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CLINICAL SIGNIFICANCE OF RESEARCH: A GROWING CONCERN

While other disciplines, such as Epidemiology and Psychiatry, have engaged in considerable debate about the meaning and measurement of clinical significance, Nursing has been relatively subdued in this regard. Clinical significance refers to the potential for research findings to make a real and important difference to clients or clinical practice, to health status or to any other problem identified as a relevant priority for the discipline. Traditionally, researchers have used statistical significance to imply clinical significance. A variety of statistical procedures have been involved in demonstrating clinical significance. For a more comprehensive analysis of this approach, I refer you to "The statistical versus clinical significance debate: Implications for nursing research" by Sandra Lefort (Image, 1992, in press). The purpose of this editorial is not to discuss the methods for evaluating clinical significance, but to highlight some very pressing reasons for my belief that Nursing will have to make a serious attempt to address and debate the issue at this time.

The first is the growing emphasis on research-based practice and the development of research implementation programs. Clinicians cannot, and should not, incorporate research findings unless those findings provide powerful support for solving a clinical problem or improving the health of clients. While replication of individual research studies may help to build a case for the size, validity and generalizability of an effect, clinicians must be capable of critiquing the results of research in order to determine whether or not an effect size is truly clinically important. Similarly, researchers must report data in a way that is meaningful to clinical practice, and must discuss the limitations of the study in terms of their impact on the meaningfulness of the results. Departments of Nursing Research in clinical settings have enormous responsibility for interpreting the statistical reporting of data, in order to help clinicians make ethical and sound decisions about the use of research in practice.

A second reason for us to address the issue of clinical significance seriously relates to the funding of health research in Canada. As more and more health disciplines are engaged in research, and as the economy for research funding is likely to become less abundant, the search for scarce funds and potential subjects for health care research will become increasingly competitive. The research that is successful in funding competitions will have to identify the potential significance of the research in addressing important clinical problems. In outlining a plan for data analyses, researchers will have to consider such issues as the limitations of group data on variables with a high degree

of variance. Plans for data analyses should include the reporting of data in a way that is most meaningful to clinicians. For example, in the field of pain, there may be statistically-significant differences between an intervention group and a control group in the level of post-treatment pain, but the high level of variability in pain may not address the question of whether those differences were clinically meaningful. It may be that the percentage of individuals responding to a treatment has more meaning for clinical practice than do group means. A second issue here, and related to the field of pain, is that, even if there are substantial differences between a treatment and control group in the level of pain, can the research demonstrate that the decrease in pain had an important impact on an individual's recovery or health status? In the field of clinical pain research, we may have to move beyond the assumption that pain relief makes a difference and actually incorporate the measurement of functional variables that have more meaning, in order to support the clinical significance of the findings.

Another reason to address the issue of clinical significance relates to potential changes in the distribution of health care delivery. With more emphasis on health and health promotion, the choice of outcome variables that will make clinically-significant differences is a major challenge. Does a 10% improvement on a quality-of-life measure make a substantial difference for the improved group? What other types of outcomes can be measured to demonstrate clinical significance in this area of research? *The Canadian Journal of Nursing Research* welcomes any letters or methodological commentaries addressing the issue of clinical significance. It is time for the discipline of Nursing to enter into a meaningful debate and to be accountable for demonstrating the clinical importance of our research. The days of "these data have important implications for nursing practice" are over.

Mary Ellen Jeans

L'IMPORTANCE CLINIQUE DE LA RECHERCHE : UN SUJET DE PRÉOCCUPATION CROISSANTE

Alors que d'autres disciplines comme la psychiatrie et l'épidémiologie ne cessent de s'interroger sur la signification et l'évaluation de l'importance clinique de la recherche, les sciences infirmières n'ont attaché que peu d'attention à cette question. L'importance clinique reflète l'incidence éventuelle des résultats de la recherche sur l'amélioration de l'état des clients ou de l'exercice de la profession, sur la santé ou sur tout problème que les milieux infirmiers jugent prioritaires. Les chercheurs ont toujours vu dans le terme "signification statistique" l'expression de l'importance clinique des résultats. On a emprunté diverses démarches statistiques pour faire la preuve de l'importance clinique. On trouvera une analyse plus complète de cette démarche de vérification de l'importance clinique dans *The statistical versus clinical significance debate: Implications for nursing research* par Sandra Lefort (Image, 1992, sous presse). Le propos de l'auteur du présent éditorial n'est pas de débattre des méthodes d'évaluation de l'importance clinique, mais plutôt de souligner quelques-unes des raisons pressantes qui doivent amener les milieux infirmiers à étudier la question et à rechercher des solutions sans plus tarder.

En premier lieu, il importe d'attirer l'attention sur l'importance croissante de la pratique fondée sur la recherche ainsi que sur la mise en place de programmes d'application de la recherche. Les cliniciens ne peuvent ni ne doivent incorporer les résultats de la recherche à l'exercice de leurs fonctions à moins que ces résultats ne jouent un rôle clé dans l'amélioration du tableau clinique ou de la santé des bénéficiaires. Bien que la reproduction de certaines études puisse contribuer à prouver la justesse d'un résultat (compte tenu du plus grand nombre de sujets examinés, de la validité et de la généralisation éventuelle des effets observés), les cliniciens doivent examiner d'un oeil critique les conclusions de toute recherche et déterminer si l'importance d'un effet présente réellement un intérêt clinique. Parallèlement, les chercheurs doivent présenter leurs résultats d'une manière qui soit utile à l'exercice de la profession et ils doivent exposer les limites de leurs études en indiquant notamment leurs effets sur la signification des résultats. Les départements de recherche infirmière situés en milieu clinique ont des responsabilités colossales au chapitre de l'interprétation statistique des données dans la mesure où il entendent aider les cliniciens à prendre des décisions avisées conformes aux normes de la profession concernant l'utilisation de la recherche dans la prestation des soins infirmiers.

Une deuxième raison nous amène à approfondir la question de l'importance clinique: il s'agit du financement de la recherche au Canada. De plus en plus

de disciplines des sciences de la santé se tournent vers la recherche, et dans un contexte de compressions budgétaires, la demande de crédits rares sera de plus en plus grande. Les chercheurs qui réussiront à faire financer leurs projets devront préciser dans quelle mesure leur recherche est susceptible d'influer sur des problèmes cliniques importants. En préparant un plan d'analyse des données, les chercheurs devront tenir compte de certaines questions comme les limites des données de groupe sur les variables affichant un taux de variance élevé. Les plans d'analyse des données devront prévoir un mode d'établissement de rapports qui maximalise les résultats pour les cliniciens. Ainsi, dans les recherches sur la douleur, on peut noter des différences statistiquement significatives entre un groupe d'intervention et un groupe témoin, notamment pour ce qui est de la douleur après traitement, mais il est possible qu'en mettant l'accent sur la variabilité élevée de la douleur, on néglige de se pencher sur l'importance clinique des différences. Il est également possible que le pourcentage de sujets qui réagissent favorablement à un traitement revête une plus grande importance clinique que les moyennes de groupe. Une seconde question se pose ici, toujours dans le contexte de la douleur : même s'il existe des différences importantes au niveau de la douleur entre un groupe traité et un groupe témoin, le chercheur peut-il démontrer que le soulagement de la douleur a eu une influence importante sur la guérison de la personne ou sur son état de santé? Dans le domaine de la recherche clinique sur la douleur, il se peut qu'il nous faille dépasser cette notion du rôle du soulagement de la douleur et qu'il nous faille introduire l'évaluation des variables fonctionnelles plus significatives pour étayer l'importance clinique des résultats.

D'éventuels changements dans la prestation et la distribution des soins de santé constituent une autre raison qui nous amène à nous pencher sur l'importance clinique de la recherche. Compte tenu de la place de plus en plus grande que l'on accorde à la santé et à sa promotion, le choix des variables d'issue qui auront un intérêt clinique apparaît comme un redoutable défi. Ainsi, une amélioration de 10 % de la qualité de la vie fait-elle une différence appréciable chez le groupe qui présente cette amélioration? Quels autres types d'issue peuvent être mesurés pour démontrer l'importance clinique dans ce domaine de la recherche? Le *Canadian Journal of Nursing Research* invite tous ceux et celles qui voudront bien lui écrire à lui faire part de leurs commentaires méthodologiques portant sur l'importance clinique. Il est temps que les sciences infirmières s'engagent dans un débat significatif et qu'elles assument leurs responsabilités en démontrant l'importance clinique de leurs recherches. L'époque où l'on se contentait de conclure les comptes rendus de recherche par ces mots "ces données sont importantes pour l'exercice de la profession infirmières" est révolue.

Mary Ellen Jeans

CONJUGAL SUPPORT, FAMILY COPING BEHAVIOURS AND THE WELL-BEING OF ELDERLY COUPLES

Francine Ducharme and Kathleen Rowat

One of the factors that is thought to contribute to the quality of life of elderly people is that they remain in their primary environment as long as possible (Ducharme, 1984; Schwenger & Gross, 1987). However, the rate of institutionalization of the elderly in Canada is one of the highest among the industrialized countries of the world, and it is growing (Schwenger & Gross, 1987; Statistics Canada, 1988). Finding ways of maintaining the elderly in the community has become a main goal of health professionals. In Canada, two strategies have recently been proposed to promote the well-being of the elderly in their primary environment: reinforcing their natural support systems, and assisting them to increase their capacity to cope (Epp, 1986; Health and Welfare Canada, 1988). However, accomplishing these goals will require further knowledge development in the area of social support and coping.

Conjugal support, acknowledged as the most important source of support for the elderly (Depner & Ingersoll-Dayton, 1985; Parmelee, 1983), and coping have been identified as important factors contributing to the elderly's ability to remain within the community (Evans et al., 1975; Wan & Weissert, 1981). Studies of conjugal support (Burke & Weir, 1982; Traupman & Hatfield, 1981) and coping (Felton & Revenson, 1984; Kahana, Kahana & Young, 1987) suggest that each of these factors is associated with the physical and psychological well-being of the elderly. Nevertheless, the features of conjugal support and the types of family coping behaviours of elderly couples that are associated with well-being are largely unknown. Furthermore, the way in which support and coping may work to affect well-being is not yet understood.

To explore these questions, therefore, a study was undertaken to test the relationship between selected characteristics of conjugal support, family coping behaviours and the well-being of community-dwelling elderly

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couples. The recognized goal of nursing is health promotion and, more specifically, to engage families in the process of learning about and acquiring healthier ways of living (Gottlieb & Rowat, 1987). As such, research dealing with possible factors associated with well-being was deemed relevant for nursing. This article reports selected findings from this study.

Literature Review

Despite the accumulated evidence showing a positive relationship between social support and health (Cohen, 1988; Cohen & Wills, 1985; House, Landis & Umberson, 1988), the association remains modest for all age groups, and the precise nature of the relationship is not well understood. The literature highlights two theoretical models for explaining the relationship between social support and health (Cohen & Wills, 1985). Much of the interest is directed to the stress-buffering hypothesis in which social support is posited to provide a buffer against the effects of acute stress or specific life events. The main-effect model, in which social support is presumed to have a direct beneficial effect on health regardless of whether persons are under acute stress, is the alternate model. Few researchers have examined this alternate model with the elderly; that is, the relationship between social support and well-being in the elderly facing daily or existential stress (Black, 1985; Blazer, 1982; Laschinger 1984).

Various conceptual issues have been addressed in the study of social support. A widely used approach to social support assumes that the benefits of social support are related to the size and range of an individual's social network and that having a relationship is equivalent to receiving support from that relationship. However, social support, as measured by such structural indicators, has been shown to exhibit little relationship to indices of well-being in the elderly (Cohler & Lieberman, 1980; Mancini, Quinn, Gavigan & Franklin, 1980; Ward, LaGory & Sherman, 1982). Rather, it has been suggested that it is the perception of *quality* of support that is important for the well-being of the elderly (Antonucci, 1985a; Ward, 1985).

Within the last decade, the literature has reflected a perspective on social support that is based on two closely related theories: Social Exchange Theory (Blau, 1964) and Equity Theory (Messick & Cook, 1983). This perspective acknowledges that social interactions may be neither free nor always benevolent. Consequently, studies incorporating the notion that support may be upsetting for the elderly - "the darker side of social support" (Tilden & Galyen, 1987) - have been more common in recent years (Okun, Mehibar & Hill, 1990; Rook, 1984).

The perceived positive and negative aspects of conjugal support, however, have not been explored in relation to the well-being of the elderly dyad,

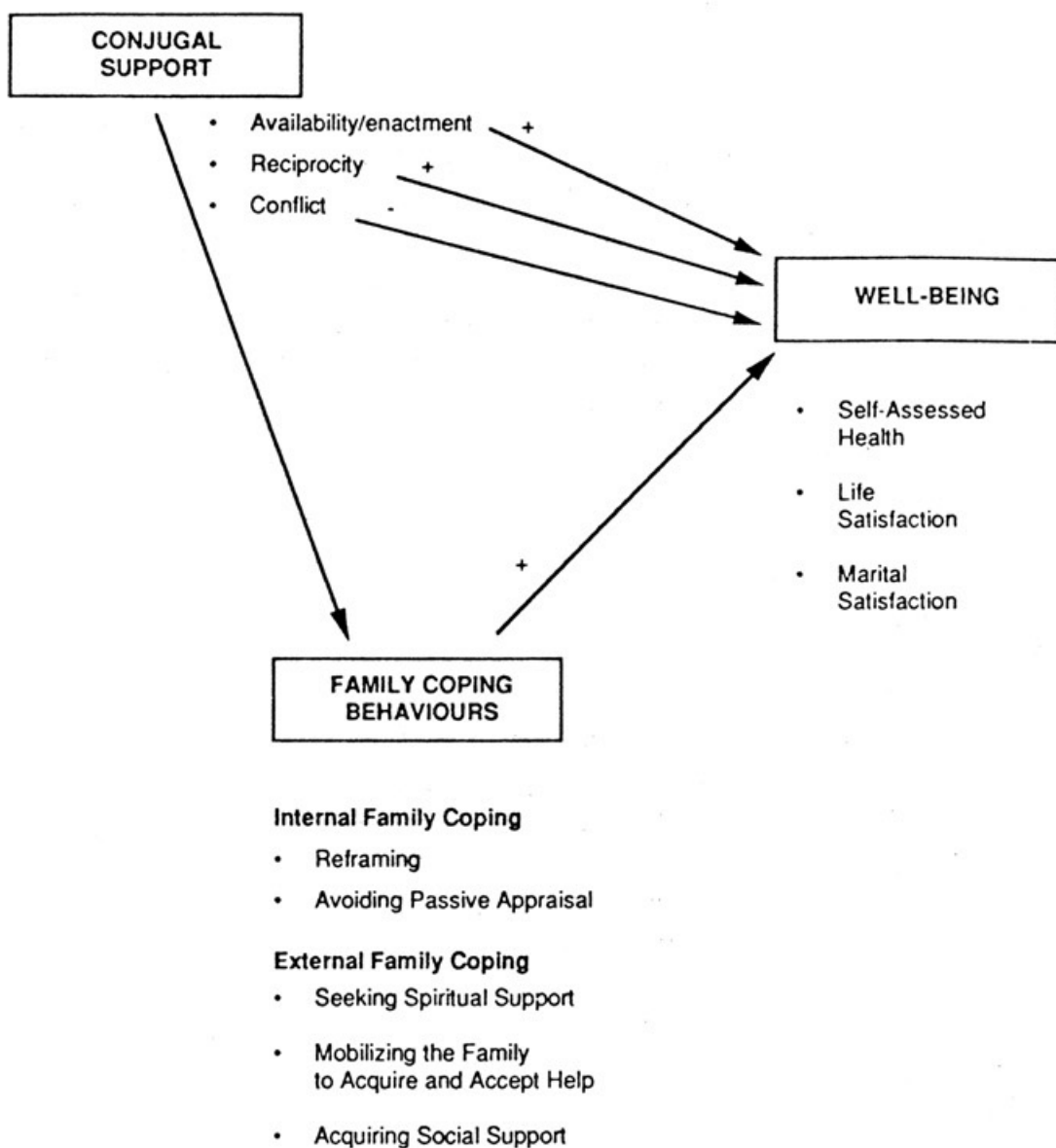
despite the fact that conjugal support has been identified as the most potent family factor affecting overall mortality and morbidity in the general population (Campbell, 1986). According to Sussman and Steinmetz (1987), the relationship of conjugal support to the well-being of the elderly has received little attention.

Another virtually unexplored area is that of the relationship between the coping strategies of the elderly, in the face of daily stressful situations, and their well-being. How elderly families respond to life circumstances, or which family coping patterns work or fail in response to daily strains, remains unknown (Berardo, 1980; McCubbin et al., 1980). The majority of the coping literature deals with the coping behaviours used in handling specific stressful encounters or major "life events". The main effect of coping on existential or daily stress has, for the most part, been neglected (Lazarus & DeLongis, 1983; Pearlin & Schooler, 1978).

Finally, although a number of studies document the importance of both social support and coping with regard to well-being, most research on social support has progressed independently of research on coping (Gore, 1985). When social support and coping have been considered simultaneously, they have been conceptualized as intervening processes mediating the effect of specific life events on health, which is identified as the absence of distress (stress-buffering effect). The mechanism through which social support and coping might work to improve well-being in ordinary circumstances is still unknown. Recent work has suggested that social support may have an indirect effect on well-being by improving effective coping (Lazarus & Folkman, 1984; McNett, 1987). However, a better understanding of the link between support, coping and well-being seems a prerequisite to the elaboration of any nursing intervention that might improve the quality of life of the elderly family.

Theoretical Framework

The framework that guided this study, the McGill Model of Nursing, emphasizes family, coping and well-being (Gottlieb & Rowat, 1987). Conceptualizations of conjugal support, family coping and well-being compatible with the model were used. Social Exchange Theory (Blau, 1964) and Equity theory (Messick & Cook, 1983) were used in defining conjugal support. Family coping was defined according to the McCubbin and Patterson framework (1983). Well-being was conceptualized as a multidimensional subjective phenomenon, consisting of the dimensions of self-assessed health, life satisfaction and marital satisfaction.



Control Variables: Functional Ability, Socioeconomic Status, Level of Stress, Social Network Size, Years Married, Gender

Figure 1

Diagram of the Proposed Model

Research hypotheses

Based on the present state of knowledge and the theoretical framework of the study, we hypothesized a model of the relationship between the variables (see Figure 1). More specifically, we hypothesized the following.

1. There is a positive relationship between the well-being of elderly marital partners and the positive aspects of conjugal support, namely perceived availability/enactment and reciprocity of conjugal support.

2. There is a negative relationship between the well-being of elderly marital partners and the negative aspect of conjugal support, namely conflict.

3. Conjugal support along with family coping behaviours account for a significant part of the variance in the well-being of elderly marital partners.

4. Conjugal support has a direct effect on the well-being of elderly marital partners, as well as an indirect effect through family coping behaviours.

Methods

Design

A cross-sectional correlational design was used to test the study hypotheses.

Sample

The study was carried out in a large urban center. Community-dwelling elderly couples were chosen according to the following criteria: the husband and wife were sixty-five years of age or older, were living at home, had the physical and mental capacities to be interviewed and spoke and understood English or French.

A multi-stage sample was drawn from users of health and social services, as well as from non-service users. A random sample of ten agencies delivering services to the elderly was selected. A "snowball strategy" was used to select non-service users. At the end of each home visit, interviewed couples were asked if they would communicate with other couples, friends and acquaintances, for their permission to be contacted.

One hundred and sixty-one couples were approached; twenty-six refused to participate in the study - a participation rate of 83.9%. Refusals were similar in terms of age, referral mechanisms and socio-economic status to those who took part in the study. The final sample consisted of 135 elderly couples, 97 of whom were obtained from the service agencies and 38 who were referred through the snowball sampling strategy.

The final sample appeared comparable to the non-institutionalized elderly population in terms of labor force distribution, educational level, mother tongue and religious affiliation of the elderly in Quebec (Bureau de la Statistique du Quebec, 1986). The mean ages were 73 years for men and 71 years for women. All individuals had lived in Canada for more than 30 years. The average duration of the marriages was 42 years. T-tests revealed that the only differences between the service and non-service users were that couples from the service agencies were significantly ($p < .05$) younger than non-service users ($M: 71.1$, $SD: 5.5$ and $M: 73.2$, $SD: 5.8$) and that they were married for fewer years ($M: 40.7$, $SD: 12.5$ and $M: 46.5$, $SD: 12.4$).

Instruments

A modified version of the *Interpersonal Relationship Inventory* (IPRI, Tilden, 1987) was used to assess conjugal support. The IPRI is a 39-item Likert-type scale, consisting of three subscales: "Perceived Availability or Enactment" of helping behaviours, "Reciprocity" and "Conflict". Because the IPRI was originally designed to assess relationships within an individual's social network, it was modified in order to assess only the conjugal relationship. Cronbach's alpha coefficient for the revised scale was .71 in this study, with a range of .68 to .80 for the subscales.

Family coping behaviours were measured with the *F-Copes* (McCubbin, Olson & Larsen, 1987). This was created to identify pattern of strategies used by families facing daily problems or difficulties. This instrument contains 30 Likert-type items, included in five subscales. Three subscales contain items assessing external family coping: "Acquiring Social Support" from relatives, friends, neighbours and extended family; "Seeking Spiritual Support"; and "Mobilizing the Family to Acquire and Accept Help" from community resources and services. Two subscales contain items assessing how families internally handle problems: "Reframing", which assesses the family's capability to redefine stressful situations in order to make them more manageable; and "Passive Appraisal" which evaluates the inactive or passive behaviours a family might employ. In this study, Cronbach's alpha for the total sample was .75 with a range of .66 to .75 for the subscales.

Well-being, as a multidimensional construct, was measured using three instruments, The *Cantril Self-anchoring Ladder* (Cantril, 1965), the *Life Satisfaction Index-Z* (Wood, Wylie & Schaefer, 1969) and a visual analogue rating scale. The Cantril ladder was used to measure self-assessed health. The respondents were asked to describe their very best and their very worst health status - the end points of a pictorial ten-point scale. They were then asked, in terms of health status, where on the ladder they would place themselves now.

