

Stress and Coping in Families with Deaf Children

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More than 90% of deaf children are born to hearing parents who experience stress, not only in response to the initial diagnosis, but also in adapting to the unique needs of their deaf child. This article is a selective literature review summarizing information from three fields in order to broaden our understanding of family adaptation to deafness. Discussion includes (1) psychology's model of individual stress and coping, (2) family science's model of family stress management, and (3) literature on family adjustment to disability. The last part of the article traces the development of professionals' understanding of the reciprocal influences between deaf children and their families and describes recent research indicating that the impact of deafness on families is complex and variable. The final conclusion is that adoption of a family stress and coping paradigm would inform discussion of current issues in deafness, such as cochlear implants and bilingualism/biculturalism.

"Oh, yes, hearing parents go through the stages of grief—shock, anger, denial and all that. I learned about it in one of my courses." Nowadays individuals training to be professionals in the field of deafness are routinely taught the stages of mourning. That hearing families experience grief in reaction to the diagnosis of deafness seems obvious enough. Nonetheless, prior to the 1970s, very little was understood about a family's adjustment to hearing loss in a child. In the last few decades, researchers and practitioners have made great strides in

understanding the impact of a deaf child on a family, but professionals are only just beginning to appreciate the diversity and complexity in families' responses to deafness.

More than 90% of children with severe to profound hearing losses are born to normally hearing families (Moore, 1987). The realization that a child is deaf causes stress in families who have had little contact with deaf persons and know little about the implications of deafness. In addition to coping with the shock of the initial diagnosis, families must acquire an understanding of a substantial and complex body of knowledge. Parents are often swamped with information on amplification devices, sign language, educational methods, school placements, and legal issues, all of which demand comprehension to assure appropriate critical decisions about the deaf child's future (Meadow, 1980).

Professionals need to understand how families adjust to a deaf child for two reasons. First, federal law requires that intervention with deaf infants and preschoolers be family-focused. Thus, planning and implementing educational programming for infants and preschoolers demand an understanding of family processes. Second, research indicates that competence, achievement, and adjustment in both preschool and school-aged children are related to successful family adjustment (Bodner-Johnson, 1986; Greenberg, 1983).

The purpose of this article is not to report new research, but rather to bring together three separate strands of literature in order to broaden our under-

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standing of family adjustment to a deaf child. The first strand includes information about individual stress and coping from the field of psychology. The second strand involves literature from the field of family stress management. The third strand includes information on family adjustment to a child with a disability as well as literature on family adjustment to deafness, in particular. In the final section of the article, I consider implications for future research and practice in the field of deafness.

Stress and Coping: A Psychological Perspective

Psychologists' interest in how individuals cope with stress has grown significantly in the past 20 to 30 years. Currently, most psychologists use the cognitive model of stress and coping that was developed by Folkman, Schaefer, and Lazarus (1979). Coping is defined as "the changing thoughts and acts that an individual uses to manage the external and/or internal demands of a specific person-environment transaction that is appraised as stressful" (Folkman, 1992, p. 34). Coping is conceptualized as an ongoing process that consists of a series of appraisals and responses to the stressful event. There are three types of appraisal: (1) primary, in which the person evaluates the significance of the event for his or her well-being, (2) secondary, in which the person evaluates the event with respect to available options and resources, and (3) reappraisal, which occurs as new information (from within and without) is received and processed.

Psychologists consider a person's appraisal of an event as stressful to be essential to the coping process. Because individuals vary in their perception of events, what one person views as stressful, another may view as inconsequential. The diagnosis of deafness presents an illustrative example of how events can be interpreted differently. Hearing parents almost always appraise the diagnosis of deafness in a child as highly stressful, whereas deaf parents typically accept or even welcome deafness in their children (Moore, 1987). Moreover, appraisal of available options and resources varies according to the hearing status and experience of parents. Obviously, deaf parents have a lifetime of experience coping with hearing loss and consequently have access to resources unfamiliar to hearing parents.

Once an event is evaluated as stressful, individuals respond with coping processes. Coping processes consist of information search, direct action, inhibition of action, and intrapsychic (thought) processes, all of which vary over time. Coping processes serve two functions or purposes: the regulation of emotion and the adjustment of the person-environment relationship. Thus, coping behaviors are described in the literature as primarily "emotion-focused" or "problem-focused." For example, parents of a newly identified deaf infant often seek out other parents with children who are deaf in order to validate and manage their feelings toward their child's deafness. This is an example of "emotion-focused" coping. On the other hand, parents also request literature on hearing loss as well as ask numerous questions about communication and educational options. This is an example of "problem-focused" coping. Obviously, a coping strategy can serve a dual purpose. For instance, persons can read information both to find a solution and to lessen distress. But, most strategies are used primarily for one purpose or the other.

