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CONTENTS — TABLE DES MATIÈRES

Focus: Early Family Development
Le Point : Développement de la jeune famille

Canadian Journal of Nursing Research, 1998, Vol. 30, No. 3, 3–4

FALL EDITORIAL

The Human Genome Project: Nursing Must Get On Board

One of the most groundbreaking projects of the end of the 20th century is the Human Genome Project, whose goal is to map and sequence the entire human genome by the year 2005. This project has been likened to the moon mission because of its scope and its far-reaching implications in transforming our understanding of human behaviour, disease processes, bodily responses to illness, and the use of biotechnology in the areas of disease prevention and treatment.

As the Human Genome Project got underway it became clear to its architects that it would generate many ethical, legal, and social implications. Thus the ELSI program was established. This past September ELSI sponsored a meeting in which nursing editors, among others, were invited to learn about the state of the art and science of "genetic" nursing and its implications for the future of nursing education, practice, and research. In particular, the conference informed the nursing community of recent advances in the fields of genetics and biotechnology.

While the Human Genome Project has captured the headlines in recent years, major developments in genetics and biotechnology in the past decade and a half have already revolutionized our understanding of people's health and illness responses. We know that specific genes have been identified as risk factors for such diseases as breast cancer and heart disease. We know that the health behaviours of children and adults are determined in part by their genetic makeup. We also know that biotechnology has resulted in the availability of highly specialized drugs and the development of new treatments, and that individual responses to these drugs and treatments are, in large part, genetically determined. We are beginning to understand the impact of biotechnology on the quality of life and well-being of our patients and their families.

In light of these advances in genetic science, it is imperative that nurses be adequately prepared in the sciences of genetics, molecular biology, and biotechnology, if they are to respond to the health-care needs of patients and their families, particularly those that can be

treated with modern biotechnologies. Without this knowledge, how can nurses teach patients and their families about the nature of their new treatments? Help patients and families make informed decisions about a new treatment or the effects of a new drug? Help patients and families understand their genetic risk factors to a particular disease? Help parents care for children with very different temperaments? Without this knowledge, finally, how can nurses deal with the ethical implications of future gene treatments?

As researchers, we must learn to anticipate the type of knowledge that will be required for nursing practice as a result of these new developments in medical science and new theoretical understandings of human behaviour and disease. These advances will undoubtedly frame the type of questions we pose, the variables we select to study and how we measure these variables, and the explanations we give to our findings in light of the new empirical research and theoretical understandings.

The knowledge gained from the Human Genome Project is challenging many of our assumptions about human nature and how the world works. A recently published cartoon depicts a husband and wife at the breakfast table. The wife is reading a newspaper item about the latest scientific findings on American presidents: "Now the DNA says that Calvin Coolidge was a clumsy lover, Millard Fillmore left the toilet seat up, and Ike [Eisenhower] never changed a diaper in his life!" Even though the cartoon is exaggerating the role of genetics as a determinant of behaviour, it clearly illustrates the fact that genetics has become an integral part of daily discourse. Genetics must become an integral part of nursing discourse. It must be a core course in every nursing curriculum and integrated into every nursing course. This is an area that nursing can no longer ignore or consider superficially, or it will find itself wholly unprepared to deal with tomorrow's health-care requirements. It is time for nursing to get on board.

Laurie N. Gottlieb
Editor

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ÉDITORIAL D'AUTOMNE

Le projet « Génome humain » : la profession infirmière se doit d'être au rendez-vous

L'un des projets les plus novateurs de la fin du 20e siècle est celui qui se penche sur le génome humain. Son objectif est de répertorier et classer le génome humain dans sa totalité, d'ici l'an 2005. Ce projet est comparé à la mission lunaire, en raison de son ampleur et de ses implications profondes quant à notre compréhension du comportement humain, des processus de la maladie et des réactions du corps, et l'utilisation de la biotechnologie dans le domaine de la prévention et du traitement des maladies.

Au cours de l'élaboration du projet, les architectes de « Génome humain » ont pris conscience des nombreuses implications générées sur le plan éthique, juridique et social. C'est donc de cette préoccupation qu'est né le programme ELSI (*Ethical, Legal, Social Implications*). En septembre dernier, ELSI parraina une rencontre à laquelle furent invitées, entre autres, les rédactrices de revues en sciences infirmières. L'objectif était de leur faire part des technologies de fine pointe et de la science de la pratique infirmière « génétique », ainsi que des implications quant à l'avenir de l'éducation, de la pratique et de la recherche en science infirmière. Notamment, dans le cadre de cette conférence, la communauté infirmière a pu s'initier aux nouvelles découvertes dans les domaines de la génétique et de la biotechnologie.

Pendant que le projet « Génome humain » faisait les manchettes au cours des dernières années, d'importantes découvertes en matière de génétique et de biotechnologie ont vu le jour depuis une quinzaine d'années, lesquelles ont transformé notre entendement de la santé humaine et des réactions à la maladie. Nous savons que certains gènes ont été identifiés comme facteurs générateurs de risque de cancer du sein et de maladie cardiaque. Nous savons que les comportements des enfants et des adultes en rapport à la maladie sont en partie déterminés par leur matériel génétique. Nous savons également que la biotechnologie a donné lieu à des médicaments à usages très spécialisés, ainsi qu'au développement de nouveaux traitements, et que la réaction individuelle à ces médicaments et à ces traitements est, en grande partie, déterminée par des facteurs génétiques. Nous commençons à compren-

dre l'impact de la biotechnologie en ce qui a trait à la qualité de vie et au bien-être de nos patients et de leur famille.

À la lumière de ces découvertes, les infirmières pourront assurer les soins aux patients et à leur famille, notamment ceux traités par les biotechnologies modernes, mais à une condition essentielle : elles doivent être adéquatement formées dans les domaines de la génétique, de la biologie moléculaire et de la biotechnologie. Sans ces connaissances, comment les infirmières pourraient-elles renseigner les patients et leur famille sur leurs nouveaux traitements et sur les risques génétiques qui leur sont propres quant à une maladie spécifique ? Comment pourraient-elles assister les parents dans les soins d'enfants à tempéraments bien différents ? En fin de compte, sans ce savoir, comment pourraient-elles composer avec les implications éthiques des traitements génétiques de l'avenir ?

À la suite de ces nouvelles innovations médicales et données théoriques sur le comportement humain et la maladie, nous devons déterminer, en tant que chercheuses, quel type de connaissances sera nécessaire à la pratique de la profession. Ces percées établiront sans aucun doute les questions que nous poserons, les choix que nous ferons quant aux variables à étudier et les façons de les mesurer, ainsi que notre interprétation des résultats de recherche, qui sera influencée par les nouvelles recherches empiriques et données théoriques.

Les connaissances issues du projet « Génome humain » mettent à défi plusieurs de nos hypothèses concernant la nature humaine et le fonctionnement du monde. Une bande dessinée publiée récemment décrit une scène qui a lieu entre deux conjoints, au petit déjeuner. L'épouse lit un article de journal, qui traite des dernières découvertes scientifiques concernant les présidents américains : « L'ADN révèle maintenant que Calvin Coolidge était un piètre amant, que Millard Fillmore laissait le siège des toilettes levé et qu'Ike [Eisenhower] n'a jamais changé une couche de toute sa vie ! » Bien que cette bande dessinée exagère l'importance du rôle de la génétique en tant que facteur déterminant du comportement, elle illustre clairement le fait que cette science fait partie du discours quotidien. La profession doit donc aussi l'intégrer. La génétique doit constituer une matière obligatoire dans tout programme d'étude et toute formation en sciences infirmières. La profession doit dorénavant s'ouvrir à ce domaine et en faire plus qu'un survol superficiel, sinon, elle deviendra tout à fait incapable de composer avec les exigences de l'avenir. Bref, la profession se doit d'être au rendez-vous.

Laurie N. Gottlieb
Rédactrice en chef

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GUEST EDITORIAL

The Developing Family: How Is It Doing with Nurturing Young Children?

Kathryn E. Barnard

Parental Disengagement

Every time I visit a culture or country different from my own I gain a new perspective on families and children. One theme I have observed in Asian cultures is the caregiving of the infant and young child by other family members. In China the maternal grandmother cares for the new baby as well as for the young parents; often the families live together. In Taiwan it is customary for the paternal grandmother to help with the newborn. In France there is a well-developed system of day nurseries supported by the government.

In both Canada and the United States it has been customary for parents to do the caregiving of infants and toddlers. I therefore found it interesting to read the studies reported in this issue about the mother's perception of her experience both working and mothering. I detect a shift in our two countries, as the care of young children becomes less exclusively the responsibility of parents. David Hamburg made the assertion, while President of the Carnegie Foundation in the 1980s, that the United States is experiencing an epidemic of parental disengagement. He suggested that post-industrial society has found a non-adaptive solution for child care, expecting the family to bear full responsibility; the society, including government and private corporations, has not assumed its share of responsibility in helping families care for children, while at the same time it has created work demands on the family for regulating the economy. In the United States over 60% of women are back in the work force by the time their infant is 1 year of age. As a society we are removing caregiving as a priority from the family agenda by employing the parents, yet government/business provides little assistance for the care of children. This is an issue that must be addressed by both scholars in human development and policy makers in human service delivery.

In fact we have much to learn from scholars in other countries about their strategies for early child care and their observations of child outcomes. International nursing congresses could be the focus of rich exchange concerning the issues of early family life and child care.

The Changing Roles of Parents

Four of the papers published in this special issue of the Journal (Killien; Lederman & Miller; Solchany; Walker, Fleschler, & Heaman) are devoted to the topic of early family development. These papers deal with the role expectations of parents and the influences of parents' own well-being on their ability to parent. The topic of becoming a family by adoption (Solchany) is particularly important, because adoption has largely been neglected in the study of family formation. The topics covered in this issue reflect the many changes that are occurring in early parenting, precipitated by the factors of more working mothers, more child-care involvement by fathers, more cultural heterogeneity within the population, and more unmarried women with children. Parenting of young children is changing; mothers are no longer the only primary caregivers.

I was pleased to see the biological-behavioural study by Humenick, Thompson, Hill, and Hart examining the sodium content in breast milk and its relationship to breastfeeding. This research strategy informs while at the same time adds to the credibility of health and behavioural practices. Demonstrating the biological basis of behaviour is an important avenue, leading to increased understanding of phenomena and increased recognition of the issue by biologically oriented scientists.

Often the complex and comprehensive perspective that nursing embraces forces us to use small sample sizes; my reaction, therefore, upon reading of the epidemiological design and large sample used to examine trends of maternal smoking and choice of infant-feeding methods (Edwards, Sims-Jones, & Breithaupt), was that we have "come of age." Questions surrounding the feeding of young infants represent a vital issue in early development. The evidence is that the most natural form of infant feeding — breastfeeding — is better for the child's growth and development. It is vital that health-care providers understand more fully the biological and lifestyle factors that influence breastfeeding success.

Important Questions for Nursing Science

Collectively, the manuscripts published in this issue are a positive indicator of the developmental maturity of nursing science. Today nursing

science uses a variety of designs and methodologies, ranging from large quantitative studies to theory-generating qualitative ones. However, the reporting of nursing research today puts greater emphasis on the questions and the answers than it did in the past, when typically we were preoccupied with design and methods. This change in emphasis in publishing study results is important, because as a practice-related discipline we must apply our scientific findings. It is on the answers to practice-related questions that nursing science must focus.

New Questions Concerning Caregiving Environments

A critical issue facing society today concerns the care of the youngest children. Who is providing the care? What are the consequences of nonparental early care? History can be informative, but most historical accounts of early child care date from times of extreme stress, when countries were facing war and famine. As we approach the year 2000 we have an opportunity to study early caregiving informed by child-development and family research. We presently know more than we ever have in recorded history about optimal environments for promoting the health and well-being of children. We have the new challenges of the information age and the global village as the contexts in which children will become adults. We know that early development can be promoted in emotionally supportive environments both within and outside the immediate family context. Human potential is a critical issue; change is constant, and children must be prepared to cope with changing environments. I submit that by studying children under optimal conditions we can discover new levels of human development, where mind, body, and soul are integrated more fully than they have ever been. We need to learn how the potential of human genetic phenotypes can be achieved by conditions of rearing. We can examine the limits of developmental potential given our increasing capacity to nurture the individual differences of each child.

Expanding Our Knowledge Base of Caregiving Environments

What do we know about the early caring environment? How can the caregiving environment be studied and measured? Recent methodological advances have brought us tools to measure the early environment. My own research has developed several instruments for observing and coding parent/caregiver behaviour and child responses in feeding and teaching contexts (Barnard et al., 1989; Sumner & Spietz, 1994). Our accumulated data demonstrate the predictive value of

parent-child interaction in the first 2 years of life (Barnard, 1994; Morisset, 1994). The parent's performance as a social partner is a strong predictor of the child's language and cognitive development. Parents' scores on the Nursing Child Assessment Satellite Training (NCAST) Parent-Child Interaction Scales during the first 2 years predict the child's IQ. Knowing the parent's influence on the child's micro environment is both important and interesting, but the changes in early parenting necessitate more studies on non-parental caregiver/child interaction. We need to understand how the child's complementary caregiving partnerships predict competencies. Nursing scholarship and research have been focused on the nuclear family; we now need to broaden our lens — the young child is no longer primarily in the care of parents.

Recent attention to early brain development and outcomes in animal and human studies (Shore, 1997) also highlights the need for intensified study of infant and toddler caregiving. As the society collaborates with parents on early child care, we need to answer several questions: What is the appropriate environment for the developing child? What does the brain need to develop well? What type and number of emotional connections does the young child require? What role do temperament and self-regulation play in developmental processes? We have the ability to bring to early child care knowledge and resources that have never before been available. We can truly test the ultimate nurturing of human potential.

As the society becomes more involved in and more responsible for the care of young children, we need to collectively establish and implement standards of caregiving. The process is beginning. Recently published daycare guidelines (American Public Health Association and American Academy of Pediatrics, 1992) speak to brain development and the social-emotional needs of young children. The document calls for activities in the child-care facility (centre- or home-based) that offer young children opportunities to develop personal and affectionate relationships with a small number of caregivers; experiences coping with separation and loss of their parent caregivers for large parts of the day; experiences communicating in the language of their family; and play opportunities that help reduce anxiety, resolve conflicts, and adapt to reality and that combine the inner and outer worlds. These guidelines have their foundation in theories and empirical evidence of child-development research, demonstrating the practical application of research in caring for children.

The Best of Times and the Worst of Times

While for many families and children early childhood is the best of times, for some children early development is the worst of times. In my research partnership with an Early Head Start program, we are finding that mothers whose relationship past has been troublesome, and who are even as new mothers struggling with relationship issues, are often emotionally unavailable to their infants. Their unresolved losses and trauma bring great emotional distress and conflict, manifesting as post-traumatic stress symptoms. How do we deal with such a parent? How can a mother possibly nurture a child unless she is freed from her own anxiety, terror, and despair? Parent-support and education intervention strategies with unavailable caregivers are ineffective in helping the parent recover fast enough to meet the needs of a child on a rapid developmental timetable (Barnard, 1998; Barnard & Morisset, 1995; Barnard, Morisset, & Spieker, 1993). These parents are unfortunately providing environments in which the child experiences rejection, fear, and despair. In later years such children often exhibit the depression and aggression so epidemic and troublesome in our human family (Karr-Morse & Wiley, 1997). As members of the scientific community we have an obligation not only to study the context of family and child well-being, but also to serve as advocates for changing the conditions of family formation and function in relation to child care. I encourage your participation in the research on early child-rearing and also in redefining society's responsibility to the care of children.

The final challenge I would bring to you is the need for a better understanding of social-emotional development. An overwhelming issue for many parents is the management of their own adult emotional states. The rates of family conflict and domestic violence are a major issue in families at all social-economic levels. The development of emotional expression and emotional regulation in the young family is an important area for future research. The nurturing of the emotional system, while a complex process, has been studied only superficially. Many alarming national statistics demonstrate an increasing amount of aggression expressed by both children and adults in schools and the community at large. This increased aggression fuels violent acts within families and communities.

The role of the early environment in developing the cortical feedback systems to regulate the aggression is emerging as one of the major issues in neuroscience. My challenge to nursing colleagues is to increase our attention to this critical area of human function, in the hope that

nursing science will bring new insights into this dimension of human functioning — the formation of compassionate and caring relationships with one another.

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Revue canadienne de recherche en sciences infirmières, 1998, Vol. 30, N° 3, 13–20

COLLABORATION SPÉCIALE

La jeune famille : où en est-elle rendue dans le soin des jeunes enfants ?

Kathryn E. Barnard

Le désengagement parental

Chaque fois que je visite une autre culture ou un autre pays, j'acquiers de nouvelles perspectives sur la famille et les enfants. Entre autres, l'un des aspects de la culture asiatique qui m'a frappée est la prise en charge des nourrissons et des jeunes enfants par certains membres de la famille. En Chine, où les familles vivent fréquemment ensemble, la grand-mère maternelle prend soin du nouveau-né et des jeunes parents. Au Taïwan, la tradition veut que la grand-mère paternelle participe aux soins du bébé. En France, il existe un vaste système de garderies, financé par l'état.

Aussi bien au Canada qu'au États-Unis, ce sont les parents qui ont habituellement la charge des nourrissons et des petits. J'ai donc pris connaissance, avec intérêt, des études publiées dans ce numéro qui traitent de la mère et de sa perception d'elle-même en tant que travailleuse et parent. Je sens qu'un transfert a lieu actuellement dans nos deux pays. Les soins prodigués aux jeunes enfants ne relèvent plus exclusivement des parents. C'est ce qu'a affirmé David Hamburg, alors qu'il était président de la *Carnegie Foundation* dans les années 80. Selon lui, une épidémie de désengagement parental sévit actuellement aux États-Unis et la société postindustrielle s'est dotée d'une solution inadéquate en ce qui a trait aux soins des enfants, remettant aux familles l'entière responsabilité. La société, y compris l'état et l'entreprise privée, n'a pas assumé sa propre part de responsabilité dans cette tâche, alors qu'elle imposait à la famille des exigences sur le plan du travail, tout cela dans le but d'assurer la bonne marche de l'économie. Aux États-Unis, plus de 60 % des femmes ont déjà réintégré le marché du travail lorsque l'enfant a atteint l'âge d'un an. En tant que société, nous soustrayons les soins des obligations familiales prioritaires en requérant la main-d'œuvre des parents. Pourtant, l'état et les entre-

prises offrent peu de soutien quant aux soins des enfants. Cette question doit être traitée autant par les chercheurs en développement humain que par les concepteurs de politiques qui réglementent la prestation de services à la population.

En fait, nous avons beaucoup à apprendre des chercheurs d'autres pays, de leurs stratégies en ce qui a trait aux soins des très jeunes et de leurs observations quant aux résultats chez les enfants. Des congrès internationaux en sciences infirmières pourraient favoriser de riches échanges sur la vie des jeunes familles et sur les soins aux petits.

La transformation des rôles parentaux

Parmi les articles publiés dans ce numéro spécial de la Revue, quatre sont consacrés au sujet du développement de la jeune famille (Killien; Lederman et Miller; Solchany; Walker, Flescher, et Heaman). Ces articles portent sur l'attente qu'ont les parents face à leur rôle, ainsi que sur l'impact de leur propre bien-être en rapport à leur capacité parentale. Le sujet de la constitution d'une famille par adoption (Solchany) est particulièrement important, puisque le thème de l'adoption a été grandement négligé dans les études sur la formation des familles. Les sujets traités dans ce numéro illustrent les nombreux changements qui touchent la première étape parentale et qui sont accélérés par les facteurs suivants : un nombre supérieur de mères-travailleuses, une participation accrue des pères aux soins des enfants, une plus grande hétérogénéité au sein de la population et un nombre supérieur de femmes célibataires ayant des enfants. Le rapport parents-jeunes enfants se transforme et les mères ne sont plus les principales pourvoyeuses de soins.

C'est avec grand plaisir que j'ai pris connaissance de l'étude en biologie-comportement de Humenick, Thompson, Hill et Hart, concernant la teneur en sodium du lait maternel et son influence sur l'allaitement. Cette stratégie de recherche favorise l'acquisition d'information tout en haussant la crédibilité de certaines pratiques dans le domaine de la santé et du comportement. La démonstration du fondement biologique lié au comportement constitue une avenue importante menant à une meilleure compréhension du phénomène et à une plus grande reconnaissance de cette question de la part des chercheurs orientés vers l'aspect biologique.

Étant donné que la profession aborde en profondeur des sujets complexes, l'utilisation de petits échantillonnages s'impose. Par conséquent, en prenant connaissance de l'approche épidémiologique et du

vaste échantillonnage utilisés pour examiner le tabagisme chez les mères et le choix de méthodes pour alimenter le nourrisson (Edwards, Sims-Jones, et Breithaupt), je me suis dit que nous avions atteint « l'âge adulte ». Les thèmes liées à l'alimentation des jeunes enfants constituent une dimension vitale du développement de l'enfant en bas âge. Selon l'évidence, la forme d'alimentation la plus naturelle — l'allaitement au sein — favorise davantage la croissance et le développement de l'enfant. Il est essentiel que les intervenants en soins de santé comprennent mieux les facteurs biologiques et les choix de vie qui influent sur le bon déroulement de l'allaitement.

D'importantes questions pour la profession

L'ensemble des manuscrits publiés dans ce numéro est un indicateur positif de la maturité croissante de la profession. De nos jours, les sciences infirmières utilisent un éventail d'approches et de méthodologies, allant des grandes études quantitatives aux études qualitatives génératrices de théories. Toutefois, aujourd'hui, la publication des résultats de recherche en sciences infirmières met davantage l'accent sur les questions et les réponses, comparativement au passé, où nous nous préoccupions surtout de l'approche et de la méthode. Il s'agit-là d'un changement important dans la manière de présenter les résultats de recherche, puisqu'en tant que membres d'une discipline liée à la pratique, nous devons appliquer nos conclusions scientifiques. La profession doit donc mettre l'accent sur les réponses aux questions issues de la pratique.

De nouvelles questions sur les milieux de soins

La société d'aujourd'hui doit affronter une question critique, celle du soin des très jeunes enfants. Qui prodiguent ces soins? Quelles sont les conséquences des soins administrés par d'autres personnes que les parents? L'histoire peut nous offrir de l'information, mais la plupart des comptes rendus sur le sujet datent d'époques de grand stress, quand les pays souffraient de la guerre et de la famine. À l'aube de l'an 2000, nous avons la possibilité d'étudier les soins en première phase de vie conçus à partir de la recherche en développement de l'enfant et de la famille. Plus que jamais au cours de notre histoire, nous savons maintenant en quoi sont constitués les milieux optimaux, ceux qui favorisent la santé et le bien-être des enfants. Nous affrontons les nouveaux défis issus de l'âge de l'information et de la mondialisation, qui sont les contextes actuels de vie dans lesquels évoluent les futurs adultes. Nous savons qu'un solide soutien émotionnel provenant à la fois des milieux

familiaux et extrafamiliaux contribue au bon développement de l'enfant en bas âge. La question du potentiel humain en est une de la plus haute importance. Le changement est constant et les enfants doivent pouvoir s'adapter à des milieux en mouvance. Selon moi, l'étude d'enfants effectuées dans des conditions optimales nous permettraient de découvrir de nouveaux seuils de développement humain, là où le corps, l'esprit et l'âme sont plus que jamais intégrés. Nous devons comprendre comment le phénotype génétique humain peut être développé de façon maximale par l'éducation. Puisque nous sommes de plus en plus capables d'appuyer le développement des caractéristiques individuelles de chaque enfant, nous pouvons nous pencher maintenant sur la question du développement, de son potentiel et de ses limites.

Développer notre base de connaissances sur les milieux de soins

Qu'est-ce que nous connaissons des milieux de soins? Comment peuvent-ils être étudiés et mesurés? De récentes percées en méthodologie ont généré des outils servant à évaluer le milieu de l'enfant en bas âge. Ma propre recherche m'a permis de développer plusieurs instruments d'observation et de codification du comportement des parents/fournisseurs de soins et de la réaction des enfants, en contextes d'alimentation et d'apprentissage (Barnard et al., 1989; Summer et Spietz, 1994). Nos données accumulées démontrent la valeur prédictive de l'interaction parent-enfant au cours des deux premières années de vie (Barnard, 1994; Morisset, 1994). La performance du parent en tant que partenaire social constitue une variable explicative importante en ce qui a trait au développement langagier et cognitif de l'enfant. Les scores des parents sur l'échelle d'interaction parent-enfant NCAST (*Nursing Child Assessment Satellite Training*) obtenus au cours des deux premières années annoncent le QI de l'enfant. Il est important et intéressant de cerner l'influence du parent sur le micro-environnement de l'enfant. Toutefois, les changements qui affectent le rôle de parents d'enfants en bas âge commandent de plus amples recherches sur l'interaction entre le fournisseur de soins non-parent et l'enfant. Nous devons comprendre comment les partenariats complémentaires entre l'enfant et les fournisseurs de soins constituent une variable explicative de ses capacités. Les bourses et la recherche en sciences infirmières ont priorisé la famille nucléaire. Nous devons maintenant élargir nos perspectives — le jeune enfant n'est plus uniquement confié aux soins des parents.

Une attention récente portée au développement du cerveau en première phase de vie et les résultats de recherches menées sur les animaux et les humains (Shore, 1997) font ressortir aussi le besoin

d'étudier davantage la question des soins aux nourrissons et aux jeunes enfants. Lorsque la société s'engagera et assumera davantage le soin des très jeunes enfants, nous devrons fournir des réponses à plusieurs questions : En quoi est constitué un environnement adéquat pour l'enfant qui se développe ? Quels sont les éléments que le cerveau doit bien développer ? Quel type de liens émotionnels l'enfant requiert-il et en quelle quantité ? Quel est le rôle joué par le tempérament et l'autorégulation dans les processus de développement ? Nous pouvons contribuer, aux soins d'enfants en bas âge, les connaissances et les ressources dont nous ne disposions pas auparavant. Nous pouvons vraiment explorer le développement ultime du potentiel humain.

Au fil d'un engagement et d'une participation accrus de la part de la société, nous devons collectivement établir et mettre en pratique des normes pour la prestation de soins aux jeunes enfants. Le processus est amorcé, et des lignes directrices à l'intention des garderies, récemment publiées (*American Public Health Association* and *American Academy of Pediatrics*, 1992), abordent la question du développement du cerveau et des besoins socioémotionnels des jeunes enfants. Le document invite les institutions de garde d'enfants (en centre ou à domicile) à mettre sur pied des activités qui apportent aux petits les éléments suivants : des relations personnelles et affectives avec un petit nombre de fournisseurs de soins ; des expériences qui leur permettent de gérer la séparation et la perte de leurs parents pour une grande part de la journée ; des occasions de communiquer dans la langue maternelle ; des jeux qui réduisent l'anxiété, résolvent les conflits et favorisent l'adaptation à la réalité tout en combinant les mondes intérieur et extérieur. Ces lignes directrices s'appuient sur la théorie et l'évidence empirique issues de recherches en développement de l'enfant, démontrant ainsi les applications pratiques de la recherche dans ce domaine.

La plus belle étape de vie pour les uns, la plus terrible pour les autres

Alors que les premières années de vie sont les plus heureuses pour certaines familles et certains enfants, elles constituent la pire étape de vie pour d'autres. Dans le cadre de mon partenariat de recherche avec le programme *Early Head Start*, je constate que les mères qui ont vécu des relations antérieures troublées et qui sont encore aux prises avec des problèmes relationnels tout en étant nouvellement mères sont souvent émotivement non disponibles pour leur enfant. Leurs deuils et leurs traumatismes non résolus engendrent un état de grande détresse et de grand conflit émotionnels, lesquels se manifestent par des symptômes

de stress post-traumatique. Que devons-nous faire face à un tel parent? Comment une mère peut-elle prendre soin d'un enfant si elle n'est pas libérée de sa propre anxiété, de sa terreur et de son désespoir? Les stratégies de soutien et d'éducation au parent appliquées par des prodigueurs de soins non disponibles n'aident pas le parent à se rétablir assez rapidement pour répondre aux besoins d'un enfant qui se développe à un rythme très rapide (Barnard, 1998; Barnard et Morisset, 1995, Barnard, Morisset, et Spieker, 1993). Malheureusement, ces parents créent un environnement dans lequel l'enfant vit du rejet, de la peur et du désespoir. Plus tard, ces enfants affichent souvent des états dépressifs et des comportements agressifs, si fréquents et troublants dans nos familles (Karr-Morse et Wiley, 1997). En tant que membres de la communauté scientifique, nous avons l'obligation de non seulement étudier les contextes familiaux et le bien-être des enfants mais aussi d'œuvrer pour changer les conditions de formation de la famille et son fonctionnement, en relation avec les soins aux enfants. Je vous invite donc à participer aux efforts de recherche sur l'éducation d'enfants en bas âge, tout en redéfinissant la responsabilité de la société en regard du soins des enfants.

Le défi ultime qui s'offre à vous est de mieux comprendre le développement socioémotionnel. Nombreux sont les parents dont la vie est dominée par la gestion de leurs propres émotions d'adultes. Les taux de violence et de conflits conjugaux constituent une question majeure pour les familles de tout niveau socioéconomique. Le développement de l'expression et de la régulation émotionnelles au sein de la jeune famille offre d'importantes voies pour la future recherche. Le soutien du système émotif, un processus complexe, n'a été étudié que de manière superficielle. D'abondantes et inquiétantes statistiques nationales démontrent l'existence d'une agressivité croissante, exprimée autant par les enfants que par les adultes, en milieu scolaire et dans la communauté en général. Cette agressivité à la hausse alimente les actes de violence au sein des familles et des communautés.

