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The McGill Model of Nursing and Children with a Chronic Condition: "Who Benefits, and Why?"

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La présente étude avait pour but de comprendre pourquoi et comment l'adaptation psychosociale des enfants entre quatre et seize ans, atteints d'une maladie chronique, avait été améliorée par un essai de soins infirmiers étalés sur une année (1990-1991), sur le modèle des soins infirmiers de McGill. Nous avons examiné les traits distinctifs des enfants dont l'adaptation s'est améliorée, ceux qui sont restés dans la normale et ceux dont l'adaptation s'est détériorée. Les enfants dont l'adaptation s'est améliorée et ceux dont l'adaptation s'est détériorée présentaient les mêmes traits distinctifs. On a procédé à une analyse de profil afin de comprendre pourquoi un groupe s'améliorait tandis que l'autre non. On a repéré quatre cheminements menant à l'amélioration. L'efficacité des soins infirmiers semblait être liée à l'engagement avec l'infirmière et aux caractéristiques des soins infirmiers.

This study sought to understand why and how the psychosocial adjustment of children between the ages of four and 16 with a chronic illness was improved by a year-long nursing trial (1990-1991), guided by the McGill Model of Nursing. We examined the characteristics of children whose adjustment improved (improvers), who remained within the normal range (adjusted), and who deteriorated (clinical rangers). Improvers and clinical rangers presented with similar characteristics, and a profile analysis was conducted to understand why one group improved while the other did not. Four pathways leading to improvement were identified. The effectiveness of the nursing appeared to be related to engagement with the nurse and to features of the nursing.

Most studies, with few exceptions, indicate that there is a higher prevalence of psychosocial adjustment difficulties among children with a chronic physical illness (Newacheck & Taylor, 1992). In an attempt to ameliorate or prevent these difficulties, researchers have developed and tested interventions that have varied in type and duration. The authors of three of these studies report benefits for children receiving the inter-

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vention (Pless et al., 1994; Pless & Satterwhite, 1972; Stein & Jessop, 1984), whereas the fourth study found no such benefits (Nolan, Zvagulis, & Pless, 1987).

One of the effective interventions was provided by nurses alone (Pless et al., 1994), guided by the McGill Model of Nursing (Gottlieb & Rowat, 1987). The central components of this model are family, health, learning, and collaboration (Kravitz & Frey, 1989), and it directs the nurse to focus on the family as the unit of concern and on the strengths and potential of the family rather than its weaknesses or deficits. The goal of nursing in this model is to foster family health by structuring an environment for learning. The overall approach is a collaborative one, and nursing care is tailored to the family's needs and motivation, with the family's goals and priorities in mind.

The effectiveness of this nursing intervention was tested using a pre-test/post-test randomized control trial design. Typically, evidence to support the effectiveness of an intervention has relied on an examination of the differences between the intervention group and the control group. This conventional approach has the ability to detect overall intervention effects, and it assumes that all participants stand to benefit equally. An examination of the between-group differences, to assess the effectiveness of this nursing intervention (Pless et al., 1994), found that children who received the intervention had better role functioning than children in the control group, who received routine care; in addition, children eight to 16 years of age reported better self-concept than their counterparts in the control group.

However, the conventional approach to evaluating intervention effectiveness has limitations. It fails to account for individual variation (Fisher, 1993), and it does not provide information about who benefits from the intervention, and under what conditions, nor about the mechanisms that bring about desired outcomes (Dunst, Synder, & Mankinen, 1989). In light of these limitations, researchers recommend that a second phase be added to the analysis, consisting of an examination of within-intervention-group differences (intra-individual differences) through case or profile analysis (Bergman, 1992).

Only one of the intervention studies with chronically ill children considers both group effects (Stein & Jessop, 1984) and individual effects (Jessop & Stein, 1991). The home-care intervention provided by a multidisciplinary team was most effective when both the burden of the child's illness and the family's coping resources were low.

