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The Family Adaptation Model: Examination of Dimensions and Relations

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Le présent article a comme but de résumer les fondements théoriques du modèle d'adaptation de la famille (Family Adaptation Model) et de présenter les analyses qui servent à son élaboration et à son évaluation. La théorie de la résilience et ses composantes de sécurité et de vulnérabilité sont à la base du modèle en question. Les auteures présentent une analyse des données provenant de deux échantillons soumis à des techniques d'enquête et à un plan d'expérience post-test seulement. Les résultats appuient modérément les dimensions linéaires du modèle. Lorsqu'on a testé les tendances prédites par le modèle, les résultats obtenus étaient non significatifs. On s'est fondé sur les études récentes en matière d'adaptation et de recherche pour explorer le sens de ces résultats non concluants en rapport avec l'utilité avérée du modèle dans l'élaboration des approches pratiques axées sur la famille.

The purpose of this paper is to summarize the theoretical underpinnings and present the model analyses used in the development and evaluation of the Family Adaptation Model. Resilience theory, with its components of protective processes and vulnerability processes, underlies the assumptions of the model. Data analyses are presented from 2 samples in which survey methodology, post-test only experimental designs were implemented. There is moderate support for the linear dimensions of the model. When the paths predicted by the theory were tested, insignificant results were produced. Recent expert reviews of adaptation concepts and research approaches were used to explore the meaning of the null findings when testing the paths of the model in contrast to the success of the model when used to develop practice approaches with families.

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The Family Adaptation Model is the product of research carried out by a multidisciplinary team at the University of Alberta. The model functions successfully to direct the development and testing of practice approaches used with families that have young children (Drummond, Kysela, McDonald, Alexander, & Shank, 1995; Drummond, Query, McDonald, Kysela, & Shank, 2002; Fleming, McDonald, & Drummond, 2001; Letourneau et al., 2001; McDonald, Kysela, Alexander, & Drummond, 1995; McDonald et al., 1997). The Family Adaptation Model is historically grounded in previous research and carries with it important theoretical considerations relevant to health professionals who work with young families. The principles of parsimony, practice utility, and empirical support have guided the choices made by the researchers during the evolution of this model.

In this manuscript the following are presented: a recounting of the assumptions underlying the model, a brief review of published data that describe the linear relations within the model, a presentation of new analyses that test causal relations hypothesized among the dimensions of the model, and a discussion of the implications for the future of this research program.