The Life Satisfaction Index-Z (LSI-Z, Wood, Wylie & Schaefer, 1969) is a shortened version of the known valid and reliable *Life Satisfaction Index-A* designed for the elderly (Neugarten, Havighurst & Tobin, 1961). The respondent is asked to agree or disagree with 13 statements concerning life in general.

A *Visual Analogue Rating Scale* and an open-ended question were used to assess marital satisfaction. Each individual was asked to rate his or her current satisfaction with conjugal life by slashing on a 100 mm visual analogue scale. Because the visual analogue is a single-item instrument, each spouse was asked also to explain his or her rating and the answers were tape recorded.

The variables found in earlier investigations to be associated with support, coping and well-being are functional ability in activities of daily living (Antonucci, 1985b), level of stress (Lazarus & DeLongis, 1983), social network size (Mancini et al., 1980), years married (Rollins & Cannon, 1974), gender and socioeconomic status (Antonucci, 1985b). These were used as control variables in the present study. The *Functional Ability Measure* (Chappel & Strain, 1985) was used to assess the subject's capacity to perform activities of daily living; the level of stress was measured using the *Geriatric Social Readjustment Rating Scale* (GSRRS, Amster & Krauss, 1974). Socioeconomic status (SES) was determined by the *Socioeconomic Index for Occupations in Canada* (Blishen, Carroll & Moore, 1987).

Data collection procedure

The measures were administered in the couples' homes, through face-to-face interviews. Husbands and wives were interviewed separately by two trained interviewers, randomly assigned to husbands or wives. At the time of the home visit, written consent was obtained from each marital partner. The average length of time per interview was 1.5 hours.

Data Analysis and Results

Data were first analyzed using zero-order correlation coefficients. Because preliminary analyses revealed significant differences between husbands and wives with regard to their perception of conjugal support and selected family coping behaviours, data were considered according to gender.

Correlation coefficients between the three dimensions of conjugal support and the three dimensions of well-being appear in Table 1. Results support the first two hypotheses. For both men and women, a significant positive relationship between the three dimensions of well-being and the positive dimensions of conjugal support (perceived availability/enactment and

reciprocity) was found ($p<.001$). A significant negative relationship between the well-being of both partners and the perception of conflict was also found ($p<.001$). Using Fisher's Zr transformation to compare the magnitude of the correlation coefficients (Ferguson, 1981), no significant differences were found between the coefficients of men and women ($Z<1.96$ for all comparisons).

Table 1

Pearson Correlation Coefficients Between Well-Being and Conjugal Support - by gender.

Conjugal Support	Men (n=135)	Women (n=135)
<i>Self-Assessed Health</i>		
Availability/Enactment	.28*	.30*
Reciprocity	.34*	.32*
Conflict	-.20*	-.21*
<i>Life Satisfaction</i>		
Availability/Enactment	.46*	.55*
Reciprocity	.51*	.62*
Conflict	-.34*	-.36*
<i>Marital Satisfaction</i>		
Availability/Enactment	.74*	.77*
Reciprocity	.68*	.74*
Conflict	-.71*	-.62*

$p<.001$

Correlation coefficients between the well-being criteria and each family coping behaviour are presented in Table 2. Because items in the passive appraisal subscale of the *F-Copes* were reversed when scored, a high score on passive appraisal denotes low use of the strategy. Results revealed a significant positive relationship between the use of internal coping behaviours and the well-being of the elderly marital partners, both male and female. "Reframing" and "avoiding passive appraisal" were the two strategies that were significantly and positively related to self-assessed health, life satisfaction and marital satisfaction. No significant relationship was found between the use of any of the external family coping behaviours ("Acquiring Social Support", "Seeking Spiritual Support" and "Mobilizing the Family to Acquire and Accept Help") and the well-being of the elderly marital partners. No significant differences were found between the correlation coefficients of men and women ($Z<1.96$).

Table 2

Pearson Correlation Coefficients Between Well-Being and Family Coping Behaviours - by gender.

Family Coping Behaviours	Men (n=135)	Women (n=135)
<i>Self-Assessed Health</i>		
Internal Strategies		
Reframing	.48**	.50**
Passive appraisal (avoidance)	.29**	.22**
External Strategies		
Acquiring social support	.01	-.05
Seeking spiritual support	-.04	.11
Mobilizing the family to acquire and accept support	-.11	-.04
<i>Life Satisfaction</i>		
Internal Strategies		
Reframing	.73**	.71**
Passive appraisal (avoidance)	.30**	.48**
External Strategies		
Acquiring social support	.20*	-.03
Seeking spiritual support	.01	.16
Mobilizing the family to acquire and accept support	-.07	-.08
<i>Marital Satisfaction</i>		
Internal Strategies		
Reframing	.43**	.64**
Passive appraisal (avoidance)	.35**	.21*
External Strategies		
Acquiring social support	.13	-.06
Seeking spiritual support	.08	.15
Mobilizing the family to acquire and accept support	.002	-.09

*p<.05; **p<.01

As the main purpose of the study was to determine the unique effects of conjugal support and family coping on well-being of the elderly couple, a series of hierarchical multiple regression analyses, one with each criterion variable (self-assessed health, life satisfaction, marital satisfaction), were performed. Because family data are usually correlated, data from husbands and wives were considered separately for these analyses in accordance with a major assumption underlying regression analysis (Pedhazur, 1982). In order to evaluate the amount of variance in well-being that could be explained beyond the control variables, these variables were first entered into the regression equations followed, according to the hypothesized model, by family coping and conjugal support variables. The conjugal support dimensions of "Availability/Enactment" and "Reciprocity" were found to be highly correlated ($r=.75$) and thus were combined into one variable, "Positive Conjugal Support" for the analyses. To assess the indirect effect of conjugal support on well-being, the path from conjugal support to coping was determined by regressing family coping variables on conjugal support variables. The relative importance of each coping and support variable was examined using the standardized beta coefficients. The level of significance for all tests was set at $p<.05$.

The models obtained for men and women were fairly similar. Because the intraclass correlation coefficients between husbands and wives were low ($r<.3$), the data from the total sample were combined (Schumm, Barnes, Bollman, Jurich & Milliken, 1985) and a global model was thus obtained (Figure 2).

The third and the fourth hypotheses (see the hypothesized model in Figure 1) were supported in part by selected indicators. Reframing, an internal family coping strategy, was the only variable that contributed significantly to self-assessed health (Beta=.40, $p<.01$). Positive conjugal support (Beta=.32, $p<.01$), reframing (Beta=.40, $p<.01$) and avoidance of passive appraisal (Beta=.13, $p<.05$) were significant predictors of life satisfaction, while both conjugal support (positive dimensions: Beta=.32, $p<.01$ and conflict: Beta=-.20, $p<.01$) and reframing (Beta=.15, $p<.05$) were significant predictors of marital satisfaction.

As hypothesized, conjugal support was found to have both a direct and an indirect effect on selected well-being criteria. Positive conjugal support had a direct effect on life satisfaction and marital satisfaction, as well as an indirect effect on the three well-being criteria through the use of the family coping strategy of reframing. Negative support (conflict) had a direct effect on marital satisfaction and an indirect effect on life satisfaction through passive appraisal.

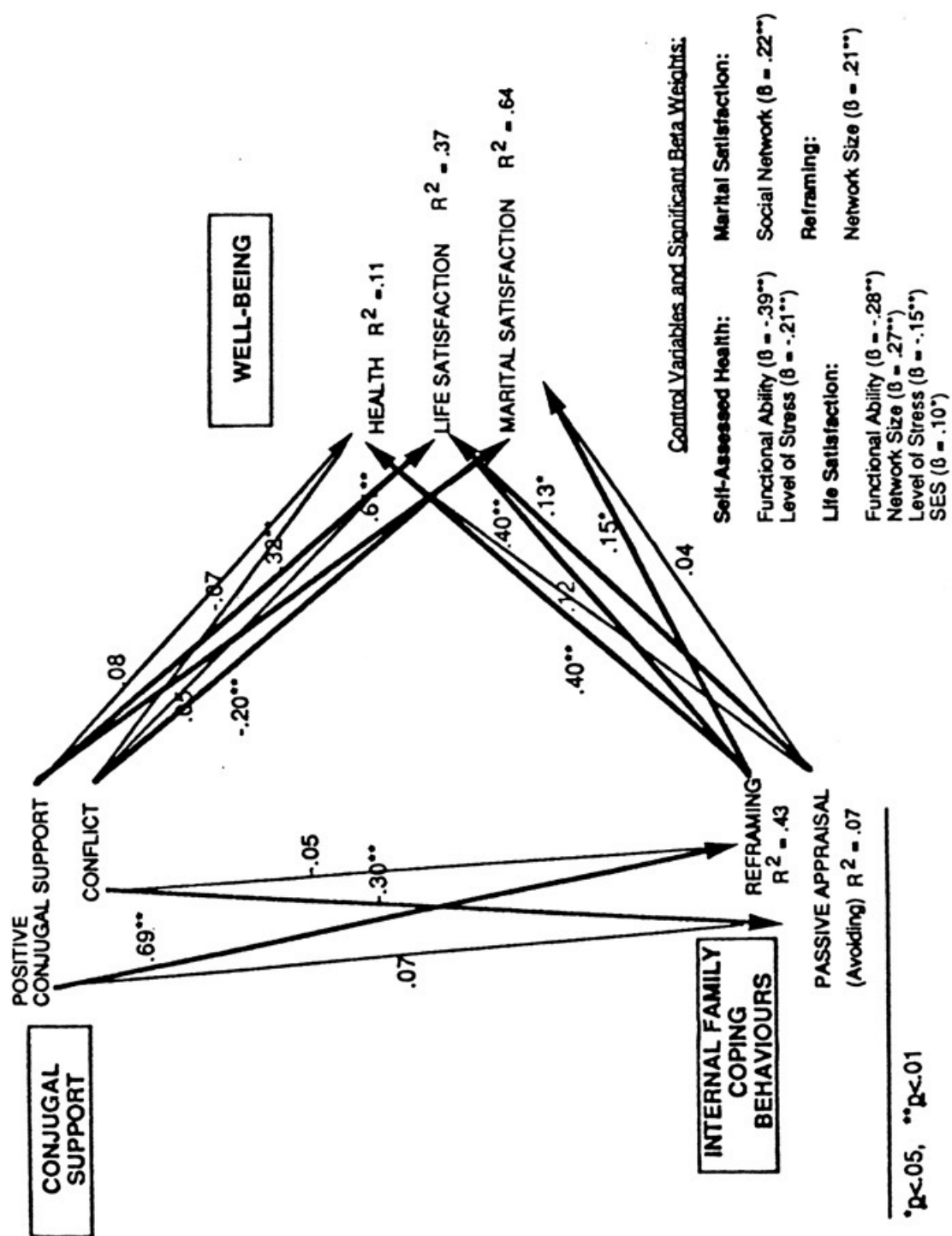


Figure 2
The Final Model ($N = 270$)

Discussion

Some of the work that has examined the concept of social support and its relationship to the well-being of the elderly may provide some understanding of the study findings. The significant positive relationship found between perceived availability of conjugal support and well-being is consistent with the findings of Krause (1987) and Ward and colleagues (1982). These showed a positive association between perceived social support and the well-being of the elderly. Recent literature suggests that perceived availability of support is more important for well-being than support actually received (Mercer & Ferketich, 1988; Wethington & Kessler, 1986). The findings of this study suggest also that perceived reciprocity is an important component in understanding the relationship between conjugal support and well-being. A positive association was found between reciprocity of social support and well-being in selected studies on support and the elderly (Antonucci, 1985a; Minkler, Satariano & Langhauser, 1983) and Social Exchange Theory (Foa, 1971) has been used to explain such an association. According to this theory, the "exploiters" as well as the "victims" in an inequitable relationship are more distressed than those individuals in an equitable relationship. It has been suggested that unequal exchange, or asymmetry, may burden those supporting and may undermine the recipient's sense of control (DiMatteo & Hays, 1981).

However, positive conjugal support (perceived availability and reciprocity) was not a significant predictor of self-assessed health in regression analyses. This is contrary to the widely held assumption that social support plays a role in physical as well as in mental health (Broadhead et al., 1983; Cohen, 1988; House, Landis & Umberson, 1988). One explanation for such a finding might be a methodological one. The Cantril Ladder, used to measure self-assessed health, is a single-item measure with less variability than the Life satisfaction index and the Visual Analogue scale used to measure the other dimensions of well-being. The Cantril Ladder might not be sensitive enough to discriminate health levels. Another possible explanation is related to the conceptualization of the variables. Life satisfaction and marital satisfaction tapped the psychological dimensions of subjective well-being, while self-assessed health was mainly defined in terms of mobility by the elderly spouse. Therefore, conjugal support might have a stronger effect on psychological well-being than on well-being defined in terms of functional ability.

Another goal of the study was to identify those family coping behaviours that contribute to the well-being of elderly marital partners. Two internal strategies, reframing and avoidance of passive appraisal, were found to contribute significantly to the three well-being indicators. None of the external family coping behaviours were related to well-being. This finding is also in

direct contrast to that reported in most studies on coping that have demonstrated the positive effect of external coping strategies such as seeking external help, on well-being (Billings & Moos., 1981, 1984; Felton & Revenson., 1984; Kahana et al., 1987).

A number of explanations might account for these differing results. Unlike the majority of other studies that have looked at support or coping in the face of a particular stressful event, this study explored the variables within the context of everyday living. Under such circumstances, elderly couples may need less external support and therefore may have underestimated their use of these types of support. The self-report nature of the family coping and well-being instruments also may account for the findings, as they may reflect a social desirability bias.

Despite these methodological concerns, there are reasons to believe that these findings are valid. The coping strategies of reframing and avoidance of passive appraisal are cognitive strategies. Reframing is the ability to redefine problematic situations in order to make them more manageable; passive appraisal involves denial of problems and feelings of powerlessness. These internal coping strategies appear to reflect the ability to regulate or influence intended outcomes through selective responding (Baron & Rodin, 1978) or a sense of control. The need for mastery and control of one's environment has long been viewed as a basic human motivation, and has been found to have profound effects on the elderly's well-being (Rodin, 1986). Some researchers (Husaini, Newbrough, Neff & Moore, 1982; Pearlin, Lieberman, Menaghan & Mullen, 1981) have also suggested that help-seeking is a hallmark of the poor copier, and that seeking help may imply that recipients are not responsible for solving their own problems.

As the hierarchical analyses demonstrated, the effect of positive conjugal support was primarily an indirect one, through the coping strategy of reframing. This indirect effect was consistent for the three measures of well-being. Such a finding lends support to the contention by Lazarus and Folkman (1984) that perceived availability of support influences coping responses, and that support may contribute to well-being through an intervening process (i.e., through coping efforts). Theoretical discussions on coping and social support refer also to the beneficial effect of social support by way of its possible positive influence on the sense of control or mastery (Ben-Sira, 1984; Smith & Midanir, 1980).

Finally, results of this study suggest a number of possible nursing interventions. According to the McGill Model of Nursing (Gottlieb & Rowat, 1987), one feature of the nurse's role is that of assisting families to strengthen coping abilities and to utilize their own resources and potential for problem-solving, in order to achieve a better quality of life. By assessing the strengths

and deficiencies of the family system, nurses could, through anticipatory care and guidance, help the elderly couple acquire and maintain the supports and coping strategies necessary for healthy survival. A role for nursing may be that of helping elderly couples learn techniques of cognitive restructuring or reappraisal of the problems they experience in everyday living, (i.e. reframing).

The significant negative relationship found between conflict and well-being underscores the importance of considering the stress-producing aspects of support in research and practice. Elderly marital partners, on a daily basis, are involved in a mutual exchange of helping behaviours. Assisting these partners to develop the positive aspects of their relationship, namely availability and reciprocity, possibly through an examination of their respective roles, might be one means by which the nurse can contribute to their well-being.

Conclusion

A major purpose of this study was to test the relationships among conjugal support, family coping behaviours and well-being of elderly community-based couples facing everyday problems. A model linking the major variables was developed and the results offer some preliminary insights into the possible mechanisms by which these variables affect well-being. One limitation of this study was its cross-sectional design, which did not allow for the establishment of causal effects. A longitudinal design which would capture the process of change in conjugal support, family coping and well-being and allow for causal inferences, is proposed.

Ensuring quality of life for the elderly in society today is a challenge facing policy makers and those engaged in health care delivery. This study offers preliminary directions for the development of nursing strategies aimed at fostering the well-being of the increasing number of elderly couples in their primary environment.

REFERENCES

- Amster, L. & Krauss, H. (1974). The relationship between life crises and mental deterioration in old age. *International Journal of Aging and Human Development*, 5, 51-55.
- Antonucci, T. (1985a). Social support: Theoretical advances recent findings and pressing issues. In I.G. Sarason & B.R. Sarason (Eds). *Social Support: Theory, Research and Application* (pp. 21-37). Boston: Martinez Nijhoff.
- Antonucci, T. (1985b). Personal characteristics, social support, and social behavior. In R. Binstock & E. Shanas (Eds). *Handbook of Aging and the Social Sciences*. New York: Van Nostrand
- Baron, R. & Rodin, J. (1978). Perceived control and crowding stress. In A. Baum, J. Singer & S. Valin (Eds). *Advances in Environmental Psychology* (pp. 145-190) Hillsdale: Erlbaum.
- Ben-Sira, Z. (1984). Chronic illness, stress, and coping. *Social Science and Medicine*, 18, 725-736.
- Berardo, F. M. (1980). Decade preview: Some trends and directions for family research and theory in the 1980s. *Journal of Marriage and the Family*, 42, 723-728.
- Billings, A. G. & Moos, R. H. (1981). The role of coping responses on social resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 4, 139-157.
- Billings, A.G. & Moos, R. H. (1984). Coping, stress and social resources among adults with unipolar depression. *Journal of Personality and Social Psychology*, 46, 877-891.
- Black, M. (1985). Health and social support of older adults. *Canadian Journal on Aging*, 4, 213-226.
- Blau, P. (1964). *Exchange and Power in Social Life*. New York: Wiley
- Blazer, D. (1982). Social support and mortality in an elderly community population. *American Journal of Epidemiology*, 115, 684-694.
- Blishen, B., Carroll, W. & Moore, C. (1987). The 1981 socioeconomic index for occupations in Canada. *Canadian Review of Sociology and Anthropology*, 24, 465-488.
- Broadhead, W., Kaplan, B., James, S., Wagner, E., Schoenbach, V., Grimson, R., Heyden, S., Tibblin, G. & Gehlbach, S. (1983). The epidemiologic evidence for a relationship between social support and health. *American Journal of Epidemiology*, 117, 521-537.
- Brody, S., Poulshock, W. & Mascioschi, C. (1978). Family care unit: A major consideration in the long-term support system. *The Gerontologist*, 18, 556-561.
- Bureau de la Statistique du Québec (1986). *Les Personnes Agées au Québec*. Québec: Les Publications du Québec.
- Burke, R. J. & Weir, T. (1982). Husband-wife helping relationships as moderators of experienced stress: The "mental hygiene" function in marriage. In H. I. McCubbin, A. E. Cauble & J. M. Patterson (Eds). *Family Stress, Coping, and Social Support* (pp.221-238). New York: Charles C. Thomas.
- Campbell, T. (1986). *Family's Impact on Health: A Critical Review and Annotated Bibliography*. Washington: National Institute of Mental Health. Series DN no. 6.
- Cantril, H. (1965). *The Pattern of Human Concerns*. New Brunswick: Rutgers University Press.
- Chappell, N. & Strain, L. (1985). *Decision-Making among the Elderly and the Use of Health and Social Services. Interview Schedule*. (pp.16-20). University of Manitoba: Centre on Aging.
- Cohen, S. (1988). Psychosocial models of the role of social support in the etiology of physical disease. *Health Psychology*, 7, 269-297.
- Cohen, S. & Wills, T. A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin*, 98, 310-357.
- Cohler, B. & Lieberman, M. (1980). Social relations and mental health. *Research on Aging*, 2, 445-469.
- Depner, C. E. & Ingersoll-Dayton, B. (1985). Conjugal social support: Patterns in later life. *Journal of Gerontology*, 40, 761-766.
- DiMatteo, M., Hays, R. (1981). Social support and serious illness. In B.H. Gottlieb (Ed). *Social Networks and Social Support*. Beverly Hills: Sage.