Coping behavior necessitates the use of four kinds of resources, according to Folkman et al. (1979): (1) health/energy/morale, (2) problem-solving skills, (3) utilitarian resources (economic status, educational programs etc.), and (4) general and specific beliefs (self-efficacy, belief in God, etc.). With regard to deafness, a family's resources might include past experience with disability, access to parent support groups, familiarity with legal and educational processes, and so on.

In summary, coping consists of, first, appraising the stressor (for example, hearing loss) and the available resources (support groups, educational programs, etc.) and, second, choosing behaviors to regulate emotions or solve problems. Folkman and her associates stress that this process is always dynamic and sometimes unconscious.

Folkman et al. (1979) suggest "goodness-of-fit" as a basis for evaluating the effectiveness of coping behaviors. According to the "goodness-of-fit" model, coping effectiveness depends on an appropriate fit between (1) reality and appraisal, (2) appraisal and coping, (3) coping strategies and task demands and constraints, and (4) coping strategies and one's other agendas, (i.e., goals, commitments, and beliefs). A "poor fit" can oc-

cur at any one of these points and result in ineffective coping. For example, parents may demonstrate a poor fit between reality and appraisal if they believe that a deaf child's speech is intelligible to unfamiliar listeners in spite of much evidence that it is not. In addition, goodness-of-fit requires a match between coping strategies and task demands and constraints. For instance, denial and withdrawal may be effective strategies in regulating the intense emotions that occur in reaction to the initial diagnosis of deafness, but may prove to be maladaptive strategies if maintained an extended length of time. Finally, there is sometimes a poor fit between coping strategies and individuals' other agendas. For example, parents may commit to developing fluency in sign language and later find this commitment difficult to maintain as job and family responsibilities compete for time and attention.

As a final note about effective coping, the fact that hearing loss is a highly ambiguous stressor tends to exacerbate the stress experienced by hearing parents. Confusing information and contradictory opinions overwhelm parents who are attempting to appraise the impact of deafness and the appropriateness of various coping strategies. Although parents may seek to diminish this ambiguity by asking questions (information search), professionals often have to answer parents' requests for a specific description of a child's future abilities with vague generalizations and a qualified "I don't know." Moreover, the expansion of choices in the last few decades with regard to communication options, educational placements, and technological devices has served to increase, rather than decrease, the ambiguity of the implications of hearing loss (Gregory, 1995).

In summary, because hearing loss in a child is experienced as stress by hearing parents, the dynamics of the situation can be understood using the stress and coping model proposed by Folkman et al. Although there has been some disagreement over the specifics of the model suggested by Folkman et al., the model has been used in numerous research studies and its general aspects have been supported empirically. Additional distinctions have been made between emotion-focused and problem-focused coping, and Folkman (1992) concedes that two categories are probably too few, but that eight or more are too many. In addition, researchers have attempted to clarify under what conditions coping

resources, such as social networks, are beneficial or detrimental. Nevertheless, the cognitive model of coping proposed by Folkman et al. (1979) has stood the test of time and proved very useful in understanding how individuals react to stressful events, such as the diagnosis of hearing loss in a child.

Family Stress Management

While psychologists have been studying how individuals react to stress, another group of researchers, family scientists, has examined how families manage stress. Family stress theory and research began in the 1930s when Reuben Hill developed his ABC-X model of family stress management. Before describing Hill's ABC-X model, a definition of "family" and a description of family processes are necessary. According to Boss (1988), a "family is a continuing system of interacting personalities bound together by shared rituals and rules even more than biology" (p. 12).

Two important terms in this definition are "system" and "rules." Family theorists believe that the family is a system, a whole greater than the sum of its parts. In other words, one cannot predict the characteristics and behavior of a system, in this case the family, simply by looking at the characteristics and behavior of its components, the family members. "Families have a structure, symbolic as well as real; they have boundaries to maintain; instrumental and expressive functions must be performed to ensure the family's growth and survival" (Boss, 1988, p. 16). A family has "rules" to fulfill its functions and ensure its growth and survival. Under normal stress-free conditions, a family's rules consist of implicit understandings about "who does what when." In addition, families share perceptions and meanings about everyday events and about larger issues such as the value of life, the efficacy or futility of human action, and the justice or injustice of the world.