Theoretical Considerations

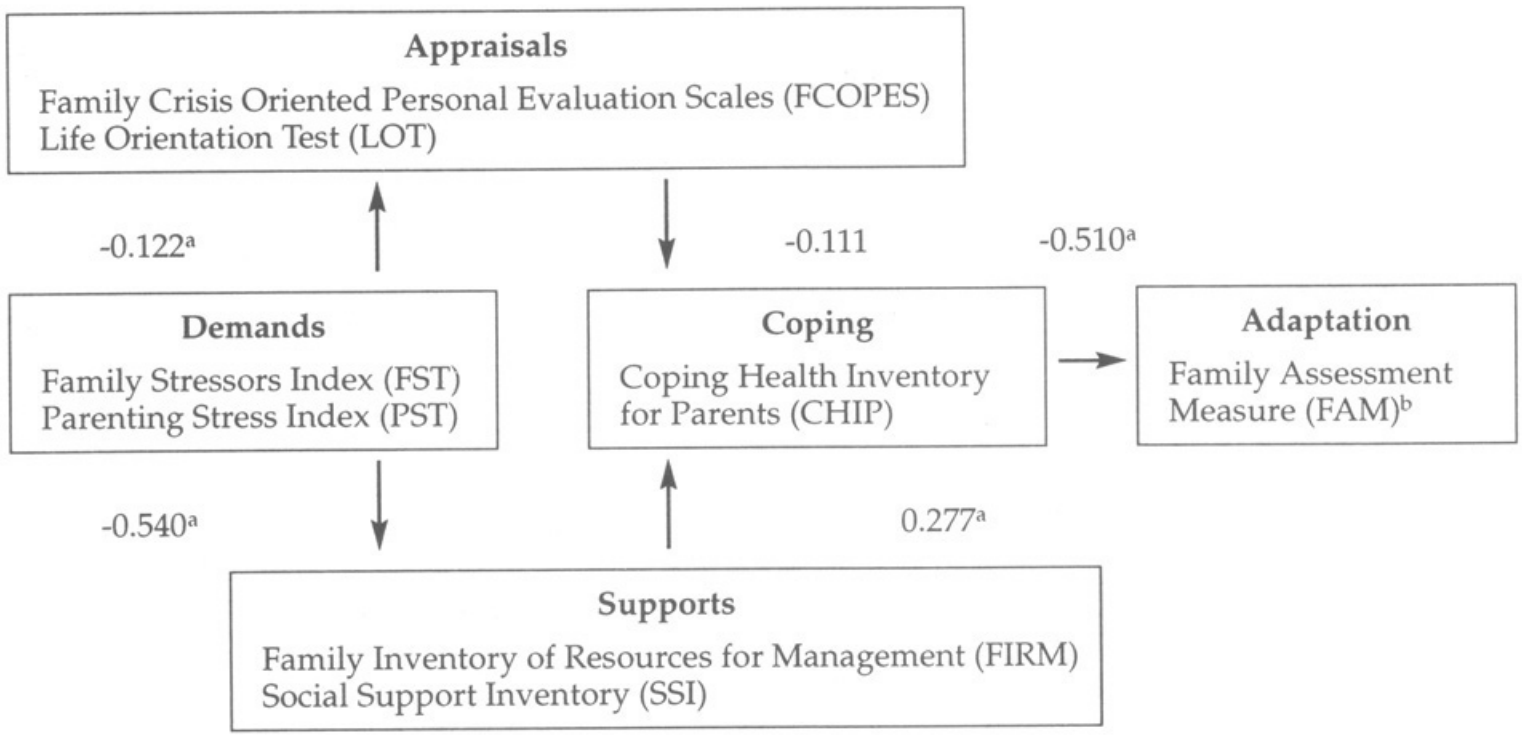
Concepts of resilience are foundational to the Family Adaptation Model (Drummond, Kysela, McDonald, Alexander, & Fleming, 1996/97). Recent examinations of the concept are consistent with our own. Resilience is defined as maintenance of positive adjustment under challenging life conditions (Luthar, Cicchetti, & Becker, 2000). It consists of an interaction between protective processes and vulnerability processes. This notion of resilience alerts us to the possibility that positive adjustment processes may differ according to environment (Luthar, 1999). The following two theoretical assumptions follow: family adaptation is the outcome of ongoing development and successful use of protective family processes; and the presence of vulnerability processes in family life, such as those initiated by the presence of a family member with special needs, *may* create demands on the maintenance of protective processes and/or provide opportunities for the development of more successful protective processes.

An established principle of early human development is to view the child within the context of family life (Bronfenbrenner, 1974; Dunst, Johanson, Trivette, & Hamby, 1991; McCubbin, McCubbin, Thompson, Han, & Allen, 1997). The need for a model of family adaptation that

takes the unique nature of family into consideration has been historically driven by the need to move away from child-centred towards family-centred programming (Achenbach, Phares, Howell, Rauh, & Nurcombe, 1990; Barrera, Rosenbaum, & Cunningham, 1986; Belsky, 1985; Davis, & Rushton, 1991; Singer & Powers, 1993). Family functions targeted in successful family intervention programs include stress management, coping and problem-solving, parent-child interactions, and family resource building. At a minimum, any comprehensive model of family adaptation should delineate key dimensions that facilitate the inclusion of these and similar family-centred practice approaches (Murphy, Lee, Turnbull, & Turbiville, 1995). The third theoretical assumption of the Family Adaptation Model, therefore, is that the dynamic between protective and vulnerability family processes can be adequately captured in its five dimensions (adaptation, demands, appraisals, supports, and coping).