- Ducharme, F. (1984). *Etude du Profil de Vie des Couples Agés à Domicile. Rapport de Recherche*. Faculté des Sciences Infirmières: Université de Montréal.
- Epp, J. (1986). Achieving health for all: A framework for health promotion. *Canadian Journal of Public Health*, 77, 393-407.
- Evans, G., Beland, D., Butler, J., Delongchamp, N., Kroetsch, K., Pearson, J. & Poling, A. (1975). Status passage characteristics and consequences for the aged: Comparison of preinstitutional and community elderly. *Canadian Journal of Public Health*, 66, 15-30.
- Felton, B. & Revenson, T. (1984). Coping with chronic illness: A study of illness controllability and the influence of coping strategies on psychological adjustment. *Journal of Consulting and Clinical Psychology*, 52, 343-353.
- Ferguson, G. (1981). *Statistical Analysis in Psychology and Education*. Montreal: McGraw-Hill.
- Ferrans, C. & Powers, M. (1985). Quality of life index: development and psychometric properties. *Advances in Nursing Science*, 8, 15-24.
- Foa, U. (1971). Interpersonal and economic resources. *Science*, 171, 345-351.
- George, L. & Bearon, L. (1980). *Quality of Life in Older Persons. Meaning and Measurement*. New York: Human Science Press.
- Gore, S. (1985). Social support and styles of coping with stress. In S. Cohen & S. Leonard (Eds). *Social Support and Health*. Montreal: Academic Press.
- Gottlieb, L. & Rowat, K. (1987). The Mc Gill model of nursing: A practice-derived model. *Advances in Nursing Science*, 9, 51-61.
- Health and Welfare Canada (1988). *Mental Health for Canadians: Striking a Balance*. Ottawa: Minister of Supply and Services, Canada.
- House, J., Landis, K. & Umberson, D. (1988). Social relationships and health. *Science*, 241, 540-545.
- Husaini, B., Newbrough, J., Neff, J. & Moore, M. (1982). The stress-buffering role of social support and personal competence among the rural married. *Journal of Community Psychology*, 10, 409-423.
- Kahana, E., Kahana, B. & Young, R. (1987). Strategies of coping and postinstitutional outcomes. *Research on Aging*, 9, 182-199.
- Krause, N. (1987). Satisfaction with social support and self-rated health in older adults. *The Gerontologist*, 27, 301-308.
- Larson, R. (1978). Thirty years of research on the subjective well-being of older Americans. *Journal of Gerontology*, 33, 109-125.
- Laschinger, S. (1984). The relationship of social support to health in elderly people. *Western Journal of Nursing Research*, 6, 341-350.
- Lazarus, R. & DeLongis, A. (1983). Psychological stress and coping in aging. *American Psychologist*, 38, 245-254.
- Lazarus, R. & Folkman, S. (1984). *Stress, Appraisal and Coping*. New York: Springer.
- Lewis, F., Woods, N., Hough, E. & Bensley, L. (1990). The family's functioning with chronic illness in the mother: the spouse's perspective. *Social Science and Medicine*, 29, 1261-1269.
- Mancini, J., Quinn, W., Gavigan, M. & Franklin, H. (1980). Social network interaction among older adults: Implications for life satisfaction. *Human Relations*, 33, 543-554.
- McCubbin, H., Joy, C., Cauble, A., Comeau, J., Patterson, J. & Needle, R. (1980). Family stress and coping: A decade review. *Journal of Marriage and the Family*, 855-871.
- McCubbin, H., Olson, D. & Larsen, A. (1987). F-Copes-Family Crisis oriented personal evaluation scales. In H. Mc Cubbin & A. Thompson (Eds). *Family Assessment Inventories for Research and Practice* (pp.195-207). Madison: University of Wisconsin.
- McCubbin, H. & Patterson, J. (1983). The family stress process: The double ABCX model of adjustment and adaptation. *Marriage and Family Review*, 6, 7-37.
- McCubbin, H. & Thompson, A. (1987). *Family Assessment Inventories for Research and Practice*. Madison: University of Wisconsin-Madison.
- McNett, S. C. (1987). Social support, threat, and coping responses and effectiveness in the functionally disabled. *Nursing Research*, 36, 98-103.

- Mercer, R., Ferketich, S. (1988). Stress and social support as predictors of anxiety and depression during pregnancy. *Advances in Nursing Science*, 10, 26-39.
- Messick, D. M. & Cook, K. S. (1983). *Equity Theory*. New York: Praeger.
- Minkler, M., Satariano, W. & Langhauser, C. (1983). Supportive exchange: An exploration of the relationship between social contacts and perceived health status in the elderly. *Archives of Gerontology and Geriatrics*, 2, 211-220.
- Neugarten, B., Havighurst, R. & Tobin, S. (1961). Measurement of life satisfaction. *Journal of Gerontology*, 16, 134-143.
- Okun, M., Mehibar, J. & Hill, M. (1990). Negative daily events, positive and negative social ties, and psychological distress among older adults. *The Gerontologist*, 30, 193-199.
- Parmelee, P. A. (1983). Spouse versus other family caregivers: Psychological impact on impaired aged. *American Journal of Community Psychology*, 11, 337-349.
- Pearlin, L., Lieberman, M., Menaghan, E. & Mullen, J. (1981). The stress process. *Journal of Health and Social Behavior*, 22, 337-356.
- Pearlin, L. & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, 19, 2-21.
- Pedhazur, E. (1982). *Multiple Regression in Behavioral Research*. New York: Holt, Rinehart & Winston.
- Rodin, J. (1986). Aging and health: Effects of the sense of control. *Science*, 233, 1271-1276.
- Rollins, B. & Cannon, K. (1974). Marital satisfaction over the life cycle: A reevaluation. *Journal of Marriage and the Family*, 36, 271-283.
- Rook, K. S. (1984). The negative side of social interaction: Impact on psychological well-being. *Journal of Personality and Social Psychology*, 46, 1097-1108.
- Schumm, W., Barnes, H., Bollman, S., Jurich, A. & Milliken, G. (1985). Approaches to the statistical analysis of family data. *Home Economics Research Journal*, 14, 112-122.
- Schwenger, C. & Gross, H. (1987). Institutional care and institutionalization of the elderly in Canada. In V. Marshall (Ed). *Aging in Canada. Social Perspectives*. Don Mills: Fitzhenry & Whiteside.
- Smith, R. & Midanir, L. (1980). The effects of social resources on recovery and perceived sense of control among the disabled. *Sociology of Health and Illness*, 2, 48-63.
- Statistics Canada (1988). *Recensement Canada 1986*. Ottawa.
- Stoller, E. P. & Earl, L. L. (1983). Help with activities of everyday life: Sources of support for the noninstitutionalized elderly. *The Gerontologist*, 23, 64-70.
- Sussman, M. & Steinmetz, S. (Eds) (1987). *Handbook of Marriage and the Family*. New York: Plenum Press.
- Tilden, V. (1987). *Interpersonal Relationships Inventory*. Oregon Health Sciences University, School of Nursing.
- Tilden, V. & Galyen, R. (1987). Cost and conflict. The darker side of social support. *Western Journal of Nursing Research*, 9, 9-18.
- Traupman, J. & Hatfield, E. (1981). Love and its effect on mental and physical health. In E. Fogel, E. Hatfield, S. Kiesler & E. Shanas (Eds). *Aging: Stability and Change in the Family*. New York: Academic Press.
- Wan, T. & Weissert, W. (1981). Social support networks, patient status and institutionalization. *Research on Aging*, 3, 240-256.
- Ward, R. A. (1985). Informal networks and well-being in later life: A research agenda. *The Gerontologist*, 25, 55-61.
- Ward, R., LaGory, M. & Sherman, S. (1982). The relative importance of social ties. *Gerontologist*, 22, (Special Issue), 123.
- Wethington, E. & Kessler, R. (1986). Perceived support, received support and adjustment to stressful life events. *Journal of Health and Social Behavior*, 27, 78-89.
- Wood, V., Wylie, M. & Schafer, B. (1969). An analysis of a short self-report measure of life satisfaction: Correlation with rater judgment. *Journal of Gerontology*, 24, 324-326.

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RÉSUMÉ

Soutien conjugal, stratégies adaptives et bien-être des couples âgés

Cet article est le compte rendu des résultats d'une étude concernant le bien-être des couples âgés vivant dans la communauté. Le but de cette étude corrélative était de déterminer la nature de la relation existant entre les caractéristiques qualitatives du soutien conjugal, les stratégies adaptatives utilisées afin de composer avec le stress existentiel de la vie quotidienne et le bien-être des couples âgés, mesuré à l'aide de trois indicateurs soit la perception de l'état de santé, la satisfaction de vie et la satisfaction maritale. Un échantillon de 135 couples, âgés de 65 ans et plus et sélectionnés à l'aide d'une stratégie mixte (aléatoire et de convenance) ont été visités à domicile. Une série de questionnaires ont été présentés séparément aux conjoints masculins et féminins sous forme d'entrevue. Des analyses de régression multiple de type hiérarchique ont démontré une contribution significative de la disponibilité et de la réciprocité du soutien conjugal aux indicateurs satisfaction de vie et satisfaction maritale. Seules les stratégies adaptatives d'ordre cognitif, c'est-à-dire l'évaluation active des problèmes et le recadrage des situations problématiques ont expliqué la variance au niveau des trois indicateurs de bien-être. Aucune des stratégies faisant appel à une recherche d'aide au sein du réseau social formel (ressources communautaires et professionnelles) et informel (parents, amis, voisins) ne fut reliée au bien-être des couples âgés. Enfin, un modèle de relation entre les variables est proposé selon lequel les dimensions positives et négatives du soutien conjugal ont principalement un effet indirect sur le bien-être par l'intermédiaire de leur contribution à l'utilisation des stratégies adaptatives d'ordre cognitif. Ces résultats suggèrent des pistes d'intervention novatrices pour les infirmières oeuvrant auprès de cette population de couples âgés de plus en plus nombreuse.

STRESSFUL LIFE EVENTS, SOCIAL SUPPORT, AND MOOD DISTURBANCE IN HOSPITALIZED AND NON-HOSPITALIZED WOMEN WITH PREGNANCY-INDUCED HYPERTENSION

Maureen Heaman

Women who are hospitalized for treatment of complications of pregnancy experience stress resulting from hospitalization, in addition to stress generated by their high risk pregnancy. Stressors associated with antepartum hospitalization include separation from home and family, health concerns, loss of control, isolation, and boredom (Becker, 1984; Waldron & Asayama, 1985; White & Ritchie, 1984). Research investigating the impact of these stressors reveals that hospitalized high risk pregnant women exhibit greater manifestations of stress than non-hospitalized low-risk pregnant women. Hospitalized pregnant women report greater anxiety and depression, lower self-esteem, and less optimal family functioning than low risk pregnant women (Becker, 1984; Mercer & Ferketich, 1988; Mercer, Ferketich, DeJoseph, May & Sollid, 1988). This evidence has led to concern about the effects of hospitalization on the pregnant woman and her family.

The recent trend toward the development of antepartum home care programs offers an alternative to hospitalization (Dahlberg, 1988; Miller, 1990). These programs allow high risk pregnant women to be cared for in the familiar environment of their homes, with access to social support from their families. Social support has been found to buffer, or mediate, the effects of stressful life events on emotional disequilibrium and complications of pregnancy in low risk pregnant women (Norbeck & Tilden, 1983; Nuckolls, Cassell & Kaplan, 1972). However, few investigations have been conducted to determine the effect of social support in high risk pregnancies. This study was designed to explore whether women with pregnancy-induced hypertension (PIH), cared for in an antepartum home care program, would experience lower levels of stressful life events and mood disturbance, mediated by increased access to social support, when compared to women with PIH cared for in a hospital setting. A comparison group of pregnant women not experiencing any complications (low risk) was also incorporated

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to unravel further the effects of pregnancy risk status and location of care on manifestations of stress. In addition, the study was designed to examine the relationships between the variables of stressful life events, social support, and mood disturbance in pregnant women.

Conceptual Framework

The conceptual framework for this research was derived from Pearlin, Menaghan, Lieberman and Mullan's (1981) description of the process of social stress, which combines three major conceptual domains: sources of stress, mediators of stress and manifestations of stress. The source of stress studied was negative life events (including high-risk pregnancy), the mediator of stress was social support, and the manifestation of stress was mood disturbance.

Literature Review

Social support is a multidimensional concept (Gottlieb, 1983; Hogue, 1985) for which the amount, type and sources of support are all important to consider (Thoits, 1982). A distinction is usually made between perceived social support (the person's perception of the supportive value or functional content of relationships) and the social network (the structure and number of relationships a person has) (Schaefer, Coyne & Lazarus, 1981). Researchers have hypothesized that social support has direct effects on health, and also buffers or mediates the relationship between stress and health (House, 1981; Wilcox, 1981). Several extensive reviews of the literature have provided evidence for both direct and buffering effects of social support on health and well-being (Broadhead et al., 1983; DiMatteo & Hays, 1981; Gottlieb, 1983; Kessler & McLeod, 1985). Because there are almost as many measures of social support as there are studies, it is difficult to compare studies and to determine why support acts as a buffer in some instances and has a direct effect in others (Cohen, Mermelstein, Kamarck & Hoberman, 1985).

Six pregnancy studies have been conducted that are particularly relevant to this research project. Nuckolls et al. (1972) investigated the relationships between psycho-social assets, social stressors as measured by a cumulative life change score, and the prognosis of pregnancy in 170 primigravidas. In the presence of a high number of stressors, pregnant women with high psychosocial assets, including social support, had only one-third the complication rate of women whose psychosocial assets were low. In the absence of stressors, there was no significant relationship between psychosocial assets and complications. Thus a buffering effect of psychosocial assets was supported.

Tilden's (1983) study of 141 medically normal pregnant women in the second trimester of pregnancy found significant and separate effects of stressful

life events and social support on emotional disequilibrium during pregnancy. Stressful life events accounted for 29.7% and social support for 3.1% of the variance in emotional disequilibrium. The interaction of stressful life events and social support was not significant.

A similar study was conducted by Norbeck and Tilden (1983) using a sample of 117 medically normal pregnant women. Life stress was measured using a negative life events score. High life stress and low social support were significantly related to high emotional disequilibrium, but the interaction between life stress and social support was not significant. High life stress from the prior year was significantly related to overall complications. The interaction of life stress during pregnancy and the tangible support factor was a significant predictor of gestational and infant complications, with subjects in the high stress/low support quadrant having the highest rate of complications.

Barrera (1981) studied the role of social support in the adjustment of 86 pregnant adolescents. Support needs and negative life events were positively correlated with depression and anxiety, while satisfaction with social support bore a significant negative correlation with depression and anxiety. Total network size was the only support variable to have a stress-buffering effect, and accounted for 4% of the variance in depression.

Few studies have investigated the effect of stressful life events and social support on psychological distress in both high-risk and low-risk pregnant women. Mercer and Ferketich (1988) studied 153 high-risk (hospitalized) pregnant women and 218 low-risk (non-hospitalized) pregnant women between the 24th and 34th week of gestation. The high-risk pregnant women reported greater negative life events and greater anxiety and depression than low-risk pregnant women. Perceived social support was not a significant predictor of anxiety or depression in the high-risk group, but it was a significant predictor of anxiety and depression in low-risk women. Neither received support nor network size entered the regression models for either group. Contrary to the hypothesis, high-risk women received more support than low-risk women, but the received support did not effect their anxiety status.

Ford and Hodnett (1990) studied perceived stressors, social support and adaptive responses in 27 hospitalized antepartum women. A positive relationship was found between social support and adaptation, but no significant relationship was found between perceived stressors and adaptation. Multiple regression analysis revealed that social support, length of hospitalization and risk status were significant predictors of adaptation; social support accounted for 17% of the variance in adaptation. However, these results should be interpreted with caution because of limited testing of the reliability and validity of the instruments.

The above studies provide conflicting results about the effectiveness of social support in reducing the impact of stressors on pregnant women. Further investigation into the relationships between sources of stress, mediators of stress and manifestations of stress in both high-risk and low-risk pregnant women is needed.

Hypotheses

The following hypotheses were tested.

1. Women with PIH cared for in a hospital setting will have higher levels of stressful life events, lower levels of social support and higher levels of mood disturbance than women with PIH cared for in a home care program.

2. Women with PIH cared for in a hospital setting will have higher levels of stressful life events, lower levels of social support and higher levels of mood disturbance than low-risk pregnant women.

3. Women with PIH cared for in a home care program will have higher levels of stressful life events, similar levels of social support and higher levels of mood disturbance than low-risk pregnant women.

4. Stressful life events will be positively related and social support will be negatively related to mood disturbance in pregnant women.

5. The effect of stressful life events on mood disturbance will be buffered by social support.

Method

Sample

The sample consisted of 60 women in the third trimester of pregnancy. Non-probability sampling was employed to obtain twenty subjects in each of three groups. Group I subjects were women with PIH, obtained from the antepartum unit of an urban acute care hospital. Group II subjects were obtained from an antepartum home care program in which women with PIH were cared for at home with daily supervision from specially trained Public Health Nurses (Manitoba Health, 1987). Subjects in both Group I and II had to meet the criteria for referral to the antepartum home care program to ensure both groups had only mild pre-eclampsia. Eligibility criteria included: sitting blood pressure <150/100 mm Hg, proteinuria <100 mg/dl and absence of headache, visual disturbances, epigastric pain or hyperreflexia. Group III consisted of low-risk pregnant women recruited from childbirth education classes.

All subjects were married and resided within the city limits; the majority were Caucasian (91.7%). The age of the subjects ranged from 20 to 42 years

($M=28.2$, $SD=4.9$). The majority of the women (91.7%) had achieved Grade 12 education or better ($M=13.1$, $SD=2.3$). Gestational age ranged from 31 to 40 weeks ($M=35.7$, $SD=2.2$). There were no significant differences between the three groups in age (F ratio=.470, $p=.627$), education (F ratio=.376, $p=.688$) or gestational age (F ratio=2.67, $p=.078$). The median family income was \$35,000.00 to \$39,999.00 per year. Forty-two women (70%) were primigravidas, while 18 women (30%) were multigravidas. For subjects with PIH, there was no significant difference in the number of days admitted to the hospital ($M=3.6$, $SD=1.9$) or to the home care program ($M=4.3$, $SD=1.7$) ($t=-1.21$, $p=0.233$). There were no significant differences between Group I and II in levels of proteinuria or edema, but Group I had significantly higher mean sitting diastolic blood pressures ($M=87.5$, $SD=9.5$) than Group II ($M=76.2$, $SD=10.5$) ($t=3.27$, $p=0.002$).

Instruments

Instruments were selected to operationalize three major concepts in the conceptual framework: sources of stress, mediators of stress and manifestations of stress. A demographic information form was also completed by the subjects.

Source of stress: stressful life events

The *Life Events Questionnaire* (LEQ) is an 82-item questionnaire that was developed by modifying existing life-event questionnaires to increase their relevance for adult female respondents of childbearing age (Norbeck, 1984). For each life event experienced during the past year, the respondent indicates his/her perception of the event ("good" or "bad") and then rates the impact of the event on a 4-point scale ranging from "no effect" to "great effect". The negative events score (the sum of the effect ratings from items designated as "bad") was used as the measure of stressful life events in this study because negative scores are a better measure of life stressors (Sarason, Johnson & Siegel, 1978) and are the most useful in predicting psychological symptoms (Zuckerman, Oliver, Hollingsworth & Austrin, 1986). The negative events score of the LEQ has an acceptable level of test-retest reliability (.78). Predictive validity has been demonstrated by significant correlations between the negative events score and measures of psychological and psychiatric symptoms.

Mediator of stress: social support

The *Norbeck Social Support Questionnaire* (NSSQ) is an instrument designed to measure multiple dimensions of social support (Norbeck, Lindsey & Carrieri, 1981, 1983), which is based on Kahn's (1979) definition of social support. Three functional properties of social support - affect, affirma-

tion and aid - are measured, as well as the network properties of size (number listed in the network), duration of relationships and frequency of contact. Scoring yields a total functional support score and a total network score.

High levels of internal consistency have been found for the functional (.72 to .98) and network (.88 to .96) properties. Over a one-week interval, test-retest reliability for these scores ranged from .85 to .92. Validity of the NSSQ has been tested in relation to response bias and concurrent, construct and predictive validity.

Manifestations of stress: mood disturbance

The *Profile of Mood States* (POMS) was developed to assess transient, fluctuating affective states (McNair, Lorr & Droppleman, 1971). The POMS consists of 65 adjective rating scales that measure six identifiable mood states: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia and confusion-bewilderment. Subjects are asked to rate "how you have been feeling during the past week including today". The adjectives are rated on a five-point intensity scale from "not at all" to "extremely" and assigned weights from 0 to 4. In addition to scores for each mood factor, a "Total Mood Disturbance Score" (TMDS) is obtained by summing the scores (with vigor weighted negatively) on the six primary mood factors.

Predictive, construct and concurrent validity have been established. Internal consistency within the six mood scales is high (.84 to .95). Lower test-retest reliability coefficients (.65 to .74) were reported, as would be expected in an instrument sensitive to fluctuations in a transient state like mood.

Procedure

Following approval of the study by a university ethical review committee, permission to recruit study subjects was obtained from hospital and public health administrators. Potential subjects were approached in their hospital rooms (Group I) or visited in their homes following a telephone call to establish a mutually agreeable time to meet (Group II and III). Only two women (one in the hospital and one in the home program) refused to participate. A written explanation of the study was provided by the investigator, and subjects who agreed to participate signed a consent form.

Results

Prior to analysis of data, frequency distributions were examined for the presence of outliers or extreme data points (Shelley, 1984). Four deviant scores were discovered when compared to the rest of the sample. Four subjects (1 from Group I and 3 from Group II) had total mood disturbance

scores ($M=86.8$, $SD=29.5$) that were more than two standard deviations above the mean for the remainder of the sample ($M=24.7$, $SD=25.0$). As per Bhattacharyya (1991), the question of whether these four scores were true outliers rested upon the identification of a theoretical reason that these four scores differed from all the others. Upon further investigation, it was found that these four subjects were the only ones who rated pregnancy on the LEQ as a "bad" event that had a "great effect" on their lives. These four subjects with outliers were not typical of the remainder of the sample, and rating pregnancy as a "bad" event seemed to have a significant effect on responses; as such, the decision was made to delete these subjects from further analyses, leaving $N=56$ for hypothesis testing.

Hypotheses 1, 2 and 3

One purpose of this study was to compare levels of stressful life events, social support and mood disturbance among the three groups of pregnant women. One way analysis of variance (ANOVA) was used to test the significance of differences between the three group means. Refer to Table 1.

Table 1

Group Comparisons by ANOVA for Negative Life Events, Social Support, and Mood Disturbance Variables

Dependent Variable	Independent Variable: Group Membership						F	p
	Group I		Group II		Group III			
	PIH-Hospital		PIH-Home Care		Low-risk			
	(n=19)		(n=17)		(n=20)			
	Mean	SD	Mean	SD	Mean	SD		
Negative life events	9.37	7.40	10.82	8.06	6.00	3.58	2.69	.077
Functional support	185.32	73.04	224.65	73.57	216.95	71.25	1.53	.227
Network support	100.32	33.40	127.18	41.22	122.40	36.95	2.75	.073
Total mood disturbance	38.11	31.27	16.06	20.19	19.20	16.18	4.82	.012*
Anxiety	12.68	5.88	8.00	3.64	8.85	3.23	5.92	.005*
Depression	12.58	9.71	6.12	4.94	5.95	3.91	6.01	.004*
Confusion	7.16	3.80	4.76	1.82	5.15	3.08	3.29	.045*
Anger	8.00	5.90	4.41	3.86	5.85	4.07	2.66	.080
Fatigue	9.32	7.18	5.82	5.33	10.25	4.44	2.95	.061
Vigor	11.63	5.10	13.06	6.77	16.85	4.56	4.71	.013*

*Significant

When a significant F-ratio was obtained, the Newman-Keuls post hoc comparison test was applied to verify the location of specific significant differences among the groups (Shelley, 1984). There were no significant differences in negative life events, functional support or network support among the three groups. There were, however, significant differences in the Total Mood Disturbance Score (TMDS) between Group I and II, and between Group I and III. The hospitalized subjects had higher TMDSs than either the Home Care subjects or the low-risk subjects. The differences between Group II and III were not significant; that is, subjects cared for on the Home Care Program had similar TMDSs to those of low-risk women.