It is possible that many other characteristics of the subjects will interact with intervention features to affect outcomes. For example, the age (Gates, Lineberger, Crocket, & Hubbard, 1988) and gender (Wallander, Varni, Babani, Banis, & Wilcox, 1988) of the chronically ill child, and various characteristics of the illness such as duration (Pless & Nolan, 1991) and severity (Lavigne & Faier-Routman, 1993), have been identified as predicting why some children are at risk for developing psychosocial problems. Healthy children whose mothers have high perceived stress have more emotional and behavioural problems (McClowry et al., 1994), and mothers' confidence in their parenting role has been associated with better psychosocial adjustment in physically healthy children (Lancaster, Prior, & Adler, 1989). These variables may also influence intervention outcomes. Although no studies have systematically examined if and how these variables influence intervention effectiveness with chronically ill children, one study investigated variables with chronically ill adults (Roberts et al., 1995).

Furthermore, evaluation research provides evidence that various features of the intervention are related to differential outcomes. Examples of such features are: duration and intensity (Dunst et al., 1989), quality of the participants' involvement in the intervention (Booth, Mitchell, Barnard, & Spieker, 1989), therapist characteristics, and theoretical orientation of the intervention (Dumka, Roosa, Michaels, & Suh, 1995). For example, Booth and her colleagues found that mothers who developed a relationship with the nurse were more likely to benefit from a nursing intervention, irrespective of the intervention model used. Thus the role that intervention features play in the effectiveness of an intervention with chronically ill children should also be examined.

The purpose of this paper, then, is to describe which chronically ill children benefited from a year-long nursing intervention, and why. Both characteristics of the participants (child, mother, and family) and characteristics of the intervention were examined to further our understanding of the complex interactions among the participants, the intervention, and child psychosocial adjustment outcomes.

Methods

Sample and Data Collection

Criteria for participation in the original study were that the child (a) was between four and 16 years of age and (b) had a chronic condition with some functional limitation, as manifested by any of the following:

health-related restriction in daily activities; special diet or home care; daily medication; attendance at specialty clinic at least twice yearly; regular physical, occupational, or speech therapy; more than two hospitalizations or three emergency-room visits in the preceeding six months (Pless et al., 1994).

A sample of 1069 families were identified from nine specialty clinics such as allergy, cardiology, or neurology. Of this group, 605 families (57%) met the criteria; however, 137 families refused to participate and 136 families could not be located. A total of 332 families agreed to participate. Families were then stratified by clinic and randomly assigned to either the control group (n = 161) or the intervention group (n = 171). The three study nurses were randomly assigned to three clinics each. The families forming the control group continued to receive routine services, while those in the intervention group received the additional year-long nursing. At the post-intervention assessment, eight children were lost from the intervention group. Children who received the intervention had better overall role functioning than children in the control group and children aged eight to 16 who received the intervention reported better self-concept than their control-group counterparts. Because this paper addresses the question of who benefited from the intervention, only the data of the intervention group will be discussed.

Background characteristics. Of the 171 chronically ill children whose families received the intervention, 89 (52%) were boys. The mean age of the children was nine years. Most (n = 150) (88%) mothers were partnered. The mean ages of the mothers and their partners were 37 and 39, respectively. Fifty-three percent of the mothers had less than or the equivalent of high school education (M: 12 years).

Intervention. The intervention was provided by three nurses selected from among the staff of the ambulatory setting in which the study was conducted. They had previous experience nursing families with a chronically ill child and were familiar with the various hospital and community services. Their practice had been guided by the McGill Model of Nursing for a number of years.

The protocol required that all families receive a minimum of 12 contacts: an initial assessment in the home, at least one telephone call per month (if no other contact had occurred), and a contact at the end of the intervention. Additional contacts were made based on family needs and readiness to work with the nurse. The average number of contacts made per family was 15, lasting 21 minutes on average; 71% of the contacts were by telephone, 12% were home visits, and 2% were visits to the nurse's office.