Our first conceptualization of the relations in the Family Adaptation Model is depicted in Figure 1. An ongoing process of family adaptation that includes response to demands of varying magnitude and intensity is hypothesized. Demands affect family adaptation through family coping processes. This is in keeping with the reported need for increased coping when confronted with the demands placed on the family unit by the presence of a child with special needs (Beckman, Newcomb, Frank, Brown, & Filer, 1993; Beckwith, 1990; Zeitlin & Williamson, 1988). It is also consistent with the research finding that family coping strategies are among the main predictors of resilient outcomes for children living in adverse conditions (Masten et al., 1999; Reynolds, Mavrogenes, Bezruczko, & Hagemann, 1996; Rutter, 1979). In the Family Adaptation Model, adaptation is seen as the development and maintenance of protective processes through the use of the strengths or capacities of supports (Dunst, 1993) and appraisals (Bandura, 1997; Lazarus & Folkman, 1984) to attenuate the effects of demands of the family on coping. There is one simple iterative process of family adaptation, rather than two phases that represent resilience processes and vulnerability processes separately (McCubbin & McCubbin, 1991; McCubbin et al., 1997). This emphasis on ongoing adaptation eliminates the tendency to categorize family life into the typical poles of usual/normative and reactive/ recovery. It also serves the specified need of the research team for parsimony and practicality. The purpose of the study presented here was to evaluate the adequacy of the relations among the five dimensions of the Family Adaptation Model.

Figure 1 *Dimensions of the Family Adaptation Model, Instruments Selected to Measure Them, and Path Coefficients of the First Test of the Model*



Note: chi square value = 189.52 (*df* = 44).
[a]t-value = 2
[b]FAM is scored negatively.

Family Adaptation

In the Family Adaptation Model, adaptation is conceptualized as successful implementation of six protective family processes: commitment to flexibility, coherent response to crisis, maintenance of stability, development of support, responsibility outside the home, and effective parenting (Drummond et al., 1996/97). These processes were distilled from two sources. The first was a study in which the prevalence of 16 family styles was determined in a large sample of military families (McCubbin & McCubbin, 1988). The second was a literature review commissioned by Health Canada to delineate the important resilient capacities of individuals, families, and communities (Mangham, Reid, McGrath, & Stewart, 1994). The processes and their sources are described in Table 1.

McCubbin and McCubbin (1988) found three family styles to be significant. Resilient military families are committed to a meaningful family unit that is responsive to the need for change (commitment to flexibility), have a shared sense of strong family control over life events (coherent response to crisis), and value the rhythm of family life (maintenance of stability). Resilient family capacities outlined by Mangham and colleagues (1994) could be categorized into five processes: good family coping, effective parenting, effective structure, presence of supports, and responsibilities outside the home. In our synthesis, these eight processes of family life were collapsed into six. Coherent response to crisis, development of supports, commitment to flexibility, effective parenting, and responsibilities outside the home were unique. Good family coping seemed vague and was eliminated since its attributes were contained in the remaining six resilient family processes. Maintenance of stability was common in both sources. Table 2 categorizes the attributes of the protective family processes into the appraisal, support, and coping dimensions of the Family Adaptation Model.

Dimensions of the Family Adaptation Model

Demands, appraisals, supports, and coping are easily traced to the T Double ABCX model (McCubbin & Patterson, 1981) that was an extension of Hill's (1958) classic family stress theory and the ABCX family crisis model. The dimensions continue to be represented in the more recent Resiliency Model of Family Stress, Adjustment, and Adaptation (McCubbin & McCubbin, 1991). Support for the dimensions is also present in the separate bodies of literature that represent each of them. A brief overview of each dimension follows.

Table 1 *Protective Family Patterns and Associated Attributes That Define Adaptation in Families*

Commitment to flexibility of the family unit[a]
- willingness to change
- interdependent family members
- fluid assignment of responsibilities
- sense of efficacy
- positive expectations for family members

Coherent responsiveness to crisis[a]
- active family problem-solving
- cooperation among members
- acceptance of life situations
- sense of being in control
- maintenance of trust and calm

Maintenance of stability[a,b]
- involvement of relatives in family activities
- effective family structure
- family rules and routines
- responsibilities for all family members
- detachment from conflict in family of origin

Effective parenting[b]
- warmth and affection
- father involved in child care
- positive parent-child interactions
- secure attachment

Presence of supports to the family[b]
- supportive spousal relationships
- strong extended-family network
- supportive network beyond the family
- supportive professionals

Responsibilities outside the home[b]
- employment
- community involvement
- extracurricular activities
- positive school experience

[a] McCubbin & McCubbin, 1988.
[b] Mangham et al., 1994.