According to Burr and Klein (1994), families usually interact with little difficulty, transforming inputs (energy, time) into outputs (meaning, affection) with ease. "Family stress occurs when feedback indicates the family does not have the requisite variety of rules to transform comfortably inputs into outputs that meet desirable standards" (Burr & Klein, 1994, p. 34). For

example, in the first months after parents learn that their child is deaf or hard of hearing, they may experience stress because they lack "rules" about how to communicate effectively with a child who has a hearing loss. Furthermore, stress may lead to crisis if family members fail to perform roles, make decisions, and care for each other. In crisis, the focus shifts from family to individual survival (Boss, 1988). According to Reuben Hill's ABC-X model, the degree of family stress/crisis is the outcome (X) of a provoking event or stressor (A), the family's resources or strengths (B), and the meaning attached to the event by the family (C), that is, $A + B + C = X$.

Family theorists have refined Hill's model in a number of ways. Researchers have examined the stages that families experience as they attempt to cope with stress. The most common pattern is referred to as the "roller coaster" model in which the initial period of stress or crisis is followed by a period of disorganization and acute coping, which is followed by a recovery period and a new level or reorganization and normal functioning. Use of the roller coaster model led to the concept of "stress pile-up," a situation in which families face additional stressors before reaching a level of reorganization and normal functioning.

When faced with stress, families adopt strategies in order to cope and reach a new level of functioning. Family coping strategies resemble individual coping strategies in that they are defined as "the active processes and behaviors families actually try to do to help them manage, adapt, or deal with the stressful situation" (Burr & Klein, 1994, p. 129). Additionally, family theorists organize coping strategies into categories similar to those employed by psychologists studying individual coping (i.e., cognitive, emotional, community, etc.). However, Burr and Klein (1994) add an interesting note to the study of coping strategies by suggesting that families progress through a developmental sequence in which level I coping strategies are adopted initially, followed by level II strategies if level I strategies fail, and finally level III strategies in the event that level II strategies are unsuccessful.

Level I strategies refer to attempts to change family rules, for example, reassigning household responsibilities. Level II strategies refer to deeper changes, that is, rules about rules. An example of a level II change is

adjusting the intent and purpose of household routines. Finally, level III strategies refer to changes in a family's paradigm, its basic values and beliefs.

With regard to deafness, families often adopt level I coping strategies. They adjust family rules as they adapt to the demands of absorbing complex information about hearing loss, learning new communication strategies, and managing the educational and legal bureaucracy. Families use level II strategies as well. An example of the use of a level II strategy might be altering the purpose of household routines from that of maintaining order to that of providing practice in communication skills. And finally, many families faced with adjusting to a deaf or hard-of-hearing child immediately find themselves adopting level III strategies, as they begin to question the meaning and purpose behind life's unexpected events.

Families and Children with Disabilities

Professionals who work with families who have children with disabilities have found it useful to conceptualize the family as a system attempting to manage the stress imposed by the child's disability. As Seligman (1991) points out, "A disability in one family member affects the entire system and in turn affects the disabled person" (p. 27). Seligman describes the family in terms of its structure and function and makes a number of points about how disability can influence the family system and vice versa. For instance, family structure is defined by membership characteristics (single parent, extended family, etc.); cultural style (beliefs, customs, etc.); and ideological style, which is based on cultural style but is more specific to the individual family. As an example, Seligman says that culturally based beliefs affect the manner in which families adapt to a child with a disability. Cultural beliefs can influence if and how family members seek help, as well as the extent to which members trust the advice of various professionals.

Families are defined not only by their structure but also by their interaction or function. Seligman posits four components to interaction: subsystems (marital, parental, sibling, etc.), cohesion and adaptability, communication, and other functions such as economic, domestic, recreational. Obviously, there are a number of

ways in which a child's disability can affect a family's interaction. The quality of parents' marital relationship may influence how the child's disability is managed, and, conversely, the strain of dealing daily with disability may affect the parents' marriage. In addition, a family's adaptability is a factor in how daily stresses are managed. As family members adjust to the needs of a child with a disability, changes in roles may be necessary. For example, fathers and siblings may be asked to accept greater caretaking responsibility.

As a final note, Seligman reminds us that families exist in a larger context both in terms of time and space. Families have a life cycle—a beginning, middle, and end—that interacts with the changes imposed by disability. Moreover, families live within a larger community and within a larger culture. Messages from friends, neighbors, health care workers, the mass media, and the political system have a major impact on the family. In fact, an ecological view reminds us that, "In understanding and helping families with disabled children, one cannot only focus on the child, nor the child and the mother, nor the dynamics occurring within the family. Rather, it is becoming increasingly crucial to examine the family within the context of larger social, economic, and political realities" (Seligman, 1991, p. 41).