The McGill Model of Nursing directs the nurse to focus on overall health rather than on illness or its treatment, on all family members rather than just the patient, and on the family's goals rather than those of the nurse. It was deemed that these criteria could best be met if the nurses provided care independent of clinic services. They were free to respond to the diverse needs of the children and their families at home or in hospital, school, or community. Nursing care was not standardized but rather tailored to meet the unique needs and goals of each family. As a result, the nurses dealt with a broad range of family concerns: the impact of the child's illness on the child and the family, problems with the child's behaviour or school performance, parenting issues, family relationships (Feeley, 1994). They used a variety of strategies to help families, including developing a relationship with the family and gathering data concerning their needs, providing emotional support, restructuring cognitions concerning events and experiences, problem-solving, and accessing/negotiating for resources and services.

Measures

Two domains of child psychosocial adjustment were assessed – namely, behavioural problems and child functioning and role performance. The Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1983), a parent-report measure, consists of 112 items, each rated on a 0- to 2-point scale. This standardized measure provides T scores for eight sub-types of behaviour and a Total Behavior Problem summary score. Scores are normed for age and gender. The Total Behavior Problem summary score was used. Evidence of both construct and convergent validity has been established, and test-retest reliability is high (Achenbach & Edelbrock).

The Personal Adjustment and Role Skills Scale (PARSIII) (Stein & Jessop, 1990), a commonly used measure of psychosocial adjustment with this population, consists of 28 items, each rated on a 1- to 4-point scale. This measure yields scores on six dimensions (dependence, hostility, withdrawal, peer relations, productivity, and anxiety/depression), which can be totalled and used as a summary score. This instrument has good internal consistency (alpha 0.7 – 0.8 subscales). Evidence supporting the concurrent validity of the measure with other measures of psychosocial adjustment has been provided (Klein-Walker, Stein, Perrin, & Jessop, 1990).

Maternal functioning was assessed, in terms of the mother's level of distress, using the General Health Questionnaire (GHQ) (Goldberg, 1972): 20 items rated on a 1- to 4-point scale recoded as 0 or 1. The items

are summed and a score of greater than 4 is indicative of high distress. Concurrent validity is assessed using a standardized psychiatric interview in two samples (r = .77 and .72) (Goldberg).

Three key aspects of maternal functioning were assessed with the Parental Stress Index (PSI) (Abidin, 1983), consisting of 54 items divided among seven subscales. For the purposes of this study, three subscales were used: Competence (10 items), Role Restriction (seven items), and Social Isolation (six items). Each item is rated on a 1- to 5-point scale. The measure has well-documented validity (discriminative, predictive, factorial) and reliability.

The effects of having a child with a chronic condition were assessed in terms of confidence in managing the child's health care, the impact of the child's condition on daily routines, and the stress involved in caring for a child with a chronic condition. Mothers rated these aspects on three single-item, 10-cm visual analogue scales. The items were developed by the authors for this study.

Family functioning was assessed with the McMaster Family Assessment Device (FAD) (Epstein, Baldwin, & Bishop, 1983), a 53-item measure that includes a general functioning sub-scale (12 items). The general functioning sub-scale was used in this study. The FAD has well-documented validity (constructive, discriminative, predictive, concurrent) (Miller, Epstein, Bishop, & Keitner, 1985).

Intervention Features

Nursing intervention features such as intensity and duration, the types of child and family concerns, and nursing strategies used may be important in effecting change in child outcomes. A number of methods were used to track the nursing.

Contact log. After each contact with the family, the nurse completed a contact sheet that included duration and location of contact, who was present, and who initiated the contact.

Nurses' notes. The nurses documented, in the form of nurses' notes, what transpired during each family contact. Each note described the family's current situation and concerns; the nurse's assessment, goals, and intervention strategies; and any changes or outcomes observed. Concerns raised by the families during nursing contacts, and types of nursing strategies, were categorized using a scheme based on Gottlieb's (1980) categorizations of health-related concerns and nursing strategies,

modified for this population (Feeley, 1994). The nurses' notes were transcribed and coded using Nota Bene (Dragonfly Software, 1988).