Table 2 *Attributes of Protective Family Processes Categorized by Mediating Dimensions of the Family Adaptation Model*

Mediating Dimension	Attributes of Protective Family Processes
Appraisal	Willingness to change Sense of efficacy Positive expectations Sense of control Maintenance of trust and calm Acceptance of life situations Detachment from conflict in family of origin Attachment
Support	Spousal relationships Extended family Network beyond the family Employment Community and school involvement Supportive professionals
Coping	Warmth and affection Active problem-solving Cooperation Responsibilities for all Positive interactions Effective rules and routines Father involved in child-rearing Community involvement Leisure and social activities Involvement in the schools

Demands are commonly conceptualized as discrete major life events or stressors (Holmes & Rahe, 1967). Another approach is to conceive demands as "daily hassles" (Delongis, Coyne, Dakof, Folkman, & Lazarus, 1982). Chronic difficulties, such as poverty, are seen as vulnerability processes (Luthar, 1999) or as an amalgam of daily stressors (Gottlieb, 1997). Pile-up of stress is also likely (McCubbin & McCubbin, 1991) and has been linked to psychiatric and physical disorders, as well as to broad adjustment and social competence difficulties (Compas, 1987). There is growing recognition that multiple risk situations are hazardous, because their effects may be multiplicative rather than simply additive. Two landmark studies highlight the phenomenon. Werner and Smith (1982) investigated the effects of perinatal stress in conjunction with aspects of environmental disadvantage such as

chronic poverty, family discord, parental psychopathology, or other poor rearing conditions. Overall, rearing conditions were found to be more powerful determinants of later maladjustment than perinatal trauma. Similarly, Rutter (1979) reported on the importance of rearing conditions and identified six factors associated with developmental disorder in a large sample of 10-year-old children: severe marital distress, low social status, overcrowding or large family size, paternal criminality, maternal psychiatric disorder, and admission into care of local authorities.

The accommodations induced by demands on family life define the process of *coping* (Compas, 1987) in families. Coping has two major functions (Lazarus & Folkman, 1984). The first is instrumental and is described as problem-solving, a cognitive enterprise with behavioural components. The second, emotional regulation, consists of *appraisals* that function in the evaluation of the balance between demands and availability of resources. An overview of studies on family resources (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Dunst, Trivette, & Deal, 1994) found that parental social *supports* have both direct and indirect positive effects on child development, family stress, and family adaptation. It is further known that families of children with special needs that utilize the resources of their social network and the community are more able to cope with daily stressors, demands, and strains (Dunst, 1993).

In our research, demands are addressed at two levels. First, families likely to be living in different vulnerable situations are studied separately through the use of different samples. Second, accumulation of daily stressors within these situations operationalizes our understanding of *demands*. In the Family Adaptation Model, as in the Resiliency Model of Family Stress, Adjustment, and Adaptation (McCubbin & McCubbin, 1991), appraisals and supports are separated from coping. This conception serves to prompt both researchers and clinicians. For researchers, a separate appraisal dimension necessitates the search for adequate measurement of important appraisal elements such as positive reframe, sense of efficacy, and optimistic attitude. For clinicians, the presence of *appraisals* ensures that an assessment of family beliefs, values, and approaches to the presence of demands is explored and that practices supporting positive appraisal are implemented. Social *supports* are conceived as an inventory of tangible relationships and resources. Thus the *coping* dimension is a process that is largely reserved for the "cognitive and behavioural efforts" (Lazarus & Folkman, 1984, p. 141) of problem-solving or "actions that help."

Linear Relations Within the Family Adaptation Model

To date, two convenience samples of parents have participated in studies to determine whether the dimensions of the Family Adaptation Model adequately conceptualize the components of adaptation. The first sample comprises 113 families of children with special needs. The second sample comprises 57 families of children enrolled in Head Start. Self-report measures common to family-studies research with adequate psychometric properties are used. Detailed descriptions of the specific measures, their subscales, and their psychometric properties have been published elsewhere (Drummond et al., 1996/97).