Of the POMS subscales, the anger and fatigue scores did not differ significantly among the three groups. However, a significant F-ratio was obtained for the anxiety, depression, confusion and vigor subscales, indicating that a significant difference existed between at least two of the three groups. Post hoc comparison indicated that Group I had significantly higher anxiety and depression scores than Group II and Group III, and a higher confusion score than Group III. Conversely, the low-risk pregnant women (Group III) had significantly higher vigor scores than either the hospitalized women (Group I) or women on the Home Care Program (Group II).

Hypothesis 4

My fourth hypothesis was that stressful life events would be positively related and social support would be negatively related to mood disturbance in pregnant women. The total sample of pregnant women ($n=56$) was used to test this hypothesis. Bivariate correlation techniques (Pearson r) were used to examine the nature and extent of the relationships between the variables. Correlations are presented in Table 2.

Table 2

Pearson r correlations between independent and dependent variables for pregnant women ($n=56$).

Independent Variables	Dependent Variables						
	Total mood disturbance	Anxiety	Depression	Confusion	Anger	Fatigue	Vigor
Negative life events	.491*	.427*	.397*	.293**	.332*	.436*	--
Functional support	-.102	-.060	-.033	-.144	-.119	.028	.196
Network support	-.194	-.161	-.122	-.256**	-.213	-.032	.196

* $p<.01$; ** $p<.05$

Moderate correlations existed between the negative life events score and the TMDS ($r=.491$), the anxiety subscale ($r=.427$) and the depression subscale ($r=.397$). Therefore the hypothesis that stress would be positively related to mood disturbance was supported.

There was little evidence to support the hypothesis that social support would be negatively related to mood disturbance. Neither the functional nor the network support variables achieved a significant correlation with the TMDS, although the correlations were in a negative direction. Of the POMS subscales, only confusion showed a significant negative relationship to the Total Network score ($r=-.256$). No other relationships between social support and the POMS subscales were significant.

Hypothesis 5

My final hypothesis was that the effect of stressful life events on mood disturbance would be buffered by social support. I investigated this hypothesis with the construction of a multiple regression model, using a hierarchical analytic strategy (Cohen & Cohen, 1983). The predictor variables of negative life events, social support and the interaction of negative life events and social support were entered into the equation. The criterion (dependent) variable was mood disturbance. This technique is similar to that employed by other investigators to test the buffering hypothesis (Norbeck & Tilden, 1983; Tilden, 1983; Wilcox, 1981). Volicer (1984) states that the contribution of interaction between two independent variables to prediction of the dependent variable is handled by including a multiplicative term in the regression equation. The multiplicative term is the product of the two independent variables and represents the effect of the two variables jointly, in addition to their independent effects.

Prior to performing the hierarchical regressions, correlations were performed to screen for possible covariates with the criterion variable of mood disturbance. No significant covariates emerged, as neither age ($r=-.131$, $p=.335$), gestational age ($r=.127$, $p=.352$), admission days ($r=.115$, $p=.503$), education ($r=.160$, $p=.223$) or sitting diastolic blood pressure ($r=.238$, $p=.176$) were related to mood disturbance. Blood pressure was not significantly correlated with mood disturbance; as such, the finding that blood pressures were significantly higher in the hospitalized group assumed less importance.

The results of the hierarchical multiple regression analyses are presented in Table 3. The negative life events score was a significant predictor of mood disturbance, accounting for 24.1% of the variance in the total mood disturbance score (TMDS). Neither functional or network support was a significant predictor of mood disturbance; therefore a direct effect of social sup-

port was not supported. The interaction term, representing the effect of negative life events and social support jointly, was also not significant; therefore a buffering effect of social support was not supported.

Table 3

Multiple Regression Analysis for Negative Life Events, Social Support, and the Interaction of Negative Life Events and Social Support on Mood Disturbance During Pregnancy (n=56)

Variance source	Beta	Multiple R	R ² Change	F	p
Negative life events	3.410	.491	.241	17.111	.000*
Functional support	.033	.498	.008	.537	.467
Interaction (Neg. life events x functional support)	-.000	.512	.014	.978	.327
<hr/>					
Negative life events	2.660	.491	.241	17.111	.000*
Network support	-.054	.525	.035	5.524	.118
Interaction (Neg. life events x network support)	-.008	.529	.004	.320	.574

* Significant

Limitations

The results of this study should be interpreted with caution, as the small, relatively homogeneous convenience sample limits generalizability to other pregnant women. While suggesting that location of care may be related to mood disturbance in women with PIH, the design of the study does not permit the determination of cause and effect relationships. The sample was also of insufficient size to perform multiple regressions for each of the three groups; therefore, the relationships among the variables had to be studied using the total sample of pregnant women.

Discussion

The results of this study suggest that antepartum hospitalization is a significant stressor for pregnant women, because the hospitalized subjects exhibited the greatest manifestations of stress. Hospitalized women had significantly higher Total Mood Disturbance, anxiety and depression scores than either the women with PIH cared for in the antepartum home care program or the low-risk pregnant women. These findings validate those of Mercer and Ferketich (1988), who reported that hospitalized high-risk pregnant women had greater anxiety and depression than non-hospitalized low-risk pregnant women.

Benefits of an Antepartum Home Care Program as an alternative approach to care for high-risk pregnant women are also evident. For women with PIH, being cared for at home was associated with less Total Mood Disturbance, anxiety and depression than being cared for in the hospital setting. In fact, women on the home care program had levels of anxiety and depression similar to those of low-risk pregnant women. This suggests that being high risk is not necessarily associated with high stress, depending on the location of care. These results provide justification for a randomized controlled trial of "location of care" for women with PIH. Random assignment of high-risk pregnant women to either the hospital or home care group would reduce selection bias and permit investigation of causal hypotheses. Research is also needed to determine whether benefits of antepartum home care can be replicated for complications of pregnancy other than PIH.

Contrary to what was expected, there were no significant differences in levels of negative life events between the three groups. This may have occurred because the LEQ is a general assessment tool exploring a broad range of stressful life events experienced during the past year. An instrument that explored stressful life events specific to a woman's pregnancy might have been more sensitive in discerning differences between the three groups. Although preliminary efforts have been made to identify stressful events related to pregnancy and childbearing (Arizmendi & Affonso, 1987), further work is needed to develop a reliable and valid questionnaire.

A significant difference in social support between the three groups was also not detected, although examination of the mean scores for the NSSQ variables and subscales indicated that, in all instances, Group I (hospitalized subjects) had lower scores than the other two groups. This suggests that hospitalization might reduce access to a person's social supports.

This study provides further support for the likelihood of a direct relationship between sources of stress and mood disturbance in pregnant women, as negative life events were significantly correlated with total mood disturbance ($r=.491$). This result is similar to that obtained by Tilden (1983). Stronger correlations seem to be obtained by using life events questionnaires that differentiate between positive and negative events and permit the subject to rate the impact of the event, rather than using predetermined weighting for events (Sarason, Sarason & Johnson, 1985).

Neither a direct or a buffering effect of social support was demonstrated in this study. These results are comparable to those of Mercer and Ferketich (1988), in which both received support and network size failed to enter the regressions predicting anxiety and depression in high-risk and low-risk pregnant women. One possible explanation for the nonsignificant effects of social support in this study is the use of a cross-sectional design, which may

not be well suited for detecting the buffering effects of social support (House, 1981; Thoits, 1982). A prospective, longitudinal study should be undertaken to test the buffering hypothesis and to obtain more conclusive evidence with regard to the cause-effect relationships between stressful life events, social support and mood disturbance in pregnancy. The research design and instrumentation also did not permit detection of specific stressor-support relationships, in which the type of support provided should match the adaptational requirements elicited by a particular stressor (Cohen & McKay, 1984; Wilcox & Vernberg, 1985).

The conceptual framework for this study classified the components of the process of social stress as sources of stress, mediators of stress and manifestations of stress. Various types of mediators, such as social support, coping and personality variables, may reduce the impact of stressors (Wheaton, 1985). The possibility exists that one of the other mediating resources may have acted as a confounding variable or obscured the effect of social support. Further research is needed to increase our understanding of the role of other mediators in helping women adapt to the stressful event of high-risk pregnancy. Pearlin et al. (1981) suggest that negative life events and the role strains they generate are more likely to produce stress when they result in a decreased sense of mastery and self-esteem. Mastery and self-esteem are also incorporated into the theoretical model for studying the effect of antepartum stress proposed by Mercer, May, Ferketich & DeJoseph (1986). These variables would thus be important to measure in future studies of antepartum stress.

Implications for nursing

Nurses must remain sensitized to the fact that antepartum hospitalization may be a stressful experience that is associated with increased levels of mood disturbance in pregnant women. Hospitalized pregnant women should be assessed for manifestations of stress, such as anxiety and depression.

Because antepartum hospitalization is associated with high levels of mood disturbance in pregnant women, I recommend that more home care programs be developed as an alternative setting of care for high-risk pregnant women. The results of this study indicate that being cared for at home may be associated with lower levels of anxiety than being cared for in the hospital. Home care may thus have beneficial effects for the pregnancy because anxiety has been consistently associated with the development of maternal and fetal complications (Crandon, 1979; Glazer, 1980; Gorsuch & Key, 1974).

REFERENCES

- Arizmendi, T. & Affonso, D. (1987). Stressful events related to pregnancy and postpartum. *Journal of Psychosomatic Research*, 31(6), 743-756.
- Barrera, M. (1981). Social support in the adjustment of pregnant adolescents: Assessment issues. In B.H. Gottlieb (Ed.), *Social networks and social support* (69-96). London: Sage.
- Becker, C.J. (1984). *Self-concept of hospitalized gravidas in the last trimester of pregnancy*. Unpublished doctoral dissertation, the University of Texas at Austin.
- Bhattacharyya, N. (1991). *Regression by example*. New York: Wiley.
- Broadhead, W. I., Kaplan, B. H., James, S. A., Wagner, E. H., Schoenbach, V. J., Grimson, R., Heyden, S., Tibblin, G. & Gehlbach, S. H. (1983). The epidemiologic evidence for a relationship between social support and health. *American Journal of Epidemiology*, 117(5), 521-537.
- Cohen, J. & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Lawrence Erlbaum.
- Cohen, S. & McKay, G. (1984). Social support, stress, and the buffering hypothesis: A theoretical analysis. In A. Baum, S. Taylor & J. Singer (Eds.), *Handbook of psychology and health, Volume IV: Social psychological aspects of health* (253-268). Hillsdale, New Jersey: Lawrence Erlbaum.
- Cohen, S., Mermelstein, R., Kamarck, T. & Hoberman, H. (1985). Measuring the functional components of social support. In I. Sarason & B. Sarason (Eds.), *Social support: Theory, research, and applications* (73-94). Boston: Martinus Nijhoff.
- Crandon, A. (1979). Maternal anxiety and obstetric complications. *Journal of Psychosomatic Research*, 23, 109-111.
- Dahlberg, N. (1988). A perinatal center based antepartum homecare program. *JOGNN Journal of Obstetric, Gynecologic, and Neonatal Nursing*, 17(1), 30-34.
- DiMatteo, M.R. & Hays, R. (1981). Social support and serious illness. In B.H. Gottlieb (Ed.), *Social networks and social support*, (117-148). Beverly Hills: Sage.
- Ford, M. & Hodnett, E. (1990). Predictors of adaptation in women hospitalized during pregnancy. *The Canadian Journal of Nursing Research*, 22(4), 37-50.
- Glazer, G. (1980). Anxiety levels and concerns among pregnant women. *Research in Nursing and Health*, 3, 107-113.
- Gorsuch, R.L. & Key, M.K. (1974). Abnormalities of pregnancy as a function of anxiety and life stress. *Psychomatic Medicine*, 36, 352-362.
- Gottlieb, B.H. (1983). *Social support strategies: Guidelines for mental health practice*. Beverly Hills: Sage.
- Hogue, C.C. (1985). Social support. In J.E. Hall & B.R. Weaver (Eds.), *Distributive nursing practice: A systems approach to community health nursing* (2nd ed.), (58-81). Philadelphia: Lippincott.
- House, J. S. (1981). *Work stress and social support*. Reading, Mass.: Addison-Wesley.
- Kahn, R.L. (1979). Aging and social support. In M. W. Riley (Ed.), *Aging from birth to death: Interdisciplinary perspectives*, (77-92). Boulder, Colorado: Westview Press.
- Kessler, R. & McLeod, J. (1985). Social support and mental health in community samples. In S. Cohen & S.L. Syme (Eds.), *Social support and health*, (219-240). Orlando: Academic Press.
- Manitoba Health. (1987). *Report on the St. Boniface General Hospital/Manitoba Health Community-Based Management of Pregnancy-Induced Hypertension Pilot Project*. Winnipeg, Manitoba: Author.
- McNair, D.M., Lorr, M. & Droppleman, L.F. (1971). *Eits manual for the Profile of Mood States*. San Diego: Educational and Industrial Testing Service.
- Mercer, R. & Ferketich, S. (1988). Stress and social support as predictors of anxiety and depression during pregnancy. *Advances in Nursing Science*, 10(2), 26-39.
- Mercer, R., Ferketich, S., DeJoseph, J., May, K. & Sollid, D. (1988). Effect of stress on family functioning during pregnancy. *Nursing Research*, 35(6), 268-275.

- Mercer, R., May, K., Ferketich, S. & DeJoseph, J. (1986). Theoretical models for studying the effect of antepartum stress on the family. *Nursing Research*, 35(6), 339-346.
- Miller, T. (1990). How to establish a perinatal home care program. *Caring*, 9(9), 22-28.
- Norbeck, J.S. (1984). Modification of life event questionnaires for use with female respondents. *Research in Nursing and Health*, 7, 61-71.
- Norbeck, J.S., Lindsey, A.M. & Carrieri, V.L. (1981). The development of an instrument to measure social support. *Nursing Research*, 30, 264-269.
- Norbeck, J.S., Lindsey, A.M. & Carrieri, V.L. (1983). Further development of the Norbeck Social Support Questionnaire: Normative data and validity testing. *Nursing Research*, 32, 4-9.
- Norbeck, J.S. & Tilden, V.P. (1983). Life stress, social support, and emotional disequilibrium in complications of pregnancy: A prospective, multivariate study. *Journal of Health and Social Behavior*, 24(3), 30-46.
- Nuckolls, K.B., Cassell, J. & Kaplan, B.H. (1972). Psychosocial assets, life crisis, and the prognosis of pregnancy. *American Journal of Epidemiology*, 95(5), 431-441.
- Pearlin, L.I., Menaghan, E. G., Lieberman, M. & Mullan, J.T. (1981). The stress process. *Journal of Health and Social Behavior*, 22(12), 337-356.
- Sarason, I.G., Johnson, J.H. & Siegel, J.M. (1978). Assessing the impact of life changes: Development of the life experience survey. *Journal of Consulting and Clinical Psychology*, 46, 932-946.
- Sarason, I.G., Sarason, B.R. & Johnson, J.H. (1985). Stressful life events, In S.R. Burchfield (Ed.), *Stress: Psychological and physiological interactions*, (241-262). New York: Hemisphere.
- Schaefer, C., Coyne, J.C. & Lazarus, R.S. (1981). The health-related functions of social support. *Journal of Behavioral Medicine*, 4(4), 381-406.
- Shelley, S.I. (1984). *Research methods in nursing and health*. Boston: Little, Brown.
- Thoits, P.A. (1982). Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress. *Journal of Health and Social Behavior*, 23, 145-159.
- Tilden, V.P. (1983). The relation of life stress and social support to emotional disequilibrium during pregnancy. *Research in Nursing and Health*, 6, 167-174.
- Volicer, B.J. (1984). *Multivariate statistics for nursing research*. New York: Grune & Stratton.
- Waldron, J.A. & Asayama, V.H. (1985). Stress, adaptation and coping in a maternal-fetal intensive care unit. *Social Work in Health Care*, 10(3), 75-89.
- Wheaton, B. (1985). Models for the stress-buffering functions of coping resources. *Journal of Health and Social Behavior*, 26(4), 352-364.
- White, M. & Ritchie, J. (1984). Psychological stressors in antepartum hospitalization: Reports from pregnant women. *Maternal-Child Nursing Journal*, 13(1), 47-56.
- Wilcox, B.L. (1981). Social support, life stress, and psychological adjustment: A test of the buffering hypothesis. *American Journal of Community Psychology*, 9(4), 371-386.
- Wilcox, B. & Vernberg, E. (1985). Conceptual and theoretical dilemmas facing social support. In I. Sarason & B. Sarason (Eds.), *Social support: Theory, research and applications*, (3-20). Boston: Martinus Nijhoff.
- Zuckerman, L., Oliver, J., Hollingsworth, H. & Austrin, H. (1986). A comparison of life events scoring methods as predictors of psychological symptomatology. *Journal of Human Stress*, 12(2), 64-70.

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RÉSUMÉ

Événements stressants, appui social et agitations d'humeur chez les femmes hospitalisées et non-hospitalisées souffrant d'hypertension provoqué par la grossesse

On a comparé les événements stressants de la vie, l'appui social et les perturbations de l'humeur chez trois groupes de femmes dans leurs trois derniers mois de la grossesse. Ces groupes comprenaient : 19 femmes souffrant d'hypertension causée par la grossesse soignées dans un hôpital, 17 femmes souffrant d'hypertension causée par la grossesse qui participaient au programme de soins à domicile avant l'accouchement et 20 femmes enceintes à faible risque. Les femmes souffrant d'hypertension causée par la grossesse soignées dans un hôpital, démontraient un niveau plus élevé de perturbations de l'humeur que les femmes qui participaient au programme de soins à domicile avant l'accouchement et que les femmes enceintes à faible risque. Chez les trois groupes, on n'a pas constaté un gros écart entre les niveaux d'événements stressants de la vie ou de l'appui social. De plus, on a aussi étudié la corrélation entre les variables en se servant du nombre total de femmes enceintes. L'hypothèse qui soutenait que les événements stressants de la vie sont absolument liés aux perturbations de l'humeur, a été fondée ($r=.491$, $p<.01$). On n'a découvert aucun effet direct ou indirect produit par l'appui social.

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AN ANALYSIS OF THE CONCEPT OF HARDINESS

Elizabeth Lindsey and Marcia Hills

Nurses who are concerned with health promotion, disease prevention and restoration of health must be aware of how different individuals vary in their responses to stressors or stressful life situations. The hardiness characteristic (Kobasa, 1979) has been identified as a moderating and mediating variable in the stress-illness response, and as such, it has potential significance for nursing. The concept of hardiness, as a personality characteristic, has generated considerable interest and research in psychology; however, it is a relatively new perspective for nursing that is of particular interest for health promotion and disease prevention (Bigbee, 1985). Although the concept of hardiness has been discussed and examined for over a decade (Kobasa, 1979; Kobasa, Maddi & Courington, 1981; Nowack, 1989), it has not been clearly defined for nursing. If nurses have a better understanding of the concept of hardiness, then patients with hardy or less hardy personalities could be differentially diagnosed. As well, nursing interventions could then be initiated and tested to ascertain whether strategies to promote hardiness would contribute to the reduction of illness from stressful life events.

The basis of any theory depends on the identification and explication of the concepts contained within it. Concept analysis is a strategy that allows for a formal and vigorous examination of the attributes or characteristics of a particular concept. This analysis of the concept of hardiness will follow the specific steps proposed by Wilson (1969, cited in Walker & Avant, 1988).

Literature Review

There has been considerable interest in studies exploring the influence stress has on health status (Garrity, Marx & Somes, 1978; Holmes & Masuda, 1974; Holmes & Rahe, 1967; Johnson & Savason, 1979; Rabkin & Struening, 1978; Rahe & Arthur, 1968). Although research indicates that stressful life events contribute to the development of physical and mental illness, the correlation between stressful life events and illness symptoms, though dependable, is low (Rabkin & Streuning, 1978). Recently, the identi-

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fication of moderating and mediating variables in the stress-illness relationship has been included as an area for empirical study and the list of moderators, or resistance resources (Antonovsky, 1979, 1987) is growing. Kobasa (1979) identified hardiness as a personality factor and this moderating and mediating variable in the stress-illness relationship has been of considerable interest to researchers in the last decade.

The phenomenon of hardiness has been deductively derived from existentialism (Lambert & Lambert, 1987). Kobasa (1979) has adapted the existentialist view of hardiness into a notion of strenuousness of authentic living, of competence, appropriate striving and productive orientation. Kobasa developed a health-related concept to explain the characteristic of people who experience high degrees of stress without falling ill. Kobasa, Maddi and Puccetti (1982) defined hardiness as "a constellation of three crucial personality characteristics - commitment, control and challenge" (p.392). Together, these elements form a personality style that is an amalgam of cognition, emotion and action, aimed, not only at survival, but at the enrichment of life through development.

Commitment. Commitment is described as a belief system that minimizes the perceived threat of any given stressful life event. The encounter with a stressor is mitigated by a sense of purpose that prevents the person giving in or feeling alienated in times of great strain. Committed persons feel an involvement with others that serves as a resistance resource against the impact of stress. They easily identify with events and persons in their lives, and they are active in confronting crises (Maddi, Hoover, Kobasa & Zola, 1982). This investment of committed energy serves to strengthen the person under stress. Kobasa (1979) suggest that commitment to self is the most crucial in maintaining health. Committed people, with a sense of purpose, remain healthier under pressure than those who are alienated and apathetic (Kobasa, Maddi & Puccetti, 1982).

Control. Kobasa (1979) incorporated control by building on Rotter's (1966) concept of locus of control. Individuals develop a locus of control orientation based on their experiences and learning that is related to reinforcement. People with an internal locus of control believe reinforcements occur primarily as a result of their own efforts or attributes. People with an external locus of control consider that forces outside themselves are dominant. In this sense, internally oriented people have a self-perceived ability that they can have an influence on the outcomes of various stressful life events, and they modify the stressor (by positive appraisal) into a manageable, growth producing challenge. In contrast, externally oriented people feel overwhelmed, helpless and powerless when faced with a stressor. The dimension of control is consistent with existential theory on personal control and individual decision making.

