.61	5.06	.00	—		
	Confrontive Coping	-.77	.26	-.36	-2.98	.01	.64	14.80	.00

In predicting social isolation, results were similar to the depression analysis in that the first IV to enter the equation was the Ways of Coping Escape-Avoidance subscale. The only other IV to enter the equation was the Positive Reappraisal subscale of the Ways of Coping measure, $R(2,44) = .72$. The relationships were such that increased use of escape and avoidance as coping approaches corresponded to increased social isolation and increased use of positive reappraisal corresponded to decreased social isolation (see Table 2). Again, locus of control had a significant correlation with social isolation, but did not enter the regression equation. Therefore, it is likely that it accounted for common variance with the coping methods.

It is interesting to note that some criterion contamination may have been present in this analysis due to the attempt to use measures of seeking and receiving social support to predict social isolation. One would logically expect a significant negative relationship to exist between these variables. Neither social support measure entered the equation, however. Furthermore, the correlation between the Seeking Social Support subscale and social isolation was only $r = .03$. The correlation between receiving social support and isolation was higher, $r = -.22$, but not significant ($p = .11$). There are several possible interpretations of this result. First, the experience of social isolation may not be directly related to the seeking of social support or the receipt of social support as tapped by the Inventory of Socially Supportive Behaviors. Second, social support may moderate the relationship between stressors and isolation. A hierarchical regression testing this hypothesis is described in the section on moderator analyses. The interaction product of stressors and social support was significant. Third, the relationship between isolation and social support may be moderated by a third variable,

TABLE 2

Stepwise Multiple Regression Predicting Social Isolation

<i>Step</i>	<i>Predictor</i>	<i>b</i>	<i>Error</i>	β	<i>t</i>	<i>p</i>	<i>Cum. R</i>	<i>F</i>	<i>p</i>
1	Escape-Avoidance	.77	.21	.48	3.61	.00	.48	13.03	.00
2	Escape-Avoidance	1.21	.19	.75	6.23	.00	—		
	Positive Reappraisal	-.83	.17	-.60	-4.92	.00	.72	22.11	.00

such as locus of control. Fourth, the relationship between isolation and seeking support might be moderated by actually receiving social support. Finally, the relationship between isolation and receiving support might be moderated by seeking support. To investigate this issue, three hierarchical regressions were conducted. In two analyses, receiving social support and locus of control were assessed as possible moderators of the relationship between seeking social support and social isolation. The interaction products of the predictor and moderators were not significant in either analysis. Therefore, receiving social support and locus of control did not moderate the relationship between seeking social support and isolation. Locus of control was assessed as a possible moderator of the relationship between receiving social support and isolation (the product of seeking and receiving social support was assessed in the first moderator analysis). The product of receiving social support and locus of control was not significant indicating a lack of moderation.

In predicting spousal relationship problems, the Ways of Coping Escape-Avoidance subscale again entered first, followed by the Positive Reappraisal and the Seeking Social Support subscales, $R(3,48) = .69$. The relationships were such that increased use of escape-avoidance, decreased use of positive reappraisal, and less seeking of social support corresponded to increased spousal relationship problems (see Table 3).

TABLE 3

**Stepwise Multiple Regression Predicting
Spousal Relationship Problems**

<i>Step</i>	<i>Predictor</i>	<i>b</i>	<i>Error</i>	β	<i>t</i>	<i>p</i>	<i>Cum. R</i>	<i>F</i>	<i>p</i>
1	Escape-Avoidance	.56	.17	.44	3.34	.00	.44	11.18	.00
2	Escape-Avoidance	.87	.17	.66	5.19	.00	—		
	Positive Reappraisal	-.57	.14	-.51	-3.97	.00	.63	15.23	.00
3	Escape-Avoidance	.88	.16	.67	5.62	.00	—		
	Positive Reappraisal	-.50	.14	-.44	-3.60	.00	—		
	Seeking Social Support	-.34	.13	-.30	-2.66	.01	.69	13.87	.00

Although actually receiving social support had a significant correlation with spousal relationship problems, it failed to enter the equation. Receiving social support had significant correlations with seeking social support ($r = .51, p = .00$) and positive reappraisal ($r = .37, p = .01$) suggesting that common variance accounted for prevented receiving social support from entering the regression equation.