Results

To address the research question of who benefited from the nursing intervention, and why, our first task was to categorize the children according to those who benefited (improvers), those who remained adjusted (adjusted), and those who deteriorated or remained in the clinical/abnormal range (clinical rangers). Children with a CBCL score greater than 63 are considered maladjusted (Achenbach & Edelbrock, 1983). Children whose PARSIII score is one standard deviation less than the group mean are considered to have poor role adjustment (Stein & Jessop, 1991). For this study, to be classified as an improver the child had to have either (a) a CBCL pre-intervention score greater than 63 and a post-intervention score of 63 or less, *or* (b) a PARSIII pre-intervention score of less than 78 and a post-intervention score of 78 or greater. Thirty intervention children (18%) were classified as improvers. To be classified as adjusted, a child had to have a normal CBCL (≤63) and PARS (≥78) pre- and post-intervention. The majority of children fell into this group (n = 107 [62%]). For a child to be classified as a clinical ranger, the score had to change from the normal range pre-intervention (CBCL:≤63 or PARS:≥78) to the clinical range post-intervention (CBCL:>63 or PARS:<78) *or* the score had to remain in the clinical range post-intervention (CBCL:>63 or PARS:<78). Of the 33 children (19%) classified as clinical rangers, seven deteriorated on the CBCL, eight on the PARS. The remainder showed either improvement or no change within the clinical range.

Characteristics of Improvers, Adjusted, and Clinical Rangers

To determine whether the three groups of children (improvers, adjusted, and clinical rangers) differed at the start of the intervention, the groups were compared on child, mother, family, and illness characteristics (Table 1). Interval data were subjected to one-way Analysis of Variance (ANOVA). With a significant F, Newman-Keuls post-hoc comparison tests were computed. Nominal data were subjected to chi-square analysis, which revealed that improvers and adjusted shared similar characteristics with respect to child's age, child's gender, mother's age, and number of years parents had been together, whereas clinical rangers were significantly younger and had mothers who were younger and had been partnered for fewer years (NK:$p < .05$); there were more boys among the clinical rangers.

Table 1
Characteristics of Children, Mothers, and Families among Improvers, Adjusted, and Clinical Rangers

Characteristics	Improvers (n = 30)	Adjusted (n = 107)	Clinical Rangers (n = 33)	F (2, 167)
Child age (years)	9.30	9.24	7.79	2.87†
Age at diagnosis (years)	1.20	2.34	1.70	2.04
Gender: male	53.3%	46.7%	66.7%	
Gender: female	46.7%	53.3%	33.3%	
Mother's age	36	38	35	3.90*
Mother's education (years)	11.73	11.80	11.50	0.13
Years partnered	13	14	11	4.73**
Marital status: partnered	79%	93%	17%	$X^2(2)=3.53$
Marital status: single	21%	7%	83%	
Maternal distress[1]	4.20	1.80	5.12	10.76***
Maternal competence[1]	34.77	28.50	33.27	19.36***
Role restriction[1]	19.23	16.35	20.01	9.18***
Social isolation[1]	13.03	10.99	13.13	6.0**
Family functioning	2.07	1.60	1.86	13.47***
Confidence to manage child's condition	81.76	85.63	80.21	0.44
Impact of condition on daily routine	41.07	35.10	40.12	0.59
Stress caring for child with condition	40.47	35.64	47.33	1.67

[1] Higher score indicates poorer score
† p<.06 * p<.05 ** p<.01 *** p<.001

In terms of maternal and family functioning, improvers and clinical rangers came from similar environments, in contrast to the adjusted (Table 1). Improvers and clinical rangers had mothers who were less confident and more distressed, more restricted in the parenting role, and more socially isolated; their mothers also reported lower family functioning (NK:$p < .05$). In contrast, the adjusted had well-functioning

mothers and families. Moreover, the level of stress experienced in caring for their chronically ill child was comparable among the groups. Despite the similarities, the intervention resulted in improvement among the improver group but not the clinical ranger group.