Although Seligman's challenge to examine the family within the context of larger social, economic, and political realities may seem overwhelming, Gallimore, Weisner, Kaufman, and Bernheimer (1989) have constructed an ecocultural theory of family accommodation to a child with developmental delay. According to their scheme, families strive to create sustainable everyday routines with their developmentally delayed children. These daily routines or activity settings, as the authors call them, not only accommodate broader economic and social forces, but also afford families the opportunity to construct and communicate themes or meanings associated with their own particular goals and values. Thus, Gallimore et al. stress the importance of both meaning and context in examining a family's efforts to cope with a child with a disability.

Seligman (1991) and others (e.g., Quittner, 1990; Wikler, 1986) who have sought to understand the impact of disability on a family have noted that the stress experienced by families with disabled children is

chronic, rather than acute. Both the individual stress and coping paradigm developed by Folkman et al. and the family stress model developed by Hill were first used to explain reactions to acute stress. Nonetheless, Wikler (1986) points out that a number of researchers have used Hill's ABC-X model, either explicitly or implicitly, to study families of children with mental retardation.

According to Wikler (1986), family stress theory can be used to organize and understand a large number of studies on families with children with mental retardation. According to Hill's model, the stressor (mental retardation) interacts with the family's resources (B) and the family's perceptions (C) to produce family stress/crisis (X). Thus, resources (B) and perceptions (C) are factors that mediate or buffer the stressful event (A) and the outcome (X). Wikler points out that most studies on families and mental retardation have ignored mediating factors and simply reported on the impact of a child with mental retardation on family functioning.

Nonetheless, a number of studies have focused on mediating factors (B and C) without using the conceptual framework provided by Hill's model. According to Wikler, the influence of family resources on the amount of family distress has been examined more often than the relationship between family perceptions and distress. And, of the large number of resources available to families, social class and social support have been the two resources most studied. In general, higher social class and better social support have been shown to mitigate the impact of mental retardation. However, the complex relationships among variables resist generalization.

Wikler (1986) mentions two studies that explicitly used Hill's ABC-X model to examine the impact of mental retardation on family functioning. In the first study, the researcher found the stressor (A), rearing a developmentally delayed child, when interacting with family resources (B) and family perceptions (C), to be significantly correlated with amount of family distress (X). According to Wikler, when variables B and C were removed from the analysis, there was no significant correlation between A and X. In the second study, the researcher used the ABC-X model to explore whether mental retardation had a different impact on families at different points across the life cycle. Transition periods

(for example, the onset of puberty) were found more stressful than nontransition periods.

Families and Deafness: Historical Perspectives

Although the above discussion is but a brief glance at the literature dealing with families and disability, it suggests that a family stress paradigm is useful in understanding how families adapt to children with disabilities. While most professionals in the field of deafness would agree that normally hearing parents experience great stress in rearing a deaf child, until the 1970s, little notice was given to the interaction between deaf children and their families. Beforehand, writers typically focused on the detrimental effects of deafness on all aspects of development (Levine, 1967; Myklebust, 1964). Families were hardly mentioned, and when they were, writers usually noted that deafness had devastating effects on the family that only served to compound the deaf child's problems.

In the 1970s, writers began to pay attention to the impact of a deaf child on the family and, conversely, the influence of the family on the child. Several writers concentrated almost exclusively on the initial period of mourning experienced by parents in reaction to the diagnosis of deafness (Luterman, 1979; Mindel & Vernon, 1974; Moses, 1985). In one of the earliest books on the deaf child and his family, Mindel and Vernon (1974) discussed at length parents' reactions to the discovery of their child's deafness. These reactions included the stages of mourning human beings experience in response to significant loss, that is, denial, rationalization, shock, guilt, anger, helplessness, and acceptance. According to the authors, "If the parents fail to resolve their feelings of grief, anger, guilt, and helplessness, they will be forced to remain arrested in the earliest stages of their psychological reactions to the child's deafness . . . [T]he parents' early reactions related to the discovery of deafness and their resolution of these feelings toward the child influence all future decisions" (Mindel & Vernon, 1974, p. 22).