Both samples of families were found to have normative adaptation in the face of significant demand. Families of children with special needs had significantly better appraisal and perceived significantly less support than the norm. With respect to the linear relations within the Family Adaptation Model, the data from both samples lent support to the notion that demands do not directly account for adaptation. It is the resilient capacity to develop supports that accounts for the variance in the adaptation of both samples. In the sample of families of children with special needs, appraisals also accounted for a smaller but significant amount of variance in adaptation (Drummond et al., 1996/97).

Causal Relations of the Family Adaptation Model

Having attained moderate support for the dimensions of the Family Adaptation Model, it was decided to examine the causal relations hypothesized by the model. The larger of the two data sets was chosen for this exercise. Because there was dependency between mothers' and fathers' responses on the self-report measures used with the 113 families of children with special needs, only mothers' data were used in these structural equation modelling analyses.

Participants

The 113 families were recruited from agencies associated with the provision of child and family preventive health-care services in the province of Alberta. The families resided in either rural or urban settings. Children with special needs between birth and 5 ½ years of age were included. A special need was defined as a delay of 12 months or greater in one domain of early development or a delay of 6 months or greater in two or more domains of early development. Young infants with any special condition that has potential for these levels of delay were included. The domains of early development evaluated included

cognitive, motor, social, emotional, speech, and language development. The presence of delays was identified through the clinical judgement of professional nursing or health-care staff, parental report, formal screening procedures, or, in some cases, formal diagnostic procedures.

Measurement

Eight self-report measures represent the dimensions of the Family Adaptation Model. The measures include the Child Characteristics Domain of the Parenting Stress Index-PSI (Abidin, 1986); the Family Stressors Index-FSI (McCubbin, 1991a); the Family Inventory of Resources for Management-FIRM (McCubbin & Comeau, 1991); the Social Support Inventory-SSI (McCubbin & Thompson, 1987); the Reframing and Passive Appraisal Scales of the Family Crisis Oriented Personal Evaluation Scales-FCOPES (McCubbin, Olson, & Larson, 1991); the Life Orientation Test-LOT (Scheier & Carver, 1985); the Coping Health Inventory for Parents-CHIP (McCubbin, 1991b); and the Family Assessment Measure-FAM (Skinner, Steinhauer, & Santa Barbara, 1984). Many of these measures are designed by McCubbin and colleagues and are utilized because they address the measurement of the dimensions of the Family Adaptation Model from a family context.

Data Analysis

Correlation was used to examine the patterns of relationships among the measures representing the dimensions of the model. Multiple regression analyses were performed to predict family adaptation. These analyses are summarized above and published elsewhere (Drummond et al., 1996/97). The path analyses conducted for the Family Adaptation Model pictured in Figure 1, testing the mediating effects of appraisals, coping, and supports between demands and adaptation, are reported first.

Findings

The mothers' ages ranged from 16 to 53 years (*mean* = 30). Most mothers reported having completed high school and being largely involved as full-time caregivers (88), with 16 mothers reporting some type of current employment. The majority of the mothers were either married or in partnerships; 19 indicated that they were separated, divorced, or single.

The mean age of the children with special needs was 39.11 months (*SD* = 18.4). The special needs most frequently identified by parents