To further understand these differential outcomes, the type and nature of the nursing that each group received were compared. Improvers and clinical rangers had greater contact with the nurse than adjusted (*M*:15.28, 15.81, 13.09, NK:$p < .05$).

To determine whether the groups differed in types of concerns and nursing strategies, the data extracted from the nurses' notes were compared (Table 2a). It was found that nurses dealt with more parenting and general distress symptoms among improvers and clinical rangers than among adjusted (NK: $p<.05$). However, nurses dealt with more issues related to environmental stressors (e.g., moving, neighbourhood safety) among families whose children improved.

Table 2a
***Mean Number of Concerns per Nursing Contact among Improvers, Adjusted, and Clinical Rangers*[1]**

Characteristics	Improvers (n = 30)	Adjusted (n = 107)	Clinical Rangers (n = 33)	F (2, 167)
Chronic condition	.44	.52	.464	0.79
Child	.19	.15	.17	.063
Disease	.22	.17	.14	1.18
Parenting	.21	.10	.22	8.29***
Family	.18	.11	.20	3.24*
Social system	.11	.10	.09	0.13
Environment	.07	.01	.01	2.57
Lifestyle	.03	.01	.01	2.57
Biophysiological	.01	.02	.02	0.29
General distress	.03	.00	.02	5.62***

[1] Based on content analysis of the nurses' notes.
Note: Mean number of health concerns = # of concern/# of contacts.
* $p<.05$ *** $p<.001$

Table 2b

Mean Number of Nursing Strategies per Nursing Contact among Improvers, Adjusted, and Clinical Rangers[1]

Characteristics	Improvers (n = 30)	Adjusted (n = 107)	Clinical Rangers (n = 33)	F (2, 167)
Relationship-building	1.01	1.09	1.0	3.69*
Support	.98	.88	.99	1.15
Information-giving	.43	.31	.36	2.87‡
Teaching	.23	.22	.23	0.07
Problem-solving	.12	.07	.08	1.96
Restructuring	.37	.26	.38	3.88*
Working the system	.07	.04	.06	1.83
Wait	.03	.02	.03	0.54

[1] Based on content analysis of the nurses' notes.
Note: Mean number of nursing strategies = # of strategies/# of contacts.
‡ $p<.06$ * $p<.05$

In terms of types of nursing strategies (with the exception of restructuring strategies), the three groups of families received similar types and amounts of nursing (Table 2b). However, nurses used more restructuring approaches (i.e., reframing, awareness-raising, anticipatory guidance) with the families of improvers than with the families of adjusted, whereas the amount of restructuring strategies used was comparable with families of clinical rangers.

Profile Analysis of Improvers and Clinical Rangers

To understand in greater depth how and why the intervention was effective, a profile analysis (Bergman, 1992) was conducted on the data of improvers and clinical rangers. A profile of each child and family was constructed by combining the quantitative data from the pre- and post-intervention measures and the contact logs with the qualitative data from the nurses' notes and summary note. Each profile included a description of (a) the child (age, sex, history and coping with chronic condition, CBCL, and PARS scores), mother (age, education, marital history, parenting competence, role restriction, social isolation, resources), and family (years of partnership, family functioning),

(b) the nature and degree of involvement with the nurse (number and length of contacts, level of involvement, family member involved, willingness to change, interest in the intervention), and (c) nature or features of the nurse-family relationship (concerns, types of intervention, amount of activity, timing and pacing of intervention). Finally, a memo of hunches and speculations about why the child improved or deteriorated was attached to each profile. To identify patterns of change in child psychosocial adjustment, profiles within groups were compared using a constant comparative approach (Strauss & Corbin, 1990). The different patterns that emerged were conceptualized as pathways towards improvement or deterioration in child psychosocial adjustment. Post-intervention child outcomes were related to two components: the process and conditions of engagement and the nature (features) of the nursing.