The realization that parents of children with disabilities experience grief and that mourning is a normal stage in parents' adjustment to a deaf child was an important addition to our knowledge. But, because interactions between deaf children and their families are

necessarily complex and everchanging, writers' interest in family dynamics expanded beyond the initial mourning period experienced by parents. Two important contributions to our understanding of families and deafness were made by Schlesinger and Meadow (1972) and Gregory (1976). Gregory interviewed 122 mothers of young deaf children in Great Britain and drew conclusions groundbreaking at the time. First, Gregory stressed the great diversity in parents' responses to deafness. Second, she suggested that some commonly held beliefs about deaf children and their families were simply not true. One was that mothers were unreasonably overprotective of deaf children, and another was that parents allowed deaf children to unnecessarily restrict their social lives. Third, Gregory concluded that global prescriptions for deaf children and their families only created problems, and she questioned whether integration into the hearing world was a reasonable goal in all cases.

Also in the 1970s, Schlesinger and Meadow (1972) introduced the idea that deafness affected a child's development because it inhibited communication between the child and the family. As evidence, the authors pointed to the superior performance of deaf children with deaf parents (who generally communicated with their children from birth through Sign Language) on tasks requiring social maturity and independence. Although the superior performance of deaf children with deaf parents had been noted by researchers prior to the 1970s, there had been little discussion of the factors responsible for this difference (see Altshuler, 1974). Schlesinger and Meadow pointed out that deaf parents not only communicated with their children from birth, but tended to take the diagnosis of deafness in stride. In addition, deaf children with deaf parents benefited from their parents' personal knowledge of how to cope with being deaf in a hearing world. Thus, the authors suggested that the quality of communication and interaction between the deaf child and the family was a factor that mediated the impact of deafness on the child.

At the end of the decade, Meadow (1980) articulated more fully her idea that communication operated as an intervening variable between deafness and its developmental outcomes. In addition, Meadow discussed at length how the presence of a deaf child put tremendous pressures on a hearing family. These pressures ei-

ther created stress, acted as a focus for existing stress, or provided a rallying ground for increased family cohesion. According to Meadow, how the possibilities for stress or growth emerged depended on a number of factors, including the quality of family resources.

In related work, Freeman, Malkin, and Hastings (1975) agreed with Meadow that several factors intervened between deafness and its impact on both the child and the family. Freeman et al. studied 120 deaf children and their families in Greater Vancouver, Canada, and concluded that there were several factors, including delay in diagnosis and the influence of educational controversies, that "make it difficult to sort out the inevitable primary consequences of childhood deafness from the secondary social, medical and educational factors" (p. 391).

As we approach the end of the twentieth century, professionals in the field of deafness seem to be arriving at a consensus that the relationships between a family and a deaf child are much more complex than previously realized. In a discussion of the adaptation of families with school-aged deaf children, Calderon and Greenberg (1993) note that research has not supported a stress-pathology model. In other words, it is not necessarily true that the stress involved in rearing a deaf child always results in negative outcomes for both child and family. According to the authors, a complex web of everchanging variables may interact to mitigate or exacerbate the impact of deafness on the family or, conversely, of the family on the deaf child. Thus, whether deafness in a child results in positive or negative outcomes for a family may be impossible to predict at the outset.

Families and Deafness: Research Perspectives

In review, the challenges faced by families adapting to a deaf child fit the stress-coping paradigm suggested by psychologists and family theorists. Individuals or families in stressful situations must choose strategies to regulate emotions and to solve problems. Coping strategies include intrapsychic mechanisms, information search, direct action, and inhibition of action. In addition, the use of coping strategies necessitates accessing coping resources, such as problem-solving skills, educational programs, social support, etc. Parents of deaf

children must cope with the emotions associated with grief, understand information on deafness and its implications, and make critical decisions regarding communication methods and educational interventions. These aspects of parents' coping processes have been addressed in a number of recent research studies.

Research on family stress and coping in response to a deaf child can be organized into the following categories: survey studies, comparative studies, correlational studies, and qualitative studies. These studies examine various aspects of the stress and coping process. According to both psychologists and family scientists, the outcome of the coping process depends upon the family's or individual's appraisal of the situation as well as on the evaluation and use of available resources. According to Hill's ABC-X model, $A(\text{stressor}) + B(\text{resources}) + C(\text{meaning or appraisal}) = X(\text{outcome})$. B and C can be seen as variables intervening between A, the stressor, and X, the outcome.

The first group of investigations, survey studies, depends upon self-report rather than direct observation and thus, by design, focus on parents' appraisals of the stressor, deafness, and the available resources, educational methods, and programs. The goal of survey studies has been to examine parents' attitudes toward communication methods and educational programming. Kluwin and Gonter Gaustad (1991) sent questionnaires to the families of 364 students in a longitudinal study involving the schools of the National Research and Development Network for Public School Programs for the Hearing Impaired. The purpose of the survey was to determine which factors influenced the families' choice of communication method. The researchers found that mothers' mode of communication predicted both fathers' and siblings' mode of communication. In addition, a greater degree of hearing loss, the use of manual communication in preschool, and a higher level of maternal education were all correlated with maternal use of manual communication. The main conclusion drawn from the study was that mothers are the primary decision-makers with regard to communication mode. From a stress and coping viewpoint, mothers' appraisal and choice of coping strategies strongly influence the behavior of other family members.