Le rôle des premiers milieux de vie de l'enfant dans le développement des systèmes de retours corticaux, lesquels assurent la régulation de l'agressivité, s'impose de plus en plus comme l'un des plus importants sujets de la neuroscience. J'invite vivement mes collègues de la profession à examiner davantage cette dimension critique du fonctionnement humain, dans l'espoir de voir les sciences infirmières contribuer de nouvelles connaissances dans ce domaine, favorisant ainsi à la création de relations réciproques, fondées sur la compassion et le soutien.

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Is a Healthy Lifestyle Related to Stress, Parenting Confidence, and Health Symptoms among New Fathers?

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Des habitudes de vie saines sont généralement reconnues comme un facteur important dans la prévention de la maladie et de l'invalidité. Dans la présente étude, on a cherché à découvrir si, en regard de la transition vers le rôle de père, un lien pouvait être établi entre, d'une part, un mode de vie sain et, d'autre part, le degré de stress perçu par le sujet, la confiance ressentie à l'égard de ce rôle, et les indices de santé physique. Les données recueillies auprès de 87 pères ont été étudiées dans le but d'établir un rapport entre le mode de vie, évalué selon six sous-échelles tirées du Profil d'un mode de vie sain (HPLP), et les éléments ci-mentionnés. En règle générale, on a pu constater qu'un mode de vie sain, en particulier en ce qui concerne les échelles de réalisation de soi et de gestion du stress du HPLP, était lié à un moindre degré de stress, une plus grande confiance en soi en tant que père, et un nombre moins élevé de symptômes physiques; plus les scores étaient élevés sur le plan de l'exercice physique et de la recherche de soutien interpersonnel et plus l'assurance en tant que parent était élevée. De plus, on a pu constater qu'il existait un lien entre un score élevé sur l'échelle mesurant le degré d'approbation sociale et un moindre degré de stress. Les auteures concluent que l'adoption de comportements sains pourrait constituer un atout personnel important en matière de préservation de la santé et de promotion du bien-être chez les nouveaux pères.

A healthy lifestyle is widely recognized as important in preventing disease and disability. This study examined whether in the transition to fatherhood a healthy lifestyle was related to perceived stress, parenting confidence, and physical health symptoms. Survey data from 87 fathers were examined for relationships between lifestyle, measured by 6 subscales of the Health Promoting Lifestyle Profile (HPLP), and perceived stress, parenting confidence, and health symptoms. In general, a healthier lifestyle, especially HPLP self-actualization and stress-management subscales, was related to less perceived stress, more parenting confidence, and fewer health symptoms. Higher HPLP nutrition and exercise scores were related to fewer health symptoms; higher exercise and seeking-interpersonal-support scores were related to higher parenting confidence. Also, higher social desirability scores, a confounding influence, were related to less perceived stress. The authors conclude that health-promotion behaviours may be an important personal resource in maintaining health and promoting well-being among new fathers.

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A healthy lifestyle exemplified by good nutrition, adequate exercise, and stress management is widely recognized as important in preventing disease and disability (Federal, Provincial and Territorial Advisory Committee on Population Health, 1994; McGinnis & Foege, 1993; U.S. Department of Health and Human Services, 1991). Still unexplored, however, are the potential benefits of a healthy lifestyle during normal but challenging life transitions such as fatherhood. Research on healthy lifestyle during the transition to fatherhood is very limited. Thus this study examined relationships between healthy lifestyle and perceived stress, parenting confidence, and physical health symptoms among new fathers.

Background

The Transition to Fatherhood

Becoming a father brings challenges of mastering a new or expanded role in the family. In addition to forming an emotional bond to the baby, a father must reorganize his life to accommodate a new person in the family, a task described as "making room for the baby" (Anderson, 1996, p. 90). Mastery of the role is reflected by fathers' self-confidence in "their decisions and responses in caring for their child" (Ferketich & Mercer, 1995, p. 93). Studies have shown that becoming a father results in varying degrees of stress (Alpert, Richardson, & Fodaski, 1983; Russell, 1974). Fatherhood also comes with some costs, such as decline in health status. For example, Ferketich and Mercer (1989) found that new fathers reported declines in perceived health status from shortly after the child's birth to 8 months later. At the same time, the number of their physical symptoms progressively increased but did not reach levels experienced during the pregnancy. Moreover, research on the transition to fatherhood has focused on changes experienced by first-time fathers (Hangsleben, 1983; Russell), largely ignoring the impact of subsequent births on fathers. There is no reason to assume that fathers' levels of stress, health status, and parenting remain static with the birth of a second or subsequent child. For example, Ferketich and Mercer (1989) report that having a larger number of children is related to less favourable reports of health at 4 months; similarly, Grace (1993) reports that second-time motherhood is more stressful than first-time motherhood.

As a foundation for interventions with fathers, research has examined predictors of parenting and health among new fathers (Hangsleben, 1983; Mercer & Ferketich, 1989, 1995). The focus of these studies has been situational or psychosocial predictors, such as marital adjust-

ment, partner support, self-esteem, depression, and feelings about labour and delivery. Many of these predictors are not immediately amenable to change, are costly to modify, or are outside the immediate control of fathers themselves. In contrast, health-promoting lifestyle behaviours may be more readily modified through self-initiated change and possibly through intervention-based efforts.

Health-Promoting Lifestyle

Walker, Sechrist, and Pender (1987) define a health-promoting lifestyle as "a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of well-being, self-actualization, and fulfillment of the individual" (p. 77). Proposed dimensions of such a lifestyle are reflected in the HPLP on subscales that measure self-actualization, health responsibility, nutrition, exercise, interpersonal support, and stress management. Among new mothers, such a health-promoting lifestyle was related significantly to positive attitudes towards their parenting — i.e., maternal identity (Walker, 1989b). It is noteworthy that contemporary books on fathering give little or no attention to the health of fathers (Bronstein & Cowan, 1988; Hanson & Bozett, 1985; Lewis & O'Brien, 1987; Mackey, 1996; Marsiglio, 1995; Snarey, 1993) except for depression (Cath, Gurwitt, & Gunsberg, 1989; Lamb & Sagi, 1983) or symptoms during pregnancy (Robinson & Barrett, 1986). This represents a significant gap in men's health. Although the impact of a health-promoting lifestyle has not been previously tested among new fathers, it may be a resource in mastering stresses during the transition to fatherhood and in preventing declines in health status. As a further benefit, a health-promoting lifestyle may bolster self-confidence in the parenting role.

Exploring the relationships between fathers' lifestyle and their perceived stress, parenting confidence, and physical health symptoms also requires considering certain background variables as confounding influences. Fathers' self-reports of parenting confidence are likely to be influenced by the wish to present themselves in a socially favourable light (Preski & Walker, 1997). Thus control for social desirability is warranted. Similarly, income as an index of socio-economic status may be related to parenting confidence (Preski & Walker) and health behaviours (Preski & Walker; Walker, 1989a). The number of children in the family also may be related to health status (negatively) and to parenting confidence (positively) (Ferketich & Mercer, 1989, 1995).

Purpose

The purpose of this study was to test whether a healthy lifestyle was related to new fathers' perceived stress, parenting confidence, and physical health symptoms, after controlling for confounding variables of social desirability, income, and number of children. A healthy lifestyle included the dimensions of self-actualization, health responsibility, nutrition, exercise, interpersonal support, and stress management. The research questions addressed were:

> *Are fathers' social desirability scores, income, and number of children related to dimensions of fathers' health-promoting lifestyle, perceived stress, parenting confidence, and physical health symptoms?*
>
> *After controlling for the possible influences of social desirability, income, and number of children, are fathers' health-promoting lifestyle dimensions related to perceived stress, parenting confidence, and physical health symptoms?*

Method

Design and Procedures

After approval had been secured, a health-related questionnaire was mailed to 232 new fathers as part of a larger descriptive correlational survey of health patterns of new parents (Walker, 1996; Walker, Walker, & Walker, 1994). Names and addresses of fathers with singleton newborns were systematically selected (every seventh name) from birth announcements published in a newspaper circulated in northern Indiana and southwestern Michigan in the United States. Four reminder notices were sent to nonresponders.

Sample

Of the 232 questionnaires that were sent, 12 were returned by the postal service as undeliverable. A total of 96 fathers (41%) returned completed questionnaires; two fathers declined to participate and one father indicated that his infant had died, rendering him ineligible. Two fathers were excluded for serious illness, while one was excluded because he had an unusually large number of health problems. Eight additional cases were excluded because of missing data on one or more of the key study variables. Thus the final sample for analysis was 87, representing 39.5% of the 220 deliverable questionnaires.

Instruments

The questionnaire packet included a demographic questionnaire and instruments to measure healthy lifestyle, perceived stress, physical health symptoms, parenting confidence, and social desirability. The demographic questionnaire contained items on sociodemographic variables such as age, race, employment, family configuration, and birth-related data. Total yearly family income was rated on a 5-point scale: (1) under $15,000, (2) $15,000 to $29,999, (3) $30,000 to $44,999, (4) $45,000 to $59,999, and (5) $60,000 or above.

Healthy lifestyle. The HPLP is 48-item instrument designed to measure health-related behaviours and perceptions (Walker et al., 1987). The HPLP has been applied successfully as a measure of lifestyle in a wide variety of populations, such as older adults (Walker, Volkan, Sechrist, & Pender, 1988), blue-collar workers (Weitzel, 1989), and new mothers (Walker, 1989a, 1989b). The HPLP consists of six subscales validated by factor analysis: self-actualization (13 items), health responsibility (10 items), exercise (5 items), nutrition (6 items), interpersonal support (7 items), and stress management (7 items). Second-order factor analysis resulted in extraction of one factor. Each item is rated on a 4-point scale: never, sometimes, often, routinely. Sample items include: *am enthusiastic and optimistic about life* (self-actualization); *report any unusual signs and symptoms to a physician* (health responsibility); *read labels to identify the nutrients in packaged foods* (nutrition); *exercise vigorously for 20–30 minutes at least 3 times per week* (exercise); *maintain meaningful and fulfilling interpersonal relationships* (interpersonal support); and *take some time to relax each day* (stress management). Higher scores on the HPLP represent more healthful lifestyles. Walker et al. (1987) reported that internal consistency for the whole scale was .92; alpha coefficients for subscales ranged from .70 to .90. Test-retest reliability over an interval of 2 weeks indicated stability of the instrument (r =. 93). In this sample the alpha coefficients for subscales was as follows: self-actualization, .91; health responsibility, .83; exercise, .83; nutrition, .76; interpersonal support, .75; and stress management, .65.

Perceived stress. The Perceived Stress Scale (PSS), a 14-item self-report scale, was used to measure fathers' perception of stress (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). The PSS has been applied successfully as a measure of perceived stress in a wide variety of populations, such as college students (Kuiper, Olinger, & Lyons, 1986), persons undergoing biomedical research (Cohen, Tyrrell, & Smith, 1991), and new mothers (Walker, 1989a, 1989b). The PSS mea-

sures the degree to which persons find "their lives unpredictable, uncontrollable, and overloading" (Cohen et al., 1983, p. 387). For example, "In the last month, how often have you found that you could not cope with all the things you had to do?" Items are rated on a 5-point scale, ranging from "never" (0) to "very often" (4). The PSS is scored by reversing responses to seven positively worded items and then summing responses to all items. Higher scores represent higher levels of perceived stress. Coefficient alpha reliability for the PSS ranges from .84 to .86 and short-term test-retest reliability is .85. Evidence for concurrent and predictive validity is derived from correlations with life-event scores and mental and physical health outcomes. The PSS exceeds life events as an effective predictor of a wide variety of outcomes. Norms have been established using 960 male and 1,427 female residents of the United States (Cohen & Williamson). In the present study, the alpha coefficient for the PSS was .84.

Parenting confidence. In this study, fathers' parenting confidence was measured by modifying the Lips Maternal Self-Confidence Scale (LMSCS) (Bloom & Lips, 1988) for use with fathers. For example, items were re-worded from "Motherhood is more difficult than I thought it would be" to "Fatherhood is more difficult than I thought it would be." This parallelism in items was maintained because the larger survey was aimed at comparing mothers' and fathers' responses. The LMSCS underwent psychometric evaluation with 177 women on their second and third postpartum days. Test-retest reliability was .88 and internal consistency was .88 and .91 on the second and third days, respectively. The instrument consists of 24 items rated on a 6-point scale from "strongly agree" to "strongly disagree." Higher scores represent higher levels of parenting confidence. In this sample, the alpha coefficient for the parenting self-confidence scale was .88, indicating high internal consistency. Since this is the first study to use the LMSCS modified for fathers, validity data for this instrument are not available.

Physical health symptoms. Symptoms were measured by a 5-item checklist developed for this study. The checklist was similar to one used by Ferketich and Mercer (1989). Fathers were asked to indicate if, during the preceding month, they had any of the following or other health problems: cold, diarrhea or vomiting, muscle or joint strain, or severe headache. A total symptom score, ranging from 0 to 5, was tallied by summing all symptoms selected by fathers.

Social desirability. A short version of the Marlowe-Crowne Social Desirability Scale (M-C SDS) (Crowne & Marlowe, 1964; Strahan & Gerbasi, 1972) was used to measure social desirability. The M-C 20 has

been used successfully with new mothers as an index of socially desirable responses (Preski & Walker, 1997). The scale measures the extent to which persons "describe themselves in favorable, socially desirable terms in order to achieve the approval of others" (Robinson & Shaver, 1973, p. 727). Correlation between the 20-item version used in this study (M-C 20) and the original 50-item M-C SDS was in the range of .90. The two scales have similar reliability, with K-R 20 reliability coefficients for the M-C 20 ranging from .73 to .83. Respondents indicate whether each statement is true or false as it relates to them (for example, "I always try to practise what I preach"). Higher scores indicate a tendency to respond in ways that are more socially desirable. The alpha coefficient in this study was .76.

Data Analysis

Data were coded, entered into a computer for analysis, and examined for accuracy. Statistical calculations were performed using the Statistical Package for the Social Sciences. Data were screened for normality via measures of skewness, kurtosis, frequency histograms, and normal probability plots. Of the three outcome variables — perceived stress, parenting confidence, and physical health symptoms — the latter two departed significantly from normality using the K-S Lilliefors test. The distribution for the parenting confidence scale departed from normality only modestly ($p = .04$), as the mean and median were within one point of each other. As a result, analysis of relationships involving both parenting confidence and perceived stress were computed using Pearson product-moment correlations and partial correlations. For health symptoms, the departure from normality was extreme ($p < .000$); thus tests of relationships involving this variable were conducted using the Spearman rho statistic.

Results

Sample

Fathers ($N = 87$) had a mean age of 29.3 years ($SD = 4.96$, *range* = 19–41). They were employed for a mean of 44.5 hours per week ($SD = 10.0$, *range* = 0–80). Most fathers ($N = 84$, 96.6%) were employed outside the home. Using the *Dictionary of Occupational Titles* (U.S. Department of Labor, 1991), 33 fathers (41.8%) were professional, technical, or managerial; seven (8.9%) were clerical or sales; four (5.1%) were service; and the remainder were in other occupations, with eight uncodable/unknown. Fathers reported their total yearly family income as follows:

10 (11.5%) under $15,000; 33 (37.9%) from $15,000 to $29,999; 22 (25.3%) from $30,000 to $44,999, 14 (16.1%) from $45,000 to $59,900, and eight (9.2%) $60,000 or above. In terms of education, 51 fathers (58.6%) had ever attended college or university. The majority (N = 51, 61.4%) stated that they lived in a rural area. Regarding ethnicity, 82 (95.3%) were White/Anglo, three (3.5%) were Black/Afro-American, and 1 (1.2%) was Hispanic/Mexican American. (The ethnicity of one was unknown.)

The majority of the fathers (N = 85, 97.7%) were currently living with a spouse/partner. Of the partners, 21.8% had had a cesarean delivery and 4.6% had given birth prematurely. Of the infants, 44 (50.6%) were male, 43 (49.4%) female; at the time of the study, they had a mean age of 30 weeks (SD = 6.24, *range* = 22–52). In terms of total number of children in the household, 35 fathers (40.2%) had only one child, 25 (28.7%) had two children, 14 (16.1%) had three children, 10 (11.5%) had four children, two (2.3%) had five children, and one (1.1%) had eight children.

Findings

The mean for fathers' perceived stress was 22.8 (SD = 7.5, *range* = 7–39). This is higher than the mean of 18.8 (SD = 6.9) reported by Cohen and Williamson (1988) for a national probability sample of men in the United States. The mean for fathers' parenting self-confidence was 114.2 (*median* = 115, SD = 13.5, *range* = 80–144) and is similar to that reported by Bloom and Lips (1988) for mothers on the second (M = 114) and third (M = 117) days postpartum. Fathers reported a mean of 1.3 health symptoms (*median* = 1.0, SD = 1.0, *range* = 0–4).

Table 1 shows that the background variables, particularly social desirability, were related significantly to fathers' outcomes of perceived stress and parenting confidence, but not physical health symptoms. Table 1 also shows that the variables of social desirability, socio-economic status, and number of children were each significantly related to one or more subscales of the HPLP. These data support controlling for the effects of social desirability, socio-economic status, and number of children when testing for relationship between health promotion and fathers' outcomes, especially perceived stress and parenting confidence.

Table 2 presents partial correlations between fathers' lifestyle patterns on HPLP subscales and perceived stress and parenting confidence, while controlling for the effects of social desirability, socio-economic status, and number of children. Table 2 also presents Spearman rho correlations between HPLP subscales and health

symptoms. Perceived stress, parenting confidence, and physical health symptoms were each correlated significantly with a majority of HPLP subscales. The direction of correlations for all three fathers' outcomes was as expected: healthier lifestyle patterns were related to lower levels of perceived stress and health symptoms and to higher levels of parenting confidence.

Table 1 *Pearson Correlations between Background Variables and Key Study Variables*

	Social Desirability	Family Income	Number of Children
Outcome Variables			
Perceived stress	-.42‡	-.32†	.03
Parenting confidence	.42‡	.24*	-.25*
Health symptoms[a]	-.08	-.18	.15
Lifestyle Subscales			
Self-actualization	.34‡	.35‡	-.21*
Health responsibility	.19	.23*	-.00
Nutrition	.12	.16	.06
Exercise	.14	.29†	-.21
Interpersonal support	.20	.12	-.16
Stress management	.17	.10	-.03

* $p < .05$ † $p < .01$ ‡ $p < .001$

[a] Spearman correlations were computed for health symptoms because of a non-normal distribution.

Table 2 *Partial Correlations between Health-Promoting Lifestyle Subscales and Fathers' Outcomes*[a]

Lifestyle Subscales	Perceived Stress	Parenting Confidence	Health Symptoms[b]
Self-actualization	-.48‡	.46‡	-.32‡
Health responsibility	-.22*	.20	-.11
Nutrition	-.15	.16	-.28†
Exercise	-.18	.35‡	-.35‡
Interpersonal support	-.28†	.37‡	-.15
Stress management	-.26*	.34†	-.30†

* $p < .05$ † $p < .01$ ‡ $p < .001$

[a] Partial correlations control for social desirability, income level, and number of children.

[b] Correlations between health symptoms and lifestyle subscales were computed as Spearman rho correlations; consequently, no control for background variables was possible.

Discussion

Conclusions

The findings of this study support an inverse relationship between a new father's health-related lifestyle, as measured on the HPLP, and perceived stress levels. That is, routinely engaging in a health-promoting lifestyle was related to lower levels of perceived stress. This is true despite the fact that fathers in this sample had stress levels above the mean of norms for men in the United States. Not surprisingly, fathers who reported seeking interpersonal support and who used more stress-management techniques experienced lower levels of perceived stress. Fathers' scores on HPLP subscales measuring self-actualization and health-responsibility behaviours were also related to lower levels of stress. Although not statistically significant, the relationships between nutrition and exercise behaviours and perceived stress were in the expected direction.

The results of this study also support a positive relationship between healthy lifestyle and parenting confidence in new fathers. In particular, more self-actualization behaviours, regular exercise, interpersonal support, and stress-management behaviours were related to parenting confidence. The finding that interpersonal support was related to parenting confidence is similar to the finding of Ferketich and Mercer (1995) that the partner relationship is a significant predictor of paternal competence for experienced fathers (but not for inexperienced fathers). We hypothesize that a healthy lifestyle enhances parenting confidence by helping fathers to renew their daily capacity to nurture and to respond to the challenges of parenting in an effective manner. Thus by engaging in a healthy lifestyle and experiencing satisfying relationships fathers may increase their own well-being, which in turn they are able to extend to others, notably their children. As a consequence, they are more confident in their role as fathers.

Since Belloc and Breslow (1972) reported some time ago that personal health practices were related to health status, there has been a growing practical wisdom that suggests that adopting positive health behaviours may be a means of avoiding illness. Although the data analyzed in this investigation came from an observational study rather than a clinical trial, the findings are consistent with this practical wisdom. More favourable nutrition, exercise, and stress-management behaviours as well as self-actualization were related to decreased physical health symptoms among new fathers. Although the non-normality of the distribution of health symptoms did not permit use of partial cor-

relations to control for social desirability, family income, and number of children, the nonsignificant relationship of these variables to health symptoms indicates that their confounding effects are likely minimal.

In summary, even after controlling for potential confounding influences, such as social desirability, a number of dimensions of a health-promoting lifestyle were related to fathers' perceived stress and parenting confidence. These findings suggest that a healthy lifestyle may help new fathers to manage the stress inherent in fatherhood, may enrich the resources that fathers bring to parenting, and may contribute to fathers' health status. We conclude that a health-promoting lifestyle may be an important personal resource in maintaining health and promoting well-being among new fathers.

Influence of Background Variables

Of the background variables, social desirability was most highly correlated with fathers' outcomes. Its influence was evident in relation to perceived stress (negative correlation of -.42) and parenting confidence (positive correlation of .42). Because perceptions of stress and self-confidence are inherently intrapersonal factors, their measurement by self-report is necessary and reasonable. The findings of this study suggest, however, that measurement innovations or statistical adjustments that take social desirability into account may be needed, to reduce measurement error threatening validity of self-report instruments for these constructs. Further psychometrically oriented research is needed to determine whether the effects of social desirability are as predominant in other samples as they were found to be in this study — especially for perceived stress, which is a widely studied variable in health research.

With regard to the influence of number of children in the family, this variable was negatively related to parenting confidence (r = -.25). That is, in the present study having a greater number of children was related to lower parenting confidence. This finding is inconsistent with that of Ferketich and Mercer (1995), who found that being an experienced father was associated during the early weeks postpartum with higher perceived paternal role competence than being a first-time father; these differences disappeared at 1, 4, and 8 months. We re-analyzed our data excluding the father who reported having eight children. With this exclusion, the correlation between number of children remained negative (r = -.15) but was no longer statistically significant. This finding is intriguing and worthy of further study.

Our finding that number of children was not related significantly to perceived stress is also inconsistent with that of Cohen and Williamson (1988). They found that the number of people in the household and the number of these who were children were associated with perceptions of stress. As the number of persons in the household increased, so did scores for perceived stress. Their larger sample size probably accounts for this difference in results, because the absolute magnitude of the correlation in the two studies is not greatly different (.03 in this study and .11 in Cohen and Williamson's report [p. 51]).

In the present study, family income was significantly related to perceived stress (r = -.32): as income increased, fathers' perceived stress decreased. This is generally consistent with the finding of Cohen and Williamson (1988): "Perceptions of stress declined linearly as household income increased to the level of $35,000 per year. Beyond $35,000 per year, the trend was less consistent" (p. 47).

Strengths and Weaknesses of the Study

In interpreting the findings of this study it is important to consider its strengths and weaknesses. Two measures used in this study, the PSS and the HPLP, are well-established instruments that to our knowledge have not previously been used with new fathers. Thus findings reported here provide information not heretofore available. The findings suggest a number of areas for health-promotion research with new fathers, such as nursing interventions to enhance health promotion in the transition to fatherhood. In contrast, findings associated with the measures of parenting confidence and health symptoms are based on previously untested measures and should be viewed as preliminary.

Moreover, the study controlled for the influence of variables, such as social desirability, which were significantly related in most cases to parenting confidence and perceived stress. The relationship found between social desirability and parenting confidence was expected. However, to our knowledge this is the first study to report a statistically significant relationship between social desirability and perceived stress. That is, fathers who valued presenting themselves in a socially acceptable manner tended to under-report stress in their lives.

The findings of this study should be viewed cautiously, however, because of sample characteristics. Fathers responding to the survey represented a minority of the target sample. The sample of responding fathers was predominantly White/Anglo and may not represent the experience of fathers from other ethnic groups. The study data reported

in this study are cross-sectional in nature, so direction of influence between fathers' lifestyle and outcome variables is not clearly established. Finally, this study of the transition to fatherhood embraced fathers of later-born children as well as first-time fathers. This may have obscured findings pertinent only to first-time fathers, who have been the usual focus of transition-to-fatherhood research.

Future Directions

The findings of this study support exploring a number of issues related to health-promotion research aimed at enhancing the health and well-being of new fathers. First among these issues is determining the best venue and timing for health-promotion interventions. Unlike new mothers, who may be in the health-care system for postpartal care, new fathers may not have the regular contact with the health-care system that facilitates health promotion. Thus the scope of traditional parenthood education may need to be broadened. Parent education for expectant mothers and fathers has traditionally focused on changes of pregnancy and preparation for the events of labour and birth. It is reasonable to start testing the efficacy of health-promotion strategies that have life-span relevance for fathers within the context of prenatal education for parenthood.

A second issue concerns whether health-promotion interventions are actually efficacious in enhancing the health and well-being of new fathers — a group who are not yet typically facing the onset of chronic illnesses. During times of transition, however, individuals are often open to making changes in daily living. Testing the efficacy of health-promotion interventions for fathers has the potential to improve their own health as well as that of their spouses and children. The findings of this study indicate that measures of perceived stress and symptoms may be useful indicators of health and well-being among fathers.

A third issue is whether health-promotion interventions for new fathers should be targeted at the family or uniquely at fathers. Barnhill, Rubenstein, and Rocklin (1979) indicate that fathers may have special needs best addressed in fathers-only groups. The optimal balance between father-focused and family-focused health promotion remains to be determined.

Clinical Implications

Lifestyle behaviours have recently been identified as a key cause of mortality (McGinnis & Foege, 1993). Conversely, promoting healthy

lifestyles is a major strategy for decreasing illness and enhancing health throughout life (Federal, Provincial and Territorial Advisory Committee on Population Health, 1994; U.S. Department of Health and Human Services, 1991). This study shows that health-promoting behaviours are related to increased parenting confidence and decreased stress and symptoms among new fathers. Interventions to promote a healthy lifestyle among expectant and new fathers have the potential to positively impact health and well-being during the transition to fatherhood. The promotion of health and healthy lifestyles is a key aspect of nursing care in the contexts of ambulatory care, discharge planning, and patient education. For maternal-child nurses, though, the emphasis on the birthing experience and infant outcomes may overshadow the broader health-promotion needs of both fathers and mothers. To quote a mother who attended a postpartum health-promotion class given by one of us: "Once the baby is born, the health-care providers are no longer interested in you — just the baby."

Thus prenatal education and classes for new parents provide one means of reaching out to fathers and mothers. Within such settings, nurses should seek opportunities to assess lifestyle and explore interventions that may aid fathers and their spouses in achieving meaning and purpose in daily life, attending to health needs and seeking health information, engaging in sound nutrition and regular exercise, fostering interpersonal support, and managing stress in daily living.

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Adaptation to Pregnancy in Three Different Ethnic Groups: Latin-American, African-American, and Anglo-American

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Des entrevues portant sur l'adaptation à la grossesse ont été faites auprès de femmes enceintes d'origines latino-américaine (N = 30), afro-américaine (N = 34) et anglo-américaine (N = 30), à l'étape correspondant à la deuxième moitié de leur grossesse. La plupart des femmes étaient âgées de 18 à 27 ans, étaient célibataires, possédaient 12 ans de scolarité ou moins et affichaient une parité de 0 ou 1. Les mesures psychosociales utilisées pour évaluer l'adaptation à la grossesse incluaient l'acceptation de la grossesse, l'identification au rôle de mère, la relation avec la mère et le conjoint/partenaire, ainsi que la préparation au travail de l'accouchement. Les données ont été analysées à l'aide du khi-carré pour déterminer les différences entre les groupes. Les résultats indiquent que chez les trois groupes, la grossesse était imprévue mais toutefois désirée. Les Afro-américaines étaient celles qui envisageaient le moins de changements de vie à la suite de leur grossesse, qui trouvaient le moins d'aspects gratifiants à leur état et qui étaient les moins intéressées à demeurer au foyer avec leur enfant. Dans la plupart des groupes ethniques, les femmes réfléchissaient sur leur rôle en tant que mère, mais les Latino-américaines ont le plus souvent exprimé leur désir d'être comme leur propre mère, qu'elles consultaient pour des questions de grossesse et de rôle parental. Les Afro-américaines étaient celles qui s'attendaient le moins à être aidées du partenaire dans la gestion du foyer. Toutefois, elles s'attendaient le plus à recevoir de l'aide des autres membres de la famille. Quant aux relations intimes avec le conjoint/partenaire, tous les groupes ont signalé une diminution des rapports sexuels au cours de la grossesse. Les Anglo-américaines étaient les moins nombreuses à signaler des problèmes/un inconfort concernant les rapports sexuels, contrairement aux Latino-américaines qui en rapportaient le plus. Les Anglo-américaines étaient les plus nombreuses à trouver d'autres méthodes pour satisfaire leur partenaire sur le plan sexuel, alors que les Afro-américaines étaient les moins nombreuses. Les résultats de cette étude exploratoire soulèvent des questions sur les différences en ce qui a trait aux prestations de soins de santé destinés à ces trois groupes ethniques et doivent faire l'objet d'une étude plus approfondie.