Challenge. The challenge feature is characterized by a positive attitude toward change (Kobasa, Maddi & Kahn, 1982). These people value change and believe that change rather than stability is the norm. Change seekers have explored their environment and know how to access resources to aid them in coping with stress (Kobasa, 1979). In this sense, challenge serves to mediate the illness-producing effects of stressful life events and provides an opportunity for growth by promoting flexibility and openness (Bigbee, 1985). Cognitively, these people are flexible and integrate seemingly incongruent life events and experiences to maintain endurance. They are change seekers and catalysts, in seeking out, enjoying and maturing through stress by utilizing supportive resources within the environment to enable them to cope effectively.

Measurement of hardiness

Hardiness has been measured in a variety of ways and the concept has been adapted to meet the measurement needs of specific populations. The earlier scales measured the negative aspects of hardiness disposition, whereas later scales measured positive aspects.

Composite Hardiness Score. In this early measurement scale, Kobasa, Maddi and Hahn (1982) combined five scales to form a composite score. Commitment was measured by the *Alienation from Self* and the *Alienation from Work Scales* (Maddi, Kobasa & Hoover, 1979). Control was measured by the *Internal versus External Locus of Control Scale* (Rotter, Seeman & Liverant, 1962) and the *Powerlessness Scale of the Alienation Test* (Maddi, Kobasa & Hoover, 1979), and the challenge disposition was measured using the *Security Scale of the California Life Goals Evaluation Schedule* (Hahn, 1966).

Abridged Hardiness Scale. The Composite Hardiness Score was later considered too complex and difficult to administer, and Kobasa and Maddi developed two concise abridged scales (cited in Allred & Smith, 1989). The main criticism of the Composite Hardiness Scale and the two Abridged Hardiness Scales are that they measure the negative aspects of the hardiness disposition: they measure alienation versus commitment, powerlessness versus control and security and stability versus challenge (Funk & Houston, 1987; Hull, Van Treuren & Virnelli, 1987; Nowack, 1986).

Cognitive Hardiness Scale. In light of the various criticisms to these scales Nowack (1989) developed a 30-item Cognitive Hardiness Scale which focuses on the positive aspects of the hardiness characteristic. Commitment is measured by involvement (as opposed to alienation); challenge is measured by attitudes that view life changes as challenging (as opposed to threatening); control is measured positively with a sense of control over significant outcomes in life.

Health Related Hardiness Scale. The Health Related Hardiness Scale (HRHS) was developed by Pollack (1984) and was adapted from the original Hardiness Scale (Kobasa, 1979) to measure the hardiness characteristic in the chronically ill. Until that time, hardiness had only been measured with well individuals. The HRHS has since been used to measure adaptation to chronic illness (Pollack, 1985, 1989).

Discussion

Measuring hardiness and its effects with the original Kobasa scales has produced varying results. Topf (1989) concluded that the stress buffering effects of hardiness were not predictive of reduced burnout in Critical Care nurses, whereas Rich and Rich (1987) concluded that hardy staff nurses were more burnout resistant than non-hardy nurses. Similarly, research conducted on hospital staff nurses (McCranie, Lambert & Lambert, 1987) concluded that hardiness had a beneficial main effect in reducing burnout. However, the same research also suggested that hardiness did not appear to prevent high levels of job stress from leading to high levels of burnout. Wolf (1990) suggested that hardiness can be promoted in nurse executives, and she provides suggestions for the development of the hardiness characteristic.

Hardiness has been measured, using the HRHS, with different client populations. Goodwin (1988) investigated the levels of hardiness of hemodialysis clients and found that the hardiness characteristic wanes with time and chronic disease, possibly because of a lack of positive reinforcement. This same author also found that people with chronic illness reported higher psychological distress possibly because their ability to control their illness and treatment was diminished. Pollack (1985) studied the hardiness characteristic using the HRHS with insulin dependent diabetics, clients with essential hypertension and clients with rheumatoid arthritis. The conclusions of this study were mixed: the diabetic group showed significant correlation between hardiness and psychological adaptation, but the hypertensive and rheumatoid arthritic group did not.

The health-promoting potential of hardiness as a protection against disease, in the presence of high degrees of life change and stress, were discussed by Bigbee (1985), who also made suggestions for future research to develop systematic, theory-based application in clinical practice. Lambert and Lambert (1987) suggest that, through identification of those individuals who do not feel in control of events in their lives, who do not feel deeply involved or committed to the activities in their lives and who do not anticipate change as an exciting challenge, the hardiness characteristic has direct relevance for nursing practice. They suggest that hardiness can be learned, and that patients and nurses with a low hardiness characteristic may be given hardiness instruction so that they can learn to cope with stress in their lives.

Defining attributes

In choosing the defining attributes of hardiness, we considered its application in nursing practice. The need for empirical testing of different intervention strategies is apparent because there is little evidence in the literature on specific interventions to promote hardiness. We have determined the defining attributes of hardiness to be the following.

1. A considerable curiosity.
2. A tendency to find experiences interesting and meaningful.
3. A belief in being influential through what is imagined, said or done.
4. An expectation that change is the norm.
5. A belief that change is an important stimulus to development.
6. A robustness and self assertiveness.
7. A capability for endurance (ruggedness).

These various attributes might be useful in coping with stressful life events (Kobasa, Maddi & Puccetti, 1982). The rationale for the choice of these attributes was that optimistic cognitive appraisals are made that might cause changes to be perceived as natural, meaningful and interesting, despite their stressfulness and as such, they are kept in perspective. Also, decisive actions might be taken to understand more about change and to incorporate the value of change in future experiences. In these ways, hardy individuals transform stressful life events into less stressful forms.

Model cases

James is a twenty-four year old who has recently been diagnosed with diabetes mellitus. He is determined to meet the challenge and to find out as much about his illness as he can. James requests books and papers about diabetes from his physician in order to become more familiar with the illness. He also meets with someone who has diabetes to learn more about the experience of living with the illness and, finally, he goes to a diabetic clinic for more information and counselling. James believes that the more information he has about the disease, the more he will be able to adapt to the necessary changes of lifestyle and treatment regimen, and to make informed choices. James understands that foregoing certain foods he has hitherto enjoyed will be difficult, but he is determined to follow the prescribed diet in order to maintain his health.

In this case, James shows commitment by seeking information. He has a sense of purpose and is actively involved in confronting his illness. Control is evident in that James believes he can actively influence his own health by seeking counselling and acquiring information in order to meet the required

dietary and treatment regimes; challenge is evident in his positive attitude toward the diagnosis, his eagerness to learn, his assertive action in participating in seeking out the information he requires and his determination to maintain his health. James demonstrates his intention to endure the necessary dietary changes required of him and he understands that the changes in his lifestyle, diet and treatment must be permanent.

Using the previous case as a basis, borderline and alternative cases can be elaborated.

James (age 24) has recently been diagnosed with diabetes mellitus. He seeks information and counselling from a diabetic clinic; he requests and reads some information about the disease and he talks to a diabetic about the experience of having diabetes. He understands that he will have to make certain changes in his lifestyle and dietary habits, learn to give himself insulin and he is nervous about these major changes in his life. He is not sure he can conform to the new and required treatment regimen.

In this borderline case, which demonstrates some, but not all, of the defining attributes, James demonstrates commitment and control by actively searching for information and counselling on diabetes. However, James does not exhibit an acceptance of challenge: he is nervous about the new treatment and diet required of him and he is not sure he can endure such major lifestyle changes.

Mary is told by her physician that she has Crohn's Disease and that in the future she will require medication and a special diet. The physician also explains to her that she should change her job to a less stressful one, or quit working altogether to avoid exacerbation of the disease. Mary refuses to be considered an invalid and is determined to continue her life as normal, despite the medication and dietary adjustments.

This related case portrays the concept of resilience, and the critical defining attributes of commitment, challenge and control are present. Mary accepts the change and she is challenged and committed to maintaining her previous lifestyle. In this sense, she feels she has some control. However, the difference between this example and the first case is that Mary is denying that her illness may be exacerbated by stressful situations. Druss and Douglas (1988) consider denial to be one of the main attributes of resilience and they suggest that denial can produce both healthy and unhealthy results. Healthy denial can serve constructive and adaptive functions in response to illness and, in some instances, can even be lifesaving. In Mary's case, her denial is

unhealthy because she is disavowing the need to reduce stress in her life. Denial is an unconscious mental process labelled "ego strength" (Druss & Douglas, 1988). This unconscious mental process is different from the largely cognitive or behavioural attributes of hardiness.

Antecedents and consequences

There is much that still needs to be understood about the antecedents of hardiness. What role does the DNA code play in the development of the personality characteristic? To date, there has been no significant research which links the biophysical composition of an individual with the personality characteristic of hardiness. Locke (1982) suggests that individuals who explain stressful events pessimistically are at an increased risk for poor health because of a lowered immune function. In this sense, stressful life events are seen as a precursor or an antecedent to poor health and hardiness is seen as the moderator or mediator in the stress-illness continuum.

Antonovsky (1979) suggests that a person's sense of coherence is the single most important antecedent to hardiness. Antonovsky states that coherence consists of a "pervasive, enduring though dynamic feeling of confidence that one's internal and external environment are predictable and that there is a high probability that all things will work out as well as can reasonably be expected" (p. 123).

Why are some individuals more hardy than others, and what causes hardiness to occur? Druss and Douglas (1988) suggest two experiences that may account for the fostering of a hardy personality. First, hardy individuals may have had role models who demonstrated the personality characteristics of control, commitment and challenge in the face of stressful life events with positive and healthy outcomes. Secondly, hardiness may be learned, with previous experiences demonstrating the person's ability to face stressful life events with a sense of mastery and control. Kobasa, Maddi and Puccetti (1982) suggest that experiences in childhood, through interactions with parents and significant others, may foster a hardy personality. These authors contend that the major factor in learning a sense of commitment or involvement is for the majority of the child's experiences to be positive rather than negative. A sense of control can be learned by regular experiences of stretching to accomplish something and succeeding; and challenge can be learned by exposing the child to a wide range of experiences so that the child will expect change (not the status quo) to be the norm.

One consequence of the personality characteristic, hardiness, is the maintenance of health in the face of stressful life events. The mediating and moderating effects of hardiness provide substantial protection against illness (Kobasa, Maddi, Puccetti & Zola, 1985). The mediating effects occur when

troubling life events are interpreted less negatively and are therefore less harmful. The moderating effects provide a buffering effect in the stress-illness relationship. Table 1 provides an overview of the antecedents and consequences of the hardiness characteristic, here identified.

Table 1

Antecedents and Consequences of the Personality Characteristic Hardiness

Defining Attribute	Antecedents	Consequences
1. Considerable curiosity	<ul style="list-style-type: none"> -Cognitive ability to inquire -Fostering and valuing curiosity in a child 	<ul style="list-style-type: none"> -Increased knowledge/ understanding -Indepth inquiry -New knowledge -Creative development
2. Tendency to find experiences interesting and meaningful	<ul style="list-style-type: none"> -Perceiving experience -Valuing experience -Ability to see pattern recognition a gestalt -Ability to reflect 	<ul style="list-style-type: none"> -Ability to focus -Ability to set goals -Peacefulness, resolution -Sparking of inquiry
3. Belief in being influential through what is imagined, said or done	<ul style="list-style-type: none"> -A belief that behaviours can have an effect -Past experiences which foster the belief that the person can be influential 	<ul style="list-style-type: none"> -Make a difference -Tenacity -High self confidence -Realization of expected outcomes -Knowledge of choice -Wielding of power -Knowledge of personal control
4. Expectation that change is the norm, and an important stimulus to development	<ul style="list-style-type: none"> -Previous experience of effective change -The degree of change (small to profound) -Cognitive ability to accept change -Social skills to access support and help 	<ul style="list-style-type: none"> -Seeking stimulation -Higher tolerance for change -Planned change -Change seeker -Self actualization
5. Robust and self assertive	<ul style="list-style-type: none"> -Past self assertive behaviour with perceived success -Courage -Physical strength 	<ul style="list-style-type: none"> -Personal control -Self actualization -Tenacity
6. Capable of endurance (ruggedness)	<ul style="list-style-type: none"> -Physical strength -Positive past experience with tenacity -Mental strength (courage) -Ability to withstand strain 	<ul style="list-style-type: none"> -Goal attainment

Empirical Referents

Empirical referents are classes of actual phenomena that demonstrate the presence of the concept and its attributes. They are useful in instrument development and they also provide clear, observable phenomena for diagnosing the concept in practice (Walker & Avant, 1988). The five measurement tools in use to measure the hardiness personality characteristic are:

1. The five scales measuring negative indicators of commitment, control and challenge (Kobasa, Maddi & Kahn, 1982).
2. The 20-item Abridged Hardiness Scale (cited in Allred & Smith, 1989).
3. The 36-item Revised Hardiness Scale (cited in Allred & Smith, 1989).
4. The 30-item Cognitive Hardiness Scale (Nowack, 1989).
5. The Health Related Hardiness Scale (Pollack, 1984).

Other empirical referents are:

1. demonstration of considerable curiosity, as evidenced by: asking questions; reading related literature; seeking advice from experts.
2. demonstration of interest, as evidenced by: paying close attention; considering the experience important.
3. expressing a sense of meaning in the experience as evidenced by: expressing the good, or the advantages which may occur as a result of the experience.
4. demonstrating an ability to influence the experience, as evidenced by: making suggestions about possible courses of action; expressing a different or imagined way of being; behaving in a way to influence others.
5. expressing the notion that change is the norm.
6. expressing the notion that change is an important stimulus to development.

Conclusion

As a personality characteristic, hardiness has been primarily related to its mediating (or buffering) and moderating effects on stressful life events and illness (Kobasa, 1979; Kobasa, Maddi & Courington, 1981; Kobasa, Maddi & Kahn, 1982; Kobasa, Maddi, Puccetti & Zola, 1985; Pollack, 1985). A variety of instruments have been used to measure hardiness, both with nurses and with patients, and the results of these studies have been mixed.

The majority of the research on hardiness has been done on white, male executives. Only recently has the characteristic been tested on females, the disadvantaged, culturally diverse populations and the chronically ill - and the results have been varied.

Hardiness may represent only one aspect of stress resistance (Kobasa, Maddi, Puccetti & Zola, 1985). However, evidence from hardiness research suggests that the characteristic has the potential to moderate or buffer stressful life events that could lead to illness. It is important to understand how hardiness is developed, and how it can be learned, so that nurses will have a better understanding of how to intervene with low-hardiness clients and colleagues before they experience illness-producing stress. Rich and Rich (1987) suggests that hardiness can be taught, and Wolf (1990) provides nurse executives with strategies that may facilitate hardiness and possibly reduce the such effects of work-related stress as burnout and illness.

The concept of hardiness is not yet fully developed or understood and, although more research is needed on the generalizability of this concept for different populations, its potential use for nursing in the areas of health promotion, health maintenance and in disease prevention is important.

REFERENCES

- Allred, K.D. & Smith, T.W. (1989). The hardy personality: Cognitive and physiological responses to evaluative threat. *Journal of Personality and Social Psychology*, 56(2), 257-266.
- Antonovsky, A. (1979). *Health, stress and coping: New perspectives on mental and physical well-being*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1987). *Unraveling the mystery of health*. San Francisco: Jossey-Bass.
- Bigbee, J.L. (1985). Hardiness, A new perspective in health promotion. *Health Practitioner*, 10(11), 51-56.
- Druss, R.G. & Douglas, C.J. (1988). Adaptive responses to illness and disability. *General Hospital Psychiatry*, 10, 163-168.
- Funk, S.C. & Houston, B.K. (1987). A critical analysis of the hardiness scales validity and utility. *Journal of Personality and Social Psychology*, 53(3), 572-578.
- Garrity, T.F., Marx, N.B. & Somes, G.W. (1978). The relationship of recent life change to seriousness of later illness. *Journal of Psychosomatic Research*, 22, 7-12.
- Goodwin, S.D. (1988). Hardiness and psychological adjustment in hemodialysis clients. *ANNA Journal*, 15(4), 211-216.
- Hahn, M. (1966). *California life goals evaluation schedules*. Palo Alta, CA: Western Psychological Services.
- Holmes, T.H. & Masuda, M. (1974). Life changes and illness susceptibility. In B.S. Dohrenmend & B.P. Dohrenmend (Eds.). *Stressful life events: Their nature and effects* (pp. 45-72). New York: Wiley.

- Holmes, T.H. & Rahe, R.H. (1967). The social readjustment rating scale. *Journal of Psychosomatic Research*, 11, 213-218.
- Hull, J.G., Van Treuren, R.R. & Vimelli, S. (1987). Hardiness and health: A critique and alternative approach. *Journal of Personality and Social Psychology*, 53(3), 518-530.
- Johnson, J.H. & Savason, I.G. (1979). Moderator variables in life stress research. In I.G. Savason & C. Spielberger (Eds.). *Stress and anxiety* (Vol. 6, pp. 151-176). New York: Halstead.
- Kobasa, S.C. (1979). Stressful life events, personality and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, 37, 1-11.
- Kobasa, S.C., Maddi, S.R. & Courington, S. (1981). Personality and constitution as mediators in the stress-illness relationship. *Journal of Health and Social Behaviour*, 22(12), 368-378.
- Kobasa, S.C., Maddi, S.R. & Kahn, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology*, 42(1), 168-177.
- Kobasa, S.C., Maddi, S.R. & Puccetti, M.C. (1982). Personality and exercise as buffers in the stress-illness relationship. *Journal of Behavioral Medicine*, 5(4), 391-404.
- Kobasa, S.C., Maddi, S.R., Puccetti, M.C. & Zola, M.A. (1985). Effectiveness of hardiness, exercise and social support as resources against illness. *Journal of Psychosomatic Research*, 29(5), 525-533.
- Lambert, C.E. Jr. & Lambert, V.A. (1987). Hardiness: Its development and relevance to nursing. *Image: Journal of Nursing Scholarship*, 19(2), 92-95.
- Lazarus, R.S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Locke, S.E. (1982). Stress, adaptation and immunity: Studies in humans. *General Hospital Psychiatry*, 4, 49-58.
- Maddi, S.R., Hoover, M. & Kobasa, S.C. & Zola (1982). Alienation and exploratory behaviour. *Journal of Personality and Social Psychology*, 42(5), 884-890.
- Maddi, S.R., Kobasa, S.C. & Hoover, M. (1979). An alienation test. *Journal of Humanistic Psychology*, 19(2), 73-76.
- McCranie, E.W., Lambert, V.A. & Lambert, C.E. Jr. (1987). Work stress, hardiness and burnout among hospital staff nurses. *Nursing Research*, 36(6), 374-378.
- Nowack, K.M. (1986). Type A, hardiness, and psychological distress. *Journal of Behavioural Medicine*, 9, 537-548.
- Nowack, K.M. (1989). Coping style, cognitive hardiness, and health status. *Journal of Behavioural Medicine*, 12(2), 145-158.
- Pollack, S.E. (1984). Adaptation to stress. *Texas Nursing*, 58(10), 12-13.
- Pollack, S.E. (1985). Human responses to chronic illness: Physiological and psychological adaptation. *Nursing Research*, 35(2), 90-95.
- Pollack, S.E. (1989). The hardiness characteristic: A motivating factor in adaptation. *Advances in Nursing Science*, 11(2), 53-62.
- Rabkin, J.G. & Streuning, E.L. (1978). *Life events, stress and illness*. *Science*, 194, 1013-1020.
- Rahe, R.H. & Arthur, R.T. (1968). Life change and illness studies: Past history and future directions. *Journal of Human Stress*, 4, 3-15.
- Rich, V.L. & Rich, A.R. (1987). Personality hardiness and burnout in female staff nurses. *Image: Journal of Nursing Scholarship*, 19(2), 63-69.
- Rotter, J.B. (1966). Generalized expectancies for internal versus external control of reinforcements. *Psychological Monographs: General & Applied*, 80, 1-28.
- Rotter, J.B., Seeman, M. & Liverant, S. (1962). Internal vs. external locus of control of reinforcement: A major variable in behaviour therapy. In Washburne (Ed.). *Decisions, values, and groups*. London: Pergamon.
- Topf, M. (1989). Personality hardiness, occupational stress and burnout in critical care nurses. *Research in Nursing and Health*, 12, 179-186.
- Walker, L.O. & Avant, K.C. (1988). *Strategies for theory construction in nursing* (2nd ed.). Norwalk, Connecticut: Appleton Lange.
- Wolf, G.A. (1990). Promoting executive hardiness. *Journal of Nursing Administration*, 20(1), 10-11.

RÉSUMÉ

Une analyse de la notion de résistance

Pourquoi certaines personnes semblent-elles moins vulnérables que d'autres aux stress environnementaux et aux maladies? De nombreuses recherches réalisées en psychologie portent à croire que les individus qui gardent la santé possèdent un trait de caractère particulier, la "résistance", notion relativement nouvelle en sciences infirmières qui pourrait avoir une incidence sur la pratique des sciences infirmières. La théorie des sciences infirmières ne peut progresser qu'à condition de définir les termes qui constituent le fondement de la somme de connaissances propres à cette discipline. L'analyse conceptuelle est une stratégie importante de la formulation des théories; cet article illustre le recours au processus analytique, tel que défini par Walker et Avant, pour clarifier la notion de résistance, de manière à pouvoir en examiner l'incidence potentielle sur la pratique des sciences infirmières.

A CASE STUDY OF A NURSING ASSIGNMENT PATTERN

Balbir K. Sandhu, Suzanne K  rouac and Andr   Duquette

At the threshold of the year 2000, the nursing environment is characterized by at least four important social forces - cost containment, nursing shortage, nurses' dissatisfaction with the profession and pressures to maintain and improve quality of care. A number of these social forces are directly linked to nursing assignment patterns practised at the unit level. The problems of absenteeism, turnover, staff dissatisfaction, quality of care and cost have been attributed to a given nursing assignment pattern (Giovannetti, 1986; Macdonald, 1988). The term "nursing assignment pattern" is used to describe roles, tasks and the policy structure that effect the allocation of nursing personnel to patients for the provision of care on a nursing unit.