A survey study undertaken by Bernstein and Mar-

tin (1992) examined another aspect of parents' coping process, that is, decision-making with regard to educational placement. The researchers surveyed 357 hearing parents of hearing-impaired children to gather information on factors that may have influenced parents to place their children in residential settings. The researchers were also interested in assessing parents' satisfaction with both the placement information they received and their child's placement. The survey responses indicated that, although a large percentage of the parents were satisfied with their child's school placement, only 36% of the parents were satisfied with information they had received. Interestingly, although the greatest number of parents stated "better education" was presented to them as a primary advantage of residential schooling, the ability to communicate turned out to be the primary advantage based on their experiences. Thus, parents' appraisals of available resources indicated satisfaction with educational programming, but dissatisfaction with information on programming.

In another survey study, Bernstein and Barta (1988) compared and contrasted parents' and professionals' views on educational programming for parents. Questionnaires were sent to parents and professionals in Texas. Results indicated that parents and professionals agreed that communication and education were the most important topics in programming for parents of hearing-impaired children. However, there were differences of opinion with regard to the importance of topics across the child's age span. Parents rated almost all topics as important across the child's age span, whereas professionals viewed audiology and speech as important in the early years and discussion of the child's future as important only in the later years. In other words, parents and professionals differed in their evaluation of the importance of various coping resources.

In summary, although survey studies permit general conclusions regarding the knowledge and attitudes of the parents who participate, they reveal little detail about how families adapt to a deaf child. A second type of study is the comparative study in which families with hearing-impaired children are compared to families without hearing impaired children. According to a stress and coping paradigm, the goal of comparative

studies is to find a connection between stressor (hearing loss) and outcome (family distress or well-being). Some comparative studies address mediating variables, such as family perceptions and family resources, while others do not. In a study evaluating the emotional and marital adjustment of hearing parents of hearing-impaired youths, the investigators found that the parents of hearing-impaired youths reported fewer symptoms of distress than did parents of hearing youths, and that there were no differences in the marital satisfaction of parents in intact families (Henggeler, Watson, Whelan, & Malone, 1990). Interestingly, family cohesion was the most consistent predictor of parental adaptation and was associated with less distress in mothers and greater marital satisfaction for both spouses. As the authors point out, this result meshes with the research in the field of family studies indicating that family cohesion is related to positive outcomes in reaction to stress.

Attempts to find the correlates of successful family adjustment to deafness represent a third category of studies. In general, the goal of these investigations is to determine which factors (resources or perceptions) mediate the impact of the stressor (hearing loss) on the outcome (family functioning). Calderon (1988) assessed 36 hearing families with school-aged profoundly deaf children who were being educated in self-contained, total communication classrooms in public school programs. She evaluated the general personal adjustment of both parents as well as their specific adjustment to the deaf child. The child's adjustment was also measured. Calderon's analysis was based on the Folkman et al. model of stress and coping. Thus, she reasoned that parental adjustment was a function of the use of coping resources, specifically, social support, problem-solving skills, utilitarian resources, beliefs, and health/energy/morale. Calderon found that mothers who experienced fewer life stressors in the past or reported greater satisfaction with social support had better personal adjustment. In addition, mothers' specific adjustment to the deaf child was most related to satisfaction with social support. Interestingly, the amount of utilitarian resources available was not related to parental adjustment.

In examining paternal adjustment, Calderon found no relationship between coping resources and adjust-

ment. In fact, fathers' adjustment was found to be dependent on maternal adjustment and maternal use of coping resources. The impact of maternal adjustment on paternal adjustment meshes with Kluwin and Gonter Gaustad's (1991) finding that mothers play a key role in determining communication mode not only for themselves but for the family as well. When Calderon examined child adjustment, she found that it was highly associated with maternal and paternal personal adjustment.