Interview assessments on adaptation to pregnancy were made of Latin-American (N = 30), African-American (N = 34), and Anglo-American (N = 30) women in the latter half of their pregnancy. Most subjects were 18–27 years old, single, had 12 years or less education, and had a parity of 0 or 1. Psychosocial measures of adaptation to pregnancy included Acceptance of Pregnancy, Identification with Motherhood Role, Relationship

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with Mother and with Husband/Partner, and Preparation for Labour. Data were analyzed using chi-square for group differences. The results indicate that in all 3 groups pregnancy was unplanned but wanted. African Americans least often anticipated life changes as a result of pregnancy, cited fewest aspects of pregnancy that were gratifying to them, and least often chose to stay home with their infant. Most women in all ethnic groups reflected on their role as mother, but Latin Americans most often indicated that they wanted to be like their own mother and that they consulted with their mother about pregnancy and parenting. African Americans least often anticipated domestic help from their partner and most often expected help from other family members. Regarding intimate relationships with husband/partner, for all groups sexual intercourse decreased during pregnancy. Anglo-Americans reported the least number of problems/discomforts with intercourse, Latin Americans the most. Anglo-Americans most often found alternative methods of sexually satisfying their partner, African Americans least often. The results of this exploratory study have significance for differences in the delivery of health care to the 3 ethnic groups and warrant further research.

Introduction

The literature often cites the importance of access to prenatal care, particularly for indigent women and women at risk for health problems. However, it infrequently cites the importance of sensitivity to differences in the health-care and counselling needs of women from different cultures and ethnic groups. Cultural or ethnic sensitivity should be a primary consideration in both the decision to retain women in the health-care-delivery system and the health outcomes of pregnant women. For example, reports in the literature on the lower incidence of low birthweight and infant mortality in Latin Americans compared to African Americans (Becerra, Hogue, Atrash, & Perez, 1991) suggest that cultural practices, particularly those pertaining to social support (Balcazar, Aoyama, & Cai, 1991; Bolla, De Joseph, Norbeck, & Smith, 1996; Edwards et al., 1994; Mason, 1991; Norbeck & Anderson, 1989a, 1989b; Norbeck & Tilden, 1983; Norbeck, De Joseph, & Smith, 1996), may have relevance to perinatal health outcomes. In addition, factors pertaining to economic circumstances, gender, and race (Murrell, Smith, Gill, & Oxley, 1996) may affect access to, extent of, and dignity of care. Recognizing these factors as important, the March of Dimes (1993) states that improving pregnancy outcomes requires special efforts to reach women who are isolated from the perinatal-care system due to cultural bias and discrimination, conflicting personal priorities, personal attitudes or fears, and other psychosocial factors.

Significant differences in pregnancy outcomes for women experiencing high prenatal anxiety and psychosocial or developmental conflict also have been reported in the literature (Aarts & Vingerhoets, 1993; Lederman, 1984, 1986, 1995a, 1995b; Lederman, Harrison, & Worsham, 1992; Lederman, Lederman, Work, & McCann, 1978, 1979,

1981; Pagel, Smilkstein, Regen, & Montano, 1990). McEwen (1998) sheds light on the significance of short- versus long-term intense stress or anxiety and on patterns of long-term stress and their sequelae, which also may have relevance for patterns of anxiety during pregnancy. Differences also have been reported (Lederman, Harrison, & Worsham, 1994) in prenatal anxiety and developmental conflict across the three trimesters of pregnancy for a large sample of gravid subjects ($N = 689$) from different ethnic groups. For example, Hispanic women report more anxiety than African-American and Anglo-American women in the first and second trimesters pertaining to identification with motherhood role and the well-being of the fetus and oneself during labour. In Latin-American families the mother has a responsibility to provide a nurturing, stable environment for the family and to maintain the health of the family, sacrificing her own needs if necessary (Lipson, 1996). The emphasis on maternal role obligations may account for the anxiety that Hispanic expectant mothers sometimes experience. Anxiety regarding maternal role adequacy also may increase when paternal support is decreased. A study with pregnant women of Mexican origin (Zambrana, Scrimshaw, Collins, & Dunkel-Schetter, 1997) found that those who reported more stress also reported less support from the father and had higher medical risks. Emerging literature on the role of culture suggests that other key cultural factors, such as the religiosity and spirituality of many Latin Americans, may serve to protect mother and infant throughout the prenatal period (Magaña & Clark, 1995).

Ethnic or cultural beliefs and values influence people's perceptions and guide their interactions with each other and with the health-care system (Lipson, 1996). "Culturally competent" nursing refers to care that is sensitive to issues related not only to culture, but also to race, social class, and economic concerns (Lipson & Meleis, 1985). It also refers to health care that is appropriately and effectively tailored to the sociocultural characteristics of a particular patient or group. The cultural elements that affect psychological, social, and emotional behaviour may account for health-status differences among ethnic groups (Betancourt & Lopes, 1993). These elements have been poorly addressed in both research and prenatal care (Magaña & Clark, 1995). Continued failure to address them may abnegate the effects of the current emphasis on increasing early consistency of care and access to care (Goss, Lee, Koshar, Heilemann, & Stinson, 1997). A comprehensive and culturally sensitive program of prenatal care, on the other hand, has been demonstrated to have favourable effects on the well-being of the gravidas and on birth outcomes (Pearce et al., 1996). Substantial individual and group variation often exists in cultural-group patterns

(Lipson). Scribner (1996), in reporting on a study with Mexican Americans, suggests that group-level effect for cultural orientation is more important in determining health risk than factors operating at the individual level.

The current study utilized prenatal interview schedules to investigate prenatal adaptational differences in psychosocial dimensions for women of three ethnic groups — Latin-American, African-American, and Anglo-American. This project was undertaken to better inform prenatal health care and counselling of women from different ethnic or cultural groups. The goal was to create a survey that would target differences in groups in order to enhance the success of future interventions. The question we hoped to answer with this exploratory study was: *Do psychosocial differences exist in adaptation to pregnancy for Latin-American, African-American, and Anglo-American ethnic groups?* This paper will focus on overall and subgroup patterns, but not individual uniqueness or variation.

Methods

Interview assessments on adaptation to pregnancy were made of Latin-American ($N = 30$), African-American ($N = 34$), and Anglo-American ($N = 30$) women in the latter half of pregnancy (most in the last trimester). Subjects were low-income patients attending a low-risk prenatal clinic at a university medical centre in the Southwestern United States. Subjects were approached in the waiting room by an interviewer and asked to participate in a survey to evaluate adaptation to pregnancy. Of the subjects who were approved, 10% refused to participate. The majority of Latin-American subjects had been born in Mexico. Table 1 presents characteristics for the different ethnic groups and the entire sample. Most subjects were 18–27 years old, single, had 12 years or less of education, and had a parity of 0 or 1. All subjects had an uneventful prenatal course.

Subjects were interviewed face to face once in the latter half of pregnancy by trained interviewers. Their responses to open-ended questions were written down and clarified before the interviewer went on to the next question. The interviews took place in a private space and subjects were assured that their answers would be kept confidential. These procedures decreased bias. Interviewers were generally women with psychosocial backgrounds who came from the same ethnic group as the subject being interviewed. They were trained and supervised for the study by the first author. The prenatal interview schedule was derived from the following five dimensions, focusing on

normal or expected developmental psychosocial changes as listed (Lederman, 1996):

- *Acceptance of Pregnancy:* planning and wanting the pregnancy, happiness, tolerance of discomforts, ambivalence
- *Identification with Motherhood Role:* motivation and preparation for parenthood
- *Relationship with Mother:* availability of gravida's mother — reactions to the pregnancy, respect for gravida's autonomy, willingness to reminisce; gravida's empathy with her mother
- *Relationship with Husband or Partner:* husband's concern for the needs of his expectant wife, wife's concern for the needs of her husband as an expectant father, effect of the pregnancy on the marital bond
- *Preparation for Labour:* planning for labour — practical steps, maternal thought processes

Table 1 *Sample Characteristics*

	Ethnicity			
Background Variables	**Anglo-American (*N* = 29–30) *n* (%)**	**African-American (*N* = 34) *n* (%)**	**Latin-American (*N* = 29–30) *n* (%)**	**Total (*N* = 93–94) *n* (%)**
Marital Status (*N* = 93)				
Married	16 (53)	3 (9)	10 (34)	29 (31)
Single	14 (47)	31 (91)	19 (66)	64 (69)
Age (*N* = 94)				
13–17	1 (3)	6 (18)	2 (7)	9 (10)
18–22	12 (40)	17 (50)	15 (50)	44 (47)
23–27	9 (30)	8 (24)	8 (27)	25 (26)
28 or older	8 (27)	3 (8)	5 (16)	16 (17)
Education (*N* = 93)				
Less than high school	8 (28)	13 (38)	13 (43)	34 (37)
High school degree	8 (28)	11 (32)	8 (27)	27 (29)
Post-secondary education	8 (28)	9 (26)	7 (23)	24 (26)
Post-secondary degree	5 (16)	1 (3)	2 (7)	8 (8)
Parity (*N* = 93)				
0	16 (53)	16 (47)	14 (48)	46 (49)
1	9 (30)	5 (15)	6 (21)	20 (22)
2 or more	5 (17)	13 (38)	9 (31)	27 (29)
Gravidity (*N* = 94)				
1	14 (47)	17 (50)	12 (40)	43 (46)
2	7 (23)	5 (15)	10 (33)	22 (23)
3 or more	9 (30)	12 (35)	8 (27)	29 (31)

The validity of these interview-item scales is discussed in detail in Lederman (1996). Results reported indicate that the prenatal interview scales were predictive of duration of labour, uterine contractility in labour, fetal heart rate evaluation and Apgar scores, and maternal post-partum = adaptation.

Face-to-face interviews were conducted in the prenatal clinic rooms before and/or after the subject's scheduled prenatal appointment. All subjects signed informed consent forms. The prenatal records of participants were reviewed prior to obtaining consent to ensure that all subjects had had a normal medical and obstetric course. Interview schedules were translated into Spanish using a forward-and-backward method of translation. The interviewers of the Latin-American subjects were fluent in Spanish; most interviews, however, were conducted in English. Interviews were of 45–90 minutes' duration and followed an open-ended format.

Since this study was exploratory and had as its goal the creation of a psychosocial adaptation questionnaire for different cultural populations, response categories were prepared for all questions after the interviews were completed, by creating mutually exclusive categories based on subject responses. Response categories that were used to determine classification are discussed in detail elsewhere (Lederman, 1996). This coding was reviewed and discussed repeatedly by both authors to ensure that valid categories and groupings were completed. Opinions from members of the community and from experts were also sought, to determine appropriate groupings for response categories. In designing questionnaires, this method has been shown to be appropriate in determining the questions that need to be asked and the best format for asking them (Weller & Romney, 1988). The results were then subjected to chi-square analysis to determine significant differences. When subjects chose not to respond to an item, the item tables show fewer responses than the total number of subjects, $N = 94$. The number of subjects responding to an item is reported in the item tables.

Results

The results show that subjects in all ethnic groups were generally happy about the pregnancy, even though most women reported that it was a difficult time for them to be pregnant and the pregnancy interrupted their life plans. Only 12–30% of all women planned their pregnancy. However, while unplanned, most of the pregnancies, in all ethnic groups, were wanted. This finding could be due to the fact that most interviews were conducted in the third trimester, by which time

the gravida may have come to terms with her pregnancy. Many subjects stated that upon first learning of the pregnancy they were unhappy and did not want to have the child but that their views changed as pregnancy progressed.

Most women made advance arrangements for help with child care, either with family and friends or with a daycare centre. Latin-American subjects were found to have less family help than reported in the literature, perhaps because many were first-generation Americans and their families were still living in their country of origin and were not in close proximity.

In terms of aspects of pregnancy that were pleasing or gratifying, the Latin-American women stated more often than women in the other two groups that they were happy to be a mother and that their family was happy. Anglo-American women stated more often than women in the other two groups that they valued and liked children. African-American women did not comment specifically in this area.

Table 2 *Identification with Motherhood Role*

Response Category	Ethnicity: Anglo-American *n* (%)	Ethnicity: African-American *n* (%)	Ethnicity: Latin-American *n* (%)	χ^2
Plans for child care	**(*N* = 29)**	**(*N* = 34)**	**(*N* = 29)**	
Will stay home	16 (55)	6 (18)	9 (31)	
Will not stay home	13 (45)	28 (82)	20 (69)	8.6*
Life changes envisioned	**(*N* = 29)**	**(*N* = 32)**	**(*N* = 29)**	
Will not change life	5 (17)	14 (44)	4 (14)	
Will change life	24 (83)	25 (86)	25 (86)	8.7*
Expectation of help from partner	**(*N* = 29)**	**(*N* = 34)**	**(*N* = 30)**	
Expect help	23 (80)	13 (38)	22 (73)	
Do not expect help	6 (20)	21 (62)	8 (27)	14.0*
Reported thinking about motherhood role	**(*N* = 30)**	**(*N* = 34)**	**(*N* = 30)**	
Do not think about	2 (70)	8 (24)	11 (37)	
Do think about	28 (93)	26 (76)	19 (63)	7.8†

* $p < .01$ † $p < .05$

Table 2 presents results pertaining to identification with motherhood role. The results for gravidas' child-care plans show that Anglo-Americans more often than African Americans planned to stay home

and care for the child. Anglo- and Latin-American women reported more often than African-American women that having a baby would change their lives. Also, these two groups reported more often that they expected to receive domestic help from their partner, while African-American women more often expected to receive help from their extended family and other family members. Latin-American women reported least often that they thought about the kind of mother they wanted to be.

Table 3 *Relationship with Mother*

	Ethnicity			
Response Category	**Anglo-American** *n* (%)	**African-American** *n* (%)	**Latin-American** *n* (%)	χ^2
Extent want to be like own mother	**(N = 29)**	**(N = 32)**	**(N = 29)**	
Want to be like own mother	19 (67)	22 (69)	26 (90)	
Do not want to be like own mother	10 (34)	10 (31)	3 (10)	5.2†
Parents help make decisions	**(N = 30)**	**(N = 32)**	**(N = 28)**	
Yes	13 (43)	12 (38)	19 (68)	
No	17 (57)	20 (63)	9 (32)	6.0†
Turned for help as child to:	**(N = 30)**	**(N = 33)**	**(N = 28)**	
Mother	11 (37)	10 (30)	16 (57)	
Father	6 (20)	2 (6)	2 (7)	
Both parents	6 (20)	13 (39)	3 (11)	
Other	0	3 (9)	1 (4)	
No one	7 (23)	5 (15)	6 (21)	15.2†

† $p < .05$

Table 3 presents results pertaining to the gravida's relationship with her mother. In comparison to the other two groups, Latin Americans cited more ways in which they wanted to be like their own mother and stated more often that they sought their parents' help in making decisions. When they were children, the Latin American subjects had more often turned to their mothers for help, Anglo-American to their fathers, and African-American to other family members.

Table 4 presents results pertaining to the gravida's relationship with her husband or partner. Sexual intercourse decreased for all ethnic groups, but an increase occurred for a small number of African- and Anglo-American women. Frequency of intercourse was most satisfactory for Anglo-Americans, while African and Latin Americans would have preferred a further decrease. Alternative methods of sexual gratification were sought most often by Anglo-Americans.

Table 4 *Relationship with Partner*

Response Category	Ethnicity: Anglo-American *n* (%)	Ethnicity: African-American *n* (%)	Ethnicity: Latin-American *n* (%)	χ^2
Changes in intercourse during pregnancy	**(*N* = 27)**	**(*N* = 31)**	**(*N* = 24)**	
Decreased frequency	20 (74)	25 (81)	18 (75)	
Increased frequency	4 (15)	5 (16)	0	
No change	3 (11)	1 (3)	6 (25)	9.1†
Gravida's satisfaction with intercourse frequency	**(*N* = 27)**	**(*N* = 31)**	**(*N* = 23)**	
Satisfied	18 (67)	14 (45)	7 (30)	
Would like less	9 (33)	17 (55)	16 (70)	6.7†
Sought alternative methods of sexual satisfaction	**(*N* = 23)**	**(*N* = 23)**	**(*N* = 21)**	
Yes	13 (57)	2 (8)	9 (43)	
No	10 (43)	21 (91)	12 (57)	12.1*

* $p < .01$ † $p < .05$

Conclusions and Discussion

Regarding aspects of pregnancy found to be gratifying, Latin Americans said most often that they were happy to be mothers and that their families were also happy. Anglo-Americans said most often that they valued and liked children. African Americans did not comment in these areas. It is of interest that African Americans also reported experiencing fewer of the discomforts of pregnancy than Anglo-Americans and Latin Americans, and perceived the discomforts as being less severe (not previously reported); these results are significant at $p = .1$ but not at $p < .05$. In addition, the results show that African Americans anticipated their lives would not change as a result of pregnancy. Taken together, these results suggest that for expectant African-American women pregnancy is more readily accepted and not perceived to be a change stimulus. The results also provide some support for the notion that pregnancy is perceived and experienced as a normal development rather than as a crisis (Andersen, 1984). Over half of all subjects, in all groups, reported that the timing of the pregnancy was difficult; reasons cited for difficulty mostly revolved around the financial demands of caring for another person or a new child.

Latin Americans least often reported that they thought about the kind of mother they wanted to be, perhaps suggesting that this ethnic

group has clearer role models and perceptions of their role. This interpretation is supported by the fact that Latin-American women most often said they wanted to be like their own mother and consulted with their mother as a pregnancy and parenting resource. It is interesting to note that over 70% of African- and Anglo-American women did not want to be like their own mother. Pertinent to the findings for Anglo-Americans in our study, Norbeck and Anderson (1989b) report that high social support from the gravida's mother in the White group studied was predictive of specific labour complications, including long labour, while for women in the Black group it was low social support, particularly from the mother, that accounted for all gestation and labour complications. These findings suggest that there may be more strain in Anglo-American mother-daughter relationships than in the other two ethnic groups.

Mexican-American families are characterized by familism — an interdependent, cooperative network of nuclear and extended family members who are closely connected for the good of the family (Burk, Wiesner, & Keegan, 1995). A strong sense of family loyalty, reciprocity, and solidarity prevails (Burk et al.; Lipson, 1996). Emphasis is placed on fostering interpersonal relationships that are caring, nurturing, loving, supportive, and respectful. Familism is also typified by the presence in the family of the father, as well as the mother, and a high regard for parental roles. However, clinicians have cautioned that paternal presence and commitment do not necessarily mean involvement. This may partially explain our finding that the Latin-American gravida turns to her mother for support and guidance in making decisions about pregnancy and parenthood. Overall, familism does not appear to change with acculturation (Sabogal, Marin, Otero-Sabogal, Marin, & Perez-Stable, 1987). The gravida's mother, grandmother, and other female family members serve as role models in matters of pregnancy, child care, and motherhood (Burk et al.; Lipson). They provide a firm foundation of emotional support for the pregnant woman (Brattan-Wolff & Portis, 1996).

African Americans least often planned to stay home with their infant. They also anticipated least domestic help from their partner and most often expected help from other family members. In this group the absence of the father in the home may be readily accepted or even expected. The expectation of not remaining home with the child and of receiving help from family members may explicate the responses by African Americans pertaining to anticipation of limited change in their lives with the advent of pregnancy and motherhood. The African-American expectant woman may also be replicating a pattern experi-

enced in childhood, wherein the mother worked and the grandmother or other family members reared the children to a moderate or great extent and were more available to them than the mother. This would also help to explain why the African-American gravida turns more to family members other than her mother for help and support. Although the sample of African-American expectant mothers in this study did not report a lack of social support, the literature does indicate that unplanned pregnancy, isolation and lack of social support, limited and unstable income, high stress, and the need to effectively manage stress are pressing problems encountered by researchers studying African-American cohorts (Bolla et al., 1996; Gonzalez-Calvo, Jackson, Hansford, Woodman, & Remington, 1997).

With regard to husband or partner relationships in the different ethnic groups, the importance of validation from a partner is underscored by Bolla et al. (1996), who cite emotional nourishment of the mother and maintaining a connection with the child as important aspects of the relationship. However, with regard to intimacy with partner or spouse, there exists a dearth of information in the literature. In this study, sexual intercourse decreased over the course of the pregnancy for all ethnic groups, yet pertinent differences were found for *aspects* of intimacy. Anglo-Americans reported the fewest problems/discomforts with intercourse, Latin Americans the most. Fear of harming the baby or concern for fetal well-being in the later stages of pregnancy may also have been a reason for decreased sexual intercourse. Anglo-Americans most often found alternative methods of sexually satisfying their partner, African Americans least often. These results, which suggest differences in women's expectations of their relationships after conception has occurred, have important implications for prenatal counselling.

One limitation of this study is that inquiry was directed to the relationship of the gravida with her husband/partner at the time of the interview, but not to whether the current husband/partner was the father of the fetus-child, or to whether there were other partners for either the gravida or her husband/partner. Cultural and subcultural variation may exist in this domain and may have a significant impact on relationship expectations and the quality of the relationship, as well as on health risks. Future inquiry could elaborate on these relationship issues and patterns. Other limitations include a small sample size and the use of a predominately low-income group of women that may limit generalizability of the findings.

Overall, the results have implications for counselling and delivering health care for gravid women in the three ethnic groups studied.

The literature documents that the reproductive concerns of minority ethnic groups, especially, have been understudied. Addressing these concerns through the provision of culturally competent care could reduce anxiety and stress for pregnant women. Future research on ethnic and cultural differences relevant to prenatal care should address representative samples of populations at risk and prominent psychosocial and health problems, and should use related assessment and intervention approaches to produce culturally informed data for research development, policy decisions, and program implementation (Steinberg, 1996).

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Postpartum Return to Work: Mothering Stress, Anxiety, and Gratification

Marcia Gruis Killien

Plus de la moitié des mères de bébés âgés de moins d'un an détiennent un emploi; cependant, peu de travaux de recherche se sont penchés sur leurs expériences en tant que parents. Le but de la présente étude était d'examiner les sentiments de satisfaction, de stress et d'anxiété de la séparation vécus par les mères qui retournent au travail au cours de la première année de la période postpartum, en lien avec les types d'emploi ainsi que certains indicateurs de santé. Les données ont été recueillies aux mois 1, 4 et 8 de la période postpartum, grâce à un questionnaire distribué par la poste, auprès d'une population de 142 femmes à prédominance caucasienne, de niveau scolaire élevé, et ayant un conjoint. On constate que les expériences des répondantes en tant que mères se sont améliorées tout au long de la première année suivant la naissance. Bien qu'on ait pu établir un lien entre, d'une part, un degré élevé de stress et d'anxiété causés par le rôle de parent et, d'autre part, la dépression et la fatigue, il reste que du point de vue clinique, peu de femmes ont effectivement souffert de ces symptômes de manière significative. On n'a constaté aucun lien entre le type d'emploi et le stress ou la satisfaction ressentie en tant que parent. Ces résultats pourront s'avérer utiles aux cliniciennes et cliniciens qui conseillent les femmes sur l'éventualité d'un retour au travail après l'accouchement.

Over half of mothers with infants less than 1 year old are employed, yet there is limited research examining the early parenting experiences of these women. The purpose of this study was to examine maternal gratification, stress, and separation anxiety, in relation to employment patterns and selected health-status indicators, of women returning to work during the first postpartum year. Data were gathered from 142 employed, well-educated, partnered, predominantly Caucasian women at 1, 4, and 8 months postpartum, using a mailed questionnaire. Their parenting experiences improved throughout the first postpartum year. While depression and fatigue were associated with greater parenting stress and anxiety, as well as a decreased sense of gratification from parenting, few women experienced these symptoms at clinically significant levels. Employment patterns were unrelated to parenting stress or gratification. These findings can be used by clinicians when counselling women regarding the decision to return to work after childbirth.

Background and Purpose

Over half of mothers with infants less than 1 year old are employed (Costello, Miles, & Stone, 1998). Scientific interest in maternal employment has focused predominantly on its impact on child development,

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especially infant-parent attachment (Bronfenbrenner & Crouter, 1982; Lerner, 1994). Such research has resulted in questions about the "best time" for mothers to return to work following childbirth, in terms of preventing negative child health outcomes, and has influenced public policies such as the *U.S. Family and Medical Leave Act,* which provides support for mothers to remain at home with their newborns without jeopardizing their jobs. Still, the majority of mothers return to work during the early months postpartum. Investigators (Gjerdingen, Froberg, Chaloner, & McGovern, 1993; Mercer, 1986; Youngblut, 1995) have more recently explored the health experiences of new mothers. However, there is limited research on how employment patterns and maternal health affect mothers' early parenting experiences, such as stress, separation anxiety, and gratification.

The purpose of this study was to examine parenting stress, separation anxiety, and maternal gratification, in relation to employment patterns and selected health-status indicators, of women who return to work during the first postpartum year. Specific questions, concerning the first year postpartum, included:

What are the changes in maternal fatigue and depression?

What are the changes in maternal gratification, parenting stress, and separation anxiety?

How does the timing of return to employment and hours worked affect maternal gratification, parenting stress, and separation anxiety?

How do maternal fatigue and depression affect maternal gratification, parenting stress, and separation anxiety?

Literature Review

The young family in which both parents are employed is an increasingly common phenomenon. In half of all married couples in the United States both partners work outside the home; 55% of women with infants under 12 months of age are employed (Herz & Wootton, 1996). Although a rapid increase in the employment rates of mothers is a recent phenomenon, considerable research has been conducted on employed mothers. Past research has been largely child-centred, focusing mainly on the relationship between the mother's employment status and the child's development and behaviour, based on the implicit if not explicit assumption that maternal absence is harmful to children. More recent research has addressed the processes by which maternal employment might affect children, focusing on such mediating variables as role satisfaction, child-care quality, and maternal health (Lerner,

1994; NICHD Early Child Care Research Network, 1996; Youngblut, 1995). While few consistent differences in children have been directly attributable to maternal employment per se, many experts are reluctant to conclude that maternal employment has little relevance to children's development and continue to advocate that mothers remain at home for varying periods after birth. Rubin's (1984) suggestion that the process of maternal identity formation as distinct from that of the child does not begin until 3 months postpartum and does not stabilize until 8 to 9 months postpartum is congruent with these recommendations. However, recent studies document that, on the average, mothers have returned to work by 12 to 15 weeks postpartum, with the majority of mothers being employed by 18 weeks (Killien & Jarrett, 1990; Mercer, 1986; Tulman & Fawcett, 1990b).

Studies that describe values influencing maternal employment decisions cite financial need, availability of adequate child-care, the desire and commitment to work, attitudes about the maternal role, and the degree of egalitarianism in the marriage as major factors (Hall, 1992; Killien, 1993; Mercer, 1986; Owen & Cox, 1987; Tulman & Fawcett, 1990b; Youngblut, 1995). The decision to return to work has been identified as one of the predominant concerns for mothers of infants (Gruis, 1977; Mercer; Walker & Best, 1991). Yet the literature offers limited guidance for nurses who counsel women during the perinatal period regarding potential outcomes of employment decisions on maternal and child health.

Employment has important effects on the health of women who attempt to juggle work and family responsibilities. Despite the common belief that physical restoration is completed by 6 weeks postpartum, women continue to experience symptoms and episodes of illness during the first postpartum year. Several longitudinal surveys have documented changes in health during the first year. Mercer (1986), in a longitudinal survey of 294 women, found that between two thirds and three quarters of postpartum mothers reported one or more illness episodes when surveyed at 4, 8, and 12 months; maternal well-being decreased at 8 months postpartum. Tulman and Fawcett gathered questionnaire data from 92 women at 3 and 6 weeks and 3 and 6 months postpartum; 58% were employed by 6 months. By this time, many still had not regained their usual level of energy; however, employed mothers were more likely than nonemployed mothers to report that they had fully regained their usual level of physical energy. Still, 60% reported that they had not yet fully resumed their usual occupational activities (Tulman & Fawcett, 1990a, 1990b). This finding is consistent with that of Mike, McGovern, Kochevar, and Roberts (1994), who sur-

veyed a stratified, random sample of postpartum women who had been employed during pregnancy. Of their small sample of 26 women who were at least 6 months postpartum, 82% reported one or more work or activity limitations because of feelings of tiredness or unwellness. Gjerdingen et al. (1993) gathered data using a mailed questionnaire from 436 currently employed women at 1, 3, 6, 9, and 12 months postpartum; physical symptoms generally declined throughout the course of the study.