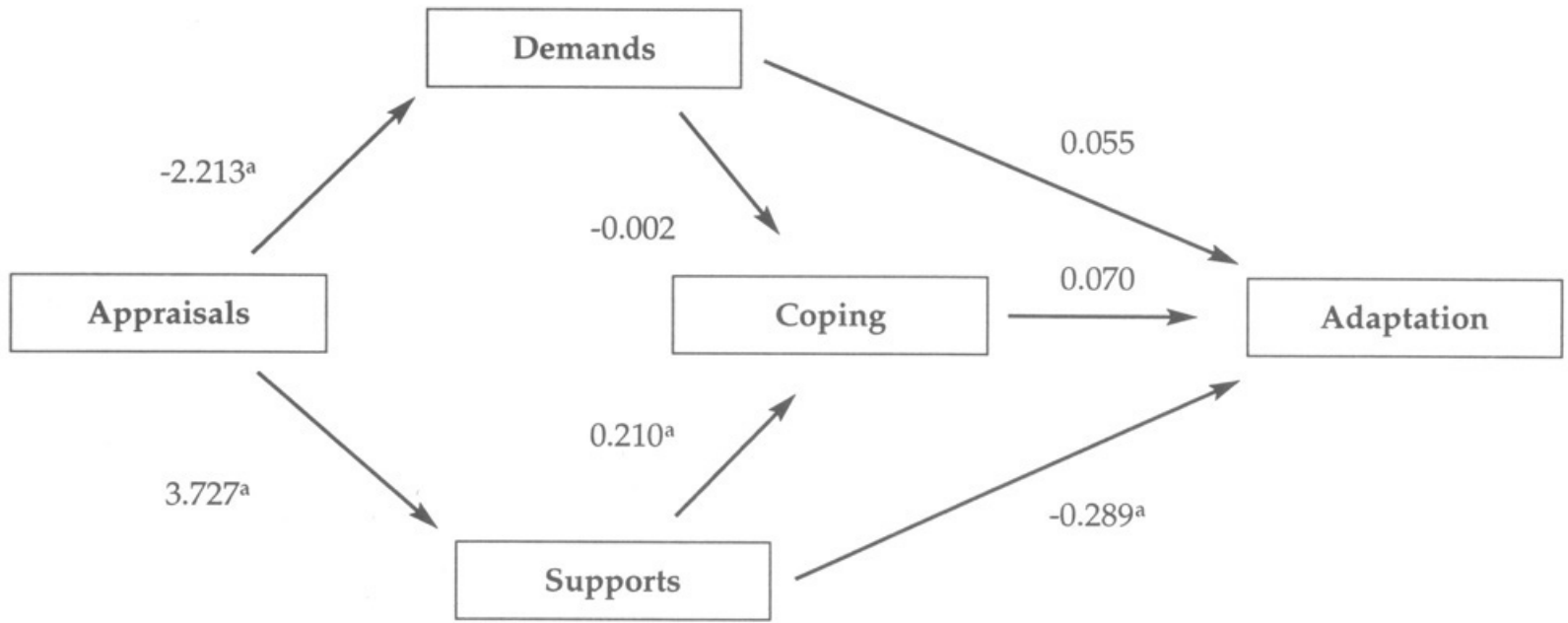
were: speech/articulation, physical/motor, cognitive/behavioural, and developmental delays. Formal diagnoses were available for 86 children. These diagnostic conditions generally coincided with the areas of need identified by the parents.

The best predictor of family adaptation for each dimension was set at 1.00 in order to test the path. The path coefficients of the relations between the dimensions of the Family Adaptation Model are shown in Figure 1. They indicate that the effect of demands on adaptation is best mediated by supports through coping — that is, every unit increase in demands was followed by a half-unit decrease in supports; further, every unit decrease in support was followed by a one-third-of-a-unit decrease in coping; finally, every unit decrease in coping was followed by a half-unit decrease in adaptation. The chi-square value of 189.52 (df = 44) is significant, indicating that the hypothesized paths of the Family Adaptation Model do not conform to the data set of mothers of children with special needs.

After a re-visitation of the literature, a second model was hypothesized that places appraisals at the beginning of all other dimensions of the Family Adaptation Model. This placement is supported by those authors (Lazarus & Folkman, 1984; Zeitlin & Williamson, 1988) who suggest that parents use coping and social supports as directed by their appraisals of family situations and that the meaning ascribed to a stimulus is a result of two forms of appraisal. Primary appraisal occurs before the conclusion that a stimulus is a stressor or demand. Secondary appraisal is carried out on the resources available.

This theory was partially tested in the model seen in Figure 2, wherein both demands and supports mediate appraisals ahead of coping and adaptation. This configuration is also an insignificant fit for these data. Some support for these theoretical postulations is indicated by the further lowering of the chi-square value by 100 to 88.53 (df = 43). Nevertheless, the effects of appraisals on demands and support are significant, as are the effects of supports on coping and adaptation. Insignificant effects include the effect of demands on coping and adaptation and the effect of coping on adaptation. While the effect of demands on adaptation is not significant, it is in the direction postulated. The effect of coping is the opposite of that expected. It is assumed that the greater the number of coping mechanisms one can access, the better one's family will adapt. As expected, large amounts of the variance of support (83%) and of adaptation (74%) are due to concepts in the model, while 21% of the variance in demands and 31% of the variance in coping are accounted for by the model.