Previous work on nursing assignment patterns was influenced by administrative theories; the underlying philosophy was grounded in beliefs in objectivity, control, productivity and measurement of facts. Empirical research on nursing assignment patterns is commonly geared towards a perspective of cost containment, outcomes and predictability. On the other hand, there is also a holistic perspective and values are given to subjectivity, accountability and continuity of care, as well as to optimal human functioning through behavioural processes (Dunham, 1989; Jennings, 1987; Miller, 1987; Nyberg, 1989). These philosophical underpinnings led us to analyze events of a nursing assignment pattern within their real-life context. Therefore, this is a report of a case study describing the inherent elements in a currently practised assignment pattern in a nursing unit.

Review of Literature

There are several different kinds of nursing assignment patterns: team, primary and modular. Team nursing is based on the notion that a team of nursing personnel - nursing assistants and nurses aides, under the supervision of nurses - deliver nursing care to a group of patients. Team nursing is theoretic-

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cally designed to maximize use of skill levels and provide cost-effective nursing care (Brill, 1976). Primary nursing promotes the concept of individualized care. It is based on the proposition that a primary nurse is responsible for her primary patients on a 24-hour basis, seven days a week, from admission to discharge (Manthey, 1980). Modular nursing - a hybrid of team and primary nursing - is based on the concept of individualized care, provided by a small number of nursing personnel to a small group of patients, in a geographical area called a module (Magargal, 1987).

There is an abundant research-based literature dealing with the evaluation of these nursing assignment patterns. These evaluations reveal the influence of assignment patterns on cost, quality of care and patient and staff satisfaction. Recent reviews of this literature show that there exists an extreme diversity in findings (Giovannetti, 1986; Macdonald, 1988; Sandhu, K  rouac, Duquette & Truchon, 1991). The most frequent approaches to this research-based literature are experimental and quasi-experimental in nature. To evaluate nursing assignment patterns in these ways presents certain difficulties. The research milieu, a nursing unit, encompasses many intervening and extraneous variables that are difficult to control and that influence the study results. It is rarely possible to ensure a random selection of units under study. The overall problems associated with operationalization of variables, instrumentation and data collection methods and procedures further obstruct meaningful results. In certain studies, the "Hawthorne" effect is suspected because the data were collected soon after the implementation of the independent variable (Berry & Metcalf, 1986; Metcalf, 1986).

To reflect a more comprehensive view of a nursing assignment pattern, it appeared appropriate to use a case study as a research strategy. Case studies are pertinent when researchers have little or no control over the events and when the focus is on a contemporary phenomenon within some real-life context. Such a study allows a better understanding of the whole situation and can be used to develop conceptual explanations among the variables being studied. Providing insights for formulating explanations of complex processes can contribute to evidence for or against theories (Burns & Grove, 1987; Wilson, 1985; Yin, 1988).

Munson and Clinton's (1979) conceptual framework, specifically developed for defining nursing assignment patterns was used to ground the study. Inherent in this framework is the notion that a particular set of variables (types of patients, available nursing resources and types of organizational support) will influence the type of nursing assignment pattern at the unit level. In return, the structural variables inherent in the assignment pattern will give rise to specific approaches to nursing, especially in terms of quality attributes: comprehensiveness, continuity, coordination and accountability of care. These in turn, will profoundly affect the caliber of outcome variables - staff satisfaction, patient care, quality and cost of care.

Research Questions

In this study, we describe the principal variables inherent in the currently practised nursing assignment pattern in a 38-bed medical-surgical nursing unit, in an acute care general hospital in Montreal. For this purpose three questions have been formulated.

1. What are the patient, personnel and organizational characteristics of the unit under study?
2. What are the structural variables inherent in the nursing assignment pattern: patient allocation, staff-mix, accountability, continuity and coordination of care?
3. What are the outcomes of this nursing assignment pattern in terms of personnel absenteeism and turnover rates?

Method

A descriptive case study design was used to allow an in-depth assessment and description of three groups of variables inherent in the nursing assignment pattern that was used to provide nursing care in a given unit. The study considers a large number of variables related to a single subject such as a nursing unit; as such, this research strategy appeared appropriate.

Twenty-nine variables, illustrated in Figure 1, were studied. According to the conceptual framework, they were classified in three groups: influencing, structural and outcome variables.

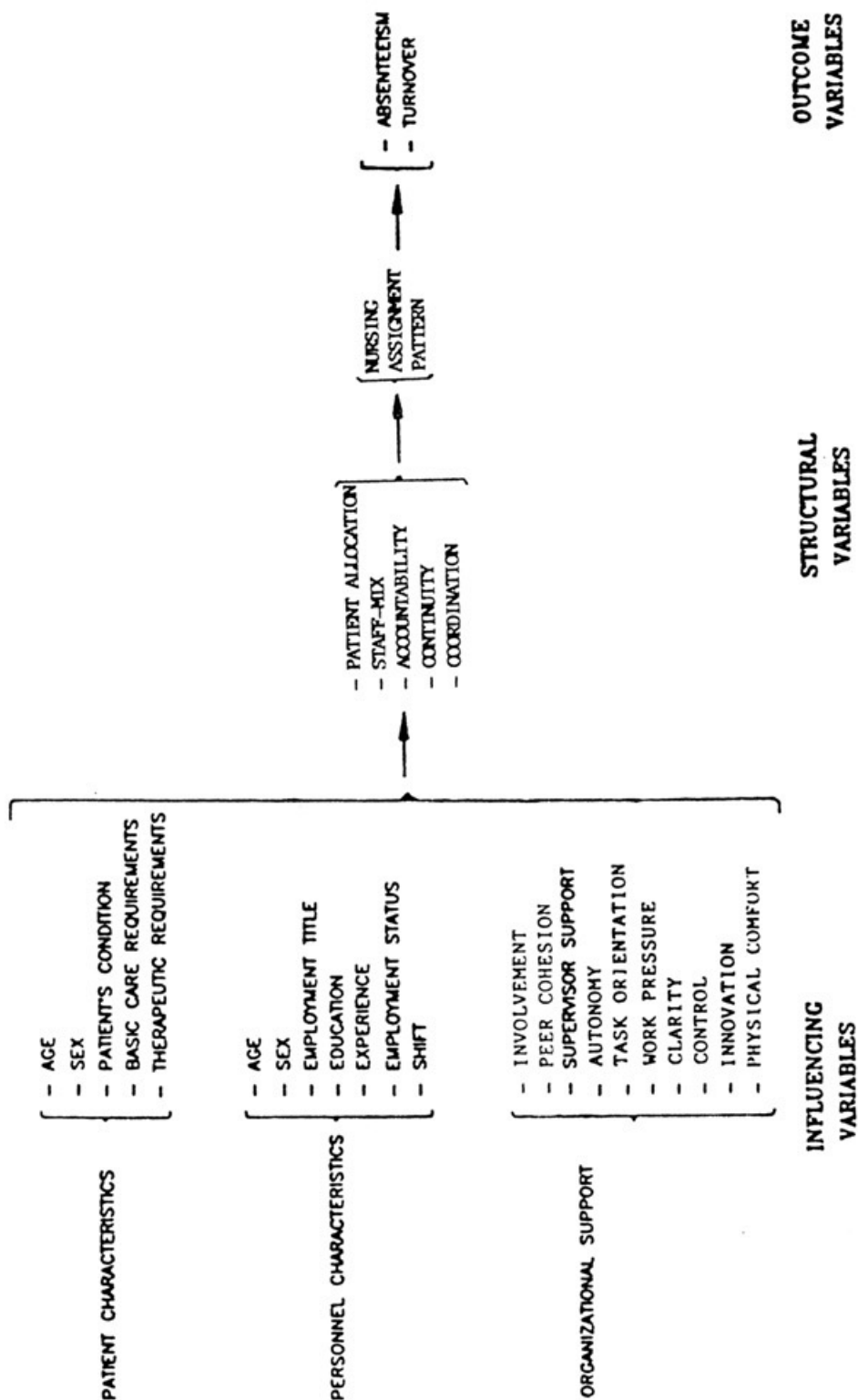
Influencing variables

The elements capable of acting upon the choice of an assignment patterns are:

Patient characteristics. Age, sex, patient's condition, basic care requirements and therapeutic requirements were obtained through "La formule modifiée Rush-Medicus pour la classification des bénéficiaires" (Grenier, Drapeau & Desautels, 1989). Inter-observer reliability values over .85 were provided by the authors (Grenier et al., 1989).

Personnel characteristics. Age, sex, job title, education, experience, employment status and shift worked were collected through "Renseignements socio-démographiques" developed and pre-tested by the authors. Personnel comprises three groups of personnel: nurses, nursing assistants and nurses aides.

Organizational characteristics. Involvement, peer cohesion, supervisor support, autonomy, task orientation, work pressure, clarity, control, innovation



MUNSON, P. & CLINTON, J. (1979) DEFINING
NURSING ASSIGNMENT PATTERNS,
NURSING RESEARCH, 28, 243-249

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Figure 1
Study Framework

and physical comfort were measured by a French version of the *Work Environment Scale* (Moos, 1986) entitled "Echelle de l'environnement de travail" (Michaud, 1991).

This scale contains 90 items; each of the above variable contains nine items expressed as a score. Internal consistency and reliability tests yielded the following: Cronbach's Alpha .69 to .86; test-retest .69 to .83 (Moos, 1986). The French version has been adapted to the nursing unit context, pre-tested and the Cronbach's Alpha showed lower but comparable values for most of the subscales (Michaud, 1991).

Structural variables

Regarded as essential elements in the description and the naming of a nursing assignment pattern (Munson, Beckman, Clinton, Kever & Simms, 1980), this group of variables includes:

Patient allocation. Duration for which the same patients are assigned to the same personnel - nurses, nursing assistants, nurses aides - either by shift or hospital stay.

Staff-mix. Composition of budgeted positions of unit's personnel: nurses, nursing assistants, nurses aides.

Accountability. Responsibility for total nursing care needs, as assumed by an identifiable nurse, either for eight or 24 hours.

Coordination. Identification of the person responsible for synchronizing various activities, and establishing the channels of communication with other health professionals and patient's family, during a specific shift.

Continuity. Mean number of personnel providing patient-centered and uninterrupted care as derived from 18 nursing activities during a specific shift.

Through a systematic review of pertinent literature, ten indicators and 11 sub-indicators relative to the above five variables were identified. Indicators were statements that guided the data collection, while sub-indicators were derived as principal questions of a tool entitled "Mode d'organisation des soins infirmiers". This is a semi-structured interview questionnaire that includes 11 open-ended questions and one 18-item observation grid. The latter estimates the continuity of care through a numerical value, while the open-ended questions capture narrative answers on accountability, patient allocation, staff-mix and coordination.

The tool "Mode d'organisation des soins infirmiers" was partly developed and partly adapted from Munson et al. (1980) and translated into French. It was submitted to two judges for content validity and pre-tested at the unit level.

Outcome variables

Absenteeism and turnover were chosen as measures of behavioural attributes of staff and have been considered as outcome variables.

Absenteeism. This is any unauthorized time taken off over a given period of time (Gillies, 1989; Steers & Stone, 1982). A total rate was calculated: based on short-term (1 or 2 days off) and long-term (3 or more days off) periods. A tool entitled "Mesure de l'absentéisme" was designed for the purpose of this study, and was pre-tested.

Turnover. Total turnover rate was calculated for internal (number of persons who left the unit) and external (those who left the organization) terminations of part-time and full-time personnel, over a given period of time (Gillies, 1989). A tool entitled "Mesure du roulement" was adapted from Munson et al. (1980), translated into French, and was pre-tested.

Study milieu

This research was conducted in a nursing unit of an acute care general hospital with over 800-beds, affiliated with Université de Montréal, in the metropolitan area. A 38-bed unit receives male and female, medical-surgical patients. Thoracic and vascular surgery and internal medicine are its specialities. The mean length of patients' stay varies from nine to 17 days respectively for surgery and medicine.

Procedure

Data collection

Thirty patients were randomly selected on the unit under study. Data on patient characteristics were collected from their charts, over a period of two weeks. All nursing personnel of the unit (n=32) were invited to participate, at the time, two positions were vacant. Most members completed and returned two self-administered questionnaires: "Renseignements socio-démographiques" et "Echelle de l'environnement de travail" (n=31/32; 96%). Anonymity of patients and staff was assured. Data on structural variables were obtained during the day shift, on five consecutive days, through semi-structured interviews with the head nurse, the staff, as well as through observation. Data for absenteeism and turnover were collected retroactively, from the unit records, for a period of 12 months.

Data analysis

Influencing variables (patient, personnel and organizational characteristics) were organized by categorizing and tabulating calculations, means and percentages. Structural variables, such as patient allocation, staff-mix, accountability and coordination, were described; these permitted the naming of the nursing assignment pattern at the unit level. A mean number of personnel was calculated for continuity of care. For outcome variables, rates of absenteeism and turnover were calculated.

Results

Influencing variables

The results are presented under the headings of patient, personnel and organizational characteristics.

Patient characteristics. In the unit under study, males accounted for 76.7% (23/30) of the patients. The majority (76.7%; 23/30) of patients were over 60 years of age, while a substantial minority 26.7% (8/30) were over 70 years of age. At admission, patients were independent or rated very low on the patient's condition dimension. A majority, 66.6% (20/30), rated zero on items related to unconsciousness, incontinence and immobility. Following surgery, patients' levels of independence decreased. Requirement for care increased accordingly. For basic requirements, such as bathing, feeding, mobility, comfort, the majority (66.6%; 20/30) needed moderate amount of nursing care. For therapeutic dimensions, two-thirds (66.6%; 20/30) required such heavy nursing care as intravenous therapy and surveillance, patient or family specific teaching, constant observation and emotional support.

Personnel characteristics. The majority of personnel (80.6%; 25/31) were female, and half (50%; 15/30) were over the age of 30 years. Over three quarters (77.4%; 24/31) were registered nurses: a minority of nurses (12.5%; 3/24) held bachelor's degrees; one-quarter (25.0%; 6/24) were involved in further education at the bachelor's, master's or certificate levels. A majority of the personnel (71.0%; 22/31) had five or more years of experience in nursing; 51.6% (16/31) had worked in the hospital over four years, 48.4% (15/31) had worked on the present unit more than two years, 51.6% (16/31) had been on the unit less than two years. A majority (61.3%; 19/31) worked on a full-time basis at the time of their interview. A little over half (51.6%; 16/31) were on the day shift; 29.0% (9/31) were on evening shift; and 19.4% (6/31) were on night shift, without rotation.

Organizational characteristics. The strengths of the organization focussed on work relationships and the structure of work. Work relationships were

characterized by involvement (Mean (x)=7.4, standard deviation (SD)=1.3); peer cohesion (x =7.3, SD=1.3); and supervisor support (x =6.6, SD=1.5). Work structure clarity was demonstrated by task orientation (x =7.2, SD=1.3); work pressure (x =6.1, SD=1.3) and clarity of expectations (x =7.3, SD=1.5). Weaknesses inherent in the organization included such limitations as physical comfort (x =4.5, SD=1.9); innovation (x =5.2, SD=2.0); control (x =5.6, SD=1.9); and autonomy (x =5.8, SD=1.4) which registered lower means.

Analysis of influencing variables resulted in the following findings. Patients on admission were mostly independent. Following surgical interventions they required complex nursing care. Nursing personnel, being an experienced group, were able to provide the care required. Personnel perceptions of their work environment showed that work relationships were characterized by involvement, peer cohesion and supervisor support. Task orientation, clarity of expectations and moderate work pressure demonstrated that the knowledge of tasks, rules and policies was clear. On the other hand, the personnel viewed the physical surroundings as being deprived of quality, while autonomy and innovation might be weakened by some rules and pressures that they felt were designed to keep personnel under control.

Structural variables

These results are presented under the headings of patient allocation, staff-mix, accountability, continuity and coordination.

Patient allocation. The unit was divided into four sections, according to the severity of patients' condition and the number of nursing personnel. The nursing personnel were allocated to specific sections for a period of two weeks on the day shift, and one week on evenings and nights. For example, on the day shift, the basic nursing team consisted of seven nursing members. Of those, one registered nurse was responsible for six patients grouped in section one. The care in other sections was given by either two registered nurses or a registered nurse and a nursing assistant. Within the sections, the patients were allocated to individual nurses or to a nurse with a nursing assistant, depending upon patients' basic and therapeutic requirements, according to their conditions. In this context, the likelihood of nurses having the same patients for several days was favoured (patients' average stay: 9-17 days). The nurses aides were given specific tasks such as bathing, feeding and making beds.

Staff-mix. The nursing unit had 34 budgeted positions: 25 registered nurses, including the head nurse; three nursing assistants; and six aides. A majority of these budgeted nurses' positions were full-time (60%; 15/25), while 40% (10/25) were part-time. Three nursing assistants' posts were all part-time and

in the process of being modified and replaced with registered nurses. Nurses aides occupied three full-time and three part-time positions.

Accountability. Registered nurses were accountable for eight hours of patient care. They formulated and updated the nursing care plans, observed any changes in the patient's condition and communicated the changes to the appropriate persons: doctors or family members. Nurses initiated proper treatments, coordinated patient-centered activities in collaboration with the assistant head nurse and communicated with the next shift by means of verbal and written records. The head nurse assumed the administrative responsibility for the unit on 24-hour basis. In her absence, the nursing supervisors on the evening and night shifts and the assistant head nurses assumed most of the administrative responsibility.

Coordination. The coordination of patient-centered activities such as diagnostic tests and physiotherapy was achieved by means of collaboration between the patient's nurse and the assistant head nurse. In the absence of the patient's nurse, whoever was around assumed responsibility for these tasks. Most of the time communication with the patient's doctor, other health professionals and the patient's family was established by the nurse. The nurse was also the person who communicated to the patient any pertinent information related to the care activities.

Continuity. From observations collected on 18 nursing activities, over a period of five consecutive days on the day shift, a mean of two nursing personnel delivered care for the same patient. The patient's nurse was primarily responsible for giving assistance with the psychological adjustment required by the patient and family. This nurse was helped by a colleague or an assistant with treatments, health teaching and preparation for discharge. Other activities, such as, vital signs, assistance with hygiene and recordings of intake and output involved at least three persons. Moreover, securing the needed patient information, making nursing diagnoses, stating goals for care, revising and evaluating nursing care plans were generally implemented through a collaboration between nurses and their assistants.

The description of structural variables demonstrates that the current assignment pattern used at the unit under study is similar to modular nursing. Modular nursing, also known as district nursing - an adaptation of team and primary nursing - is oriented towards individualized care, provided by a small number of nursing personnel (nurses, nursing assistants and nurses aides) to a small group of patients in a geographical area called a module (Magargal, 1987). Registered nurses had an eight-hour accountability for patient care. The coordination of care was mainly maintained by the bedside nurse and continuity of care was favoured most of the time.

Outcome variables

Absenteeism. The short-term absenteeism was 3.7% and the long-term absenteeism was 3.7% annually. Therefore, the total short- and long-term absenteeism rates was 7.4%. This surpasses the recommended norm of 4% annually (Oberman & Rainer, 1983).

Turnover. The nursing personnel had an internal turnover of 20.0%, an external turnover of 8.5% and a total turnover rate (resignations and transfers from the unit) of 28.6% annually. Although, this total rate is lower than others studied in the Montreal area (Collinge, 1988), it surpasses the recommended optimum turnover rate of five to ten per cent annually (Gauerke, 1977).

Discussion

In this study we attempted to describe the work situation of nursing personnel who practise on a medical-surgical unit, in a large metropolitan city. Studying people and their environment is consistent with a nursing philosophical perspective in which numerous characteristics are related and, to a certain extent, inseparable. However, there are limitations to this study. The major disadvantage of a case study approach lies in the constraints to generalizability. Other limitations are the small sample size and the measurements used. Data collection on patients is constrained by the short time frame (three weeks). The instruments for structural variables have not had a broad application to date; they should be further refined and tested.

The Munson and Clinton (1979) conceptual framework was specifically designed to highlight the essential elements of assignment patterns. It was a foundation for this study and our findings underline the importance of the influencing factors. For instance, the complexity of patient characteristics, especially the therapeutic requirements, required that specialized treatments be confined to a few, highly trained caregivers. To deal with this reality, the staff-mix was modified by increasing the proportion of registered nurses to ancillary caregivers. Rutkowski (1987) points out that the severity of illness is translated into nursing workload; this defined the staffing requirements for the unit.

Nursing assignment patterns are not only influenced by institutions's philosophical aspects, but also, by the contextual constraints imposed by other factors, such as acuity of patients and available resources. Most of the patients were elderly, short-term in-patients, rating high on the patient classification scale (*La formule modifiée Rush-Medicus pour la classification des bénéficiaires*). These patients required intensive, continuous and complex nursing care - not only for therapeutic requirements, but also for emo-

tional support and guidance for patients and their families. It was evident in these circumstances that employing nursing assistants to provide care might result in the fragmentation of care; this ultimately would jeopardize the delivery of care.

This research showed how nursing managers have reacted to some of the problems at hand. For instance, to cope with acuity levels of patients, using available resources, unit managers modified the existing team nursing assignment pattern to modular nursing. Modular nursing was chosen for many reasons, including maximizing the potential of ancillary caregivers, allowing nurses more autonomy and getting nurses accustomed to accountability and responsibility. Other advantages are that nurses are encouraged to use the nursing process while maintaining continuity and coordination of care and that, when patients are admitted and assigned to sections, this method of assignment may help equalize workloads. Disadvantages are that, during busy periods, help may not be readily available, and that it weakens the team spirit, thus reducing the willingness to lend a hand to others. In the unit under study, "peer cohesion" was an influence that helped overcome these negative features. In addition, the "support" of the head nurse and "role clarity" are also strengths on which managers might capitalize to promote more accountability and responsibility.

With respect to the outcome variables, both measures (absenteeism and turnover rates) were higher than the optimal rates reported in the literature. Data for absenteeism and turnover were partly collected during the contract negotiation period for nurses. To maintain the unit optimally functional, Oberman and Rainer (1983) recommend that institutions maintain absenteeism rate of around 4%; Gauerke (1977) suggests that organizations should aim for 5-10% annual turnover rate (terminations) to reduce personnel turnover to manageable levels. In the context of this unit, perhaps it is important to mention that the absenteeism rate was highest among the nursing assistants and that the turnover rate was highest among the nurses aides.