The most common symptoms reported during the first postpartum year are fatigue, depression, and infectious diseases (Elek, Hudson, & Fleck, 1997; Gjerdingen et al., 1993, 1994; Killien, 1992; Mercer, 1986). Research with employed women suggests that these symptoms are responses to stress associated with multiple responsibilities at home and on the job (Barnett & Marshall, 1992; Sorensen & Verbrugge, 1987). Even when women assume obligations outside the home their responsibility for household maintenance and child care continue at high levels (Pleck, 1985).

The role of parent has been found to be particularly stressful when combined with other roles (Killien & Brown, 1987; McEntee & Rankin, 1983; Woods, 1985). Stress, when associated with maternal anxiety and depression, can negatively impact the quality of parenting. Mercer (1986) found that younger mothers, who were less often employed, reported greater feelings of gratification from parenthood than older, employed mothers. Ozer (1995) found that greater child-care responsibility was associated with decreased well-being and greater psychological distress among professional women at 1 month postpartum. Hyde, Klein, Essex, and Clark (1995) found that short postpartum leaves (less than 6 weeks) was a risk factor for depression. One source of stress for employed mothers is separation from their infant as they return to work. DeMeis, Hock, and McBride (1986) report that women who preferred employment and those who preferred being at home with their infants experienced similar levels of maternal separation anxiety in the early postpartum period; however, employment-preference mothers had less separation anxiety at 8 months. Owen and Cox (1987) found that mothers who worked more than 40 hours a week were more anxious than mothers who worked fewer hours or were not employed; these women also were less animated and less sensitive to their infants during interactions and were less securely attached to their infants. Gross, Conrad, Fogg, Willis, and Garvey (1995) found that maternal depression was significantly related to lower social competence and more behaviour problems in preschool children.

In summary, during the first postpartum year family role demands are particularly stressful for employed women as they adopt the motherhood role, alter dyadic relationships to incorporate a new family member, and adjust to separation from their infant (DeMeis et al., 1986; Gruis, 1977; Mercer, 1986). When women return to work the demands of the job can influence both their health and their parenthood experience. Thus the impact of returning to work on early experiences of parenting is an important area of focus for nurses involved in promoting the health of women and their families.

Methods

Design and Procedures

Data for this paper are derived from a larger, prospective longitudinal study of the impact of returning to work on the health of postpartum mothers. Data were gathered from September 1989 to May 1995 from 142 women residing in an urban community in the Pacific Northwestern United States. Participants met the following criteria at the time of enrolment in the study: married or in a committed relationship (as self-defined by the participant) with a male partner; pregnant with first child; employed 20 hours/week or more; and planning to return to work within 1 year of the birth. Participants were recruited through advertisements in local media, prenatal clinics, and word of mouth. The research was approved by the University of Washington Institutional Review Board.

Measurement

Data on maternal health status, family and employment variables, and health-promoting behaviours were gathered on five occasions: during mid-pregnancy and at 1, 4, 8, and 12 months postpartum. A variety of data-collection methods was used in the larger study; this paper is based on mailed questionnaire data from the 1-, 4-, and 8-month postpartum occasions of measurement.

Employment pattern. Timing of return to work was indicated by the week postpartum that the mother reported returning to regular employment. At each occasion the mother was also asked the average number of hours per week she currently spent in employment activities.

Health status. Young women of childbearing age are a primarily healthy population. However, two symptoms, depression and fatigue,

are commonly reported during the postpartum period and have been associated with disrupted parenting. Maternal experience of symptoms of *depressed mood* and *fatigue* were measured as part of the Symptoms of Stress Scale (Thompson & Kogan, 1982). Respondents indicate on a 5-point scale ranging from "never" to "very frequently" the presence of 94 symptoms of physical and emotional distress. Published reports of internal consistency ranged from .75 to .88 with test-retest reliability of .75. Internal consistency of the depression subscale in this sample ranged from .70 to .83 across all occasions.

Parenting variables selected for study included the perceived gratification derived from parenthood, stress associated with parenthood, and maternal anxiety associated with work-related separation from the child. *Parental gratification* was measured by Russell's (1974) Gratification Checklist as modified by Mercer (1986). The scale was constructed by asking new parents what things they enjoyed most about their new role. The 14-item, 5-point scale has internal consistency coefficients ranging from .71 to .80 (Mercer). In this sample, internal consistencies ranged from .80 to .83. *Parenting stress* was measured by the Parenting Stress Index (PSI) developed to measure the relative magnitude of stress in the parent-child system (Loyd & Abidin, 1985). The PSI contains 13 subscales in two domains, the Child Domain and the Parent Domain. For this study the total Child Domain (47 items) was used, including the following subscales: adaptability, acceptability, demandingness, mood, distractibility, and parent reinforcement. The alpha reliability coefficient for the total Child Domain is .89. In this sample, internal consistency ranged from .89 to .92. Three subscales (27 items) from the Parent Domain were used: attachment, role restriction, and sense of competence. Alpha reliability coefficients for these subscales are .55, .79, and .74 (.45–.58; .72–.79; .67–.79 in this sample). Test-retest coefficients for a 3-week interval on the PSI were .81 for the Child Domain and .71 for the Parent Domain. The PSI has been used extensively in child-development research and practice to identify parent-child dyads at risk for development of dysfunctional parenting behaviours or behaviour problems in children (Loyd & Abidin). An additional indicator of parenthood stress was the 35-item Maternal Separation Anxiety Scale (DeMeis et al., 1986) designed to measure the mother's apprehension about leaving her child for short-term separations. It includes three subscales: maternal separation anxiety, perception of separation effects on the child, and employment-related separation concerns. Alpha reliability coefficients range from .71 to .90; in this sample the internal consistency ranged from .88 to .92. Test-retest reliability coefficient for a 3-month interval was .99 (DeMeis et al.).

Analysis

Data were coded and entered for analysis into *SPSS for Windows*, Version 7.5. For interval-level data, high scores indicate a greater amount or degree of the variable of interest (i.e., more depression, more gratification), with the exception of the parenting stress variables for which a lower score represents greater stress. Descriptive statistics were used to summarize the variables. Changes in variables over the four occasions of measurement were analyzed using Analysis of Variance for Repeated Measures, with post-hoc contrasts for differences between each occasion. Relationships between bivariate pairs of variables were analyzed using Pearson's R. In all cases the significance level was set at .05.

Results

Characteristics of Participants

Data were available for 123 of the 142 original participants through 12 months postpartum. The majority of the participants who withdrew before completing the study did so within the first month postpartum, stating that they were too busy to complete the extensive questionnaires. Analyses revealed no demographic differences between the 123 participants who completed the study and the 19 who withdrew. Participants ranged in age from 20 to 41 years, with a mean age of 31 years. Maternal education ranged from less than high school to postgraduate, with 65.3% having at least a bachelor's degree. Participants were employed in a wide range of occupations: service (3%), sales (7%), technical (9%), clerical (17%), and professional/managerial (60%). Total annual family income at the time of study enrolment ranged from $10,000 to more than $80,000, with a median of $50–60,000 (US). The majority (90.5%) were Caucasian, with the proportion of Black, Hispanic, and Asian/Pacific Islanders approximating that of the community from which the sample was drawn. The majority (95%) were married; the remainder indicated they were in an unmarried but committed relationship (self-defined) with a male partner.

Participants reported working 20–75 hours/week at the time of enrolment — during their pregnancy — with 77% working 40 hours/week or more. Over one third (36.2%) of the sample worked until the day of delivery. Of the 15% who quit work 2 weeks or more prior to the birth, the majority did so under physician advice or because they had arranged for leave and delivered after their estimated due date. None experienced serious intrapartum complications requiring

extended hospitalization. Nearly all of the infants were healthy at birth. All but three infants (98%) were discharged home with their mothers. The majority of infants were breastfed after birth (97%) and at 1 month postpartum (87%).

Employment Patterns Postpartum

Participants returned to regular employment between 1 and 44 weeks postpartum, with a median time of 12 weeks. By 4 months 80% had returned to work and at 6 months 93% were employed. At 8 months 66% reported that they were satisfied or very satisfied with their decision to return to work when they did; while 46.7% indicated they had taken the "right amount" of time off work, 52.8% wished they had stayed home longer.

Of the participants employed at each occasion, the mean hours worked per week were 16.8 (1 month), 33.6 (4 months), and 32.2 (8 months). From 4 months postpartum onward, over half of the participants were employed full-time (40 hours/week or more), with some participants at each occasion reporting working up to 60 hours/week.

Maternal Health Status

Fatigue was by far the most prevalent symptom reported at 1 month postpartum (97.2%) and 4 months postpartum (88.9%). Fatigue scores remained high during the entire postpartum year, with mean scores indicating that fatigue was experienced "sometimes" (coded as 2) to "often" (coded as 3). The ANOVA for repeated measures indicated that there were statistically significant reductions in fatigue by time ($F = 29.64$, $df = 2,127$, $p<.001$), with statistically significant changes between each occasion of measurement as indicated by post-hoc contrasts (Table 1).

Participants reported generally low levels of depression at each occasion, with mean scores between "never" (coded as 0) and "infrequently" (coded as 1). The ANOVA for repeated measures indicated a statistically significant reduction in depression by time ($F = 12.12$, $df = 2$, $p<.001$), with the post-hoc contrasts showing that the only significant difference occurred between 1 and 4 months (Table 1).

Parenting

Maternal gratification with parenting was generally high, with mean scores ranging from 45.8 to 48.9 (from a possible range of 12–60) over

the three measurement occasions. Scores increased significantly throughout the postpartum period ($F = 22.65$, $df = 2,128$, $p<.001$), with significant changes between each occasion of measurement (Table 1).

Parenting stress, as measured by both child and parent domains, was low compared with published norms. A number of participants remarked that despite the PSI's reputation for being applicable to children under 3 years of age they found many items inappropriate for their infants. The ANOVA for repeated measures indicated a statistically significant decrease in parenting stress in both domains by time, with the post-hoc contrasts showing significant differences between each occasion for the parent and child domains (Table 1).

Table 1 *Changes in Postpartum Fatigue, Depression, Maternal Gratification, Parenting Stress, and Maternal Separation Anxiety by Time*

Variable	Occasion	Mean	Std. D	F (contrast)
Fatigue	1 month	3.05	0.83	
	4 months	2.56	0.99	55.11†
	8 months	2.44	0.96	6.38*
Depression	1 month	0.82	0.65	
	4 months	0.61	0.44	17.95*
	8 months	0.65	0.58	1.00
Gratification	1 month	45.83	7.21	
	4 months	48.37	6.35	39.37†
	8 months	48.85	6.46	9.16*
PSI: Child	1 month	177.70	17.84	
	4 months	188.89	17.02	75.65†
	8 months	190.43	17.00	26.78†
PSI: Parent	1 month	91.98	9.61	
	4 months	96.27	8.07	70.00†
	8 months	97.39	9.26	8.91*
Separation Anxiety	1 month	20.14	2.89	
	4 months	20.05	2.98	na
	8 months	19.77	3.28	na

Fatigue: [$F = 29.64$ ($df = 2,127$), $p < .001$], $n = 129$
Depression: [$F = 12.12$ ($df = 2,256$), $p < .001$], $n = 129$
Gratification: [$F = 22.65$ ($df = 2,128$), $p < .001$], $n = 130$
PSI: Child: [$F = 58.97$ ($df = 2,226$), $p < .001$], $n = 114$
PSI: Parent: [$F = 35.74$ ($df = 2,122$), $p < .001$], $n = 124$
Separation anxiety: [$F = 1.37$ ($df = 2,121$), $p =$ ns], $n = 123$
* $p < .01$ † $p < .001$

Maternal separation anxiety, as represented by the total scale score, was low and did not change significantly over time, as measured by ANOVA for repeated measures (Table 1).

Relationships among Maternal Health Status, Employment, and Parenting

Relationships among indicators of maternal health (fatigue, depression) and employment patterns (week of return to employment, hours worked per week) and indicators of the parenting experience (parenting stress, maternal gratification with parenting, and maternal separation anxiety) were examined at the 8-month postpartum occasion of measurement using Pearson's correlation coefficient (Table 2). At this time over 97% of the participants had returned to work; the majority had been back for several months.

Table 2 *Relationships among Indicators of Maternal Health, Employment, and Parenting Experience at 8 Months Postpartum*

Variable	Gratification	PSI: Child	PSI: Parent	Separation Anxiety
Depression	-.24*	.40†	.57†	.21†
Fatigue	-.13	.39†	.45†	.24†
Week RTW	.19*	-.07	-.10	.14
Hours/Week	-.02	-.20*	-.19*	-.02

$N = 126$ * $p < .05$ † $p < .01$

By 8 months postpartum the amount of time mothers had stayed home with their infants, as indicated by the postpartum week of return to employment, showed no relationship to experiences of parenting stress or maternal anxiety related to separation from her child. There was a mild positive relationship between maternal gratification with parenting and having returned to employment later ($r = .19$, $p<.05$). The number of hours a mother worked per week was unrelated to either maternal separation anxiety or maternal gratification, but was mildly associated with reporting less parenting stress in both the child ($r = -.20$) and parent ($r = -.19$) domains.

Maternal reports of depression and fatigue were moderately associated with all measures of the parenting experience. Mothers who reported more symptoms of depression and fatigue reported less grati-

fication, more parenting stress, and more maternal separation anxiety (correlations ranged from .21 to .57). It should be noted, however, that in general the sample scores for depression, parenting stress, and maternal separation anxiety were very low.

Discussion

This sample of healthy employed women incorporated parenting into their lives with relative ease. They worked until near the time of delivery, experienced few complications, and returned to work within the first months postpartum. Fatigue was the most common symptom they experienced during the postpartum months, and as time progressed their mood improved and levels of fatigue declined. Their parenting experiences improved throughout the first postpartum year. While depression and fatigue were associated with greater parenting stress and anxiety, as well as less gratification from parenting, few women experienced these symptoms at clinically significant levels.

The results cannot be generalized to groups of women who may not share the same resources as the participants in this study. These women were all in partnered relationships, were predominantly well educated, and were self-selected to participate in a longitudinal study that was demanding of their time and energies. Further, their employment status brought them financial resources and sources of social support unavailable to other populations of women. For example, Youngblut (1995) reported that women who were consistently employed from 3 through 18 months postpartum were more likely than women who left employment to perceive that adequate child care was available to them. In this study, 80–94% of the participants reported at each occasion that they were satisfied with their child-care arrangements. We could speculate that without these resources women might experience higher levels of stress, decreased gratification, and more health problems.

Some of the participants questioned the appropriateness of the PSA as a measure of parenting stress for mothers of infants. While a review of the scale items indicates that the majority of items are applicable, and the scale's psychometrics on this population are strong, the perception of these participants suggests than future studies should employ additional measures of parenting stress that focus on stressors associated with parenting young infants.

The findings of this study support those reported in the literature that employment per se does not interfere with parenting, especially

among otherwise healthy, functioning women. While learning to make room for a new infant in a busy life may be a challenge for working mothers, the resourceful women in this study managed the transition well. By 8 months postpartum their health and perceptions of parenting were largely positive. However, interview data reveal that some women experienced greater difficulties in juggling work and parenthood. Women who had jobs with limited flexibility, unsatisfactory child care, or non-supportive husbands or partners expressed concerns about their ability to manage their multiple responsibilities.

This study contributes to our understanding of the transition experienced by new mothers as they re-enter the work force. The longitudinal design of the study offers the opportunity to learn about longer-term outcomes of the transition, and thus adds to the literature, which comprises reports on studies of the immediate postpartum period or cross-sectional studies. The results offer clinicians guidance in reassuring clients that when adequate resources are available women can successfully combine employment and parenthood. It remains for future researchers to explore how women with fewer resources manage this transition and also how women continue to balance their work and family lives, especially as children get older and the demands of parenting change. Hochschild (1997) suggests that employment is consuming an ever-increasing share of family life. If this is true, the challenge for employed women to effectively incorporate parenting and work will continue.

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Breast-Milk Sodium as a Predictor of Breastfeeding Patterns

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La présente étude reproduit en partie et poursuit une étude antérieure qui concluait que le taux élevé de sodium contenu dans le lait maternel (LM [Na^+]) au début de la lactogenèse pouvait aider à prédire un allaitement maternel déficient. Du lait maternel extrait au jour 6 de la période postpartum a été utilisé pour la présente étude. En conformité avec les résultats de l'étude précédente, on a constaté que chez 80 % des femmes dont le lait affichait un taux de LM [Na^+] de 16 mmol/L ou moins au jour 6, le taux de sécrétion lactée demeurait élevé à la quatrième semaine, comparé à 50 % chez celles pour qui le taux LM [Na^+] était élevé (χ^2=4,05, *df*=1, *p*=0,04). Cette différence était encore plus marquée chez un sous-groupe de femmes pour lesquelles on avait prédit un risque de sécrétion lactée insuffisante, se fondant sur les variables de qualité du soutien reçu et de l'attitude éprouvée à l'égard de l'allaitement. Au sein de ce dernier groupe, chez 75 % des femmes pour qui le taux LM [Na^+] était faible, on observait une sécrétion lactée élevée à la quatrième semaine de la période postpartum, alors que ce pourcentage n'était que de 22 % chez celles affichant un taux LM [Na^+] élevé (χ^2=0,65, *df*=1, *p*=0,01). Par contraste, chez les femmes à faible risque, les taux de LM [Na^+] n'ont pas été associés à une variation du taux de sécrétion lactée (allaitement soutenu dans 89 % des cas pour le groupe au taux de sodium faible et dans 82 % des cas pour le groupe au taux de sodium élevé). Par conséquent, une baisse normale du taux de LM [Na^+] laisse prévoir de meilleures chances d'allaitement soutenu. Or, la valeur de prédiction de cet indice semble s'accroître lorsque celui-ci est combiné aux variables psychosociales que sont la qualité du soutien reçu et l'attitude de la mère à l'égard de l'allaitement.

This study partially replicates and extends a study reporting that elevated breast-milk sodium BM [Na^+] during early lactogenesis was predictive of poor breastfeeding outcomes. The present study used 6-day postpartum breast milk. Consistent with the findings of the earlier study, 80% of those with a BM [Na^+] of 16 mmol/L or lower at day 6 sustained a high level of breastfeeding at week 4, compared to only 50% of those with an elevated BM [Na^+] (χ^2 = 4.05, *df* = 1, *p* =.04). This difference was even greater in a subgroup of mothers predicted to be at high risk for insufficient milk supply on the basis of support density and self-perception variables. Of the latter group, 75% with low BM [Na+] sustained a high level of breastfeeding at 4 weeks postpartum, compared to only 22% with an elevated BM [Na+] (χ^2 = .65, *df* = 1, *p* =.01). In contrast, among the low-risk

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mothers BM [Na^+] levels were not associated with any difference in breast-milk sustainment (89% and 82% sustainment for low- and high-sodium groups, respectively). Thus a normal drop in BM [Na^+] is predictive of higher sustainment of breastfeeding. However, the predictive validity of this marker appears to be enhanced by combining it with the psychosocial variables of support density and self-perception of breastfeeding by the mother.

Elevated sodium concentrations in human breast milk have been associated with insufficient milk supply and infant malnutrition. Little is known, however, about the usefulness of elevated sodium concentrations as a predictor of sustained breastfeeding.

Review of the Literature

In her study of breast-milk sodium (BM [Na^+]) and lactation, Morton (1994) summarizes what is generally known about BM [Na^+] as follows: BM [Na^+] is not influenced by a mother's diet and is similar in women of high and low socio-economic groups. BM [Na^+] levels are generally high in colostrum but fall precipitously by day 3 and then continue to decline slowly for at least 6 months. BM [Na^+] does not differ between foremilk and hindmilk (Ereman, Lonnerdal, & Dewey, 1987; Gillies & Neill, 1985; Neville et al., 1991; World Health Organization/UNICEF, 1989). Additionally, BM [Na^+] levels are high during weaning when the volume of milk falls below 400 mL per day. The expected early postpartum drop in BM [Na^+] usually precedes the increased volume experienced with the mother's milk "coming in" by day 1 (Neville et al., 1991). Thus while related, dilution is not considered to be the primary mechanism for the dramatic drop in BM [Na^+], which typically occurs at about 60 hours postpartum.

Based on animal studies, Allen and Pelto (1985) propose a mechanism to relate sodium to milk production. They report that before lactation is established, and later during circumstances threatening the milk supply, the tight junctions between mammary epithelial cells leak, permitting pericellular Na^+ to influx into the milk. In contrast, when lactation is well established the junctions close and there is no exchange of Na^+ between the pericellular fluid and breast milk. When lactogenesis is diminishing and the junctures are again open, a resulting high Na:K ratio in both the milk and secretory cells may inhibit synthesis of the proteins necessary for milk formation, which would explain the downward spiral of milk production once weaning begins. The majority of studies in this area have focused on the conditions influencing the amount of sodium in breast milk. Little has been documented about how the long-term human breastfeeding process is related to BM [Na^+]. Morton (1994) looked at the relationship between early BM [Na^+] in the

first week and human lactation at 1 month and reports that an elevated BM [Na^+] between postpartum days 3 and 8 was associated with a drop in breastfeeding rates at 1 month postpartum. Thus BM [Na^+] level showed potential for being an important early clinical marker of the lactation process. Further development of such a marker would be potentially useful in early intensive support for mothers at risk of insufficient milk supply (IMS), which is the reason most frequently given by mothers for earlier than intended weaning (World Health Organization/UNICEF, 1989). While debate exists as to whether these mothers truly have insufficient milk supply or merely perceive that they do, mothers respond similarly in both cases. Early perceived IMS frequently leads to increased supplementation before lactation is established, followed by true IMS; thus for the purpose of nursing care the distinction may be a moot point.

It is important that mothers be assisted in continuing to breastfeed, because breast milk has been shown to benefit infants and mothers in ways that infant formulas cannot. Despite these relatively well-known benefits, many North American mothers wean their infants in the first few weeks and earlier than intended. Infant demand has been shown to be the main determinant of lactation performance after the first month (Dewey, Heinig, Nommsen, & Lonnerdal, 1986; Neville et al., 1989). However, the most rapid decline in the incidence of breastfeeding occurs in the first 2 weeks postpartum when maternal factors as well as infant demand — including maternal health, fatigue, comfort, and confidence (Hill & Humenick, 1989; Samuels, Margen, & Schoen, 1989) — may also affect the establishment of breast-milk production. Thus it is likely that a high level of BM [Na^+] at the end of the first week of breastfeeding is a result of poor lactation management and only secondarily an infant problem.

The purpose of the present study was to partially replicate Morton's (1994) research and to extend it to examine additional risk factors with mediating potential on the relationship of elevated BM [Na^+] to breastfeeding outcomes. For this study, mothers who reported breastfeeding at a level over 80% at 4 weeks were operationally defined as having sustained breastfeeding. Those who reported weaning or breastfeeding at a level 80% or below at 4 weeks were defined as having non-sustained breastfeeding.

We chose 80% as a cut point because our data analysis in a pilot study had shown that early in breastfeeding, once a mother decreased her breastfeeding to 80% and below, it was often a short time until the baby was weaned. Thus in these early weeks once feeding had reached

80% breast milk and below, supplemental feeding was substantial, and essentially the weaning process had begun.

Research Questions

1. The primary question was: *Do elevated levels of BM [Na+] at postpartum day 6 by themselves serve as a marker to predict low frequency of breastfeeding at week 4?* Additional data were available to examine supplemental questions as to whether they also predict low attainment of mothers' breastfeeding goals, a more rapid decline of breastfeeding levels in the first 20 weeks, or higher weaning rates by week 20.

2. *Are the psychosocial risk factors of perceived IMS, support density, and self-perception of breastfeeding mediators of the relationship between elevated BM [Na+] and the above breastfeeding outcomes?*

Methods

Primary Subjects

This analysis was performed as a secondary analysis. The subset of data was drawn from 340 subjects in a prospective, longitudinal, primary study of IMS. Mothers were recruited from 10 hospitals within 36 hours of giving birth. The original sample was stratified to recruit an equal number of first- and second-time mothers, with half of the latter group having breastfed previously for longer than 3 weeks. Subjects were retained if they fit into pre-selected categories designed so that two thirds were judged as high-risk for perceived IMS. Human-subject reviews were conducted by the two universities and 10 hospitals involved. The consent forms allowed for additional unspecified analyses of the milk samples.

Approximately 50% of the breastfeeding mothers who were approached agreed to participate in the study. This was also true in a similar pilot study conducted by Hill and Humenick (1996a). For the pilot group, almost all mothers not participating in the full study agreed to participate minimally. This consisted of selected demographic information at the time of the birth and a telephone call to ascertain breastfeeding outcome at week 20. There were no significant differences between mothers who fully and minimally participated in the study on either breastfeeding outcomes or demographics, with the exception of lower maternal education for the minimally participating mothers. Of those mothers who entered the present primary study, almost none

were lost to the planned follow-up, due to vigorous staff efforts and highly cooperative subjects.

Women in this primary study had single births, had begun breastfeeding within 36 hours, and, along with their infants, had been judged to be in good health. In addition, all the infants weighed at least 2,500 grams and had an estimated gestational age of 37 weeks or more. The mothers of the subsample in this secondary analysis averaged 28 years of age and lived in western Illinois or eastern Iowa in the United States; 85% were married; 89% were Caucasian. These demographic characteristics are consistent with those of the larger, primary sample.

Assessment of Risk

On the first day postpartum, mothers reported the density of their breastfeeding support network by responding to the question of how many of their friends and family members who had had babies in the previous 3 years had breastfed ("most," many," few," or "none"). Subsequently mothers provided a Breastfeeding Satisfaction Scale (MIBSS) at 6 days postpartum. Based on these responses, mothers in the primary study were assigned to one of three groups relative to their risk for IMS: high risk were randomly assigned to either an intervention or control group, while low risk were assigned to a low-risk observational group. The risk assessment and outcomes of the nursing interventions are fully described elsewhere (Humenick & Hill, 1998). The MIBSS is a subscale of the H & H Lactation Scale (Hill & Humenick, 1996b). It is a 7-point Likert scale with the following five items: (1) I feel successful at breastfeeding my baby; (2) In general, I am satisfied with breastfeeding; (3) I become more relaxed as I sit and breastfeed; (4) My baby appears to enjoy breastfeeding; and (5) I believe my baby is satisfied with breastfeeding. Cronbach's alpha for this subscale was .92. Mothers in the high-risk intervention group received weekly home nursing visits that included counselling based on use of a current breastfeeding reference (Tully & Overfield, 1989). Mothers in the high-risk control and low-risk observational groups were queried during bi-weekly telephone calls from a non-nurse who offered no advice. The risk assessment is enumerated in Box 1.

These variables were the most potent at day 6 out of all the variables in the study conceptual framework (Hill & Humenick, 1989). In the primary study, IMS risk category was assigned by the end of the first postpartum week, because mothers who wean earlier than intended often do so by week 2 or 3; thus any planned intervention must be started early.

Box 1 *Risk Assessment*

The assessment of mothers for risk for breastfeeding outcomes was based on items culled from a Phase 1 observation of 120 mothers that immediately preceded this primary study. The items used did separate out a high-risk group as documented in this article. However, analyses of the Phase 2 data suggest that a portion of the items can parsimoniously be used to assign risk. The first is the Maternal Infant Breastfeeding Satisfaction Subscale (MIBSS) (Hill & Humenick, 1996), which was administered at 1 week postpartum. The scale is a 5-item Likert scale with 35 possible points at the extreme end of disagreement. A score of 16 or more points was the cut point for MIBSS risk. The second item was one of "support density" administered while the mother was in hospital. It read, "How many (best guess) of family, friends and co-workers having babies in the past three years have breastfed their babies?" Possible answers were "none," "few," "many," or "most." Answers of "none" or "few" constituted the cut point for supporting density risk.

Further analysis revealed that the following levels of risk were predictive of breastfeeding outcomes among Phase 2 subjects:

Risk Level 1: No risk on MIBSS and no risk on support density.

Risk Level 2: No risk on MIBSS but high risk on support density.

Risk Level 3: High risk on MIBSS and either high or low risk on support density.

	Level 1 Risk	Level 2 Risk	Level 3 Risk	Chi-Square	*P* Value
Mother met or exceeded her breastfeeding goals during her hospitalization	70.8% (n = 34)	60.0% (n = 40)	20.0% (n = 15)	12.2	.002
Week 4: Breastfeeding exclusively or >80%	95.6% (n = 45)	92.0% (n = 50)	35.7% (n = 14)	34.8	.000
Week 8: Breastfeeding exclusively or >80%	82.2% (n = 45)	72.9% (n = 48)	15.4% (n = 13)	21.7	.000
Week 12: Breastfeeding exclusively or >80%	72.0% (n = 43)	57.8% (n = 45)	15.4% (n = 13)	34.8	.000
Week 16: Breastfeeding exclusively or >80%	66.7% (n = 39)	47.7% (n = 44)	14.3% (n = 14)	11.55	.003
Week 20: Breastfeeding exclusively or >80%	57.5% (n = 40)	32.5% (n = 43)	13.3% (n = 15)	10.55	.003

Assessment of Breastfeeding Level

Breastfeeding levels were adapted from Labbok and Krasovec (1990). All mothers were asked to respond to the inquiry "How would you describe your breastfeeding pattern this week?" A set of choices was verbally administered at postpartum weeks 1, 2, 4, 6, 8, 12, 16, and 20. For the secondary analysis, mothers were categorized as feeding over 80% breast milk ("More than eight of every ten feedings is breast milk") or less.