Figure 2 *Dimensions of the Family Adaptation Model and Path Coefficients of the Second Test of the Model*



Note: chi square value = 88.53 (*df* = 43). Adaptation is scored negatively.
[a]t-value = 2

Summary of Evidence and Methodological Issues for the Family Adaptation Model

The objective findings from the linear analysis of the model with two samples of vulnerable families (families of children with special needs and families of children in Head Start) validate the presence of greater than normal demands in both family situations. Normative adaptation is managed mostly through the use of supports in both samples and through positive appraisals in the families of children with special needs. The finding that the model can make some differentiation between adaptive processes in samples representing two different family vulnerability processes is promising. It may demonstrate the sensitivity of the model's dimensions to accommodations made by families in different vulnerability situations. Analyses of hypothesized paths of mediation were insignificant but do highlight the possibility that appraisals underlie the other mediating dimensions of demands, supports, and coping for families with children who have special needs.

The usual important methodological solutions need rigorous application to this research program. First, the model's dimensions must accurately reflect up-to-date conceptions (Lazarus, 1999). The separation of appraisals from coping is helpful clinically, and when placed before all other dimensions in the model and tested provides a better fit to the data. However, the aspects of coping beyond problem-solving, including such things as support seeking/maintenance and connectedness to the community, are not well represented in this conception and are therefore not well measured. Second, it is necessary to find or develop and match appropriate objective measures of the model's dimensions to their conceptions. For instance, in the work described here, the coping measure did not adequately operationalize the intended focus of the concept in the model on problem-solving. It is also desirable to find a truer measure of the resilient family processes that were chosen to conceptualize family adaptation in the Family Adaptation Model. Third, data-analysis techniques that account for the family unit of analysis must be developed and applied. Before these methodological corrections are incorporated into the Family Adaptation Model research program, the broad and foundational issue concerning the systems/transactional approach to providing context to family adaptation must be examined.

According to recent expert reviews of stress and coping research (Lazarus, 1999; Somerfield & commentators, 1997), the essence of an

adaptational transaction is that the whole system changes from moment to moment and from one situation to another. The authors of these reviews admit that diagramming this level of changing complexity obscures more than it clarifies and is difficult to test completely. Two different overarching methodological approaches are advanced as solutions to the complex nature of studying adaptation within the systems approach.

Most conservative of all (Somerfield & commentators, 1997) is the proposal that a traditional microanalytic strategy of centring attention and resources on high-frequency, high-stress problems — for example, family adaptation in the presence of a child with special needs — would reveal conceptually sophisticated and generalizable, clinically informative analysis. This approach presents difficulties (Lazarus, 1999). It is known that each type of stress and each family context produce distinctive demands, constraints, and opportunities. In this regard, Luthar (1999) shows that effective middle-class parenting strategies, when employed by families in situations of extreme inner-city poverty, are not protective of children. Further, the use of traditional objective scientific approaches, even in a longitudinal fashion, will not likely add to our understanding of such a complex system as family adaptation. The results from the causal modelling of the Family Adaptation Model lend support to this conclusion. It is an example of a microanalytic approach that breaks family adaptation into its constituent parts with their cause-and-effect relations identified. These parts and relations are not the whole of family adaptation, and the microanalytic approach does not provide an obvious way to re-synthesize it.

A systems analysis of family adaptation would more profitably consist of building objective understanding of the important variables in combination with individual families' construal of what counts for them (Lazarus, 1999). For the Family Adaptation Model, the dimensions of demands, appraisals, supports, coping, and family adaptation are the proposed important variables. The data analysis that best supported these dimensions was that obtained with families of children with special needs while they used the dimensions of the Family Adaptation Model with researchers skilled at implementing family-centred practice (McDonald et al., 1997). We plan, therefore, to continue objective examination of the dimensions of the model, but to also validate those conceptions through strategic reflective narrative inquiry in the context of individual families.

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