In a related study, Calderon, Greenberg, and Kusche (1989) examined the influence of family coping on the cognitive and social skills of deaf children. Again, the Folkman et al. model of stress and coping was used. According to the authors, the purpose of the study was to examine how five factors of coping resources (health/energy/morale, beliefs, social support, problem-solving skills, utilitarian resources) affect the family's adaptation and influence the child's development. Study participants included the 36 families of Calderon's (1988) earlier study. Numerous instruments were used to assess parental use of coping resources and child outcomes. Results indicated the following relationships: maternal problem-solving skills were positively related to the child's emotional understanding, reading achievement, and cognitive problem-solving skills; maternal belief in chance was negatively related to the child's social problem-solving skill; utilitarian resources were correlated with reading achievement; and, finally, positive maternal adjustment to the child was related to lower child impulsivity, greater cognitive flexibility, and higher social understanding. Conversely, the investigators found no relationship between child outcomes and maternal life stress, social support, and religiosity. There was also no relationship between maternal assessment of her own personal adjustment and child outcomes.

The failure to find a relationship between the two maternal factors, personal adjustment and experience of social support, and the child outcomes, cognitive and social skills, contrasts with Calderon's (1988) prior finding that child adjustment was most related to parental personal adjustment and maternal experience of social support. In addition, in her earlier analysis, Calderon found no relationship between child adjustment and utilitarian resources, whereas a significant relation-

ship was found between reading achievement and utilitarian resources in the Calderon et al. analysis. It seems that child adjustment and achievement are differentially related to parental coping factors, with child adjustment being related to parental adjustment and social support, and child achievement being related to parental problem-solving ability and utilitarian resources.

In addition to Calderon, a number of other researchers have suggested that access to social support moderates or buffers the stress involved in rearing a child with a hearing loss (Koester & Meadow-Orlans, 1990; MacTurk, Meadow-Orlans, Koester, & Spencer, 1993). In fact, MacTurk et al. (1993) found that the families of deaf infants had social support networks equivalent to those of the families of hearing infants, and for both groups "the amount of support mothers received from family, friends, and professionals contributed significantly to the quality of later mother-child interaction" (p. 22).

Nonetheless, Quittner, Glueckauf, and Jackson (1990) have advised caution in the face of "widely held notions about the role of social support, and premature recommendations that increased support will be beneficial to those under high levels of stress" (p. 1266). Quittner et al. assessed parenting stress in 96 mothers of deaf children and 118 matched controls. The investigators also examined social support and distress symptoms, such as depression and anxiety. They found no moderating effects for social support. In contrast, parenting stress was associated with lowered perceptions of emotional support and greater symptoms of depression and anxiety. The authors concluded that social support mediated the relationship between stressors and outcomes. In other words, when mothers were experiencing stress, social support did not protect them from depression and anxiety. On the contrary, mothers experiencing stress tended to experience their relationships as less supportive and less helpful. Quittner et al. interpret their results to mean that social support may function as a buffer in situations of acute stress, but fail in chronic stress situations, such as parenting a deaf child. But Gallimore et al. (1989) demonstrate even greater caution and suggest that coping resources, such as social support and income, are not good or bad in themselves, but rather acquire their positive or nega-

tive value in the context of the family's particular circumstances and family-constructed themes or meanings. Thus, Gallimore et al. reiterate a feature of both psychologists' and family scientists' stress and coping models, that the meaning ascribed to both the stressor and various resources is critical to outcomes.

A final category of studies on family adaptation to deafness is qualitative research. The majority of qualitative research consists of personal interviews and thus focuses on family perceptions of the stressor and available resources. In other words, qualitative research examines how perception or appraisal mediates the impact of a deaf child on family functioning. Morgan-Redshaw, Wilgosh, and Bibby (1990) interviewed five hearing mothers of hearing-impaired adolescents on their experiences in rearing a hearing-impaired child. Mothers were also asked to keep journals for a period of two to three weeks. Journal entries and a second interview were used to validate the information gathered during the first interview. Transcripts of the first interview were analyzed for recurrent themes, and the following six topics emerged as significant: (1) the mothers' personal growth, (2) the mother-child relationship, (3) parent-professional relationships, (4) concerns about educational programming, (5) the importance of fluent communications, and (6) support systems available to the mothers.

Interestingly, content analysis of the interviews supported many of the conclusions drawn from quantitative research. First, the mothers often expressed dissatisfaction with professionals and with educational programming. Second, mothers stressed the importance of access to social support and of developing fluent communication with their children. And finally, the mothers assessed their child-rearing experience as challenging, but personally satisfying.

In a similar study, Israelite (1985) interviewed 14 female adolescent siblings of younger children with severe to profound hearing losses. Results indicated a mixed pattern of sibling reaction to a hearing-impaired child. In general, positive reactions were associated with positive family relationships and negative reactions with negative family relationships. Variability in sibling response seemed to be related to variability in parent attitudes and behavior. Israelite concluded that the presence of a hearing-impaired child strength-

ens relationships in some families and exacerbates tenuous situations in others.