Breast milk sample collection. Mothers collected breast-milk samples on postpartum day 6. They were instructed to hand-express from each breast 1/2 to 1 teaspoon (2.5 to 5 mL) of breast milk. The sample was to be taken before and after the feeding nearest to 8 a.m. Mothers were instructed to refrigerate breast-milk samples until research assistants collected them the following day. Milk samples were tested for fat content and milk maturation progression from colostrum through mature milk (Humenick, Mederios, Wreschner, Walton, & Hill, 1994). The remainder of the milk samples were frozen for 1 to 2 weeks at -10 to 0°C and then frozen at -80°C in the event future analysis was required.

Subjects and Samples

Morton's (1994) study was published just after the aforementioned data collection had been completed. It became apparent that a partial replication was possible through secondary analysis of collected milk samples and maternal data. For this analysis, foremilk samples at day 6 postpartum were analyzed for Na^+. Samples were conveniently chosen if adequate milk samples were on hand to carry out this post-hoc milk analysis, potentially introducing a sample bias of mothers with more ample milk production. The number of milk samples for this unanticipated analysis was based on budget constraint. To avoid the confounding variable of prior breastfeeding experience, only milk from primiparae was used. The milk samples used for the Na^+ analysis had been frozen for 2 to 3 years prior to the analysis. All samples were stored in 12 x 75 polystyrene capped 5 cc. tubes, which were then sealed in plastic bags to prevent dehydration. Of the 41 samples, 16 were from mothers in the low-risk observation group, 14 from the high-risk intervention group, and 11 from the high-risk observation group.

Milk Analysis

The 41 milk samples used were re-labelled to conceal identification and control testing biases. Each sample was 1 to 2 mL in quantity. The samples were brought to room temperature, mixed, and centrifuged at 3,000 rpm for 10 minutes, and the substrate was analyzed for NA^+ (ion-specific electrode method) on a Beckman Synchron CX7 at Medical Laboratory in Casper, Wyoming.

The Medical Laboratory in Casper is accredited (#21965-01) by the College of American Pathologists (CAP). The instrument was calibrated with two standards for maximum sensitivity, and the linearity correlation coefficient was 0.99995. Zero of five data points exceeded the 10% limit set for sodium using the ion-specific electrode methodology. All test samples were reported in whole numbers using mmol/L as the unit of measure. Assayed control samples were run parallel with the 41 breast-milk samples to ensure instrument function. For consistency with Morton's (1994) study, samples with BM [Na^+] levels of 16mmol/L and under were operationally defined as non-elevated; those above 16mmol/L were defined as elevated.

Breastfeeding Outcome Patterns

In this study, mothers who reported breastfeeding at a level over 80% at 4 weeks were operationally defined as having sustained breastfeeding. Those who reported weaning or breastfeeding at a level 80% and under at 4 weeks were defined as having non-sustained breastfeeding. We chose 80% as a cut point because our primary data analysis had shown that early in breastfeeding, once a mother decreased her breastfeeding to 80% and below, it was usually a short time until the baby was weaned. Additional outcome variables used were: (1) the percentage of mothers who met their breastfeeding goals as stated during their childbirth hospitalization, (2) the number of weeks until breastfeeding decreased to below 80%, and (3) the percentage of mothers who had weaned at infant age of 20 weeks. These outcome variables were chosen because they were related outcomes and reflected the data available.

Limitations

This sample had several limitations. Approximately two thirds of the subjects were selected because they were at risk for perceived IMS, a rate higher than found in the general population. Thus generalization of feeding and weaning rates to all mothers cannot be made. However, the comparison between in-study groups is appropriate and useful.

Other limitations to generalization to all breastfeeding mothers are that only primiparae were included, BM [Na^+] was examined only at one time period, and the sample was small and from a circumscribed region of one country.

Statistical Analysis

Chi-square analysis or Fisher's Exact Tests were used to test the validity of BM [Na^+] as a predictor of breastfeeding outcome patterns. *T*-tests were used to contrast duration of feeding in weeks between low and elevated BM [Na^+]. A difference with a p value of .05 was considered significant.

Results

For the 41 breast-milk samples, BM [Na^+] ranged from 6 to 46 mmol/L. The median was 15. The mean was 17.4 with a standard deviation of 8.59. Of the 41 mothers, 61% (n = 25) had non-elevated BM [Na^+] (16 mmol/L or lower) and 39% (n = 16) had elevated BM [Na^+] levels.

BM [Na^+] as a Predictor of Breastfeeding Outcomes

Of the 41 mothers, 80% of those with low BM [Na^+] had sustained breastfeeding at postpartum week 4 compared to 50% with elevated BM [Na^+]. The difference was significant ($\chi^2 = 4.05$, $df = 1$, $p = .04$) (see Table 1). Thus day 6 BM [Na^+] was predictive of sustained breastfeeding at week 4.

Table 1 *Comparisons of Breast-Milk Sodium Level and Frequency of Sustained Breastfeeding: Patterns at 4 Weeks Postpartum*

	Low BM [Na^+]	High BM [Na^+]	χ^2	Fisher's Exact Test	*P* Values
All Mothers (n = 41)	80%	50%	4		.04
High-Risk Intervention (n = 14)	67%	20%		.13	
High-Risk Control (n = 11)	86%	25%		.08	
Low-Risk Comparison (n = 16)	89%	86%		.70	
Combined High-Risk Groups (n = 25)	75%	22%	65		.01

For the supplemental outcome measures: the percentage of mothers reaching their goal, the average time to decreasing breastfeeding to 80% or less, and the percentage of mothers weaning by 20 weeks were all in the direction of better outcomes for the low BM [Na^+] for high-risk mothers. These differences did not reach significance.

Risk for IMS Outcomes

The data were further analyzed by IMS risk group. By chance, all three groups had relatively even distribution of elevated BM [Na^+]. This was 36% for the control group, 36% for the intervention group, and 44% for the low-risk observation group (p =. 88). Thus these samples could be compared across risk groups by BM [Na^+].

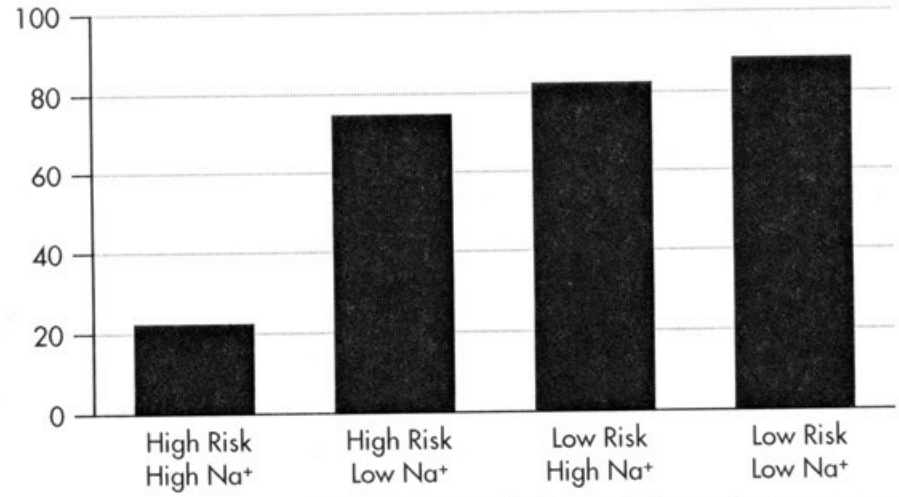
Week 4 comparison. Sustained breastfeeding rates at 4 weeks were compared. For mothers in the *high-risk control* group they were 86% and 25% for low- and elevated-BM [Na^+] groups, respectively (Fisher's Exact Test, one-tailed, p = .08). Similarly, for the *high-risk intervention* group the rates were 67% to 20%, respectively (Fisher's Exact Test, one-tailed, p = .09). For the combined *high-risk* groups the differences in the percentage who sustained breastfeeding at 4 weeks were statistically significant at 75% and 22%, respectively (χ^2 = .65, df = 1, p = .01). In contrast, for the *low-risk* group nearly identical rates of sustained breastfeeding were 89% to 86%, respectively, for low- and elevated-BM [Na^+] groups (Fisher's Exact Test, one-tailed, p = .70) (see Table 1). In summary, elevated BM [Na^+] at postpartum day 6 was shown to be predictive only for the mothers at high risk for IMS (Figure 1).

Meeting breastfeeding goals. For the *low-risk* group 55% and 57% of mothers with low and elevated BM [Na^+] had met their breastfeeding goals at week 20. For all *high-risk* mothers 50%, contrasted with 22%, of low- and elevated-BM [Na^+] mothers, respectively, met their breastfeeding goals (p = .42).

Weeks until breastfeeding decreased. The average time for mothers in the *low-risk* group to decrease their level of breastfeeding to 80% or less was 14.1 weeks and 14.5 weeks for the low- and elevated-BM [Na^+] groups, respectively. For all *high-risk* mothers decreased breastfeeding occurred at 10.3 and 5.6 weeks for the low- and elevated-BM [Na^+] groups, respectively. Using two-way ANOVA, the differences in time to decreased breastfeeding was significant for risk grouping (p = .02) but not for BM [Na^+] level (p = .31).

Weaning rates. When weaning rates (number of mothers breastfeeding) by 20 weeks were examined by IMS risk group, the mothers in the *low-risk* group continued to breastfeed at 20 weeks at a rate of 55.6% and 57.1% for low- and elevated-BM [Na^+] groups, respectively. For all *high-risk* mothers, breastfeeding continued at a rate of 28.6% and 11.1% for mothers with low and elevated BM [Na^+], respectively. This trend was also not statistically significant. However, it is notable that all the measures were in the direction of a difference by BM [Na^+] level for high-risk mothers and nearly identical numbers for low-risk mothers.

Figure 1 *Percentage of Mothers Breastfeeding >80% at Week 4 by Sodium Level and Risk Level*



Additional Variables

Several other potentially influencing factors were examined. Correlations and *t*-tests were used as appropriate, and determined that BM [Na^+] (as both a continuous variable and a grouping variable) was not significantly related to any of the following: mothers' reports of their age, height, and weight; mothers' responses to questions about their general health and nutrition levels, exercise level, or consumption of alcohol, caffeine, vitamins, and medications. None of the mothers reported smoking. BM [Na^+] was also compared to an objective measure of breast-milk maturation (Humenick et al., 1994) at postpartum days 6 and 20 and was not found to be significantly related. BM [Na^+] was compared to the MIBSS and no significant relationship was found in these two measures from data collected at postpartum days 6 and 7.

Summary

In summary, answers to the research questions are that elevated levels of BM [Na^+] at postpartum day 6 do predict a significant decrease in breastfeeding sustainment at week 4. When IMS risk groups was used as a mediating variable, high-risk mothers showed a striking decrease in sustained breastfeeding at week 4 (75% compared to 22%) for low- and elevated-BM [Na^+] groups, respectively. For mothers who had been judged to be at low risk for IMS, level of BM [Na^+] showed no prediction of future breastfeeding patterns. Thus BM [Na^+] appears to be a marker predicting poor breastfeeding outcomes only for mothers at high risk for perceived IMS.

Discussion

The answer to the first research questions is yes. A difference in sustained breastfeeding was predicted by early BM [NA^+] levels. Morton (1994) reported diminished breastfeeding at 1 month for mothers whose milk was elevated above 16mmol/L sampled between postpartum days 3 and 8. There were a number of methodological differences between our study and the Morton investigation. In the Morton study the initial BM [Na^+] was measured in samples collected from days 3 through 8, as compared to day 6 samples in the present study. Morton's criteria for success were exclusive breastfeeding and 454 grams above birthweight at 1 month, whereas in the present research "sustained breastfeeding" was defined as infant daily average intake of greater than 80% breast milk at 4 weeks. In the Morton study all mothers with an elevated BM [Na^+] received intervention, whereas mothers with low BM [Na^+] received no intervention. In comparison, in the present study approximately one third of mothers with both low and elevated BM [Na^+] received intervention. Thus in Morton's study intervention was potentially confounded with BM [Na^+] grouping, whereas in the present study intervention was limited to half the high-risk mothers but appeared to make no difference among those with elevated sodium levels. Another difference is that in the present study mothers were followed for 3 additional months; thus more is known about their breastfeeding outcomes up to 20 weeks. Morton reported a 1-month follow-up.

Consistency

In spite of the recruitment and methodological differences, the similarity of the 1-month findings for the two studies is striking. This provides

support for the findings from both sets of data. Morton (1994) reported that of 60 women with high BM [Na^+] 45% did not meet her criteria for success at 1 month. Similarly, in the present study 50% of all mothers with high BM [Na^+] did not meet our criteria for sustained breastfeeding at 4 weeks. Of the mothers in Morton's study who had low BM [Na^+] 88% met her criteria for success, as compared to 80% of all mothers in the present study. Given our small sample and the multitude of variables that were not controlled, perhaps this similarity is a coincidence. Conversely, since the findings fit the earlier physiologic discussion of lactogenesis, it is likely that BM [Na^+] is a sufficiently powerful marker of the lactation process to override the influence of a variety of potentially intervening variables. The collective evidence calls for a more definitive study with more subjects than featured in our study and with a longer follow-up data-collection period than featured in Morton's study. A larger sample would allow for the examination of additional mediating variables such as labour anesthesia/analgesia, frequency of breastfeeding, use of supplements, newborn suckling behaviour, and maternal breastfeeding-associated problems such as sore nipples, engorgement, and mastitis.

Question 2: IMS Risk as a Mediating Variable

An important finding of our study was that high levels of BM [Na^+] predicted a significant difference in breastfeeding at 4 weeks only for the groups at high risk for perceived IMS when this variable was considered. In the present analysis the high-risk mothers with low [Na^+] also showed a trend towards more weeks of breastfeeding before weaning and a greater likelihood of meeting their breastfeeding goals. While these trends were not significant in this small sample, they suggest that the influence of early BM [Na^+] may extend beyond the time frame documented in the Morton (1994) study. This, too, should be further studied in a larger sample.

Interestingly, the data also suggest that mothers' BM [Na^+] levels at 6 days are not significantly associated with mothers' reported MIBSS scores at 7 days. Thus although MIBSS scores played a large part in IMS risk-group assignment, they do not predict BM [Na^+] in this sample. One might hypothesize that mothers with elevated BM [Na^+] would be somewhat aware of experiencing breastfeeding difficulties and would express this as dissatisfaction on the MIBSS. This does not, however, appear to be the case based on this small sample. Thus the MIBSS scores and the BM [Na^+] scores, collected at about the same time (days 7 and 6), appear to be independent but additive predictors.

Implications for Nursing

If the additive prediction of this combination of biological and psychosocial variables is supported by future studies, it will be of clinical significance. The better the predictive validity of risk measures, the more precision is possible in nursing interventions related to breastfeeding outcomes. Identification of those at highest risk for IMS (or any health condition) has potential for cost savings in the provision of care. Seldom are there adequate health-care resources to provide all mothers with intensive breastfeeding support. In the larger primary intervention study, Humenick and Hill (1998) found that intervention with their group of high-risk primiparae resulted in significantly more breastfeeding and less weaning due to perceived IMS. Continued perfecting of risk-assessment measures has the potential to allow nurses to efficiently direct their efforts towards the breastfeeding mothers who need them most.

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Smoking in Pregnancy and Postpartum: Relationship to Mothers' Choices Concerning Infant Nutrition

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L'objectif de cette étude consistait à examiner le lien possible entre le statut de fumeuse d'une mère et l'alimentation du nourrisson. En 1993, on a pré-sélectionné sur une période de 6 mois des femmes devant accoucher dans 5 hôpitaux de la région d'Ottawa-Carleton en Ontario. Un suivi par téléphone a été effectué auprès des répondantes au troisième mois de la période postpartum, à l'aide d'un questionnaire éprouvé. On a posé aux mères des questions concernant les choix faits par celles-ci quant à l'alimentation du nourrisson, ainsi que leur comportement en tant que fumeuses. On a eu recours à des analyses de régression logistique afin de déterminer l'importance des facteurs démographiques et du tabagisme chez les mères, en lien avec trois pratiques sur le plan de l'alimentation : l'allaitement au biberon dès la naissance, l'interruption de l'allaitement au sein, et le passage aux aliments solides dès la douzième semaine. Au total, 796 femmes ont participé à l'étude longitudinale (taux de suivi : 90 %). Les mères ayant un faible niveau de scolarité, les jeunes mères, les mères monoparentales, séparées ou divorcées et les mères nées à l'étranger avaient davantage tendance à allaiter au biberon dès la naissance. Les femmes ayant un faible niveau de scolarité étaient plus enclines à cesser l'allaitement au sein avant la douzième semaine. Les femmes ayant fumé durant toute la grossesse ou une partie de celle-ci et qui fumaient toujours au moment de l'entrevue avaient, et ce de manière significative, davantage tendance à allaiter au biberon à la naissance ou à avoir cessé d'allaiter au sein à la douzième semaine, comparativement aux non-fumeuses. Les fumeuses étaient aussi plus enclines que les non-fumeuses à inclure, dès la douzième semaine, des aliments solides au régime du nourrisson. Le tabagisme chez les mères s'est avéré un facteur significatif pouvant permettre de prédire, lorsque d'autres facteurs sociodémographiques étaient pris en compte, le mode d'alimentation du nourrisson qui serait privilégié. Ce facteur devrait par conséquent être intégré aux outils d'évaluation clinique en matière d'alimentation du nourrisson. De nouvelles études portant sur le lien entre d'autres dimensions du tabagisme chez la mère et l'alimentation du nourrisson (par ex. les tentatives d'arrêter de fumer, la qualité du soutien de la part du conjoint, le tabagisme chez le conjoint) mériteraient d'être entreprises.

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The objective of this study was to examine the relationship between maternal smoking status and infant nutrition. Women delivering in 5 hospitals in the Ottawa-Carleton region of Ontario were screened for eligibility over a 6-month period in 1993. Follow-up data were collected by telephone at 3 months postpartum using a validated questionnaire. Mothers were retrospectively asked about their infant-feeding choices and their smoking behaviours. Logistic regression analyses were used to determine the significance of demographic factors and maternal smoking behaviours in relationship to 3 feeding practices: bottlefeeding at birth, discontinued breastfeeding by 12 weeks, and introduction of solids by 12 weeks. A total of 796 women participated in the longitudinal study (90% follow-up rate). Less-educated; younger; single, separated or divorced; and foreign-born mothers were more likely to bottlefeed at birth. Less-educated women more often discontinued breastfeeding before 12 weeks. Mothers who had smoked during part or all of their pregnancy and were smoking at the time of the interview were significantly more likely than non-smokers to bottlefeed at birth or to discontinue breastfeeding by 12 weeks. Current smokers were also more likely than non-smokers to have introduced solid food by 12 weeks. Maternal smoking was a significant predictor of infant nutrition, with other sociodemographic factors taken into account. Smoking status should be included in clinical screening tools for infant nutrition. The relationship between other dimensions of maternal smoking (e.g., timing of quitting attempts, degree of partner support, partner's smoking behaviours) and infant-feeding practices warrants investigation.

Introduction

The protective health effects of quitting smoking during pregnancy, shielding infants from environmental tobacco smoke, initiating breastfeeding, and delaying the introduction of solid foods have been well documented (American Academy of Pediatrics, Committee on Substance Abuse, 1994; DiFranza & Lew, 1996; Floyd, Rimer, Giovino, Mullen, & Sullivan, 1993; Klonoff-Cohen et al., 1995; Lucas, Brooke, Morley, Cole, & Bamford, 1990). However, relationships between smoking and infant-feeding practices have received less attention. For example, a review (Edwards, 1995) of 14 prospective studies investigating predictors of breastfeeding initiation and duration among postnatal immigrants or ethnic minorities found that only one study (Grossman, Fitzsimmons, Larsen-Alexander, Sachs, & Harter, 1990) examined women's smoking patterns during pregnancy. A thorough understanding of how women's choices about smoking affect their infant-feeding decisions is critical to the design of infant-nutrition programs.

There are both biological and psychological models underlying the hypothesized negative relationship between smoking and breastfeeding. The biological model arises from endocrinologic research indicating that lactogenic hormone levels, particularly prolactin, are altered by cigarette smoke in a manner consistent with reduced milk production (Andersen, Ronn, Tjonneland, Djursing, & Schioler, 1984; Widstrom, Werner, Matthiesen, Svensson, & Uvnas-Moberg, 1991). Studies have

shown that infants of women who smoke exhibit delays in initiating sucking, decreased sucking pressures, and more frequent episodes of colic than infants of non-smoking mothers (Martin, Martin, Streissguth, & Lund, 1978; Said, Patois, & Lellouch, 1984). Hopkinson, Schanler, Fraley, and Garza (1992) demonstrated that smoking reduces breast-milk production and lowers fat concentration in the milk of mothers of pre-term infants. Other authors (Cabello et al., 1991; Vio, Salazar, & Infante, 1991) have reported reduced milk intake by both full- and pre-term infants of smoking mothers. Consistent with this finding, Hill and Aldag (1996) found that insufficient breast milk was more often cited as a reason for a change in feeding patterns among smoking mothers than among non-smoking mothers of term and low-birthweight infants.

Retrospective and cross-sectional studies have found that smokers wean their infants earlier than non-smokers. For example, Redman, Watkins, Evans, and Lloyd (1995) found that women who breastfed for less than 4 months were more likely to be current smokers than women who breastfed longer than 4 months (crude OR 2.83, 95% CI: 1.25, 6.39). Other authors have reported similar findings, with non-smokers being two to four times more likely than smokers to initiate breastfeeding or to wean later (Ever-Hadani, Seidman, Manor, & Harlap, 1994; Feinstein, Berkelhamer, & Gruszke, 1986; Minchin, 1991; Schwartz-Bickenbach, Schulte-Hobein, Abt, Plum, & Nau, 1987). More recent studies have found a dose-response gradient between amount smoked and early breastfeeding cessation (Nafstad et al., 1997) and a stronger likelihood of early weaning among mothers of low-birthweight versus term infants (Hill & Aldag, 1996).

The link between reduced milk production and smoking may also affect the decision to introduce solids earlier. For example, Redman et al. (1995) report that women who terminated breastfeeding prior to 4 months were 3.33 times more likely to introduce solids early than women who terminated breastfeeding later (95% CI: 1.68, 6.62). Little, Lambert, Worthington-Roberts, and Ervin (1994), in their study of maternal smoking and infant weight gain, examined the body mass of 1-year-old infants. They compared three groups: breastfed infants of smokers, breastfed infants of non-smokers, and bottlefed infants of smokers. Breastfed infants of smokers gained more weight and had a significantly higher body mass than the other two groups. The authors hypothesize that this paradoxical finding may be due to smokers having difficulty maintaining milk supply and supplementing with more solid food to soothe fussy babies. Conter, Cortinovis, Patrizia, and Riva (1995) and Nafstad et al. (1997) found that adjusted weight gain in the first year of life was greater in the children of smokers.

The psychological model explaining the relationship between smoking and breastfeeding arises from recent qualitative and quantitative studies of postpartum smoking relapse (Edwards, Sims-Jones, & Hotz, 1996; Sims-Jones et al., 1997). About one third of women who quit smoking during pregnancy do so for the sake of the baby rather than themselves. Furthermore, women who quit for the sake of the baby often indicate an intention to take up smoking again, either soon after delivery or upon termination of breastfeeding. For some women, breastfeeding appears to provide an extension of the period when they quit smoking for the sake of the baby (Edwards & Sims-Jones, 1998). For this cohort, a decision to stop breastfeeding closely coincides with a decision to start smoking again.

Supporting these findings are the results of O'Campo, Faden, Brown, and Gielen's (1992) prospective study of psychosocial factors affecting infant-feeding practices between 6 and 12 weeks postpartum. After adjusting for sociodemographic characteristics in a logistic regression analysis, the investigators found that a mother's decision to use formula rather than to breastfeed was the only significant predictor of postpartum smoking relapse (OR 2.7, 90% CI: 1.1, 6.6).

Methods

The purpose of this analysis was to examine the relationship between smoking status during pregnancy/postpartum and infant-nutrition practices. Data for this study were collected as part of a three-group randomized controlled trial designed to test the effectiveness of alternative approaches to postpartum follow-up for lower-risk primiparas (mail-out package either alone or in combination with a phone call by a clerk reminding women to attend a postpartum support group; or a telephone "visit" by a public health nurse). Methods are detailed elsewhere (Edwards & Sims-Jones, 1997). Briefly, women delivering in five hospitals serving the Ottawa-Carleton region were screened for eligibility over a 6-month period in 1993 using data on hospital liaison forms. Inclusion criteria were: primiparous, singleton birth, gestation 35 weeks or more, no congenital abnormalities, and identified as lower risk by the hospital liaison referral process. Follow-up data were collected by phone at 3 months postpartum using a validated questionnaire that obtained self-reported data on infant-feeding and maternal-smoking status.

Predictor and Outcome Variables

For the principal analysis, response categories for sociodemographic variables were collapsed as follows: mother's age (15–24; 25–29; 30–34;

35 or over), education completed (less than high school diploma; high school diploma or greater), annual household income ($20,000 or less; $21,000 or more), country of birth (Canada; elsewhere), and marital status (married; living common-law; single, separated, or divorced).

Three categories of smoking behaviours were coded: did not smoke during pregnancy or smoked during some or all of pregnancy but quit at time of interview (quit smokers); smoked during some or all of pregnancy and smoking at time of interview (current smokers); or never smoked (non-smokers). Non-smokers were defined as women who had never smoked or had smoked less than 100 cigarettes in their lifetime.

The outcome variables were defined as exclusive or partial bottle-feeding initiated at birth, discontinuation of breastfeeding by 12 weeks postpartum, and introduction of solid foods by 12 weeks. Solids were defined as any food other than milk, water, or vitamin or fluoride supplements. Responses to study questions were used to derive three dichotomous (yes or no) outcome variables: (a) bottlefeeding at birth; (b) discontinued breastfeeding by 12 weeks postpartum; and (c) solids introduced by 12 weeks postpartum.

Analysis

Relationships between sociodemographic variables, smoking status, and each of the three feeding practices were examined using the Pearson chi-square. All predictor variables with a chi-square having a probability of .25 or less were considered to be potentially important predictors and were included in initial logistic regression models. Two-way interaction terms were tested in the three models to identify any combined effects of the mother's age with other predictors. A backwards stepwise logistic regression procedure was followed, where the inclusion of individual predictors was determined by the significance of the Wald statistic associated with each regression coefficient. Predictors that were not found to be significant were dropped for successive iterations in the model-fitting process. Final models were considered significant based on the overall chi-square test of fit.

Possible relationships between patterns of missing responses and the dependent or independent variables were examined to ensure that the findings were not biased by excluding from the analysis mothers who did not respond to some questions. All analyses were run using *SPSS 6.1.2 for Windows* (SPSS Inc., 1995).

Results

Sample

Of the 972 women initially found to be eligible for the study, 873 (90%) were contacted at 3 months postpartum when their final eligibility was ascertained and their consent to be interviewed requested. Forty-four women were subsequently determined to be ineligible. Only 31 mothers (3%) refused to participate. In total, 788 women completed the interview. One woman did not provide any demographic information and was not included in the analysis. Smoking outcomes were computed for 787 women. However, 18 of these women reported quitting smoking prior to pregnancy, not smoking throughout pregnancy, and relapsing during the postpartum period. This subgroup was excluded from the main analysis because theoretically it was considered inappropriate to include them with the current smokers; yet the number of women in this subgroup was too small to include in the logistic regression due to the occurrence of singularities. Thus a cohort of 769 women provided information used to analyze predictors of both bottlefeeding at birth and introduction of solids by 12 weeks postpartum. The subcohort of 674 women who had initiated breastfeeding at birth was examined to identify predictors of breastfeeding cessation by 12 weeks.

Findings

Among the 769 women included in the analysis, 317 (41.2%) had smoked more than 100 cigarettes in their lifetime; 183 (23.8%) who had either quit for the pregnancy or had smoked during some or all of the pregnancy were not smoking at the time of the interview, while 128 (16.6%) were smoking at the time of the interview. A large proportion of smoking women (69%) had tried to quit during pregnancy. Quit attempts occurred most frequently during the first trimester.

The demographic characteristics of mothers differed across smoking categories (Table 1). Compared to non-smokers, quit and current smokers were younger, had less education and lower incomes, were less often married, and were more often Canadian-born. Among the three smoking cohorts, current smokers had the highest rates of bottlefeeding at birth and breastfeeding cessation by 12 weeks. Current smokers were also more likely to have introduced solid foods by 12 weeks than non-smokers or quit smokers (Table 2).

Table 1 *Demographie Profile of Sample by Smoking Status*[a]

Characteristic	Total Sample (N = 769) %	Non-Smokers (N = 586) %	Quit Smokers (N = 55) %	Current Smokers (N = 128) %
Age (years)				
15–24	16.5	12.8	29.1	28.1
25–29	37.3	37.5	40.0	35.2
30–34	36.2	38.4	27.3	29.7
35 and over	10.0	11.3	3.6	7.0
Education[a]				
Less than high school diploma	24.4	18.6	41.8	43.8
High school diploma or some post-secondary	16.5	16.2	7.3	22.7
College or university graduation	58.8	65.2	50.9	32.9
Marital Status[a]				
Single, separated, divorced	8.8	6.7	16.4	15.6
Living common-law	9.6	6.5	12.7	22.7
Married	81.5	86.9	70.9	61.7
Country of Birth				
Canada	79.4	76.7	87.3	88.3
Elsewhere	20.6	23.3	12.7	11.7
Household Income[b]				
$20,000 or less	11.3	9.4	17.0	17.1
$21,000–$39,000	19.9	18.7	26.4	22.7
$40,000–$59,000	22.8	22.2	24.5	24.4
$60,000 or over	46.0	49.7	32.1	35.8

[a] Proportions do not always sum to 100% due to subgrouping or rounding errors.
[b] Fifty-three women did not respond to income questions.