Moderator Analyses

Following the Baron and Kenny (1986) approach, three sets of regressions were conducted to evaluate the hypothesis that ten variables (social support, locus of control, and eight coping styles) might moderate the relationship between stressors and negative outcomes (depression, social isolation, and spousal relationship difficulties). In addition, locus of control was evaluated as a potential moderator of the relationship between social support and negative outcomes. Moderator analyses were conducted using hierarchical regression as described previously. When predicting depression and spousal relationship problems, none of the ten potential moderator-predictor interaction products were significant. When predicting social isolation, however, two moderator-predictor interaction products including Ways of Coping—Distancing subscale ($t = -2.48, p = .016$, see Table 4) and social support ($t = -2.91, p = .005$, see Table 5) were statistically significant. The moderator-predictor interaction product was not significant in any of the analyses assessing locus of control as a moderator of the relationship between social support and negative outcomes. Therefore, locus of control did not appear to moderate this relationship.

TABLE 4

Hierarchical Regression Assessing Moderation of the Relationship Between Stressors and Social Isolation by the Coping Style of Distancing. Variables are Listed in Order of Entry

<i>Predictor</i>	<i>R² Change</i>	<i>F Change</i>	<i>df</i>	<i>Sig. F Change</i>
Stressors	.02	1.18	1,51	.28
Distancing	.01	.65	1,50	.43
Product of Stressors and Distancing	.11	6.17	1,49	.02

TABLE 5

**Hierarchical Regression Assessing Moderation of the
Relationship Between Stressors and Social Isolation by
Social Support. Variables are Listed in Order of Entry**

<i>Predictor</i>	<i>R² Change</i>	<i>F Change</i>	<i>df</i>	<i>Sig. F Change</i>
Stressors	.02	1.09	1,52	.30
Social Support	.05	2.46	1,51	.12
Product of Stressors and Social Support	.14	8.46	1,50	.01

DISCUSSION

Social Support

Our hypotheses regarding social support were supported by a correlation that indicated that higher levels of social support corresponded to fewer spousal problems. In regression analyses, however, coping styles were a more powerful predictor of spousal problems while social support was not significant. It is interesting to note that there was no direct relationship between social support and isolation suggesting that some of these parents feel isolated despite receiving social support. In fact, reliance on escape and avoidance and failure to use positive reappraisal corresponded to feelings of isolation more than seeking or receiving social support. Moderator analyses, however, indicated that the relationship between social support and isolation is complex. Social support was found to be a significant moderator of the relationship between stressors and isolation such that decreasing social support corresponded to an increased likelihood that stressors would correspond to isolation. Therefore, it may be particularly important for these parents to receive social support in more difficult times. Further research on the types of support that are most helpful and on the relationship between support and isolation is clearly warranted. Despite the analyses that supported the importance of social support, coping styles were found to be more directly related to isolation than seeking or receiving social support. Therefore, while receipt of social support is clearly important, it may be secondary to methods of coping. Practitioners would be well-advised to facilitate social support for these parents, particularly in times of

increased stress, but other types of coping should be emphasized as well.

Locus of Control

In support of our hypotheses, internal locus of control corresponded to lower levels of depression and isolation, but like social support, locus of control was overshadowed by coping styles in the regression analyses. Locus of control did not moderate the relationship between stressors and negative outcomes or the relationship between social support and negative outcomes. Therefore, locus of control did not buffer the effects of stress or enhance the effects of social support. Again, the relationship between social support and negative outcomes appears to be complex. Encouraging an internal locus of control may not enhance the positive effects of social support, but there is certainly reason to believe locus of control is important. The direct relationship between internal locus of control and fewer negative outcomes suggests that making the enhancement of parents' sense of control a therapeutic goal would be beneficial.