As a final note on qualitative research, Gregory (1995) followed up her initial study of 122 deaf children and their families by reinterviewing the families 20 years later. According to Gregory, many of the parents remained concerned about their children, although the focus of their concerns had shifted somewhat. Many parents were concerned with their children's relationships with persons beyond the family and with the stability of their employment.

In summary, it seems that writers and researchers have made progress in their understanding of the impact of a deaf child on a normally hearing family, but that much remains to be learned. Traditionally, writers focused on the negative effects of a deaf child on a hearing family. While it is true that hearing parents experience grief in reaction to the diagnosis of their child's deafness, the pattern of family response following the initial mourning period appears to be variable. Much of the research on family adjustment to a deaf child provides only general insights into the adjustment process. For example, surveys indicate that parents are not completely satisfied with the resources available (i.e., information delivery and educational programming). In addition, surveys indicate that mothers play a key role in family adjustment. Comparative studies as well as qualitative research suggest that having a deaf child in the family may not be as detrimental as professionals once believed. In one study, measures of marital satisfaction and family cohesion showed no difference in families with a hearing-impaired member.¹ In other studies, personal reports suggested that adjustment to a deaf child can result in personal growth and enhanced family relationships. Correlational studies indicate that the presence of coping resources, such as problem-solving skills and social support networks, contributes to successful adaptation to a deaf child. Indeed, the use of a stress and coping paradigm adapted from the field of psychology has increased our understanding of families and deafness.

Implications for Research and Practice

It is notable that, although investigators in the field of deafness have adopted the conceptual framework pro-

vided by the literature on individual stress and coping, they have neglected the significant body of research in the field of family stress management. Family researchers are interested in how stress affects family roles and relationships, in how families use coping strategies to survive and reach a new level of functioning, and in how family coping behavior changes over time. Adopting a family systems perspective suggests new questions about how families adjust to a deaf child. How do family roles and relationships change when families learn of their child's deafness and attempt to adopt new communication modes? How does the search for appropriate educational placement affect family functioning? What coping strategies do families use in response to changing demands throughout the deaf child's development? Do families vary significantly in their use of coping strategies and in their pattern of adjustment?

Wikler's (1986) analysis of research on families of children with mental retardation suggests that a stress management paradigm is useful in understanding family response to a child with a disability. According to a stress management viewpoint, family resources and family perceptions operate as intervening variables affecting the impact of the stressor on outcomes. Furthermore, as Wikler points out, the use of a stress management model reveals that, while many studies have examined the coping resources available to families, few have examined family perceptions of stressor or resources. With regard to the disability of deafness, it seems obvious that a hearing family's perception of the hearing loss itself, of its implications for the child and family, and of the resources available to the family is a critical factor affecting the family's adaptation. Indeed, qualitative studies involving in-depth interviews of family members have demonstrated the importance of family perceptions (Gregory, 1976; Israelite, 1985).

Currently, a number of debates in the field of deafness would be better informed if a family stress management view were adopted. Two issues under discussion are cochlear implants and bilingualism/biculturalism. A cochlear implant is a device that is surgically implanted to stimulate the auditory nerve of the deaf patient. Cochlear implants do not restore full hearing and are only appropriate for a small number of deaf children. Nonetheless, the issue of medical treatment for deafness presents an example of how percep-

tions of available resources vary. Many hearing parents of recently identified deaf infants react to information about cochlear implants positively, whereas deaf parents often react negatively. Although a complete discussion of the dynamics underlying the different evaluations of cochlear implants is beyond the scope of this article, the important point is that family (and community) dynamics should be considered in discussion of cochlear implants.

In addition, the pros and cons of a bilingual/bicultural approach to the education of deaf children have been debated without reference to the response of hearing families to such an approach (Stuckless, 1991). Again, a full discussion of this issue is beyond the scope of this article, but professionals in the field of deafness need to remind themselves that educational trends as well as medical treatments need to be examined in the context of family dynamics. Indeed, several writers point out that even larger social, economic, and political contexts need to be considered as well as the family context (Seligman, 1991; Gallimore et al., 1989).

In conclusion, psychologists' stress and coping paradigm and family researchers' stress management model have proved useful in furthering our understanding of family adjustment to deafness. Examining the reciprocal influences between deaf children and their families will not only further our understanding of the complex processes involved in family adaptation, but, ultimately, lead to more effective intervention for deaf children and their families.

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