Table 2 *Proportion of Mothers' Infant-Feeding Practices by Maternal Smoking Behaviours*[a]

Infant-Feeding Practice Total $N = 769$	Non-Smokers % (N)	Quit Smokers % (N)	Current Smokers % (N)	Chi-Square	p Value
Initiated breast-feeding at birth					
Yes	91.1 (534)	83.6 (46)	73.4 (94)	31.3	$p < .001$
No	8.9 (52)	16.4 (9)	26.6 (34)		
Partial or exclusive bottlefeeding at birth					
Yes	47 (275)	47.3 (26)	76.6 (98)	37.3	$p < .001$
No	53 (311)	52.7 (29)	23.4 (30)		
Discontinued breast-feeding by 12 weeks[a]					
Yes	27.3 (145)	34.8 (16)	52.1 (49)	23.2	$p < .001$
No	72.7 (389)	65.2 (30)	47.9 (45)		
Introduced solid food by 12 weeks					
Yes	38 (222)	45.5 (25)	70.3 (90)	44.6	$p < .001$
No	62 (364)	54.5 (30)	29.7 (38)		

[a] Only women who had initiated breastfeeding were asked about continuing breastfeeding at 12 weeks postpartum ($N = 674$).

As shown in Table 3, there were some differences in the predictor variables retained in each logistic regression model. Smoking status was, however, a consistent predictor of each feeding behaviour. Final models for the three feeding practices were significant based on the overall chi-square for model fit ($p < .0001$). No interaction terms were retained in final models.

Initiation of bottlefeeding at birth was significantly greater among current smokers than non-smokers. Compared to non-smokers and women 35 years of age or older, current smokers and women aged 15 to 24 were significantly more likely to have introduced solid foods by 12 weeks postpartum.

To explore the possibility that successful quit attempts during pregnancy influenced outcomes, logistic regression models were constructed and tested using only those responses from the 128 mothers who were smoking at the time of the interview. Predictors were identical to those used in the main analysis, with the addition of information about quit attempts during pregnancy or postpartum (yes or no).

Table 3 *Maternal Characteristics Related to Infant-Feeding Practices*

Maternal Characteristics (predictor variables)	Odds Ratios (95% CI's) for Feeding Practices[a]		
	MODEL 1 Bottlefeeding at Birth (N = 769) OR (95% CI)	**MODEL 2 Discontinued Breastfeeding by 12 Weeks Postpartum (N = 674)[a] OR (95% CI)**	**MODEL 3 Introduced Solids by 12 Weeks Postpartum (N = 769) OR (95% CI)**
Age Group (years)			
15–24	–	–	2.33 (1.28, 4.26)[b]
25–29			1.25 (0.74, 2.12)
30–34			0.78 (0.46, 1.33)
35 and over			1.0
Marital Status			
Single, separated, divorced	2.90 (1.53, 5.49)[b]	–	–
Living common-law	1.39 (0.81, 2.37)		
Married	1.0		
Smoking Status			
Current smoker	3.01 (1.89, 4.78)[b]	2.48 (1.56, 3.93)[b]	3.53 (2.31, 5.38)[b]
Quit smoker	0.79 (0.44, 1.43)	1.14 (0.59, 2.21)	1.16 (0.65, 2.05)
Non-smoker	1.0	1.0	1.0
Country of Birth			
Outside Canada	1.50 (1.04, 2.19)[b]	–	–
Canada	1.0		
Education			
Less than high school diploma	2.01 (1.38, 2.93)[b]	2.19 (1.47, 3.26)[b]	–
High school diploma or greater	1.0	1.0	

[a] Only women who had initiated some breastfeeding were asked about continuing breastfeeding (N = 674). [b] The regression coefficient for this predictor is significant in the model ($p < .05$, based on Wald statistic). – Predictors not retained in the backward stepwise logistic model.

Results indicate that less education is associated with bottlefeeding initiation and breastfeeding cessation prior to 12 weeks (OR 2.64, 95% CI: 1.07, 6.49; OR 4.29, 95% CI: 1.75,10.6, respectively). However, the variable "women's quit attempts" was not found to be a significant predictor of infant-nutrition choices.

As discussed above, 18 women (2.3%) who had not smoked at all during pregnancy but resumed smoking after the birth were omitted from the main analysis. In a separate analysis (not shown here) these women were found to be most similar to the current smokers. Including these women with the current smokers group neither altered the set of predictors entering any of the three models nor significantly changed the computed odds ratios.

Discussion

Consistent with other studies, results indicate a strong relationship between maternal smoking status and infant nutrition. Smoking was the only factor associated with all three outcomes: initial choice of bottle- over breastfeeding, early discontinuation of breastfeeding, and early introduction of solids. While smoking is a proxy for other personal and situational factors (Stewart et al., 1996), smoking emerged as an independent predictor when other sociodemographic variables were controlled for in the analysis. Examining three smoking status groups in our analyses allowed us to identify current smokers rather than quitters as the subgroup most in need of early interventions targeting infant nutrition.

There were some notable differences in the sociodemographic predictors retained in each model. Only age was retained as a predictor of the introduction of solids, whereas level of education was the only predictor of early breastfeeding cessation. However, bottlefeeding initiation at birth was predicted by three sociodemographic factors: marital status, level of education, and whether immigrant or Canadian-born. These differences in sociodemographic predictors may reflect varying mechanisms of influence between each of the predictors and the infant-nutrition outcomes. For example, immigrants have been identified as less likely than non-immigrants to initiate breastfeeding (Baranowski, Bryan, Rassin, Harrison, & Henske, 1990; Bryant, 1989; Greene-Finestone, Feldman, Heick, & Luke, 1989; Jacobson, Jacobson, & Frye, 1991), but a similar relationship with the early introduction of solid foods has not been reported.

The study had several limitations. First, interviews were conducted at 3 months postpartum, providing retrospective data for predictor variables and for one of the feeding outcomes (bottlefeeding at birth). With the exception of marital status and family income, all of the sociodemographic predictor variables would have been stable for the initial 3 months postpartum. Thus it is unlikely that bias was introduced by changes in sociodemographic predictor variables for that 3-month period. However, the retrospective nature of data collection does not allow us to confirm the temporal relationship between smoking status and outcome variables. For example, we do not know with certainty whether smoking relapse postpartum preceded or succeeded breastfeeding cessation. Nor do we have data on the time lapse between smoking relapse and change in infant-nutrition practices. Therefore we cannot establish causal links between smoking status and feeding choices.

Second, approximately one third of the women enrolled in this study were randomized to receive a telephone visit consisting of an assessment and a brief educational intervention. While the decision to initiate breastfeeding took place prior to the visit, the decision to stop breastfeeding early or to introduce solids may have been influenced by the visit. However, prior analysis (Edwards & Sims-Jones, 1997) indicates no clinically or statistically significant differences in infant-care practices between women who did and did not receive telephone visits, thus suggesting the absence of a cointervention bias.

Third, self-report data were used for all variables. Other authors (Margolis, Keyes, Greenberg, Bauman, & La Vange, 1997; Nafstad et al., 1996) have cited a tendency for pregnant and postpartum women to under-report smoking. No biochemical testing was used in this study. Therefore we are unable to determine what proportion of women were misclassified as quit smokers when they should have been in the current-smokers group. Similarly, there may have been some underreporting of the use of solid food and the introduction of bottlefeeding by women knowledgeable about infant-feeding recommendations. This effect may have been mitigated somewhat by having the interview take place at 3 months postpartum rather than closer to the time of birth. Furthermore, several authors have documented a high level of accuracy of self-reports for infant-feeding practices (Launer et al., 1992; Quandt, 1987).

Finally, women enrolled in the study were lower-risk primiparas as reflected in the sociodemographic profile of the sample. We compared the characteristics of our sample with a cohort of primiparas recruited

from hospitals in our region in 1994 (Stewart et al., 1994). Women in our study were older and more educated. However, both samples were nearly identical with respect to immigration and marital status. The impact of socio-economic status and age on smoking and infant-feeding decisions needs to be better understood before results can be generalized with confidence to higher-risk women.

Several implications for targeting and delivering postpartum follow-up services result from this study. Smoking status is a strong predictor of infant-feeding choices immediately following delivery and within the first few months postpartum. Therefore relevant questions about a woman's smoking history should be asked to guide decision-making about the allocation of follow-up services. In the early postpartum period, examples of such questions include: "Did you quit smoking during your pregnancy? If yes, are you currently smoking or are you planning to start smoking again?"

In this study, only current smoking was a significant predictor of the three feeding outcomes. Women who had quit during pregnancy and were not smoking at 3 months postpartum were not significantly different from non-smokers with respect to the three feeding practices. Findings support the inclusion of smoking-related interventions as a core component of all infant-nutrition programs. Given the two models underlying the relationship between smoking and feeding practices, two types of interventions are required. First, mothers who are smoking when they initiate breastfeeding or who resume smoking while breastfeeding require guidance on minimizing infant exposure to ingested nicotine and ensuring adequate levels of lactation. Second, women whose breastfeeding termination demarcates a return to smoking require early intervention to reduce the risk of smoking relapse. Such interventions include encouraging women to consider quitting smoking not just for the sake of the baby but also for themselves, and preparing women to handle risky situations that may lead them to smoke (Edwards, Sims-Jones, Hotz, & Cushman, 1997; Hotz, Edwards, Sims-Jones, & Cushman, 1996).

Overall, findings are consistent with both the biological and psychological models explaining the relationship between maternal smoking and infant-feeding status. However, as with other research involving secondary analyses of data sets, the original study was not designed with the primary purpose of examining relationships between maternal smoking and infant feeding. Thus the present analysis was limited to an examination of predictors assessed in the original study. Potential confounding factors include the mother's reasons for quitting

smoking; the timing of her intention to resume smoking; her partner's smoking status; the support of her family and friends for her smoking choices during pregnancy and postpartum; and her plans to return to work (Beaudry & Dufour, 1991; McBride & Pirie, 1990; Mullen, Richardson, Quinn, & Ershoff, 1997; Pollack & Mullen, 1997; Sims-Jones et al., 1997). Since factors such as social influences and employment status affect both breastfeeding practices and smoking decisions, future research should investigate potential interactions among these variables. A prospective longitudinal study assessing this expanded set of predictors during pregnancy and postpartum would not only help to validate explanatory models, but would also assist in the refinement of assessment guidelines and the development of stage-matched interventions.

In conclusion, this study supports the relationship between a mother's smoking status and her infant-feeding practices. Findings indicate that irrespective of a mother's quit attempts during pregnancy, smoking during the postpartum period is a predictor of sub-optimal feeding practices. Early interventions are required to target both the prevention of smoking relapse among women who quit smoking during pregnancy and the promotion of breastfeeding initiation and continuation among smokers.

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Une intervention infirmière familiale systémique appliquée dès la naissance d'un enfant ayant une déficience : les effets sur l'adaptation des parents

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This quasi-experimental study evaluated the effectiveness of a new systemic family nursing intervention to facilitate the adaptation of parents with a handicapped child, as well as variations in effectiveness according to the gender of the parent, family income, and type of handicap. Conducted over a 6-month period, the intervention began immediately after birth and included the participation of 198 mothers and fathers of 6-month-old babies with Down syndrome or a cleft lip and/or palate. Half of the group received the intervention, while the other half, constituting the control group, received regular services. Emotional distress was measured, as were various aspects of parental stress. The results confirm the program's effectiveness. Almost all parental stress indicators showed less stress among parents who received the intervention. For some indicators, the effect of the intervention varied with the parent's gender. No significant correlation was found to exist between the program's effectiveness and family income or type of handicap. These results are discussed in light of the goals of the intervention, various aspects of parental adaptation, and a number of factors that may be linked to the effectiveness of the intervention.

Cette étude quasi-expérimentale évalue l'efficacité d'un programme original d'intervention infirmière familiale systémique sur le plan de l'adaptation de parents d'enfants ayant une déficience, ainsi que les variations de cette efficacité, selon le sexe du parent, le revenu familial et le type de déficience de l'enfant. L'intervention, d'une durée de six mois, débute immédiatement après la naissance du nouveau-né. Au total, 198 mères et pères d'enfants de six mois ayant une trisomie 21 ou une fissure labiale et/ou palatine ont participé à l'étude. La moitié de ce groupe a bénéficié de l'intervention et l'autre moitié, constituant le groupe contrôle, a reçu les services habituels. Les mesures d'adaptation incluent divers aspects du stress parental et une mesure de détresse émotionnelle. Les résultats confirment l'efficacité du programme dans son objectif de favoriser, de façon significative, l'adaptation des parents. Sur presque tous les indices de stress parental, les parents qui ont participé à l'intervention ont exprimé des niveaux moins élevés de stress que ceux qui n'ont pas participé. Pour certaines de ces mesures, l'effet de l'intervention varie selon le sexe du parent. Aucune variation significative dans l'efficacité du pro-

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gramme n'est ressortie selon le revenu familial ou le type de déficience de l'enfant. Ces résultats sont discutés à la lumière des buts de l'intervention, des diverses dimensions de l'adaptation parentale et de divers facteurs potentiellement liés à l'efficacité de l'intervention.

L'impact de la naissance et de la prise en charge d'un enfant ayant une déficience sur la famille a fait l'objet de nombreuses études au cours des dernières années. Bien qu'il soit reconnu que plusieurs familles s'adaptent bien à une telle situation (Bennett, DeLuca et Allen, 1996), on constate, dans plusieurs autres familles, un débordement des capacités adaptatives, ainsi que l'émergence d'une situation de crise qui, à plus ou moins long terme, occasionne des séquelles chez l'individu, le couple, le nouveau-né, la fratrie et même la famille élargie. De façon générale, les parents d'enfants ayant une déficience rapportent plus de problèmes de santé physique, une plus grande incidence de dépression, une moins grande estime de soi et davantage de stress, d'anxiété et de détresse émotionnelle que les parents d'enfants sans atteinte (Beckman 1991 ; Bristol, Gallagher et Schopler, 1988 ; Goldberg, Morris, Simmons, Fowler et Levison, 1990 ; Kazak et Marvin, 1984 ; Miller, Gordon, Daniele et Diller, 1992 ; Trout, 1983 ; Waisbren, 1980). Sur le plan conjugal, certaines études indiquent que ces parents sont particulièrement à risque de développer des problèmes relationnels et des problèmes de communication qui, dans plusieurs cas, mènent à la séparation ou au divorce (Dallaire, 1984 ; Fortier et Wanlass, 1984 ; Trout, 1983). Au plan social, ces parents vivent souvent des sentiments d'isolement social et de marginalisation (Carlson, Ricci et Shade-Zeldow, 1990 ; Pelchat-Borgeat, 1978) ainsi qu'une attrition du réseau de soutien (Kazak et Marvin, 1984).

Plusieurs programmes d'intervention ont été développés pour venir en aide aux familles d'enfants ayant une déficience. Traditionnellement, ces programmes étaient orientés vers le développement de l'enfant sans souci pour les besoins spécifiques des familles et les difficultés d'adaptation des parents et autres membres de la famille (Baker, 1984 ; Boucher, Kerner et Piquet, 1989 ; Lamarche, 1987 ; Pelchat, 1989). Cependant, depuis une dizaine d'années, suivant le développement de modèles conceptuels du stress parental et de l'adaptation des familles (Belsky, 1984 ; Boss, 1988 ; Wallander et al., 1989), plusieurs programmes d'intervention ont été développés pour remédier à ces difficultés (Baxter, Cummins et Polak, 1995 ; Brinker, Seifer et Sameroff, 1994 ; Bristol, Gallagher et Holt, 1993 ; Honig et Winger, 1997 ; Kirkham, 1993 ; Singer, Irvin et Hawkins, 1988 ; Shonkoff, Hauser-Cram, Krauss et Upshur, 1992). En général, ces programmes ont démontré un effet bénéfique sur l'adaptation des parents et autres membres de la famille.

Comme les programmes développés antérieurement, ces programmes d'intervention et les études qui ont évalué leurs effets sur la famille comportent encore certaines limites et restent sujets à amélioration. Une de ces limites concerne leur période d'application. Comme l'ont souligné plusieurs auteurs, les programmes existants ne visent pas une intervention suffisamment précoce, soit dès la naissance de l'enfant ou du moins dès les premiers mois après la naissance (Baker, 1984; Bouchard, 1987; Boucher et al., 1989; Lamarche, 1987; Pelchat, 1992; Tourigny, 1989). Par exemple, les programmes recensés par Baker s'appliquent alors que les enfants ont entre trois et huit ans. Une intervention précoce permettrait d'aider les familles lorsque leurs besoins sont particulièrement importants, dans les premiers mois de vie de l'enfant, quand les parents doivent à la fois s'adapter à leur situation parentale, faire le deuil de l'enfant désiré parfait et apprendre à prendre soin de leur enfant et à s'y attacher (Bouchard et Pelchat, 1997; Pelchat et Berthiaume, 1996). Une intervention très précoce permettrait en outre de prendre en compte la façon dont l'annonce de la déficience est faite aux parents. Cette annonce est un moment crucial pour les parents, et la manière dont ils la vivent a des conséquences importantes sur leur adaptation et celle de la famille (Bailey et Simeonsson, 1988; Detraux, 1989; Pelchat-Borgeat, 1978; Sauter, 1989), sans compter les conséquences difficilement réparables de décisions prises à ce moment sur l'avenir de l'enfant. Les résultats d'études menées au Québec démontrent qu'il existe une réelle lacune à cet égard (Bouchard, Pelchat, Boudreault et Gratton-Lalonde, 1994).

Les limites des études qui ont évalué les effets d'interventions sur l'adaptation des familles et des enfants ont été amplement documentées par certains auteurs (Meisels, 1985; Shonkoff, Hauser-Cram, Krauss et Upshur, 1988; Woodhead, 1988). Premièrement, ces études comportent souvent d'importantes lacunes méthodologiques, dont l'absence de groupe contrôle, des menaces à la validité interne, et des données insuffisantes sur les participants de l'étude et sur le programme d'intervention (Dunst, 1986; Farran, 1990; Shonkoff et Hauser-Cram, 1987). Deuxièmement, ces études n'ont évalué les effets des interventions qu'en rapport à un nombre très restreint de dimensions de l'adaptation parentale. Depuis trois décennies, les recherches se sont surtout penchées sur la question du stress parental (Shonkoff et al., 1992; Beckman, 1991). Or, plusieurs autres dimensions de l'adaptation devraient être aussi intégrées pour avoir un tableau plus complet de l'adaptation des familles et de l'effet des programmes d'intervention sur celles-ci. Ceci est certes le cas de la santé émotionnelle des parents. On sait que la détresse émotionnelle a souvent été identifiée parmi les

conséquences négatives de la prise en charge d'un enfant ayant une déficience (p. ex. Goldberg et al., 1990; Trout, 1983). De plus, alors que la mesure du stress permet d'évaluer l'adaptation parentale en terme de perceptions, d'attitudes et de sentiments plus ou moins spécifiques et à court terme face à la situation, la mesure de la détresse émotionnelle permet d'évaluer les conséquences plus générales, à plus long terme et plus graves de la situation. Troisièmement, ces études ont examiné l'effet des programmes d'intervention sur l'adaptation des familles, sans considération pour les facteurs pouvant être associés à leur efficacité. Par exemple, elles n'ont pas documenté de quelles façons les effets des interventions pouvaient différer selon le sexe du parent, ou selon la déficience spécifique de l'enfant. Or, il a été largement clamé par plusieurs chercheurs qu'au-delà de la simple question d'efficacité, la question suivante demeure : dans quelles conditions, pour qui, et sur quelles dimensions de l'adaptation les interventions sont-elles les plus efficaces? (Farran, 1990; Innocenti et White, 1993; Meisels, 1985)

Dans ce contexte où tout reste à connaître au sujet des facteurs de l'efficacité des programmes d'intervention, une première étape serait d'abord d'évaluer la portée de facteurs reconnus pour leur influence sur l'adaptation parentale. Partant des nombreux facteurs de l'adaptation parentale identifiés à ce jour, trois facteurs se distinguent de manière particulière à cet égard : le sexe du parent, le type de déficience présente chez l'enfant et le revenu familial. Ces facteurs ressortent dans plusieurs études comme d'importants prédicteurs de l'adaptation des parents d'enfants ayant une déficience (Beckman, 1991; Bristol et al., 1988; Hanson et Hanline, 1990; Pleck, 1997; Sloper et Turner, 1993). De plus, ils correspondent à trois grandes classes de facteurs d'adaptation parentale : les caractéristiques de l'enfant (le type de déficience), les caractéristiques des parents (le sexe du parent) et les ressources de la famille (le revenu familial). Ces dimensions font partie intégrante des principaux modèles théoriques de l'adaptation parentale proposés depuis le début des années 1980, incluant le modèle de Belsky (1984), celui de McCubbin et Patterson (1983), de Farran, Metzger et Sparling (1986) et de Wallander et al. (1989).

La présente étude donne les grandes lignes d'un programme d'intervention infirmière familiale systémique précoce développé par Pelchat (1989) pour palier entre autres au problème de précocité insuffisante des programmes développés à ce jour. Le but premier de l'étude est d'évaluer l'efficacité de ce programme d'intervention sur le plan de l'adaptation de parents d'enfants ayant une déficience (trisomie 21 et fissure labiale et/ou palatine), et en second lieu, d'évaluer l'influence

du type de déficience de l'enfant, du sexe du parent et de son niveau de revenu familial sur l'efficacité du programme. Les effets du programme sont évalués à l'aide d'un devis quasi expérimental qui permet de comparer, selon un ensemble d'indicateurs de stress parental et de détresse émotionnelle, un groupe de parents ayant participé à l'intervention et un groupe comparable de parents n'ayant pas participé à l'intervention. Étant donné l'efficacité démontrée des programmes d'intervention similaires sur le plan de l'adaptation des parents, nous posons l'hypothèse suivante : le programme sera capable de réduire, de façon significative, les différents indicateurs de stress parental et de détresse émotionnelle. En raison de la nature plus novatrice et exploratoire des questions relatives aux facteurs de l'efficacité du programme, aucune hypothèse spécifique n'est posée à cet égard.

Description du Programme d'Intervention

Le programme d'intervention infirmière familiale systémique précoce, développé par Pelchat (1989), débute dès la naissance de l'enfant. Il s'inspire de la théorie psychodynamique de la crise (Caplan, 1964), de la théorie du stress et de l'adaptation de Lazarus et Folkman (1984), du modèle de gestion du stress familial de Boss (1988) et de l'approche familiale dont les principes relèvent de la théorie des systèmes (Bertalanffy, 1980), de la cybernétique (Weiner, 1948) et de la communication (Bateson, 1979). Le programme intègre aussi les objectifs spécifiques et les stratégies d'intervention identifiées dans la thèse de Pelchat (1989). Fondé sur une philosophie de soins à la famille qui met l'accent sur les forces et capacités adaptatives de la famille et de ses membres, le programme a pour but l'autonomie de la famille, la valorisation et l'actualisation optimale de ses ressources internes et externes, et l'appropriation par la famille de compétences utiles à son adaptation et à la prise en charge de l'enfant ayant une déficience (Pelchat, 1995). L'originalité du programme réside plus spécifiquement dans la précocité de son application (dès la naissance de l'enfant), l'implication des deux parents, le souci de répondre aux besoins de chacun des membres de la famille et l'accent sur les compétences de chacun. Les objectifs spécifiques du programme sont orientés vers les cinq sous-systèmes de la famille : les sous-systèmes individuel, conjugal, parental, familial et extrafamilial. Ceux-ci sont présentés au Tableau 1. Le programme consiste en une série de six à huit rencontres entre une infirmière dûment formée et la famille. Deux rencontres sont effectuées à l'hôpital dès la naissance de l'enfant, suivies de quatre à six rencontres échelonnées sur six mois, dans le milieu familial.

Tableau 1 *Objectifs spécifiques du programme d'intervention*

Sous-systèmes	Objectifs spécifiques
Individuel	Identifier chez chacun des parents les perceptions et croyances relatives à la situation ; ébranler celles qui nuisent et renforcer celles qui favorisent l'adaptation. Favoriser chez les parents une compréhension réaliste de la situation et les aider à progresser dans le processus de deuil de l'enfant désiré « parfait ».
Conjugal	Aider les conjoints à mieux comprendre l'expérience de l'autre et à se soutenir mutuellement dans le processus de deuil de l'enfant désiré « parfait ».
Parental	Favoriser une relation de confiance entre les parents et l'enfant ainsi que l'évolution positive du processus d'attachement.
Familial	Favoriser l'échange concernant la perception de la situation entre les membres de la famille et faire reconnaître l'influence de chacun dans le processus d'adaptation.
Extrafamilial	Aider les parents à conserver des relations significatives avec l'entourage et à utiliser le plus efficacement possible les ressources du milieu et l'aide des professionnels de la santé

L'implantation du programme

Le programme d'intervention a été mis en place à la suite de la formation d'une équipe d'infirmières spécialisées en périnatalité et rattachées aux hôpitaux participants. Compte tenu du temps qu'elle passe auprès des parents et du lien qu'elle peut assurer entre les différents professionnels, l'infirmière est une personne clef dans le soutien aux familles. Sa présence assure également la continuité du suivi par les médecins après l'annonce.

La formation des infirmières est fondée sur une approche de partenariat. Au plan théorique, les infirmières ont été formées aux grands principes de l'intervention familiale systémique auprès de familles vivant une situation de stress important, ainsi qu'aux principes de l'autodétermination et de l'appropriation par la famille de ses propres compétences dans la prise en charge de l'enfant ayant une déficience (Dunst, Trivette et Deal, 1988). Le volet pratique incluait un suivi hebdomadaire des infirmières pendant toute la durée du programme.

Méthode

Échantillon

Les données de la présente recherche proviennent d'une étude quasi expérimentale longitudinale en cours portant sur les effets du programme d'intervention sur l'adaptation de parents d'enfants ayant une déficience. Les données sont issues de la première phase de la collecte, qui a été effectuée au moment où les enfants étaient âgés de 6 mois, les autres phases s'étant déroulées lorsque les enfants avaient 12, puis 18 mois. Deux groupes de sujets sont à l'étude : un groupe expérimental (Exp) constitué de parents d'enfants ayant une fissure labiale et/ou palatine ou une trisomie 21 qui ont bénéficié du programme d'intervention; un groupe contrôle (CO) constitué de parents d'enfants atteints des mêmes problèmes qui bénéficient des services habituels. Afin de respecter les exigences des comités d'éthique des hôpitaux participants, la sélection des familles pour la participation au programme — et ainsi la constitution des groupes expérimental et contrôle — n'a pas été faite de façon aléatoire mais plutôt selon l'entrée en vigueur du programme. Les premières familles recrutées avant le début du programme constituent le groupe contrôle; celles recrutées par la suite, soit un an après le recrutement des premières familles, ont participé à l'intervention.[1]

Les participants ont été recrutés entre juin 1993 et avril 1995 par des infirmières de 14 hôpitaux urbains et semi-urbains des régions de Montréal et de Québec. Les critères d'inclusion requéraient que l'enfant vive avec ses parents et ne soit pas adopté, que la famille ne participe pas pour le temps de l'étude à d'autres projets de recherche, que les parents puissent communiquer en français et habitent dans un rayon n'excédant pas 90 minutes de route des lieux de recrutement. Dans chaque hôpital, l'infirmière-intervenante identifie les familles répondant aux critères d'inclusion. Dans le cas de familles participant à l'intervention, elle rencontre les parents à l'hôpital dès la naissance de l'enfant pour leur présenter le programme, s'enquérir de leur participation et obtenir leur consentement signé. Pour les familles du groupe contrôle, la même infirmière téléphone aux parents quand l'enfant a

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[1] Un tel devis de recherche a l'avantage d'éviter les effets de contamination qui auraient pu survenir à la suite d'une répartition aléatoire des sujets, laquelle aurait requis que les deux groupes de parents soient rencontrés durant la même période par les infirmières. Les infirmières qui ont appliqué le programme auraient pu facilement modifier leurs pratiques à l'égard des familles du groupe contrôle, à la suite des apprentissages faits durant leur formation et en correspondance avec leurs nouvelles pratiques à l'égard des familles du groupe expérimental.

quatre ou cinq mois pour leur présenter l'étude et solliciter leur participation. Quand les enfants ont six mois, un membre de l'équipe de recherche rencontre les parents des deux groupes à domicile, lesquels remplissent individuellement un questionnaire autoadministré évaluant les effets du programme.