Improvers: Pathways Towards Improvement in Child Psychosocial Adjustment

Four pathways – Empowering Youth, Parenting the Family, Boosting Competence, and Not Getting to First Base – were used to explain why and how children benefited from the intervention.

I. Empowering Youth

Engagement. In the first pathway, the nurse worked primarily with the child and to a lesser extent with the mother. During the initial home visit, the nurse identified that the child, pre-adolescent or adolescent, was experiencing difficulties as a result of the chronic condition. The condition tended to be visible (e.g., cleft lip) or to interfere with the child's participation in peer activities. The nurse recognized and acknowledged the child's concern. Although all mothers were competent as parents, and family functioning was high, they nonetheless failed to appreciate their child's distress; they either were unaware of, minimized, or ignored the child's feelings about the condition. However, the mothers were supportive of the nurses' involvement with the child.

Nursing. During the initial contacts, the nurse identified any discrepancy between how the mother appraised the effects of the chronic condition on the child and the actual effects on the child. The nurse used various strategies, depending upon the nature of the concern, to alleviate the child's concerns: for example, helping the child deal with other children's reactions to the condition, sensitizing the mother to the child's perspective, helping the family arrange or expedite treatment.

II. Parenting the Family

Engagement. In the second pathway to child improvement, the nurse worked with the mother and the child both alone and together. In addition, the nurse worked with the couple and the family unit, as required. At the initial contact, the families were open to working with the nurse, but they became more involved after several interactions. These children came from highly stressed environments: their families faced multiple acute and chronic life stressors. Mothers reported great distress in general and high stress in their parenting role.

Nursing. The nurse worked with the family on a broad range of issues, including parenting, marital conflict, peer relationships, crisis management, and self-esteem. The child's chronic condition was rarely an issue. The intervention was characterized by intense involvement, with frequent face-to-face or telephone contact. The process of working together involved a continuous shifting of focus in response to the family's changing and most pressing needs. The nurse paced the intervention in light of the family's level of energy and interest. When the family's energies waned, the nurse provided support and encouragement. When interest and motivation were high, the nurse structured more active learning experiences by using cognitive restructuring techniques (e.g., reframing, awareness-raising) and helping the family to solve their problems.

III. Boosting Competence

Engagement. In the third pathway, the nurse worked primarily with the mother. Mothers were friendly during the early contacts and became more open with time. The children tended to be preschoolers and many were dealing with normative transition events such as starting school. Mothers were healthy (low distress, low social isolation) but lacked confidence in their parenting. They were resourceful and had supportive partners.

Nursing. Mothers were open to the nurse's monthly telephone contact and treated it as an opportunity to discuss a broad range of concerns primarily related to parenting and family issues. They used the nurse as a "sounding board," and the nurse responded by providing support (e.g., active listening, validating, providing positive feedback).

IV. Not Getting to First Base

Engagement. In the fourth pathway, the families never engaged with the nurse. Although they continued to participate in the study and contacts with the nurse took place according to the protocol (i.e., one per month), the nurse-client interaction was superficial in quality and contacts were brief. Nonetheless, the mothers' scores on the quantitative measures indicated that they were experiencing difficulties in parenting and family functioning – although these issues were never shared with the nurse.

Nursing. Nurses rated these mothers' involvement in the intervention as low. The monthly telephone calls were short (< 5 minutes) and dealt primarily with symptom-management issues. Nurses spent the year attempting to engage with the family. Examination revealed the scores of these children to be close to the cut-off point pre-intervention, improving to the point where they could be classified in the non-clinical range post-intervention. It was unclear why these children improved.

Clinical Rangers: Pathways Towards Deterioration or No Change in Child Psychosocial Adjustment

Profile of the data of children whose psychosocial adjustment had deteriorated over the course of the intervention and children who had remained in the clinical range (despite some change in score that could indicate improvement) identified two pathways: one associated with deterioration (Rosy Picture) and one with improvement within the clinical range (Parenting the Mother).