This framework allows for continuous relationships between variables, as well as linear. In a continuous framework the influencing variables have an impact on the structural variables; these, in turn, influence the outcome variables. For instance, a high rate of absenteeism and turnover may influence certain aspects of nursing care delivery, such as the continuity of care. Increasing turnover of registered nurses increases the likelihood that the assistant head nurse would assume responsibility for the coordination of care as well as the likelihood that institutions will implement more rules and procedures: Decision-making power becomes increasingly centralized.

It is important to know how nurses deliver patient care with respect to each assignment pattern. Such knowledge should improve our understanding of

the methods of allocating work and of the related autonomy and well-being of nurses. Further studies would make possible "cross-case" analyses which would provide greater insights to these complex processes.

We believe that nursing assignment patterns, to be useful, must meet three essential criteria. First, they should be based on patient-oriented care: such aspects as comprehensiveness, continuity, coordination and accountability of care must form the core of all assignment patterns. Only then will high-quality care be a reality. Secondly, they should possess properties that are nurse-oriented: these should focus on the autonomy, empowerment and psychological well-being of nurses. Thirdly, a nursing assignment pattern should be cost-oriented: nurses should be paid for nursing and not for clerical, housekeeping or administrative tasks.

This case study describes the influencing and structural variables inherent in the currently used nursing assignment pattern for a 38-bed medical-surgical unit, and measured some of its outcomes. We observed that the assignment pattern, although somewhat in transition from team nursing to total care nursing, currently is modular nursing. In spite of some constraints, particularly in the context that the study was done in, our results should be seen as a first phase of understanding of a complex and multidimensional research theme - the nursing assignment patterns.

REFERENCES

- Berry, A.L. & Metcalf, C.L. (1986). Paradigms and Practices: The Organization of the Delivery of Nursing Care. *Journal of Advanced Nursing*, 11, 589-597.
- Brill, N. (1976). *Team-work: Working Together in the Human Services*. Philadelphia: Lippincott.
- Burns, L. & Grove, S.K. (1987). *The Practice of Nursing Research*. Toronto: Saunders.
- Collinge, J. (1988). *Report on Nursing Manpower, Retention and Turnover in Hospitals of the M.J.H.I., with Recommendations*. Montréal: Montréal Joint Hospital Institute.
- Dunham, S.A. (1989). The Art of Humanistic Nursing: Expanding the Horizons. *Nursing Administration Quarterly*, 13(3), 55-66.
- Gauerke, R. (1977). Appraisal as a Retention Tool. *Supervisor Nurse*, 8(6), 34-37.
- Gillies, D.A. (1989). *Nursing Management, A Systems Approach (2nd ed.)*. Toronto: Saunders.
- Giovannetti, P. (1986). Evaluation of Primary Nursing. In H.H. Werley & J.J. Fitzpatrick (Eds.), *Annual Review of Nursing Research*, 4, pp. 127-151. New York: Springer.
- Grenier, R., Drapeau, J. & Desautels, J. (1989). *Instrument global d'évaluation de la qualité des soins infirmiers-Manuel de l'observateur*. Montréal: Hôpital Notre-Dame.
- Jennings, B.M. (1987). Social Support: A Way to a Climate of Caring. *Nursing Administration Quarterly*, 11(4), 63-71.
- Macdonald, M. (1988). Primary Nursing: Is it Worth it? *Journal of Advanced Nursing*, 13, 797-806.
- Magargal, P. (1987). Modular Nursing: Nurses Rediscover Nursing. *Nursing Management*, 18(11), 98-104.
- Manthey, M. (1980). A Theoretical Framework for Primary Nursing. *Journal of Nursing Administration*, 10(6), 11-15.
- Metcalf, C.A. (1986). Job Satisfaction and Organizational Change in a Maternity Hospital. *International Journal of Nursing Studies*, 24, 285-298.
- Michaud, S. (1991). Relations entre des caractéristiques de l'environnement de travail et l'épuisement professionnel d'infirmières en service d'urgence. Unpublished master's thesis, Université de Montréal, Montréal.
- Miller, K.L. (1987). The Human Care Perspective in Nursing Administration. *The Journal of Nursing Administration*, 17(2), 10-12.
- Moos, R. (1986). *Work Environment Scale Manual (2nd ed.)*. Palo Alto: Consulting Psychologists Press.
- Munson, F., Beckman, J., Clinton, J., Kever, C. & Simms, L.M. (1980). *Nursing Assignment Patterns (NAP) Users Manual*. Washington: Alpha Press.
- Munson, F. & Clinton, J. (1979). Defining Nursing Assignment Patterns. *Nursing Research*, 28, 243-249.
- Nyberg, J. (1989). The Elements of Caring in Nursing Administration. *Nursing Administration Quarterly*, 13(3), 9-16.
- Oberman, S. & Rainer, G. (1983). Effective Control of Absenteeism. *Health Care Supervisor*, 1(3), 17-30.
- Rutkowski, B. (1987). *Managing for Productivity in Nursing*. Rockville: Aspen.
- Sandhu, B.K., Kérouac, S., Duquette, A. & Truchon, S. (1991). Nursing Assignment Patterns and Patient Outcomes. Accepted for Publication in the *Canadian Journal of Nursing Administration*.
- Steers, R. & Stone, T. (1982). Organisation Exit. In K. Rowland & G. Ferries (Eds.), *Personnel Management* (pp. 461-502). Boston: Allyn and Bacon.
- Wilson, H.S. (1985). *Research in Nursing*. Menlo Park: Addison-Wesley.
- Yin, R.K. (1988). *Case Study Research: Design and Methods*. Beverly Hills: Sage.

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RÉSUMÉ

Étude de cas d'un mode de prestation des soins infirmiers

Influencés par des forces d'ordre social, économique et professionnel, plusieurs modes de prestation des soins sont apparus au cours des dernières années. Comment ces modes de prestation sont-ils appliqués dans le contexte québécois francophone? Cette étude descriptive vise une exploration intensive des variables liées à l'application d'un mode de prestation des soins infirmiers dans une unité d'un centre hospitalier de la région de Montréal. Appuyées par un cadre de référence (Munson & Clinton, 1979), 29 variables, regroupées selon trois ensembles, ont été étudiées. Les instruments de recherche ont été choisis, traduits, adaptés ou élaborés à partir des écrits consultés. L'analyse des données montre que le mode d'organisation identifié s'apparente au système modulaire. Les caractéristiques des bénéficiaires, celles du personnel et de l'organisation exercent une influence marquée sur la prestation des soins infirmiers, en particulier la composition de l'équipe de soins, l'affectation du personnel, la coordination, la continuité et l'imputabilité des soins eux-mêmes. Enfin, des indices d'absentéisme et de roulement du personnel furent aussi captés. Cette étude mène à une meilleure compréhension des multiples forces qui agissent sur le mode de prestation des soins infirmiers.

ÉTAT EMOTIONNEL DES MERES ET COMPORTEMENT DE L'ENFANT LORS D'UNE CHIRURGIE MINEURE

Jocelyne Tourigny

Les parents, lors de l'hospitalisation de leur enfant pour une chirurgie, doivent assumer leurs propres craintes et tenter également de réduire celles de leur enfant. Dans le but de faciliter cette expérience, des moyens tels que le court séjour et les programmes de préparation à la chirurgie se sont avérés efficaces dans la réduction des effets néfastes de l'hospitalisation sur l'enfant et ses parents (Faust & Melamed, 1984; Wolfer & Visintainer, 1979).

Cependant, dans certains hôpitaux, l'enfant est encore hospitalisé durant deux ou trois jours pour une chirurgie mineure ou, s'il est admis en centre de jour, lui et ses parents ne bénéficient pas d'un programme de préparation à la chirurgie. Dans de tels milieux, les parents rapportent du stress, de l'anxiété, de l'insatisfaction alors que leur enfant adopte des comportements très négatifs. Bien plus, les résultats contradictoires obtenus par les chercheurs sur la relation entre l'anxiété de la mère et le comportement de détresse de l'enfant justifient amplement l'étude de ce phénomène (Hannallah & Rosales, 1983; Johnston et al., 1988; Klorman et al., 1979; Venham et al., 1978).

La théorie de l'émotion de Plutchik (1984) a servi de cadre théorique pour la formulation des questions de recherche et le choix des instruments de mesure. Selon cette théorie, l'expérience émotionnelle se définit comme étant une représentation consciente de changements survenant en relation à une situation qui suscite des émotions. A ce titre, les émotions servent également de régulateurs sociaux et se manifestent surtout lors du processus appelé "processus de référence sociale" (social referencing). Ce processus consiste en une tendance, pour des personnes de n'importe quel âge, de tirer leur information émotionnelle d'une personne significative dans leur environnement et d'utiliser cette information pour comprendre et faire face à un événement (Klennert et al., 1983). La présence de ce processus est particulièrement notable chez l'enfant car ce sont les parents qui servent de ressource lors de situations provoquant des émotions telles la tristesse, la joie, la peur et même l'anxiété.

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Dans cette recherche, les émotions du type peur/anxiété ont été étudiées tant au plan de l'auto-rapport des mères que celui de l'observation du comportement de l'enfant. De plus, le concept de douleur a été retenu chez l'enfant en raison de son lien potentiel étroit avec une chirurgie et de la difficulté d'identifier séparément ces trois émotions. Katz et al. (1980) suggèrent d'ailleurs d'étudier ces trois concepts sous le nom de "comportement de détresse".

Les objectifs de cette étude descriptive corrélative sont de: 1) décrire l'intensité des réactions émotionnelles chez la mère et chez son enfant hospitalisé pour une chirurgie mineure sans avoir reçu au préalable de préparation systématique 2) vérifier la relation entre l'état émotionnel de la mère et le comportement de l'enfant.

Questions de recherche

1. Quel est le niveau d'anxiété-peur exprimé par les mères avant et pendant la chirurgie de leur enfant?
2. Quelles sont les réactions d'anxiété-peur-douleur démontrées par l'enfant avant et après la chirurgie?
3. Y a-t-il une relation entre l'anxiété-peur des mères et l'anxiété-peur-douleur de l'enfant?

Recension des écrits

Réactions des parents

Plusieurs études démontrent que les parents sont perturbés lors de l'hospitalisation ou de la chirurgie de leur enfant. Que ce soit pendant une séance d'immunisation (Broome & Endsley, 1989a, b), lors d'une visite chez le dentiste (Wright & Alpern, 1971) ou avant la chirurgie de leur enfant (Meng, 1980) ils démontrent généralement un niveau modéré ou élevé d'anxiété situationnelle sur l'échelle d'anxiété STAI-A (Spielberger et al., 1970). Caty et al. (1989) se sont intéressées aux réactions émotives des mères, décrites par les mères elles-mêmes en termes d'anxiété ou de peur, alors que d'autres auteurs se sont penchés sur les effets de ces réactions sur le comportement de l'enfant (Fradet et al., 1990; Jay et al., 1983; Meng, 1980; Skipper, 1966).

Réactions des enfants

Chez l'enfant hospitalisé, la séparation des parents, la perte de contrôle de son environnement, l'atteinte corporelle et la douleur peuvent provoquer des réactions d'anxiété ou de peur: rigidité du corps, agressivité verbale ou physique, fuite, cris ou pleurs (Whaley & Wong, 1987). De telles réactions

ont été rapportées à de nombreuses reprises par Jay et al. (1985) et par Vernon et al. (1967) chez des enfants de deux à douze ans lors de procédures médicales ou chirurgicales. Ces réactions varient d'une rigidité ou tension du corps à des réactions très intenses comme les cris, les coups de pied ou la fuite (Melamed et al., 1975; Wolfer & Visintainer, 1975). Toutefois, certaines manifestations peuvent être considérées comme un processus de "coping" dans la recherche d'information, de réconfort ou de contrôle; ex: poser des questions, toucher, demander de l'aide, participer (Catty et al., 1984; Peterson & Toler, 1986).

Relations mère-enfant

La relation entre l'anxiété parentale, particulièrement maternelle, et le comportement de détresse de l'enfant a été étudiée lors de procédures médicales, d'une chirurgie ou d'une visite chez le dentiste. Jay et al. (1983), dans leur étude de 42 enfants cancéreux entre deux et vingt ans devant subir une ponction de la moëlle osseuse, ont obtenu une corrélation positive entre l'anxiété situationnelle et de trait des parents mesurée par le STAI-A et le score de détresse de l'enfant. Plus récemment, Fradet et al. (1990) ont obtenu des résultats similaires avec 196 enfants âgés de trois à dix-sept ans subissant une ponction veineuse pour analyse sanguine.

Shaw et Routh (1982) ont démontré que des enfants de 18 mois et de 5 ans, dont la mère était présente pendant l'examen et l'immunisation, avaient une conduite beaucoup plus négative que les enfants dont la mère était absente. Ces auteurs attribuent ce résultat au fait que l'enfant, en présence de sa mère, exprime davantage ses sentiments ou émotions négatives. Par contre, Broome et Endsley (1989b) n'ont pas trouvé de relation significative entre l'anxiété de 83 mères et la conduite de leur enfant de quatre à six ans lors d'une séance d'immunisation.

Des études menées par des dentistes montrent également des résultats contradictoires; l'anxiété des mères n'est pas toujours reliée au comportement négatif de l'enfant (Johnson, 1971; Klorman et al., 1979; Koenigsberg & Jonnson, 1972; Venham et al., 1978; Wright et al., 1973).

Davies (1984) a établi qu'il y avait une corrélation positive entre l'anxiété rapportée par les mères et les conduites non adaptées de 41 enfants âgés de deux à dix ans admis, sans aucune préparation, pour une chirurgie mineure. Cependant, la majorité des recherches sur la relation entre l'anxiété de la mère et les comportements de détresse de l'enfant lors d'une chirurgie ont été effectuées surtout au moment de l'implantation de programmes de préparation pré-opératoire.

Des mères ayant bénéficié d'une information accrue et d'un soutien émotionnel offerts par une infirmière spécialisée ont rapporté être plus satis-

faites de l'expérience et avoir eu moins de difficulté à aider leur enfant comparativement aux mères sans information ni soutien, alors que leurs enfants démontraient un niveau de stress moins élevé (Skipper & Leonard, 1968).

Johnston et al. (1988) se sont intéressés à l'influence de la présence des parents lors de l'induction à l'anesthésie de l'enfant. Dans cette étude, les peurs de 134 parents, relatives à l'opération, étaient en étroite relation avec les peurs de l'enfant dans la salle d'attente, sa conduite pendant l'induction et une semaine après la chirurgie. De plus, les enfants avec des parents très anxieux ayant assisté à l'induction ont démontré un plus haut niveau d'anxiété que les enfants avec parents anxieux n'ayant pas assisté à l'induction. Ces résultats diffèrent de ceux obtenus par Hannallah et Rosales (1983) auprès de 50 enfants âgés de un à cinq ans, non prémédiqués, dont les parents étaient présents à l'induction comparativement à un groupe contrôle de 50 enfants sans parents présents. Dans cette étude, le nombre d'enfants difficiles ou agités était significativement plus bas dans le groupe expérimental dont les parents étaient présents.

Facteurs d'influence

Outre l'information et le soutien reçus par les mères, plusieurs autres facteurs ont été mis en cause dans les réactions des parents et le comportement des enfants lors d'une chirurgie ou de procédures médicales. A ce jour, l'âge de l'enfant (Melamed & Siegel, 1975), l'expérience ou une hospitalisation antérieure (Faust & Melamed, 1984; Fradet et al., 1990; Jay et al., 1983), le type de préparation (Melamed et al., 1976) et la cohabitation (Alexander et al., 1986; Wolfer & Visintainer, 1975) ont été identifiés. Tous ces facteurs peuvent influencer autant l'état émotionnel de la mère que le comportement de l'enfant.

La méthode

Echantillon et collecte de données

La présente étude s'est effectuée sur une unité pédiatrique d'un hôpital général desservant une population anglophone et francophone. Cinquante (50) mères et cinquante (50) enfants de deux à dix ans hospitalisés pour une chirurgie mineure ont constitué cet échantillon de convenance. Les critères d'inclusion pour les enfants étaient: être âgé de 2 à 10 ans; subir une chirurgie mineure ne nécessitant pas plus de 3 jours d'hospitalisation; absence de maladie cérébrale ou trouble de comportement; et présence d'un parent. Le consentement de la mère et de l'enfant était obtenu la veille de l'opération, la mère devant être le parent accompagnateur pour chacun des enfants de l'étude.

Les mères décrivaient leurs réactions émotives à deux reprises: la veille et pendant l'opération. Le comportement de leur enfant était observé à cinq moments par la chercheuse: une heure pré-opératoire, au départ pour la salle d'opération, à l'induction, au retour à la chambre et une heure post-retour.

Instruments de mesure

Etat émotionnel des mères. Cette variable était constituée de cinq items dont trois affirmations tirées du vocabulaire des adjectifs affectifs de Gazda et al. (1973): nervosité, tension, appréhension, et deux signes physiologiques d'anxiété/peur de Plutchik (1984): tremblements, palpitations. Ces cinq items étaient mesurés sur une échelle de 0 à 4 indiquant "pas du tout" à "extrêmement" selon une méthode d'auto-évaluation. Le score total de cette variable variait entre 0 et 20. L'utilisation d'indicateurs similaires d'anxiété a été mentionnée par Caty et al. (1989), Derogatis (1983), Fortin et Coutu-Wakulczyk (1985) et Spielberger (1972). Une étude-pilote effectuée auprès de dix mères, cinq de langue anglaise et cinq de langue française, n'a démontré aucune difficulté de compréhension des énoncés.

Comportement de l'enfant. Cette variable est mesurée par l'Echelle des comportements de l'enfant opéré (ECEO). Cet instrument d'observation de l'enfant a été bâti à partir du Global Mood Scale, de Schulman et al. (1962) et complété de l'échelle descriptive de comportements post-opératoires de Knudsen (1975) auquel des indices de douleur tirés du Procedure Behavior Checklist de LeBaron et Zeltzer (1984) ont été ajoutés. Le Global Mood Scale, utilisé à de nombreuses reprises (Johnston, 1983; Schulman et al., 1970; Torrance, 1968; Vernon & Bailey, 1974; Williams, 1980), a démontré une fidélité inter-observateurs moyenne à élevée (.79 à .91), une validité de contenu satisfaisante et une certaine validité convergente (.43 et .47, $p < .05$).

Ce nouvel instrument, l'ECEO, tient compte des manifestations faciales, verbales, affectives et motrices d'un état de détresse émotionnelle dû à l'anxiété, la peur et la douleur éprouvées par l'enfant tout au long du processus opératoire. Le comportement global de l'enfant est évalué sur une échelle de 0 indiquant une - activité constructive, rit ou sourit, échange verbal maximum - à 4 indiquant - aucune activité, pleure ou crie, aucun échange verbal possible -, en période pré-opératoire. En période post-opératoire, l'ECEO varie entre 0 pour - calme, repose - et 4 pour - crie, pleure, inconsolable, essaie de sortir du lit, ne dit pas ou ne sait pas s'il a mal -. Le score total possible est de 20 pour l'ensemble des 5 moments d'observation. La validité de contenu a été établie par trois juges experts en soins infirmiers pédiatriques. La fidélité inter-observateurs, lors de l'étude-pilote de dix enfants, était de 0.90. Les deux autres tests de fidélité ont été effectués au cours de l'étude et ont donné respectivement des coefficients de corrélation de 0.91 et 0.94. Les résultats satisfaisants obtenus avec la version originale du Global Mood

Scale, utilisée en même temps que des évaluations parentales et des échelles d'anxiété (STAI, VAS) démontrent une certaine validité avec corrélation de critère ainsi qu'une validité convergente (Johnston, 1983, Vernon & Bailey, 1974, Williams, 1980).

Autres facteurs. L'âge de l'enfant, la cohabitation, l'expérience antérieure avec une chirurgie et la prémédication ont été documentés et ont été pris en considération dans l'analyse et l'interprétation des résultats.

Résultats

Les tableaux 1 et 2 montrent la répartition des sujets selon l'âge, le sexe, le revenu familial, le niveau d'éducation, le genre d'opération et l'expérience antérieure avec le milieu hospitalier.

Etat émotionnel des mères

La moyenne et l'écart-type du score total d'anxiété-peur des mères la veille et pendant l'opération se retrouvent au tableau 3. La distribution des scores bruts variait entre 0 et 15 avant alors que pendant, ces scores étaient de 0 à 20. Un test de t-student pour échantillons appariés a démontré une différence significative ($p < 0.001$) entre le score total d'anxiété/peur la veille de l'opération et celui pendant l'opération ($t(df\ 49) = 3.77$). Une analyse de variance a démontré que le facteur cohabitation a amené un écart significatif entre le groupe de mères avec cohabitation (19) et le groupe sans cohabitation (31) ($F = 4.07$, $p < .05$).

Comportement de l'enfant

Le score global décrivant le comportement de détresse a été calculé pour chaque enfant en additionnant le score des 5 périodes d'observation. Les enfants ont obtenu un score moyen de 5.56 avec un écart-type de 1.38 et une étendue de 1 à 9. Quarante-six (46) pourcent des enfants ont obtenu un score de 7 et plus, indiquant qu'à au moins deux moments, ils se situaient au niveau 2, net indicateur de détresse. La moyenne a ensuite été calculée aux moments où la mère était présente (1 heure pré-opératoire, au départ pour la salle d'opération, au retour à la chambre et 1 heure post-retour) et celui où elle était absente (à l'induction). Les enfants, quel que soit leur âge, ont obtenu une moyenne plus élevée quand la mère était présente comparative-ment en l'absence de la mère (tableau 4).

Un test de t-student pour échantillons appariés a montré qu'il y avait une différence significative entre les moments où la mère était présente et où elle était absente, et ce à tous les âges ($t(df\ 49) = 5.31$, $p < .001$) (tableau 5). Un examen des scores selon le sexe a également démontré que les garçons, com-

parativement aux filles, étaient plus en détresse en présence de la mère alors qu'à l'inverse, les filles présentaient plus de détresse en l'absence de la mère.

Le pouls des enfants a été enregistré à différentes reprises; il était plus élevé lors de la période d'induction à l'anesthésie, période s'étendant de l'arrivée dans la salle d'opération jusqu'au début des substances anesthésiantes, qu'en période pré et post-opératoire (figure 1).