Le Tableau 2 présente les grandes lignes de la constitution de l'échantillon final. Des 120 familles approchées et éligibles pour participer à l'étude, 11 familles ont refusé de participer et 109 ont participé (91 %). De ce nombre, 10 familles monoparentales ou dont un des conjoints n'a pas répondu ont été retirées des analyses, pour un total de 99 familles (ou 198 parents) retenues pour fins d'analyse : soit 46 familles du groupe expérimental et 53 familles du groupe contrôle. Parmi les 40 enfants ayant une trisomie 21, 16 (40 %) souffrent aussi d'une maladie cardiaque congénitale, ce qui concorde avec l'incidence de maladie cardiaque chez les enfants ayant une trisomie 21 située entre 40 % et 60 % (Rogers et Roizen, 1991). Parmi les 59 enfants ayant une fissure labiale et/ou palatine, 11 sont nés avec une fissure palatine, 34 avec une fissure labiale, et 14 avec une fissure labiale et palatine. À l'âge de trois à quatre mois, tous les bébés ayant une fissure labiale ont subi une opération correctrice des lèvres. Les statistiques descriptives des parents des groupes expérimental et contrôle sont également présentées au Tableau 2. L'âge des mères varie de 17 à 40 ans (moy. = 29,6, é.-t. = 5,1) et celle des pères de 20 à 52 ans (moy. = 32,5, é.-t. = 6,3). Le niveau de scolarité des deux parents est relativement élevé, avec 79 % des mères et 76 % des pères qui ont complété leurs études secondaires. Les familles ont en moyenne deux enfants (é.-t. = 0,8), et 36 % d'entre elles en ont un seul. Aucun enfant de l'étude n'était prématuré. Le revenu familial annuel est inférieur à 30 000 $ CAN pour 35 % des familles, entre 30 000 $ et 60 000 $ pour 37 % d'entre elles, et au-dessus de 60 000 $ pour 28 % d'entre elles. Aucune différence significative ne ressort entre les parents des deux groupes au niveau de ces caractéristiques.

Mesures

Détresse émotionnelle

Le niveau d'adaptation des parents est évalué dans cette étude à l'aide de la version courte de l'Indice de Détresse Émotionnelle de l'Enquête Santé Québec (IDESQ-14, Préville, Boyer, Potvin, Perreault et Légaré, 1992). Cette mesure est une adaptation française du *Psychiatric Symptoms Index* initialement développé par Ilfeld (1976). L'échelle comprend 14 énoncés décrivant différents symptômes psychologiques, dont

Tableau 2 *Déscription de l'échantillonnage avec statistiques descriptives et comparatives de l'échantillon final*

	Groupe contrôle	Groupe expérimental	Total	t/χ^2
Familles éligibles	65	55	120	
Refus	6	5	11	
Familles participantes	59	50	109	
Familles monoparentales ou dans lesquelles l'un des parents n'a pas participé à l'étude	6	4	10	
Échantillon final	53	46	99	
Familles d'enfants ayant une T21	19	21	40	
Familles d'enfants ayant une FLP	34	25	59	
Âge des mères*	28,7 ± 4,7	30,6 ± 5,5	29,6 ± 5,1	t(96) = -1,91
Âge des pères*	31,9 ± 6,1	33,2 ± 6,6	32,5 ± 6,3	t(96) = -1,00
Scolarité (mères)				
Aucun diplôme	20,8 %	21,7 %	21,2 %	$\chi^2(2) = 4,4$
Diplôme d'études secondaires	45,3 %	26,1 %	36,4 %	
Études collégiales ou universitaires	34,0 %	52,2 %	42,4 %	
Scolarité (pères)				
Aucun diplôme	26,4 %	21,7 %	24,2 %	$\chi^2(2) = 0,8$
Diplôme d'études secondaires	45,3 %	54,3 %	49,5 %	
Études collégiales ou universitaires	28,3 %	23,9 %	26,3 %	
Nombre d'enfants à la maison*	1,9 ± 0,9	1,9 ± 0,8	1,9 ± 0,8	t(97) = -0,03
Revenu familial				
< 30 000 $	33,3 %	37,0 %	35,1 %	$\chi^2(2) = 5,6$
entre 30 000 $ et 60 000 $	47,1 %	26,1 %	37,1 %	
> 60 000 $	19,6 %	37,0 %	27,8 %	

* moy. ± é.-t. 1 %

l'anxiété, la dépression, la colère et certains troubles cognitifs. Les répondants doivent indiquer sur une échelle en quatre points la fréquence à laquelle ils ont expérimenté chacun des symptômes au cours de la dernière semaine. L'échelle varie de 0 à 100, où 0 indique une absence totale de détresse, et 100, une détresse extrême. La fiabilité et la validité de cette version courte de l'échelle ont été démontrées par Préville et son équipe (1992). En particulier, la validité de construit a été établie par de fortes corrélations entre les scores sur l'échelle et l'occurrence, dans les 12 derniers mois, d'une consultation auprès de professionnels en santé mentale, d'une hospitalisation pour des problèmes de santé mentale, ainsi que l'occurrence d'idées suicidaires ou de tentatives de suicide, et la consommation de drogues psychoactives. Le coefficient de consistance interne de l'échelle avec le présent échantillon est de 0,88.

Le stress parental

Différents aspects du stress parental ont été évalués à l'aide de deux instruments de mesure : le *Stress Appraisal Measure* (SAM; Peacock et Wong, 1990) et le *Parenting Stress Index* (PSI, Abidin 1990). Les deux instruments ont été traduits en français et ont fait l'objet d'analyses de validation. Le SAM est un questionnaire auto administré comprenant 28 énoncés évaluant la perception du stress dans diverses dimensions de l'expérience parentale auprès d'un enfant ayant un problème particulier. L'échelle comprend sept mesures. La Menace représente la perception d'une perte ou d'une menace de perte liée à la situation parentale. La perception de Défi représente l'anticipation d'un gain tiré de l'expérience et la Centralité, l'importance de la situation pour son propre bien-être. Le Contrôle par soi réfère aux ressources personnelles mobilisées pour répondre aux exigences de la situation. Le Contrôle par les autres réfère à l'aide que l'individu croit pouvoir recevoir des autres pour l'aider à répondre à la situation et l'Incontrôlabilité est la perception d'une incapacité à répondre aux demandes situationnelles. Le Stress évalue la perception de l'individu en rapport au niveau global de stress engendré par la situation. Toutes les mesures sont calculées en prenant la moyenne des réponses aux quatre énoncés la constituant. Les scores varient de 1 à 5, où 1 indique l'absence de correspondance au concept mesuré (p. ex. aucun stress) et 5, une correspondance maximale au concept. Les auteurs de l'échelle originale ont démontré que ces mesures étaient suffisamment fiables (alpha variant de 0,73 à 0,86), relativement indépendantes et avaient une bonne validité convergente (fortes corrélations avec des mesures associées au stress). Les auteurs

de la version française de l'échelle ont rapporté des propriétés psychométriques comparables (Pelchat, Ricard, Lévesque, Perreault, Polomeno, 1994). Dans la présente étude, les alpha des sept échelles varient de 0,73 à 0,86.

Le PSI est un instrument de dépistage et de diagnostique évaluant l'intensité du stress dans diverses dimensions du système parent-enfant. Cinq des 13 sous-échelles du PSI ont été administrées aux parents, desquelles quatre ont été retenues pour les analyses en raison de leur applicabilité à des parents d'enfants de six mois et de leur fiabilité. Celles-ci incluent : (1) la mesure d'Acceptation de l'enfant (7 énoncés, p. ex. « Mon enfant fait certaines choses qui me dérangent beaucoup ») ; (2) la mesure sentiment de Compétence (13 énoncés, p. ex. « Je me trouve compétent(e) et maître de la situation lorsque je m'occupe de mon enfant ») ; (3) la mesure de Restriction de rôle (7 énoncés, p. ex. « Je me sens coincé(e) par mes responsabilités de parent ») ; (4) la mesure de perception de l'Adaptation de l'enfant (11 énoncés, p. ex. « Mon enfant s'habitue à de nouvelles choses difficilement et seulement après une longue période de temps »). Chaque échelle est calculée en prenant la moyenne des réponses aux énoncés la constituant. Les scores varient de 1 à 5, où 1 indique l'absence de correspondance au concept mesuré (p. ex. aucun sentiment de restriction) et 5, une correspondance maximale au concept. Le PSI a été validé dans plusieurs études et auprès de diverses populations (voir Lacharité, Éthier et Picher, 1992 pour une recension). Des indices de fiabilité et de validité comparables à ceux obtenus avec les échantillons américains ont été établis à l'aide de l'échelle (version française) utilisée dans la présente étude (Lacharité et al., 1992). Dans la présente étude, les alpha des échelles retenues varient de 0,70 à 0,81.

Méthode d'analyse

Les effets de l'intervention, du sexe du parent, du type de déficience et du niveau de revenu familial sur chacune des mesures d'adaptation (la mesure de détresse émotionnelle et les diverses mesures de stress parental) sont évalués à l'aide d'analyses de variance à mesures répétées. Les effets d'interaction entre l'intervention et les autres variables indépendantes sur chaque mesure d'adaptation permettent d'évaluer les effets du sexe du parent, du type de déficience et du revenu sur l'efficacité de l'intervention. Lorsque de telles interactions sont significatives, l'analyse des effets simples permet de vérifier dans quel sous-groupe de parents l'effet de l'intervention est significatif.

L'utilisation d'un plan à mesures répétées permet de tenir compte des fortes corrélations entre les réponses des répondants d'une même famille et ainsi de respecter le postulat de l'indépendance des observations.

Résultats

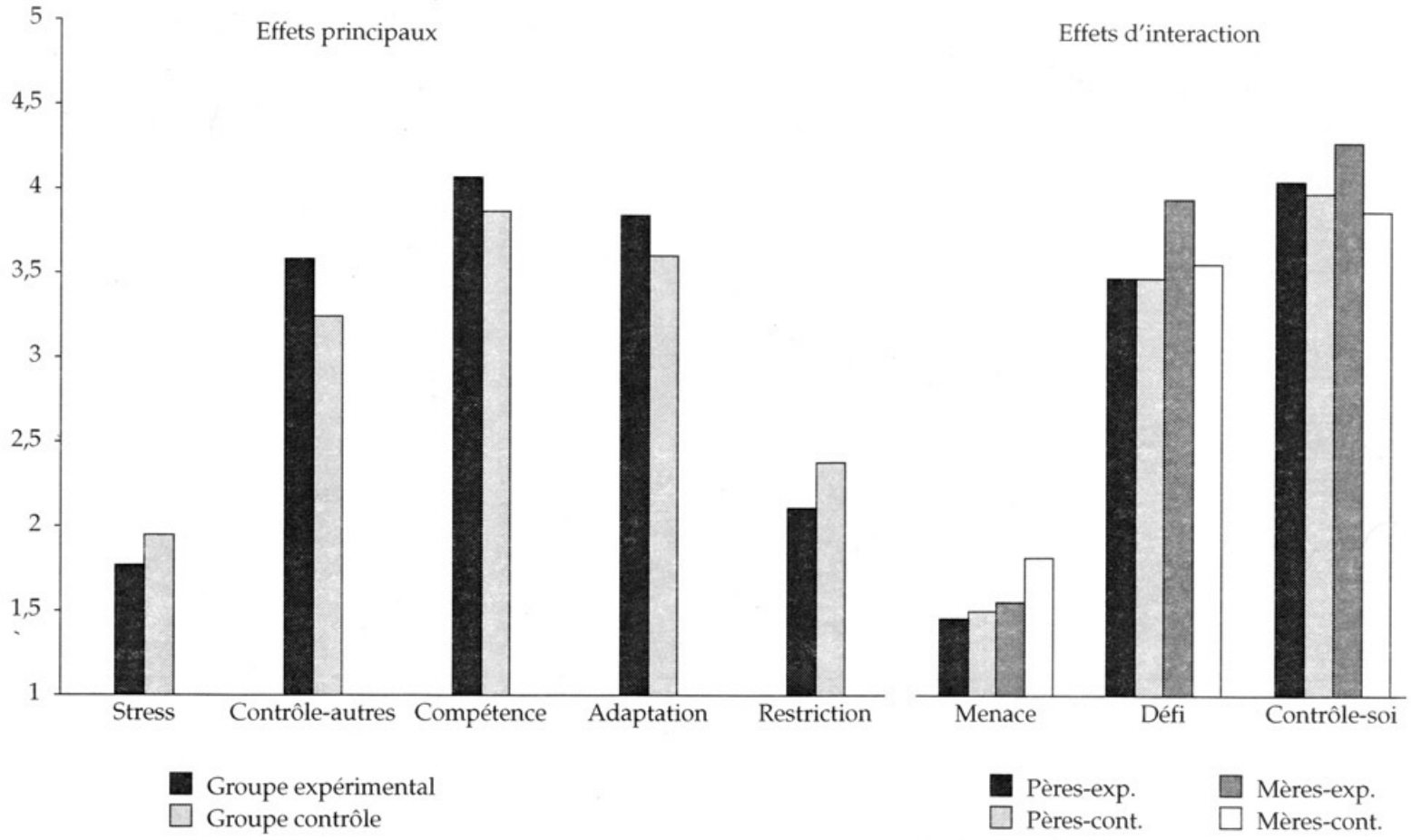
Le Tableau 3 présente les résultats des analyses de variance. Pour simplifier la lecture des résultats, le modèle retenu pour chacune des mesures d'adaptation ne comprend que les effets principaux et les effets d'interaction ayant eu un impact significatif sur au moins une variable dépendante. L'intervention n'a eu aucun effet significatif sur la détresse émotionnelle des parents. Par contre, elle a eu un effet significatif sur cinq des sept mesures du SAM et sur trois des quatre mesures du PSI. Pour deux des mesures du SAM (le Stress et le Contrôle par les autres) et pour trois mesures du PSI (la Compétence, la Restriction de rôle et l'Adaptation de l'enfant), on observe un effet principal significatif de l'intervention. Comme l'indique la Figure 1, dans tous ces cas, les parents qui ont participé à l'intervention affichent des niveaux de stress parental moins élevés que les parents du groupe contrôle. Ces parents perçoivent moins leur situation comme stressante, ils estiment davantage pouvoir bénéficier de l'aide des autres, ils se sentent plus compétents dans la prise en charge de leur enfant, perçoivent leur enfant comme mieux adapté, et ils se sentent moins restreints dans leur rôle parental. Pour les mesures de Menace, de Défi et de Contrôle par soi, les analyses révèlent une interaction significative entre l'intervention et le sexe du parent. L'analyse des effets simples indique que l'intervention a un effet significatif sur ces mesures uniquement chez les mères. Comparées aux mères du groupe contrôle, les mères qui ont participé à l'intervention se montrent significativement moins menacées par leur situation parentale, sont plus portées à percevoir leur situation comme un défi et croient davantage avoir les ressources nécessaires pour y faire face. L'effet de l'intervention sur les différentes mesures d'adaptation parentale ne varie pas de façon significative selon le type de déficience qu'a l'enfant ou selon le revenu familial. Pour une raison d'économie d'espace, les résultats sur les effets du sexe du parent, du revenu et du type de déficience sur l'adaptation parentale ne sont pas commentés. Certains d'entre eux font cependant l'objet de discussions, qui alimentent l'interprétation des effets de l'intervention.

Tableau 3 *ANOVA sur les mesures de détresse et de stress parental (statistique F) selon l'intervention, le sexe du parent, le diagonostic et le revenu familial (N = 99)*

	Intervention (I)	Sexe (S)	Déficience (D)	Revenu (R)	I x S	S x R	D x R	S x D x R
Détresse émo.	0,8	18,2‡	2,8	0,0	0,1	0,3	0,5	0,8
Stress	4,2*	8,7†	10,2†	3,0	3,7	4,7†	4,9†	2,0
Menace	6,1*	9,8†	13,1‡	5,3†	4,4*	4,3*	1,7	0,4
Centralité	2,6	20,0‡	37,5‡	7,7‡	0,1	3,9*	5,9†	4,5†
Incontrolabilité	0,7	0,0	11,5‡	3,0	0,3	0,3	5,6	0,7
Défi	0,8	4,4*	3,3	0,5	5,6*	1,2	1,0	0,1
Contrôle par soi	3,7	0,5	1,4	0,4	6,2*	0,6	1,6	0,0
Contrôle — autres	3,9*	6,3†	0,0	0,0	0,2	0,1	1,6	1,0
Acceptation	1,9	1,5	51,5‡	6,9†	1,5	0,1	4,4†	0,7
Compétence	4,1*	0,9	0,9	2,3	0,0	0,5	0,0	3,0
Restriction de rôle	6,2*	4,6*	2,7	1,5	1,4	1,4	0,4	1,5
Adaptation	6,3†	0,1	0,8	0,2	3,0	2,1	0,4	0,6

* $p < 0,05$ † $p < 0,01$ ‡ $p < 0,001$

Figure 1 *Scores moyens de stress parental selon l'intervention et le sexe du parent*



Discussion

Ces résultats confirment l'efficacité du programme d'intervention infirmière familiale systémique, sur le plan de l'adaptation des parents, et ce de manière significative. Presque toutes les mesures de stress parental indiquent que les parents qui ont participé à l'intervention présentent des niveaux de stress moins élevés que ceux qui n'ont pas participé. Ils se perçoivent comme moins stressés face à la déficience de leur enfant et leur situation parentale, et ils ont une plus grande confiance dans l'aide qu'ils peuvent recevoir des autres. Ils éprouvent aussi un plus grand sentiment de compétence face à la prise en charge de l'enfant, perçoivent leur enfant comme étant mieux adapté et se sentent moins restreints par leur rôle et leurs responsabilités parentales. En outre, l'intervention aide les mères à se sentir moins menacées par la déficience de leur enfant, à percevoir davantage leur situation parentale comme un défi et à avoir une plus grande confiance en leurs propres ressources pour y faire face.

D'une façon générale, ces résultats correspondent aux résultats d'études relativement récentes qui ont démontré l'efficacité de divers types d'intervention pour réduire le stress parental et favoriser l'adaptation de parents d'enfants ayant une déficience (p. ex., Brinker et al., 1994 ; Bristol et al., 1993). Toutefois, l'utilisation d'un groupe contrôle et le contrôle statistique d'importants facteurs de l'adaptation assurent une validité à ces résultats qui fait défaut dans plusieurs études similaires. Cependant, le fait de ne pas avoir sélectionné les familles participant à l'intervention de façon purement aléatoire, mais plutôt sur la base de la période de recrutement, limite l'interprétation de la causalité entre l'intervention et les niveaux de stress moins élevés chez les parents qui ont participé à l'intervention, comparativement aux parents du groupe contrôle. Théoriquement, des facteurs autres que l'intervention pourraient expliquer ces écarts. Cependant, la similarité des profils sociodémographiques des deux groupes de parents limite la plausibilité d'une telle interprétation.

L'absence d'impact de l'intervention sur la détresse émotionnelle des parents

L'absence d'effet de l'intervention sur la mesure de détresse émotionnelle est moins conforme aux prévisions. Trois facteurs peuvent expliquer cet énoncé : le type de mesure, l'âge des enfants et la latence des effets. En premier lieu, il y a lieu de s'interroger sur la sensibilité de l'indice de détresse émotionnelle comme mesure de l'adaptation psychologique des parents. La validité de cette mesure basée sur la

fréquence moyenne de divers symptômes de détresse durant la dernière semaine est bien établie. Cependant, il est possible que des résultats fort différents auraient pu être obtenus en utilisant une mesure de l'état émotionnelle plus fine ou avec une mesure de l'état psychologique plus spécifique — telle qu'une mesure de dépression.

Une seconde considération concerne l'âge de l'enfant et l'écart conceptuel entre la mesure de détresse émotionnelle et les mesures de stress parental. Alors que les mesures de stress parental permettent d'évaluer l'adaptation parentale en termes de perceptions, d'attitudes et de sentiments immédiats et spécifiques par rapport à la déficience de l'enfant et à la situation parentale, la mesure de détresse émotionnelle permet davantage d'évaluer les conséquences plus générales, plus graves et à plus long terme de la situation et du stress vécu. La détresse émotionnelle, tout comme l'émergence de symptômes psychiatriques, et plus généralement l'état de santé mentale, sont nécessairement plus stables que les perceptions, attitudes et sentiments et ne sont généralement affectés qu'après de longues expositions à un stresseur. Or, quand l'enfant n'a encore que six mois, il est raisonnable de penser que les parents n'ont pas encore commencé à manifester les conséquences les plus graves, telle la détresse émotionnelle, pouvant potentiellement émerger de leur situation parentale. Dans le cas de la trisomie 21, les conséquences de la déficience de l'enfant sur son développement ne sont pas non plus aussi visibles à six mois qu'elles pourraient l'être ultérieurement. Pour ces raisons, il est possible et aussi théoriquement plus probable que la détresse émotionnelle ne se manifeste que plus tard. Les études qui on examiné l'effet de l'âge de l'enfant sur l'adaptation parentale ne sont pas très révélatrices à cet égard. Elles ont porté sur des enfants plus âgés et n'ont généralement évalué l'adaptation que par le biais de mesures de stress parental (c.-à-d. Beckman, 1983; Murphy, 1982).

En troisième lieu, l'influence de l'intervention sur l'adaptation des parents — et plus particulièrement sur les dimensions stables de l'adaptation — peut se développer progressivement dans le temps; elle pourrait même traverser une période de latence avant de se manifester concrètement. Les résultats de l'étude de Bristol et al. (1993) vont exactement en ce sens. Ces auteurs ont examiné l'impact d'une intervention psychoéducative sur les symptômes de dépression de mères d'enfants autistiques. Ils ont démontré que les mères qui ont participé à l'intervention présentaient une réduction significative des symptômes de dépression, 18 mois après le diagnostic d'autisme de leur enfant et leur participation à l'intervention, alors qu'aucune réduction significative des symptômes n'était notée six mois après l'intervention. Aucune

réduction semblable n'était observée parmi un groupe comparable de mères n'ayant pas participé à l'intervention. Ces résultats démontrent l'importance de bien cibler la période durant laquelle est évaluée l'influence d'une intervention sur l'adaptation des parents.

L'efficacité de l'intervention selon les autres facteurs

Parmi les trois facteurs potentiels de l'efficacité du programme, seul le sexe du parent est significativement associé à l'efficacité de l'intervention. Ceci se constate par l'efficacité de l'intervention chez les mères, et non chez les pères, à réduire les perceptions de menace face à la déficience de l'enfant, à favoriser une perception de la situation parentale comme un défi et à accroître la confiance en ses propres ressources pour y faire face. Différentes raisons peuvent expliquer ces résultats. Il est possible que l'engagement plus prononcé des mères auprès de leur enfant explique le fait qu'elles soient à la fois plus stressées par leur situation parentale particulière et plus enclines à percevoir leur situation comme un défi et à s'attribuer les ressources nécessaires pour y faire face. Étant à la fois plus stressées par leur situation parentale et plus engagées envers leur enfant que ne le sont les pères, elles auraient davantage intérêt à bénéficier du programme d'intervention et à mieux s'adapter à leur situation parentale.

L'absence de différence dans l'efficacité de l'intervention selon le revenu des parents et selon le type de déficience de l'enfant est plus surprenante. Comme la trisomie 21 est une déficience beaucoup plus sévère que la fissure labiale ou palatine, que les parents de ces enfants manifestent en fait plus de stress parental que les parents d'enfants ayant une fissure, il aurait été moins étonnant que l'intervention soit plus efficace pour aider ces parents. Ayant de plus grands besoins, ils auraient eu davantage intérêt à bénéficier de l'intervention. Il en est ainsi du revenu, puisque des écarts marqués dans le stress parental ressortent selon ce facteur. La courte période de temps entre l'intervention et la mesure de son impact sur l'adaptation des parents peut en être la cause. Il est possible que de tels effets n'apparaissent que plus tard, alors que les parents auront pu réellement intégrer et mettre en pratique tout ce à quoi ils ont été exposés durant l'intervention.

Retombés pour la pratique clinique et la recherche

Les résultats de cette étude ont d'importantes retombées pour la pratique clinique et la recherche. En premier lieu, les bénéfices récoltés par les participants au programme sont bien évidents : la réduction du

stress parental, l'émergence de perceptions et d'attitudes plus justes et plus constructives face à la déficience de l'enfant et à la situation parental. Ces bénéfices indiquent certainement une meilleure adaptation des parents face à leur situation parentale. En outre, la plus grande confiance qu'ils expriment face à leurs propres ressources, ainsi que leurs plus grands sentiments de compétence face à la prise en charge de l'enfant témoignent de l'efficacité du programme à favoriser leur autonomie et leurs sentiments de contrôle et d'efficacité personnelle face aux responsabilités parentales. De tels changements survenus dès les premiers mois de vie de l'enfant risquent d'avoir une influence de grande importance sur l'adaptation ultérieure des parents, de l'enfant et de la famille. En outre, l'implication du père dès la naissance de l'enfant peut aider à maintenir l'harmonie familiale, voire à prévenir l'éclatement de la famille. En fait, les réflexions faites par les équipes médico-nursing des hôpitaux participant à l'application du programme ont généralement conduit à reconnaître l'importance du père dans le processus d'appropriation de la situation familiale et l'importance de l'engager davantage dans le processus de soins. D'autre part, une meilleure adaptation, une plus grande autonomie et une meilleure perception de la part des parents face à la déficience de l'enfant favorisent une utilisation plus éclairée et judicieuse des ressources de santé, ce qui peut contribuer à réduire les coût des services de santé. Enfin, la mise en oeuvre d'un tel programme fondé sur une philosophie de partenariat entre parents et infirmières et sur l'appropriation par les familles de leurs propres compétences peut alléger le fardeau des infirmières. Les infirmières qui appliquent le programme reconnaissent l'expertise des parents et font confiance à leurs compétences. Elles remettent aux parents la responsabilité de leurs choix et décisions, ce qui les protège de l'épuisement professionnel et leur permet de croître comme professionnels (Pelchat, Bouchard et Berthiaume, 1997). Une étude en cours sur les processus d'apprentissage chez les infirmières et les parents lors de l'intervention nous permettra de mieux évaluer l'impact de l'intervention sur les milieux cliniques et d'identifier les éléments du programme pouvant être améliorés (Pelchat et Lefebvre, 1998).

Conclusion

Les résultats de cette étude constituent un premier jalon dans la réponse à l'importante question « Pour qui, à quel niveau et dans quelles conditions les interventions auprès de parents d'enfants ayant une déficience sont-elles les plus efficaces ? » Ils démontrent que l'intervention n'a pas le même impact sur toutes les dimensions de l'adaptation et sur tous les groupes de parents. Notamment, l'intervention a un

effet marqué sur les mesures de stress parental mais reste sans effet sur le niveau de détresse émotionnelle des parents. L'effet de l'intervention varie aussi de façon importante selon le sexe du parent. Ces résultats soulèvent d'importantes questions sur le plan théorique, auxquelles sont offertes certaines amorces de réponses ayant trait au rôle des différentes dimensions de l'adaptation, à l'âge des enfants, à la latence des effets de l'intervention et aux rôles parentaux. Cependant, force est d'admettre que la dynamique des processus adaptatifs chez les parents d'enfants ayant une déficience est encore très peu connue. Une meilleure compréhension de ces processus permettra de mieux identifier les problèmes présents et à venir dans les familles d'enfants ayant une déficience et de mieux cibler les interventions pour venir en aide aux parents. En visant une intervention infirmière familiale systémique dès l'annonce de la déficience ainsi qu'une intervention orientée vers les multiples facettes de l'expérience des parents — tels les sous-systèmes individuel, conjugal, parental, familial et extra-familial — le présent programme d'intervention a maximisé ses chances d'avoir un impact positif sur l'adaptation des parents. Les données de l'enquête longitudinale permettront prochainement d'examiner les réponses des parents lorsque les enfants ont atteint les 12 et 18 mois, et de mieux comprendre la dynamique de leur processus adaptatifs.

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Brief/En bref

Anticipating the Adopted Child: Women's Preadoptive Experiences

Jo-Anne E. Solchany

Cette étude-pilote d'orientation phénoménologique s'est penchée sur les expériences de 3 femmes ayant choisi l'adoption internationale. Ces mères ayant adopté au total 7 enfants venant de 4 pays différents ont échangé sur le parcours qui les a menées à l'adoption : le désir de fonder une famille, les longues démarches occasionnées par la procédure d'adoption, de même que la création de liens affectifs profonds avec leurs enfants. La période qui précède l'adoption est marquée par la préparation, soulevant des thèmes tels que le besoin de prendre sa vie en main, le désir de fonder une famille, l'attente, la contemplation heureuse de photos, les façons de respecter les origines de l'enfant, la nécessité de s'impliquer, et la création de liens affectifs. Ce travail de recherche contribue à affirmer l'importance et la pertinence des expériences vécues par les mères adoptives, et à approfondir, de manière importante, les connaissances des professionnelles en sciences infirmières qui travaillent auprès de ces mères.

A phenomenological pilot study looked into the experiences of 3 women choosing to adopt internationally. The mothers of a total of 7 children from 4 different countries shared the journey leading to adoption: the desire to create a family, the labour of the adoption process, and the experience of bonding with their children. The preadoptive period was a time of preparation, generating the themes of taking control, creating a family, anticipating, celebrating the pictures, honouring the child's origins, investing personally, and bonding. This research validates and adds credibility to the experiences of adoptive mothers, thus contributing critical information to the knowledge base of the nursing professionals who work with these mothers.