I. Rosy Picture

Engagement. In this pathway, the nurse's initial contact and monthly telephone calls yielded little information about the child and the family. Mothers never became involved with the nurse and in fact did not receive the prescribed number of contacts. These mothers painted a "rosy picture." Their scores on the quantitative measures indicated that they and their families were functioning well.

Nursing. Mothers raised few issues; any concerns identified were restricted to questions related to the child's illness. Nurses' efforts were directed towards trying to develop a relationship (e.g., indicating their availability). Although the child's psychosocial adjustment had deteriorated (as indicated by post-intervention scores), the nurses appeared to be unaware of the child's difficulties. There were no data in the

nurses' notes to indicate that these children were distressed or that their behaviour was deteriorating.

II. Parenting the Mother

Engagement. This pathway shares many characteristics with the Parenting the Family pattern. Instead of working with a variety of family members, including the target child, however, the nurse worked primarily with the mother. These mothers welcomed the nursing and in fact some attempted to contact the nurse even prior to the initial home visit. These families were immediately highly involved in the intervention, and subsequent contacts were frequent and lengthy.

Nursing. The nurse worked with these needy mothers on a broad range of issues such as self-esteem, parenting, family relationship, and environmental stressors. The nurse focused on being available and offering support in the midst of multiple and recurrent crises. During the course of the intervention, many of the children improved within the clinical range. However, the improvement was insufficient to move them from the clinical to the adjusted range.

Discussion

The purpose of this study was to understand why some children benefited from a year-long nursing intervention while others deteriorated or continued to show disturbance. The findings raise several issues concerning how change comes about and the critical nature of the engagement process. First and foremost, we found no single pathway to change in child psychosocial adjustment. Three pathways to improvement were revealed: Empowering Youth, Parenting the Family, and Boosting Competence – whereas one pathway (Rosy Picture) was associated with deterioration. The pathways differed according to who the nurse worked with, the engagement process, and the various nursing strategies used. For example, in the pathway Empowering Youth the nurse worked primarily with the child, whereas in the pathway Parenting the Family the nurse worked with multiple family members and family subsystems on a broad range of issues, carefully pacing the intervention to suit the family's energy and level of interest.

These findings support the importance of a broad-based, flexible intervention tailored to the unique needs and characteristics of families rather than a narrow-focused, highly structured intervention uniformly delivered to all participants. The effectiveness of a tailored intervention has been discussed in reports of other intervention studies with chil-

dren and parents (Dunst et al., 1989). This "cafeteria style" approach recognizes that individuals and families bring to the intervention varying attributes (resources, needs) that shape, in turn, what they require from an intervention (Powell, 1986).

The engagement process is important as well. In three of the four pathways that led to improvement, families were actively involved with the nurse, as indicated by their initiating contact and the broad range of concerns they shared with the nurse. Engagement was minimal in two pathways, Not Getting to First Base and Rosy Picture. Although psychosocial adjustment in the Not Getting to First Base pathway did improve, improvement was minimal and did not appear to be attributable to the nursing. In the Rosy Picture pattern, psychosocial adjustment deteriorated. These findings are consistent with those of previous studies: the quality of the participant's involvement in the intervention is crucial in bringing about the desired change. For example, Booth and her colleagues (1989) found that high-risk mothers who were involved in a nursing intervention were better able to benefit from it. In the Parenting the Mother pathway, mothers readily engaged and were highly involved in the intervention. Although their children did improve, the progress was insufficient to move them out of the clinical range. These mothers were highly distressed and a one-year intervention may have been too short to facilitate change.

It is unclear why some mothers were able to engage with the nurse while others were not. Engagement is a complex interactive process involving the mother, the nurse, and the "fit" between the two. It has been suggested that factors such as openness to forming new relationships, the social skills to sustain an interaction (Booth et al., 1989), and the ego necessary to accept help are important in developing a relationship and profiting from it. The findings reported here lend some support to this notion. The mothers who benefited from the intervention were older and had been partnered longer, which may be indicative of competence in some of these areas; moreover, their stable relationship may have provided a secure base from which to effect change (Mahoney, 1991).