Tableau 1

Répartition des mères selon l'âge, le revenu familial, le niveau d'éducation et l'expérience antérieure avec le milieu hospitalier.

Caractéristiques	N=50	%
Age		
-18 ans	1	2
19-29	19	38
30-39	26	52
40-49	2	4
pas de réponse	<u>2</u>	<u>4</u>
	50	100.0
Revenu familial		
11-20,000	4	8
21-30,000	10	20
31-40,000	9	18
41-60,000	14	28
60,000 +	6	12
pas de réponse	<u>7</u>	<u>14</u>
	50	100.0
Niveau d'éducation		
Primaire	7	14
Secondaire	20	40
Collégial	18	36
Universitaire	3	6
Pas de réponse	<u>2</u>	<u>4</u>
	50	100.0
Expérience antérieure		
Oui	11	22
Non	<u>39</u>	<u>78</u>
	50	100.0

Tableau 2

Répartition des enfants selon l'âge, le sexe, le genre d'opération, l'expérience antérieure avec une chirurgie.

Caractéristiques	N=50	%
Age		
2-3 ans	13	26
4-5 ans	20	40
6-8 ans	15	30
9-10 ans	<u>2</u>	<u>4</u>
	50	100.0
Sexe		
Masculin	25	50
Féminin	<u>25</u>	<u>50</u>
	50	100.0
Genre d'opération		
Adénoïdectomie, amygdalectomie	38	76
Circoncision, cure d'hernie, hydrocélectomie, orchidopexie	<u>12</u>	<u>24</u>
	50	100.0
Expérience antérieure		
Oui	10	20
Non	<u>40</u>	<u>80</u>
	50	100.0

Tableau 3

Moyenne et écart-type du score total d'anxiété-peur des mères la veille et pendant l'opération.

	<u>X</u>	SD	t dl.49
La veille de l'opération	9.680	4.09	3.77*
Pendant l'opération	12.360	6.11	

* $p < 0.001$

Tableau 4

Score moyen de détresse de l'enfant selon l'âge et la présence ou non de la mère.

Age	Mère non présente (1 moment)	Mère présente (4 moments)
2-3 ans	0.38	1.92
4-5 ans	0.30	0.95
6-8 ans	0.20	1.33
9-10 ans	0.0	1.00

Tableau 5

Comparaison des moyennes et écart-types du score total de détresse des enfants selon la présence ou l'absence de la mère.

	<u>X</u>	SD	t dl.49
Mère présente (4 moments)	2.32	1.16	5.31*
Mère absente (1 moment)	1.28	0.53	

* $p < 0.001$

Tableau 6

Score total de détresse de l'enfant avec ou sans cohabitation.

Caractéristiques	n	X	t	dl	p
Avec cohabitation	19	6.052	2.03	48	.048
Sans cohabitation	31	5.258			

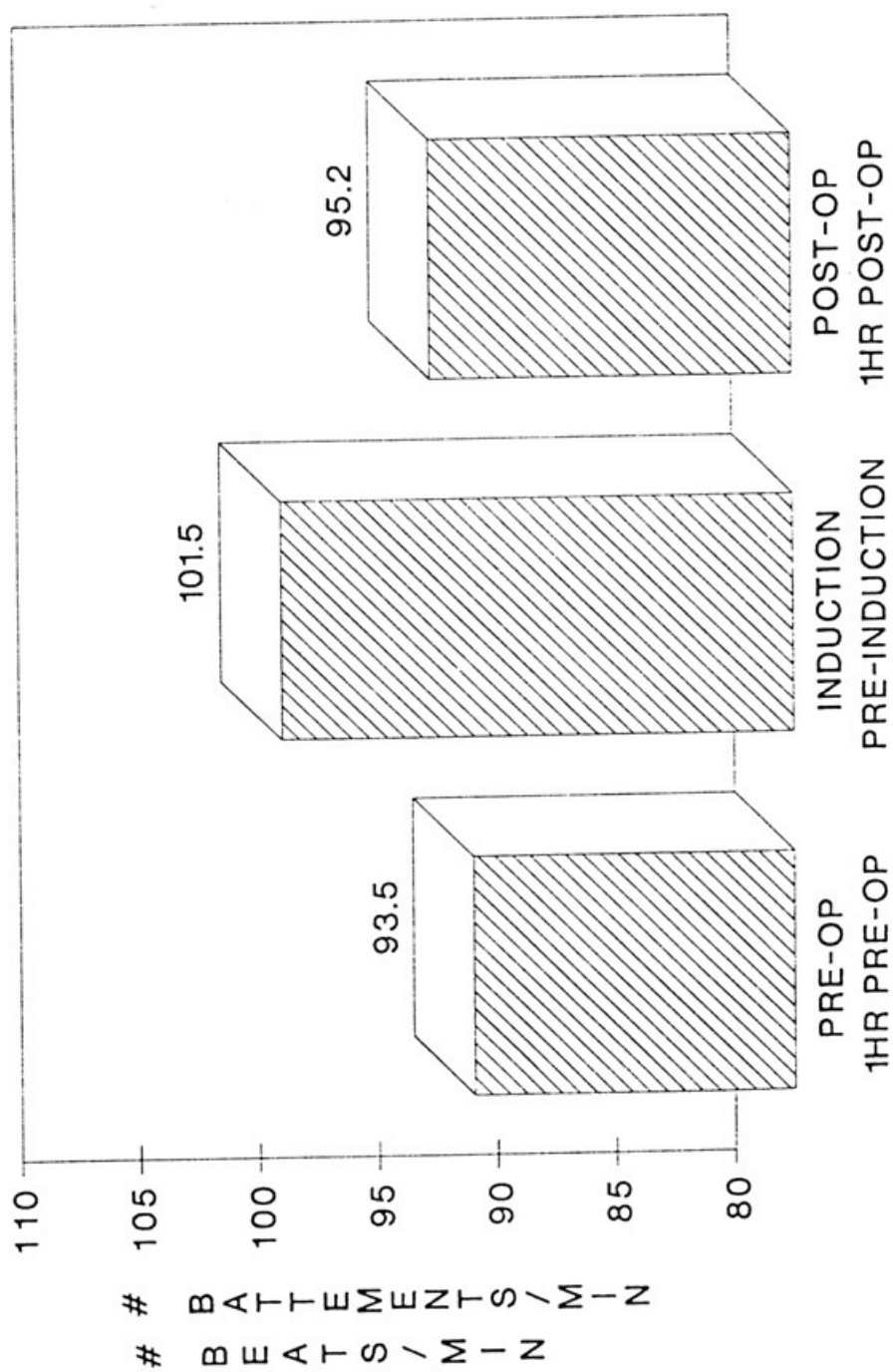


Figure 1
Pouls moyen des enfants à trois moments

La cohabitation semble influencer le score de détresse des enfants dans le sens que ceux dont la mère a cohabité au moins une nuit ont démontré significativement plus de détresse émotionnelle que ceux sans cohabitation (tableau 6).

Ni l'expérience antérieure avec une chirurgie, ni la prémédication n'ont affecté de manière significative le score total de détresse de l'enfant.

Relation mère-enfant

Un test de corrélation r de Pearson a démontré une corrélation positive légère entre le score d'anxiété/peur des mères pendant l'opération et le score d'anxiété/peur/douleur des enfants lorsque la mère était présente ($r=.28$, $p<.05$). Une relation significative a également été établie entre le score total de détresse de l'enfant et son score aux moments où la mère était présente ($r=.81$ $p<.01$).

Discussion

Les mères de cette étude ayant une moyenne d'anxiété/peur au-dessus de 2.00, étaient émotionnellement perturbées. Ces résultats coïncident avec ceux obtenus dans les études de Meng (1980) et de Fradet (1990). Ce niveau d'anxiété/peur était beaucoup plus élevé pendant la chirurgie que la veille de la chirurgie. Toutefois, ces résultats diffèrent de ceux de Skipper (1966) où le niveau d'anxiété/peur des mères était sensiblement le même aux deux moments, sauf pour les mères ayant reçu beaucoup d'information du médecin; en effet, ces mères avouaient avoir été plus craintives pendant la chirurgie de l'enfant.

Dans cette étude, la cohabitation a été un facteur important de variation dans le niveau d'anxiété/peur des mères. Il faut souligner cependant que seules les mères d'enfants de moins de six ans sont demeurées à l'hôpital. L'inquiétude des mères, reliée à l'âge de l'enfant, et la fatigue occasionnée par cette cohabitation ont pu hausser le score d'anxiété/peur, surtout pendant la chirurgie. Dans l'étude d'Alexander et al. (1986), ce sont les mères qui ne cohabitaient pas qui étaient les plus anxieuses; mais c'était à l'occasion d'une maladie grave et d'un long séjour à l'hôpital.

Cette recherche a démontré qu'au moins 46% des enfants ont démontré un niveau moyen de détresse émotionnelle; celle-ci était plus élevée chez les enfants de deux et trois ans et s'abaissait vers l'âge de six à huit ans, comme dans l'étude de Jay et al. (1983). Par contre, Wolfer et Visintainer (1975) ont rapporté que les enfants démontraient plus de comportements de détresse entre trois et six ans.

Les enfants ont démontré significativement plus de conduites de détresse lorsque la mère était présente. Ces résultats diffèrent de ceux de Broome et Endsley (1989 b), où le comportement des enfants dont la mère était présente pendant la séance d'immunisation était sensiblement la même que celle des enfants dont la mère n'était pas présente. Ils coïncident cependant avec ceux d'Hannallah et Rosales (1983) et ceux de Johnston (1988) lors d'une chirurgie de l'enfant. Est-ce parce que, comme l'affirment Shaw et Routh (1982), l'enfant se sent plus libre d'exprimer ses émotions ou est-il influencé par l'état émotionnel de sa mère? Ou est-ce un processus circulaire, l'enfant et la mère s'influencent mutuellement? En effet, les mères qui cohabitaient étaient plus inquiètes et leur enfant a démontré plus de comportements de détresse.

Cette relation entre l'anxiété/peur des mères et le comportement de détresse des enfants a également été établie par une corrélation positive, tout comme par Davies (1984) et Johnston (1988). Cette corrélation était faible cependant et peut être due à un manque de précision des instruments utilisés. Le fait que les mères, conscientes de l'influence qu'elles peuvent avoir sur leur enfant, essaient de cacher ou réprimer leurs émotions peut aussi avoir affecté la force de la relation.

Implications

Des mères ne bénéficiant pas d'un programme de préparation pré-opératoire étaient perturbées émotionnellement, surtout pendant la chirurgie de leur enfant. Cette période où la mère se retrouve seule, sans information ni soutien semble être la plus pénible pour elle. C'est souvent à cette période que l'infirmière vaque à d'autres occupations et néglige de continuer à informer et à rassurer les parents. Les programmes de préparation à la chirurgie devraient prévoir des interventions spécifiques pour cette période.

La cohabitation est maintenant permise et encouragée dans presque tous les hôpitaux pour réduire les effets néfastes de l'hospitalisation sur l'enfant. Cette cohabitation peut cependant s'avérer difficile pour des parents très peu préparés à faire face à la fatigue, au bruit, au manque d'intimité et surtout aux réactions plus intenses de l'enfant. Les programmes de préparation devraient également tenir compte de ces facteurs et donner aux mères de l'information sur les procédures, surtout celles reliées à l'anesthésie, sur le comportement de leur enfant à l'hôpital et sur les moyens pour l'aider efficacement pendant l'hospitalisation; ces programmes devraient aussi fournir le soutien dont les mères ont besoin aux moments difficiles, comme la période d'attente pendant la chirurgie de l'enfant.

Il faudrait donc orienter la préparation à la chirurgie vers une évaluation et des interventions dirigées vers la mère. En utilisant les ressources des mères

et en les impliquant dans cette préparation, nous pourrions ainsi réduire l'impact émotionnel à la fois sur la mère et sur l'enfant et faciliter l'expérience vécue à l'hôpital.

Il n'y a actuellement pas d'instrument validé en français et destiné à évaluer le comportement d'un enfant tout au long de l'expérience de la chirurgie. Le développement et la validation d'un tel instrument permettrait aux infirmières de l'utiliser afin d'évaluer adéquatement l'effet de la chirurgie sur l'enfant et d'élaborer ensuite des stratégies d'interventions ponctuelles. Cet instrument d'observation sera très utile pour l'évaluation des trottineurs et des enfants d'âge pré-scolaire qui ne peuvent pas toujours rapporter fidèlement ce qu'ils ressentent. D'autres recherches permettront de continuer cette validation et de mesurer l'effet sur l'enfant d'interventions ou de programmes précis.

REFERENCES

- Alexander, D., White, M., Powell, G. (1986). Anxiety of non-rooming in patients of hospitalized children. *Children's Health Care*, 15(1), 14-20.
- Broome, M.E., Endsley, R.C. (1989a). Parent and child behavior during immunization. *Pain*, 37, 85-92.
- Broome, M.E., Endsley, R.C. (1989b). Maternal presence childrearing practices and children's response to an injection. *Research in Nursing and Health*, 12(4), 229-235.
- Caty, S., Ellerton, M.L., Ritchie, J.A. (1984). Coping in hospitalized children: An analysis of published case studies. *Nursing Research*, 33, 277-282.
- Caty, S., Ritchie, J.A., Ellerton, M.L. (1989). Helping hospitalized pre-schoolers manage stressful situations: The mother's role. *Children's Health Care*, 18(4), 202-209.
- Davies, C. (1984). Mother's anxiety may increase child's distress. *Nursing Mirror*, 158(18), 30-31.
- Derogatis, L.D. (1983). *SCL-90-R. Administration, Scoring and Procedures Manual-II*. Towson, MD: Clinical Psychometric Research.
- Faust, J., Melamed, B.G. (1984). Influence of arousal, previous experience, and age on surgery preparation of same day surgery and in hospital pediatric patients. *Journal of Consulting and Clinical Psychology*, 54, 359-365.
- Fortin, F., Coutu-Wakulczyk, G. (1985). Validation et normalisation d'une mesure de santé mentale: Le SCL-90-R. Rapport final. Recherche subventionnée par le Conseil québécois de la recherche sociale. RS 787S83.
- Fradet, C., McGrath, P.J., Kay, J., Adams, S., Lupe, B. (1990). A prospective survey of reactions to blood tests by children and adolescents. *Pain*, 40, 53-60.
- Gazda, G.M., Walters, R.P., Childers, W.C. (1973). *Human relations development. A manual for Health Sciences*. Boston: Allyn and Bacon Inc.
- Hannallah, R.S., Rosales, J.K. (1983). Experience with parents' presence during anaesthesia induction in children. *Canadian Anesthesiology Sciences Journal*, 30(3), 286-289.
- Jay, S.M., Ozolins, M., Elliott, C., Caldwell, S. (1983). Assessment of children's distress during painful medical procedures. *Health Psychology*, 2, 133-147.
- Jay, S.M., Elliott, C.H., Ozolins, M., Olson, R.A., Pruitt, S.A. (1985). Behavioral management of children's distress during painful medical procedures. *Behaviour Research and Therapy*, 23, 513-520.
- Johnson, R. (1971). Maternal influence on child behavior in the dental setting. *Psychiatry in Medicine*, 2, 221-228.
- Johnston, C. (1983). Preparing children for surgery. *Canadian Operating Room Nursing Journal*, 1(2), 4-9.
- Johnston, C.C., Bevan, J.C., Haig, M.J., Kimon, V., Tousignant, G. (1988). Parental presence during anesthesia induction. *AORN Journal*, 47(1), 187-194.
- Katz, E.R., Kellerman, J., Siegel, S.E. (1980). Behavioral distress in children with cancer undergoing medical procedures: Developmental considerations. *Journal of Consulting and Clinical Psychology*, 48, 356-365.
- Klinnert, M.D., Campos, J.J., Sorce, J.F., Emde, R.N., Svejda, M. (1983). Emotions as behavior regulators: Social referencing in infancy. Dans: R. Plutchik et H. Kellerman, *Emotion, Theory, research, and experience*, Vol. 2, pp. 57-86. New York: Academic Press.
- Klorman, R., Michael, R., Hilpert, P.L., Sven, O.B. (1979). A further assessment of predictors of the child's behavior in dental treatment. *Journal of Dental Research*, 58(12), 2338-2343.
- Knudsen, K. (1975). Play therapy-preparing the young child for surgery. *Nursing Clinics of North America*, 10(4), 679-687.
- Koenigsberg, S.R., Johnson, R. (1972). Child behavior during sequential dental visits. *Journal of American Dental Association*, 85, 128-135.
- LeBaron, S., Zeltzer, L. (1984). Assessment of acute pain in children and adolescents by self-reports, observer reports, and a behavior checklist. *Journal of Consulting and Clinical Psychology*, 52(5), 729-738.

- Melamed, B.G., Siegel, L.J. (1975). Reduction of anxiety in children facing hospitalization and surgery by use of filmed modeling. *Journal of Consulting and Clinical Psychology*, 43, 511-512.
- Melamed, B.G., Meyer, R., Gee, C., Soulé, L. (1976). The influence of time and type of preparation on children's adjustment to hospitalization. *Journal of Pediatric Psychology*, 1, 31-37.
- Meng, A.L., (1980). Parents' and children's reactions toward impending hospitalization for surgery. *Maternal Child Nursing Journal*, 9(2), 83-98.
- Peterson, L., Toler, S.M. (1986). An information seeking of position in child surgery patients. *Health Psychology*, 5, 343-358.
- Plutchik, R. (1984). Emotions: A general psychoevolutionary theory. Dans: K.R. Scherer et P. Ekman (Eds.), *Approaches to emotions*. Hillsdale, NJ: Erlbaum.
- Schulman, J.L., Vernon, D.T.A., Foley, J.M., Sipowicz, R.R., Back, M.A. (1962). *Field foundation project activities*. Children's Memorial Hospital Chicago: Systematic Observation Record Form A - Pilot Study A. Appendix B. 48-53(a).
- Schulman, J.L., Kaspar, J.C., Child, D. (1970). Videotape sampling of the child's day in the hospital. *Journal of Pediatrics*, 76(5), 728-731.
- Shaw, E.G., Routh, D.K. (1982). Effect of mother presence on children's reaction to aversive procedures. *Journal of Pediatric Psychology*, 7(1), 33-42.
- Skipper, J.K. (1966). Mothers' distress over their children's hospitalization for tonsillectomy. *Journal of Marriage and the Family*, 28(1), 145-151.
- Skipper, J.K., Leonard, R.C. (1968). Children, stress, and hospitalization: a field experiment. *Journal of Health and Social Behavior*, 9(1), 275-287.
- Spielberger, C.P., Gorsuch, B., Lashene, R.E. (1970). *STAI Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Torrance, J.T. (1968). *Children's reactions to intramuscular injections. A comparative study of needle and jet injections*. Case Western Reserve University, Cleveland, Ohio. (Public Health Service Research Grant).
- Venham, L.L., Bengtson, D., Cipes, M. (1978). Parent's presence and the child's response to dental stress. *Journal of Dentistry for Children*, 45, 37-41.
- Vernon, D.T.A., Bailey, W.C. (1974). The use of motion pictures in the psychological preparation of children for induction of anesthesia. *Anesthesiology*, 40(1), 68-72.
- Vernon, D.T.A., Foley, J.M., Schulman, J.L. (1967). Effects of mother-children separation and birth order on young children's responses to potentially stressful experiences. *Journal of Personality and Social Psychology*, 5, 162-174.
- Whaley, L.F., Wong, D.L. (1987). *Nursing care of infants and children*. St. Louis: C.V. Mosby.
- Williams, P.D. (1980). Preparation of school-age children for surgery: A program in preventive pediatrics - Philippines. *International Journal of Nursing Studies*, 17, 107-119.
- Wolfer, J.A., Visintainer, M.A. (1975). Pediatric surgical patients' and parents' stress responses and adjustment. *Nursing Research*, 24(4), 244-255.
- Wolfer, J.A., Visintainer, M.A. (1979). Prehospital psychological preparation for tonsillectomy patients: Effects on children's and parents' adjustment. *Pediatrics*, 64(5), 646-655.
- Wright, G.Z., Alpern, G.D. (1971). Variables influencing children's cooperative behavior at the first dental visit. *Journal of Dentistry for Children*, 38, 60-64.
- Wright, G.Z., Alpern, G.D., Leake, J.L. (1973). The modifiability of maternal anxiety as it relates to children's cooperative dental behavior. *Journal of Dentistry for Children*, 40, 265-271.

ABSTRACT

Mother's Emotional State and Child's Behaviour in the Course of Minor Surgery

The objectives of this descriptive correlational study were to measure the degree of fear-anxiety in mothers and in their children who were having minor surgery, and then to verify if there was a relationship between these two variables. Other variables examined were: child's age, rooming-in, premedication and child's experience with surgery.

Fifty (50) mothers described their emotional states both on the day before and during the surgery. Fifty (50) children between the ages of two (2) and ten (10) years old were observed at five different times (one hour pre-operatively, leaving for the OR, pre-induction, coming back to the room and one hour post-operatively). Their behaviours were noted on a new scale, the ECEO: Echelle des comportements de l'enfant opéré. This scale was developed to describe the behaviour of children experiencing fear, anxiety and pain.

Results show that the mother's fear-anxiety score was significantly higher during the surgery than before it ($t_{df.49}=3.77, p<0.001$). Rooming-in significantly affected mothers' emotional states ($F=4.07, p<0.05$). Younger children were more affected than older ones; they also showed more distress when the mother was present ($t_{df.49}=5.31, p<0.001$). Rooming-in contributed significantly to the child's distress score; children whose mother roomed-in at least one night showed more distress behaviours than children whose mothers did not room-in ($t_{df.48}=2.03, p<0.05$). A correlation was found between the degree of mothers' fear-anxiety and the children's fear-anxiety-pain score or distress behaviours ($r=.28, p<0.05$). A strong relationship was established between the total distress score of the child and his or her score when the mother was present ($r=.81, p<0.01$).

These results support the theory of social referencing: the child is influenced greatly by the mother's emotional state and he refers to her for the interpretation of events provoking anxiety. Therefore, nurses should inform and support mothers, especially those who are rooming-in; they should also make more use of parents in the preparation and the management of the child for surgery. The development and validation of an instrument measuring fear-anxiety-pain in younger children will facilitate evaluation of the effect of surgery or other procedures on the child, and the planning adequate interventions.

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