This brief report explores the experiences of three women who became mothers through international adoption. Several themes were identified in the process of developing a mother-child relationship in the preadoptive period. One mother poignantly described the experience:

> *We did talk about that bonding issue, about having 9 months to bond when you are pregnant. Would it be different? Would you not be able to bond? But we were adopting. You knew that at the end of this road there was going to be this baby and it didn't matter that we weren't pregnant.*

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It was just a different road and we thought about that child and we talked about it and we prepared for him and you get a room ready, you choose a name...you know, all those things that you do to prepare for a child. It is all part of the bonding process and we did all that...we had a room set up...we shopped, we bought things, we got ready to embrace this child, to bring him into our life. He was coming into our family and there was already that bonding...how you open yourself up to embrace and bring this child in your life. Is that what bonding is? I guess it is.

Literature Review

Professionals working with mothers, children, and families are aware of the importance of every mother-child dyad beginning their relationship under the best possible circumstances. The only way to ensure healthy, positive beginnings for the adoptive mother-child dyad is to eliminate the stigma and celebrate the union. In order to do this we need to know what the natural path for the mother and child in adoption looks like. Research can provide this information.

Very little is known about the development of the mother-child relationship in adoption. The studies that have been done have addressed specific factors in the mother-child interaction such as reciprocity and attachment outcomes (Beckwith, 1972; Lucia, 1992; Singer, Brodzinsky, Ramsay, Steir, and Waters, 1985). Adoptive mothers fared as well as or, often, better than biological dyads in these studies. Smith and Sherwen (1984) looked at qualities of the child that seemed to facilitate bonding. They found that it was easier for adoptive mothers to bond with children under age 4, children of a similar racial or ethnic background, and children viewed as healthy.

Lobar and Phillips (1996) are the only investigators to have looked at the experiences and feelings of mothers and fathers during the pre-adoption and adoption phases. They used ethnographic analysis to explore the processes of parents making the decision to adopt and facilitating the adoption. Their study generated several major themes including uncertainty, unpreparedness, and commitment to an unguaranteed investment, as well as isolation, competition, judgement, and ostracism from a variety of sources. Lobar and Phillips' study lays a foundation for understanding the parents' process in the early stages of adoption. Their study differs from the present one in that they looked at domestic adoptions and did not focus on how these processes relate to the developing parent-child relationship.

Study Design

Participant Profile

Three mothers of children adopted internationally were recruited through network sampling and subsequently agreed to participate in the study. A total of seven children, two girls and five boys, representing four countries, were adopted by the three families. Three of the children had identified special needs, only one of which was known prior to adoption. The children were all adopted before the age of 2. Five had initially been cared for by foster parents, two by orphanages. The children now ranged in age from 3 to 9 years. All children were culturally different from their adoptive families and five were racially different as well. All parents were white. All parents were married, owned their own home, and were financially able to allow the mother to stay at home for an average of 1 year with each adoption.

Data Collection

Data collection involved interviewing each mother for approximately 2 hours. Interviews were open-ended within a semi-structured format designed to maintain the focus on the maternal-child relationship rather than on the adoption process. Early interviews helped inform questions for later ones. All interviews were audiotaped and transcribed. Probing questions and questions generated impromptu by the mother's words were posed liberally throughout the interview. Procedures were conducted within university human-subject guidelines.

Data Analysis

Using an inductive approach, the coding process involved a series of strategies including open, axial, and selective coding (Miles & Huberman, 1994; Strauss & Corbin, 1990). This type of analysis was selected for its structure, which was necessary for the time frame involved. Inter-coder agreement was established on the coding of select transcript pieces. Theoretical memos were kept throughout the study to help guide the question-development, thinking, and coding processes.

Findings

The themes that were generated during this study of the preadoptive period were: taking control, creating a family, anticipating, celebrating the pictures, honouring the child's origins, investing personally, and

bonding. As one mother stated, "It's all preparing to bring this child into your life and commit yourself to him." The themes emerged out of the issues the mothers identified as relevant to their experiences of developing a relationship with their adopted child. Each of the themes is described below.

Taking Control

The first step in adoption is, of course, deciding to adopt. Mothers described this as taking control, a theme represented frequently in their adoption journeys. Taking control encompasses the mother's process of beginning to develop a mother-child relationship. Mothers took control of their lives and their environments in order to make a place in the world for a family purposely created through adoption. All made a conscious decision not to pursue pregnancy, seeing adoption as a natural, proactive choice that put them in control of their reproductive health and desire to be a parent. As part of taking control they intellectually prepared for international adoption by learning about adoption from adult adoptees and attending adoption classes.

Creating a Family

The second theme to emerge was that of creating a family. Mothers saw adoption as the predestined, natural path to creation of their families. They embraced adoption and assumed a proactive role in navigating the road ahead. Mothers believed adoption would provide them with the family they were meant to have. All mothers stated clearly that their goal was to create a family, be a parent, and have a child. One mother summed it up nicely:

> *It's a feeling, like you've been on this road all your life and everything that came before was bringing you to this point. These were the kids meant to be in this house, in this home, to be our children. I have no doubt about it. This is just the way and the time they had to come to us.*

Anticipating

Once parents had made the commitment to adopt and had navigated the initial bureaucratic roads on their journey, they eventually learned of their child. Mothers did not see this simply as a waiting period; they anticipated and dreamt of their children. They welcomed them into their hearts long before they were able to hold them in their arms. The waiting was charged with emotion, preparation, and expectancy. They socially prepared for their children by sharing their anticipation and the

adoption process with family, friends, acquaintances — and even strangers who were willing to listen!

Celebrating the Pictures

A significant component of developing the relationship was receiving pictures of the child. All mothers described the pictures of their child as things to hold on to, share with others, and help prepare them for the actual arrival. The pictures seemed to serve as transitional objects. The mothers took them everywhere they went and shared them with everyone they met. They even slept with them. The pictures became a tangible connection to their baby a world away, like a pregnant belly to rub and soothe.

Honouring the Child's Origins

Mothers shared a sense of honouring both their child's early caregivers and their child's country of birth. Believing that their child-to-be was in good, caring hands while waiting to be placed in their arms seemed extremely important to all the mothers. Even orphanage staff were spoken of with high regard, except for the case of one baby who had been severely neglected and malnourished. Trusting that their infant had been in quality care during those initial months seemed to be, for the mothers, an extension of themselves and their affection for their baby.

In addition to honouring the caregivers, the mothers honoured their child's country of origin. Learning about their child's land and culture seemed to be for them a way of paying tribute to the country that was giving them their child. Some mothers visited their child's country just to learn about it; they studied some of the language and customs, read books about it, and learned to cook its foods. They saw the child's time in their country of origin and with their early caretakers as worthy beginnings.

Investing Personally

The investment of these mothers went beyond money, time, and resources; they invested of themselves. The mothers pursued adoption with blind determination. Once they began, stopping the pursuit to adopt seemed no longer an option. Mothers travelled internationally, lived for weeks in foreign countries, flew on questionably safe aircraft, and exposed their lives to a host of adoption-related professionals.

Bonding

Mothers used the word *bonding* to describe what they did during the preadoption period (the term was generated by each mother, not by the interviewer). It was a significant theme running throughout their experience of developing a relationship with their adopted infant. The mothers found places at all stages where seeds of bonding were sown. The natural association they all made between their work in developing a maternal-child relationship and bonding speaks to the expectation that bonding was inherent in their relationship with the child, and that it occurred in the context of their adoptive experience and in the absence of pregnancy. One mother summarized:

> *The bonding starts with all the preparation you make in your home, just psychologically, all the anticipation, having the pictures. What is that like? Maybe it is like parents who first feel their child kicking. The things that we did to bond, many of them are the same as the couple who are pregnant. I mean you paint a room, you get a crib, you have a baby shower. Many of those things are the same, and then some of the other things are different.*

Discussion

The narratives of these three women describe themes in the process of preparing to welcome a child. These themes were different from those that emerge during pregnancy, yet there are parallels between the preadoptive process and pregnancy. Value was attached to the child in the earliest stages of adoption just as value is attached to the fetus in pregnancy. The maternal work of pregnancy includes seeking safe passage, securing and ensuring acceptance of the child, bonding with the child, and giving of oneself (Rubin, 1984). The adoptive mothers went through all those processes, only in a different context. They fulfilled adoption requirements to secure the child, shared each step in the process with everyone around them, used pictures to bond with the baby, and went beyond the normal limits of safety and comfort, travelling to unknown lands.

Interestingly, the mothers in this study did not share feelings or experiences consistent with the themes identified by Lobar and Phillips (1996). There were no reports of pain, fear, or angst. Evident instead were feelings of confidence, proactiveness, and affection. This perhaps reflects the fact that the mothers in the present study were interviewed after they had successfully adopted instead of during the preadoptive period. It may also reflect the fact that the questions were posed in the

context of the maternal-child relationship rather than the adoption process itself.

The stories of these women demonstrate the strength, commitment, and resilience inherent in their journey to create a family. Future research might focus on providing adoptive mothers with validation of both their journey and the processes inherent in it, credibility for this alternative but natural path to motherhood, and recognition of the beauty of the adoptive mother's development of a deep, loving, lifelong mother-child relationship. The accounts of adoptive mothers can educate and inform other women seeking to adopt, as well as the professionals who work with them. Nurses can benefit from knowing what waiting for the adoptive child involves and can increase their sensitivity to the needs of the preadoptive mother. Pregnancy is a time of honouring and pampering. The preadoption process deserves similar compassion and recognition; the adoptive mother-to-be is worthy of care and treatment equal to that accorded the pregnant mother-to-be.

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Book Review

Ghosts from the Nursery: Tracing the Roots of Violence

Robin Karr-Morse and Meredith S. Wiley
New York: Atlantic Monthly Press, 1997, 364 pp.
ISBN 0-87113-703-8

Reviewed by Jean Hughes

One in every 20 American children will spend some part of his or her life in jail. This riveting text, with an introduction by Berry Brazelton, presents compelling research demonstrating the linkage between violent crime and abuse/neglect during the first two years of life. It reinforces an earlier notion, introduced by psychoanalyst Selma Fraiberg, that unresolved issues from the childhoods of the parents, influence, in turn, their own child-rearing practices. The authors add another dimension to this argument: that even the most violent citizens in our society are forever haunted by "ghosts from the nursery" — the spirits of the babies they once were and the forces that killed their promise.

Each chapter begins with a graphic excerpt from the life story of Jeffrey, a young murderer who typifies the violent, impulsive, but not premeditative or sociopathic killer. The excerpts focus on specific developmental issues and are followed by summaries of related brain research. The research underscores the notion that while no one biological or social factor, in isolation, predisposes a child to violent crime, negative factors such as fetal alcohol syndrome, early neglect and physical abuse, and the mother's chronic alcoholism, working in combination, create the conditions that promote violent behaviour later (often, not very much later) in a child's life.

The first two chapters introduce the theoretical arguments linking brain anatomy and violence. An understanding of the interaction between internal vulnerability (biological variables) and external risk factors (social variables) is essential to an understanding of this linkage. Evidence now suggests that the interplay of the developing brain during the nine months of gestation and the first two years of life creates the core of a person's ability to think, feel, and relate to others. In contrast to earlier research results, evidence now suggests that the

brain is a dynamic (rather than rigid, preset) organism, constantly reflecting and adjusting to its environment. The authors of *Ghosts from the Nursery* argue that while genetics does establish the parameters of the brain, the actual brain matter is formed according to the type and degree of stimulation it receives. At birth, all the basic neurons that the brain will ever have are already formed, while the structures that connect the neurons are just beginning to develop. These synapses are entirely dependent on stimulation from the outside world. It is the quality of the baby's stimulation that determines whether, and how, these vital brain connections will be made.

It has been shown that children who receive positive stimulation (sensitive, warm nurturing) are more likely to learn how to manage their world in successful and satisfying ways, while children who experience negative stimulation (abusive, neglectful conditions) fail to develop critical brain functioning and, in the extreme, are more likely to become violent. For much of the remaining text the authors demonstrate the effects of aversive factors on child outcomes. Four chapters focus on the short- and long-term traumatic effects of specific prenatal experiences: drugs (street, over-the-counter, prescription); malnutrition; birth injury; early deprivation; and absence of father. Three chapters concentrate on child behaviour, temperament, trauma, and head injury.

In the two final chapters the authors observe the misguidedness of current child-care policy in viewing violence as "the problem" rather than as "a late-stage symptom." The facts are clear, and "still we wait" — for the babies of overwhelmed families to be abused or neglected, and for those same abused children to fail in school and, in turn, become delinquent or pregnant. The costs in terms of human productivity are great, yet society is, with few exceptions, unwilling to take preventive action. Karr-Morse and Wiley identify a number of proven assessment and intervention programs for health professionals to use when dealing with emotional, behavioural, and interactional problems in young children and their parents. They also identify the barriers (personal history, previous actions, feelings of helplessness) that must be overcome before preventive action is supported. The future of our society, the authors contend, lies in our investment in those who nurture our children.

The text ends with a series of relevant, practical appendices: factors associated with violence that are amenable to early intervention; myths about the human brain; behavioural effects of drug exposure; reliable primary prevention initiatives; and resources.

Ghosts from the Nursery is a most readable text designed for professionals, policy makers, and members of the public who are committed to making children the social priority. Karr-Morse and Wiley's ability to distil information from volumes of related research is their most important contribution to the study of children. Perhaps it is through a book such as this that professionals and lay stakeholders will find the common ground on which to build a commitment to society's most precious resource, and thereby break the cycle of violence.

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Video Review

Keys to Caregiving: A Self-Instructional Video Series

(Infant State, Infant Behavior, Infant Cues, State Modulation, The Feeding Interaction, Nurse-Parent Communication)

Executive Producer: Georgina Summers
Content Expert: Kathryn Barnard
Seattle: NCAST Productions, 1990. 6 videos ranging from 33 to 62 min.

Reviewed by Kathryn R. Sherrard

Becoming a parent can be a time of excitement and joy but also a time of bewilderment and frustration. Parents are getting to know their child while at the same time learning the complexities of providing care to a newborn.

Families look to nurses for the information they need to enjoy and feel confident in caring for their baby. Nurses in turn must take advantage of every opportunity to develop a relationship with families and to help them make a smooth transition to parenthood.

Keys to Caregiving, developed as a self-instructional package for nurses, is designed to ultimately give parents confidence and competence in caring for their child during the first days and weeks. This series could also become part of the learning process for other health professionals involved in the care of newborns and their parents.

The series comprises six videos — or classes — a self-instructional study guide, and five parent handouts. As the name suggests, each video in the series provides the key to guiding parents and caregivers through the process of understanding the newborn and using this knowledge in nurturing and caring. The complete package is learner-friendly, with clear directions for using both the video and the study guide for optimal learning.

The first three videos, *Infant State, Infant Behavior,* and *Infant Cues,* are sequenced and organized with a view to providing the learner with knowledge of newborn behaviour, the ways in which infants communicate and express their uniqueness, and the importance of sensitivity to newborn behaviour in providing responsive caregiving.

Video 4, *State Modulation,* focuses on recognizing the ways in which infants self-soothe and regulate their state, and using this knowledge to

master techniques for modulating their sleep/wake states. Nurses and parents alike can derive caregiving satisfaction from learning the techniques of both soothing a crying infant and bringing an infant to an alert state for feeding and interaction.

Video 5, *The Feeding Interaction,* combines the content of the first four lessons to demonstrate parent-child interplay during feeding. The Barnard model, which is based on Dr. Kathryn Barnard's years of research, is built on the notion of mother and infant as partners in the feeding experience. The learner is made aware of the complexity of this interaction, as each partner "reads" and responds to the other.

The final video, *Nurse-Parent Communication,* focuses on the ways in which nurses can share the information they have acquired in a way that makes parents feel they are being cared for and, in turn, feel confident and competent in providing care for their newborn.

The series draws on the extensive research of Dr. Barnard and her colleagues in the areas of infant states, how the regulation of states affects sleep, and feeding interactions with parents. The package is well organized. Careful attention has been given to ensuring that the learner understands the concepts to be covered: each video is preceded by a comprehensive reading in the study guide, accompanied by clear, concise references. The study guide highlights important points and observations, including nurse-parent interactions, and provides ample space for notes. It summarizes the key concepts clearly, provides questions for self-testing, and offers suggestions for further reading to keep the viewer actively involved in the learning process.

The videos themselves are presented in a captivating way. Using a range of babies and families to illustrate the points being made, the producers succeed in holding viewers' interest while at the same time directing them to what is being demonstrated. In *Infant State,* for example, the infant close-ups and the voice-over give the viewer a good understanding of the six states and how they affect the child's responsiveness to the caregiver. After viewing this first video, nurses will be able to identify the various states exhibited by the different infants in their care.

The clinical scenarios are well chosen, and the nurses who demonstrate the key concepts make excellent role models in their sensitive handling of the infants and in their caring interactions with mothers and babies. After observing the interplay of a variety of nurses, newborns, and mothers, viewers will be readily able to relate the information to their own clinical practices.

The instructor for the program, Anita Spietz, who is also one of the nurses in the parent-infant interaction segments, narrates in a calm, agreeable voice. Through her choice of positive adjectives to describe the infants and mother-nurse interactions, Spietz conveys a sense of appreciation for the uniqueness of each baby and enthusiasm for applying each lesson in clinical practice.

The segments on working with parents demonstrate the pacing and timing required in caring for a newborn. This is consistent with the entire program's measured pace of introducing and then reviewing each new idea. The careful attention to the learning process ensures that the viewer does not become overwhelmed by the amount of material presented: things appear deceptively simple, until one realizes the extent of the knowledge that has been synthesized into the package.

The series does have its shortcomings. At the outset of the program Dr. Barnard suggests it be used with high-risk families and infants, yet there is little reference to this population in the study guide or videos. By suggesting ways of adapting the various concepts for use in assessing and caring for high-risk infants and their parents, the program would have wider appeal for nurses working with such families. Also, by including a father with his infant in a feeding segment, or a nurse showing a father how to soothe and bring his infant to a lower state, the program would demonstrate to nurses how they might assist fathers in making the transition to parenthood.

Each of the videos includes examples of nurses providing both collaborative and individualized care to infants and parents. Sensitivity and respect are accorded both newborns and families throughout the six videos, particularly *Nurse-Parent Communication,* which demonstrates a model of communication that is used for parent teaching but that could be used in any nursing situation. In an atmosphere of caring, the parents become active participants in the process of identifying what they know and what they need to know and of acquiring the skills and knowledge to become confident in their role. The value and pitfalls of supplementary written information are discussed, while the parent handouts serve as good examples of printed material. This video will be useful for students learning how to recognize and build on people's strengths and how to develop collaborative approaches to working with families.

This series is highly recommended for all health professionals who provide care to new families and their infants. As stated in *Infant Cues,* nurses who already employ many of the techniques described will have a heightened awareness of what they are observing and will be able to

use this awareness in providing individualized care to the newborn. After viewing the series, all nurses will have a new appreciation for newborn babies — the ways in which they communicate their needs and their role as partner in every interaction. The outcome will be nurses who experience satisfaction with their role in helping new families to understand their child and gain the knowledge to parent effectively, and, ultimately, parents who are happy and competent caregivers, providing a healthy, growth-promoting environment for their infant.

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Call for Papers

Mental Health

Summer 1999 (vol. 31, no. 2)

The continuing growth in mental-health problems and the ongoing transformation in services for the people affected pose a major challenge for nursing. With this issue, focusing on mental health, we hope to publish the latest research results as well as theoretical and critical articles likely to influence nursing interventions and thus contribute to improved care. Of particular interest are studies from a nursing-science perspective focusing on those factors that influence recovery among persons with transitory or persistent problems. Priority will be given to articles dealing with the evolving role of nurses in the mental-health sector and with the development and application of new interventions geared for individuals, their families, and their communities.

Guest Editor: Dr. Nicole Ricard
Submission Deadline: January 15, 1999

International Nursing

Fall 1999 (vol. 31, no. 3)

There are diversities as well as similarities in the practice of nursing around the world, and there is increasing international collaboration designed to improve nursing globally. This issue will focus on the ways in which various countries are dealing with the issues, challenges, and problems in nursing. Its purpose is to publish studies relating to policy and planning, education, working conditions or the work environment, and the clinical practice of nursing. Topics include: policy formulation and planning, including situational analyses of requirements and supply; aspects of education such as assessments of the quantity and quality of programs, applicant pool, recruitment, follow-up of graduates, and evaluation of faculty; and staffing patterns such as mix of professional and non-professional staff, recruitment and retention strategies, and ways in which clinical nursing services are being provided. Of interest are theoretical, research, or evaluative papers that advance our knowledge of nursing across cultures and societies. Of particular interest are studies that cut across two or more countries or that are the result of international collaboration.

Guest Editor: Dr. Susan French
Submission Deadline: April 15, 1999

Please send manuscripts to: The Editor, *Canadian Journal of Nursing Research*
McGill University School of Nursing, 3506 University Street
Montreal, QC H3A 2A7 Canada

Appel de soumission d'articles

Santé mentale

Été 1999 (vol. 31, no 2)

L'augmentation progressive des problèmes de santé mentale au sein de la population et la transformation actuelle des services posent des défis importants sur le plan de l'efficacité et de l'efficience des interventions infirmières en regard de ce problème de santé publique. Ce numéro consacré à la santé mentale vise la publication de résultats de travaux de recherche et d'articles théoriques ou critiques à la fine pointe des connaissances, susceptibles d'influencer les modes de prestation des soins et le renouvellement des interventions infirmières. Les manuscrits soumis doivent, partant d'une perspective en sciences infirmières, permettre une meilleure compréhension des facteurs influençant le processus de rétablissement des personnes présentant des problèmes transitoires ou persistants. Également, seront privilégiés les écrits portant sur l'évolution du rôle de l'infirmière en santé mentale, ainsi que la mise en oeuvre et l'évaluation de nouveaux modes d'intervention auprès de la personne, de la famille ou de la communauté.

Collaboration spéciale : Nicole Ricard, inf., Ph.D.
Date limite pour les soumissions : le 15 janvier 1999

Les sciences infirmières sur la scène internationale

Automne 1999 (vol. 31, no. 3)

Il existe des diversités tout comme des similitudes au sein la profession, partout dans le monde, et les collaborations internationales conçues pour améliorer la pratique à l'échelle mondiale se font de plus en plus nombreuses. Ce numéro sera consacré aux approches mises en place dans différents pays pour gérer les questions, les défis et les problèmes qui se présentent à la profession. L'objectif est de publier des recherches qui se penchent sur les politiques et la planification, l'éducation, les conditions ou les milieux de travail, ainsi que la pratique clinique. Entre autres, ce numéro traite des sujets suivants : la formulation et la planification des politiques, y compris l'analyse de situation en ce qui a trait à l'offre et à la demande; les aspects de l'éducation tels que l'évaluation de la quantité et de la qualité des programmes, le bassin étudiants-postulants, le recrutement, le suivi des diplômés et l'évaluation de facultés; ainsi que les tendances en matière de composition du personnel comme par exemple les équipes composées de professionnels et de non-professionnels, les stratégies de recrutement et de fidélisation, et les méthodes utilisées pour prodiguer les services en milieu clinique. Nous vous invitons à soumettre des articles théoriques, évaluatifs et de recherche qui nous permettront d'approfondir nos connaissances de la profession, exercée dans le cadre d'autres cultures et sociétés. Également, seront privilégiés les écrits dont le contenu traite de deux pays ou plus ou qui sont le fruit d'une collaboration internationale.

Collaboration spéciale : Susan French, inf., Ph.D.
Date limite pour les soumissions : le 15 avril 1999

Prière d'envoyer les manuscrits à : La rédactrice en chef,
Revue canadienne de recherche en sciences infirmières,
École des sciences infirmières de l'Université McGill, 3506, rue University
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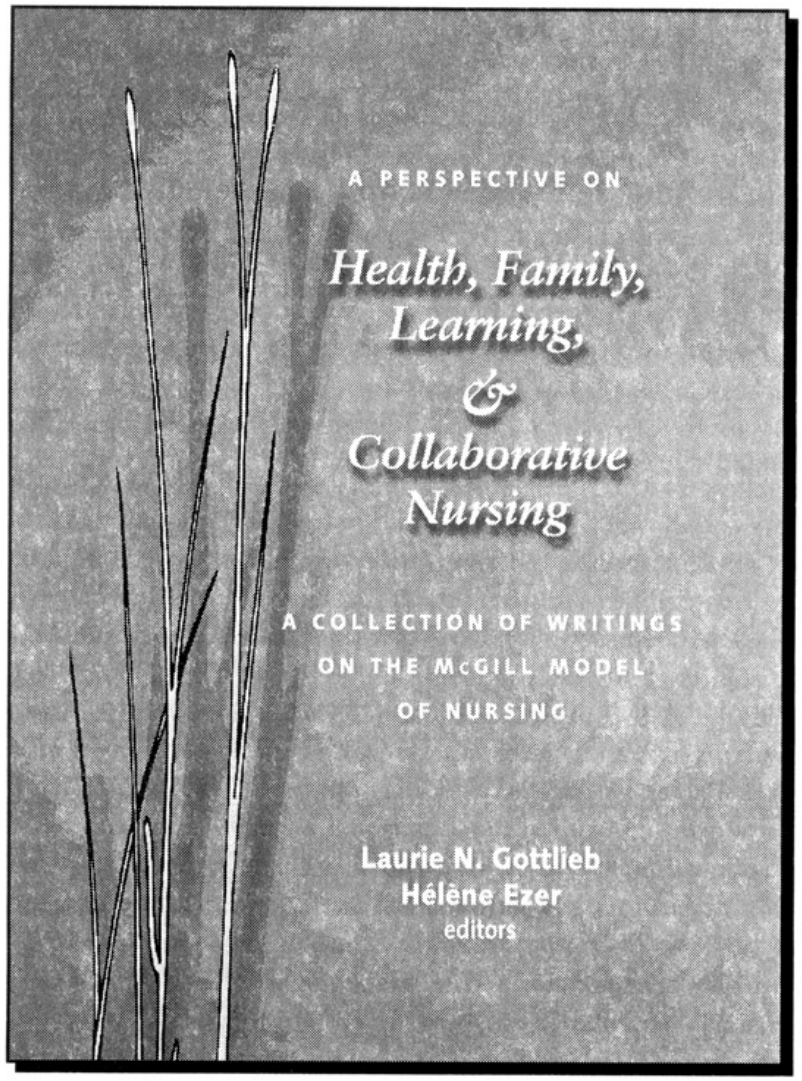

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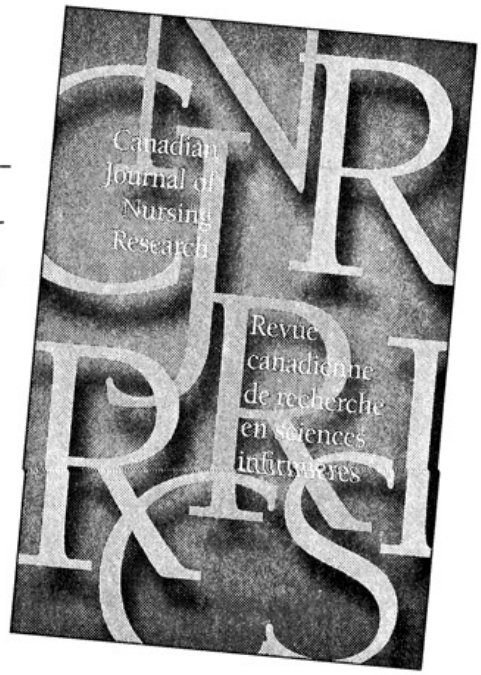

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Procedure: Three double-spaced typewritten copies of the manuscript on 8 ½" x 11" paper are required. Articles may be written in French or English. Authors are requested not to put their name in the body of the text, which will be submitted for blind review. Only unpublished manuscripts are accepted. A written statement assigning copyright of the manuscript to the *Canadian Journal of Nursing Research* must accompany all submissions to the journal. Manuscripts are sent to: The Editor, *Canadian Journal of Nursing Research*, School of Nursing, McGill University, 3506 University Street, Montreal, QC H3A 2A7.

Manuscripts

All manuscripts must follow the fourth edition of the *Publication Manual of the American Psychological Association*. Research articles must follow the APA format for presentation of the literature review, research questions and hypotheses, method, and discussion. All articles must adhere to APA guidelines for references, tables, and figures. Do not use footnotes.

Title page: This should include author name(s), degrees, position, information on financial assistance, acknowledgements, requests for reprints, address, and present affiliation.

Abstract: Research articles must include a summary of 100–150 words containing information on the purpose, design, sample, findings, and implications. Theory and review papers must include a statement of the principal issue(s), the framework for analysis, and a summary of the argument.

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Electronic copy: Authors must provide satisfactory electronic files of the accepted final version of the manuscript.

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La *Revue canadienne de recherche en sciences infirmières* est publiée quatre fois par année. Son mandat est de diffuser la recherche en sciences infirmières qui a trait au développement des connaissances dans la discipline et l'analyse de la mise en pratique de ces connaissances. La revue accepte également des articles de recherche liés à l'éducation, à l'histoire de même que des articles liés à la méthodologie, la théorie et l'analyse critique qui favorisent le développement des sciences infirmières. Nous vous invitons à nous faire parvenir également vos commentaires sur les articles publiées.

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La présentation du manuscrit doit respecter les normes du *Publication Manual of the American Psychological Association*, 4e édition, 1994. Notamment, les figures, tableaux, illustrations et références doivent être présentés selon les normes prescrites. Il est suggéré de ne pas avoir recours aux notes de bas de page.

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