In contrast, mothers whose children did not benefit from the intervention tended to be younger and partnered for fewer years, and, moreover, most fit the Rosy Picture pattern. Rosy Picture mothers reported low personal distress, parenting competence, and good family functioning, despite the fact that the psychosocial adjustment of their children deteriorated over the course of the intervention. These mothers may have been unable or unwilling to form a relationship with the

nurse because of their previous history of developing trusting, secure relationships. These mothers may have established firm personal boundaries and made unrealistic appraisals of their abilities in order to protect a fragile sense of self-worth.

It should be noted that among mothers who did engage there was found to be variability in length of time it took to establish a relationship with the nurse as well as intensity of involvement. For example, some mothers engaged with the nurse immediately (i.e., Parenting the Mother), whereas others required several contacts (i.e., Empowering Youth, Boosting Competence). It may be that less needy, more secure mothers were open to involvement with the nurse but waited to share concerns as the relationship evolved.

Given that the engagement process is interactive, the characteristics of the nurse also influence this dynamic. Nurse characteristics such as age, gender, ethnicity, socio-economic status, personality, and style of nursing may be critical determinants of engagement. Research is needed to examine how nurse characteristics interact with client characteristics to affect intervention outcomes.

Another aspect of the engagement process that varied among the pathways was which family member(s) became involved with the nurse. A number of factors may have played a role in determining who became involved. For example, in Empowering Youth the major partners were the distressed pre-adolescent/adolescent children whose mothers endorsed their involvement. In contrast, Rosy Picture children were distressed but the nurses were unaware of it. Their mothers may have acted as "gatekeepers," blocking access not only to themselves but to other family members. Research is needed to more clearly elucidate the process of engagement, its various forms, and how these patterns relate to intervention outcomes.

A final issue concerns the effectiveness of this intervention program with children from families who confront multiple acute and chronic stressors. It has been observed that such families are less likely to agree to participate in an intervention, and, if they agree, are more likely to drop out (Demi & Warren, 1995). However, in this study the response rate for participation was high and the actual attrition rate was low, especially in the intervention group. The success of this intervention with some multi-stress families may be attributed in part to the nature of the intervention and the fact that it was provided by nurses. Nurses tend to be perceived by the public as caring and understanding (Rayner, 1984), and as a result might be less threatening than other professionals. Furthermore, nurses' broad knowledge base, and their

ability to meet both illness-related and psychosocial concerns of a chronically ill population, may help explain why this trial was more effective than a similar trial carried out by social workers (Nolan et al., 1987).

The features of the nursing model guiding this intervention may be particularly well suited to this population. Two major features of the McGill Model approach are: (1) nursing is tailored to the needs of each family and (2) control for setting the agenda is shared with the family (Gottlieb & Rowat, 1987). The flexibility of this approach may have enabled the nurses to respond to the multiple crises and ever-changing priorities of these families. Moreover, families identified their concerns and nurses helped families to arrive at their own solutions, recognizing and tapping their inner strengths and resources (Allen, 1983).

In addition, the effectiveness of this intervention may be related to its length and its outreach component. Whereas the social work trial was six months (Nolan et al., 1987), this trial lasted a year – and the number, complexity, and chronicity of problems faced by multi-stress families may require an intervention of at least one year. The regular, predictable telephone contact with the nurse may have been effective in letting these families know that someone was concerned about their well-being and was available to them. The nurses spent considerable effort building the relationship, explaining their role, acknowledging the family's interpretation of their situation, and offering assistance (Feeley, 1994).

This study has highlighted the complexity of change processes and the challenges nurses face in designing and implementing a nursing approach. It has also revealed the importance of going beyond the conventional approach of restricting the examination of the effects of an intervention to group differences. The insights gained from a more in-depth analysis will enable us to refine intervention strategies and improve the quality and effectiveness of our work with children and families.

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