Styles of Coping

The emotion-focused coping style of escape-avoidance was found to correspond to increased depression, isolation, and spousal relationship problems. Therefore, it may be particularly beneficial to discourage use of escape-avoidance including hoping for miracles, having fantasies, using food or drugs, and avoiding others. Distancing, another emotion-focused style that includes going on as if nothing has happened, trying to forget the situation, and making light of the situation, also corresponded to increased depression. Distancing was also a significant moderator, however, in the relationship between stressors and isolation. Less use of distancing corresponded to a greater likelihood that stressors would correspond to isolation. It may be that parents who fail to use some distancing strain their social relationships. If one is not able to talk about any other subject or be interested in someone else's life, isolation may result from friends being less willing to provide social support. Parents may benefit from being encouraged to distance themselves appropriately from their situation when spending time with others to facilitate interpersonal relationships.

Failure to employ several coping styles corresponded to negative outcomes. Failure to use the emotion-focused style of positive reappraisal

corresponded to isolation and spousal relationship difficulties. Failure to use the problem-focused style of confrontive coping corresponded to depression and failure to seek social support corresponded to spousal relationship difficulties. Therefore, it might be beneficial to encourage parents to use positive reappraisal, confrontive coping, and to seek social support. Positive reappraisal includes such things as growing as a person, finding new faith, rediscovering the important things in life, and being inspired to be creative. Confrontive coping includes fighting for what is wanted, expressing anger to the cause of the problem, letting feelings out somehow, and taking chances.

Summary

It was the intent of this study to assess the simple and complex relationships between stressors, social support, locus of control, coping styles, and negative outcomes in parents of children with autism. Stressors were not a direct predictor of negative outcomes, but their influence was moderated by social support and coping style. Although locus of control was correlated with negative outcomes, it was overshadowed by coping styles in regression analyses. First and foremost, these data indicated that it would be beneficial to discourage parents from using escape and avoidance as a coping style. Encouragement of more appropriate coping and receipt of social support should also be beneficial in buffering the effects of stressors and reducing negative outcomes.

It must be noted that coping behavior might be a short-term mechanism, thus warranting further research on the long-term effects of coping styles. In addition, the most critical period of adjustment and coping may occur before the age of three and different relationships among these variables may be observed in this time frame. Further research with a narrower range of the child's age may be warranted. Finally, participants in this study were members of autism societies. There may be a substantial number of parents who do not participate in these societies. These parents may be coping effectively with different methods or may be experiencing a higher rate of negative outcomes. Future work should target this population.

REFERENCES

- Abidin, R. R. (1995). *Parenting Stress Index: Professional Manual*. Odessa, FL: Psychological Assessment Resources, Inc.

- Bailey, D., Wolfe, D. M., & Wolfe, C. R. (1994). With a little help from our friends: Social support as a source of well-being and of coping with stress. *Journal of Sociology and Social Welfare*, 21(2), 127–152.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, Vol. 51, No. 6, 1173–1182.
- Barrera, M., Sandler, I. N., & Ramsay, T. B. (1981). Preliminary development of a scale of social support: Studies on college students. *American Journal of Community Psychology*, Vol 9(4), 435–447.
- Blumenthal, J. A., Burg, M. M., Barefoot, J., Williams, R. B., Haney, T., & Zimet, G. (1987). Social support, type A behavior, and coronary heart disease. *Psychosomatic Medicine*, 49, 331–340.
- Bouma, R., & Schweitzer, R. (1990). The impact of chronic childhood illness on family stress: A comparison between autism and cystic fibrosis. *Journal of Clinical Psychology*, 46 (6), 722–730.
- Bowers, C., & Gesten, E. (1986). Social support as a buffer of anxiety: An experimental analogue. *American Journal of Community Psychology*, 14 (4), 447–451.
- Bristol, M. M., Gallagher, J. J., & Schopler, E. (1988). Mothers and fathers of young developmentally disabled and nondisabled boys: Adaptation and spousal support. *Developmental Psychology*, 24, 441–451.
- Bristol, M. M., & Schopler, E. (1983). Coping and stress in families of autistic adolescents. In E. Schopler & G.B. Mesibov (Eds.), *Autism in adolescents and adults* (pp. 251–278). New York: Plenum.
- Chay, Y. W. (1993). Social support, individual differences and well-being: A study of small business entrepreneurs and employees. *Journal of Occupational and Organizational Psychology*, 66, 285–302.
- Cooper, C. L., Kirkcaldy, B. D., & Brown, J. (1994). A model of job stress and physical health: The role of individual differences. *Personality and Individual Differences*, 16 (4), 653–655.
- DeMyer, M. K. (1979). *Parents and children in autism*. New York: Wiley.
- Donovan, A. M. (1988). Family stress and ways of coping with adolescents who have handicaps: Maternal perceptions. *American Journal on Mental Retardation*, 92 (6), 502–509.
- Fisman, S. N., Wolf, L. C., & Noh, S. (1989). Marital intimacy in parents of exceptional children. *Canadian Journal of Psychiatry*, 34 (6), 519–525.
- Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of college examination. *Journal of Personality and Social Psychology*, 48 (1), 150–170.
- Friedrich, W. N., Wiltner, L. T., & Cohen, D. S. (1985). Coping resources and parenting mentally retarded children. *American Journal of Mental Deficiency*, 90 (2), 130–139.
- Gill, M. J., & Harris, S. L. (1991). Hardiness and social support as predictors of psychological discomfort in mothers of children with autism. *Journal of Autism and Developmental Disorders*, 21 (4), 407–416.
- Gray, D. E., & Holden, W. J. (1992). Psychosocial well-being among the parents of children with autism. *Australia and New Zealand Journal of Developmental Disabilities*, 18 (2), 83–93.
- Grinker, R. R., & Spiegel, J. P. (1945). *Men under stress*. New York: McGraw-Hill.
- Holroyd, K. A., & Lazarus, R. S. (1982). Stress, coping, and somatic adaptation. In L. Goldberg & S. Breznitz (Eds.), *Handbook of stress: Theoretical and clinical aspects* (pp. 21–35). New York: The Free Press.
- Holroyd, J., & McArthur, D. (1976). Mental retardation and stress on the parents: A contrast between Down's syndrome and childhood autism. *American Journal of Mental Deficiency*, 80, 431–436.
- Hynes, G. J., Callan, V. J., Terry, D. J., & Gallois, C. (1992). The psychological well-being of infertile women after a failed In Vitro Fertilization attempt: The effects of coping. *British Journal of Medical Psychology*, 65, 269–278.
- Janis, I. L. (1954). *Psychological stress*. New York: Wiley.
- Johnson, J. H., & Sarason, I. G. (1978). Life stress, depression and anxiety: Internal-external control as a moderator variable. *Journal of Psychosomatic Research*, 22, 205–208.
- Kobasa, S.C.O., & Puccetti, M.C. (1983). Personality and social resources in stress resistance. *Journal of Personality and Social Psychology*, 45 (4), 839–850.
- Konstantareas, M. M., & Homatidis, S. (1989). Assessing child symptom severity and stress in parents of autistic children. *Journal of Child Psychology and Psychiatry*, 30 (3), 459–470.

- Lazarus, R. S. (1993a). Coping theory and research: Past, present, and future. *Psychosomatic Medicine*, *55*, 234–247.
- Lazarus, R. S. (1993b). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology*, *44*, 1–21.
- Lazarus, R. S., & Alfert, E. (1964). Short-circuiting of threat by experimentally altering cognitive appraisal. *Journal of Abnormal and Social Psychology*, *69* (2), 195–205.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, Springer.
- Loyd, B. H., & Abidin, R. R. (1985). Revision of the Parenting Stress Index. *Journal of Pediatric Psychology*, Vol. *10*(2), 169–177.
- Marcus, L. M. (1977). Patterns of coping in families of psychotic children. *American Journal of Orthopsychiatry*, *47*, 388–399.
- McKinney, B., & Peterson, R. A. (1987). Predictors of stress in parents of developmentally disabled children. *Journal of Pediatric Medicine*, *12* (1), 133–150.
- Milgram, N. A., & Atzil, M. (1988). Parenting stress in raising autistic children. *Journal of Autism and Pervasive Developmental Disorders*, *19* (3), 415–424.
- Rodrigue, J. R., Morgan, S. B., & Geffken, G. (1990). Families of autistic children: Psychological functioning of mothers. *Journal of Clinical Child Psychology*, *19* (4), 371–379.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, *8* (1), Whole No. 609.
- Sarason, I. G., Johnson, J. H., & Siegel, J. M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. *Journal of Consulting and Clinical Psychology*, Vol. *46*(5), 932–946.