

***THE CANADIAN JOURNAL
OF
NURSING RESEARCH***

Fall/Automne 1993 Vol. 25 No. 3

***REVUE CANADIENNE
DE RECHERCHE
EN SCIENCES INFIRMIÈRES***

McGill

The Canadian Journal of Nursing Research/Revue canadienne de recherche en sciences infirmière is published quarterly by the School of Nursing, McGill University, 3506 University Street, Montreal, Quebec, H3A 2A7. Letters regarding subscriptions, changes of address and other business matters should be sent to the Circulation Manager.

SUBSCRIPTION RATES: Institutions (including hospitals, schools, libraries and agencies): \$85/one year. Individual subscriptions: \$40/one year; \$77/two years. Students \$36/one year. Cheques payable to McGill University.

ADVERTISEMENTS: Full-page display \$250; half-page display \$125; quarter-page display \$75; line display (15 words or less) \$35.

BACK ISSUES: Available at \$20/copy or \$75/year. Xerox copies are available at a minimum of \$10.00 an article.

ABONNEMENTS: Institutions (ce qui comprend les hôpitaux, les écoles, les bibliothèques et les agences): 85\$ pour une année. Abonnements individuels: 40\$ pour une année; 77\$ pour deux ans. Étudiants: 36\$ pour une année. Les chèques à l'ordre de Université McGill.

ANNONCES: 250\$ la page; 125\$ la demi-page; 75\$ quart de page; 35\$ par ligne (15 mots ou moins)

ANCIENS NUMÉROS: 20\$ le numéro ou 75\$ par année. On peut se procurer les photocopies d'articles pour un minimum de \$10.00 par article.

This issue has been supported by a SSHRC (441-88-0104) grant.

Nous avons reçu les subventions du CRSHC (441-88-0104) pour ce numéro.

ISSN 0844-5621

The Canadian Journal of Nursing Research is indexed in:

La Revue canadienne de recherche en sciences infirmières se retrouve dans les Indexes suivants: CINAHL; Health Care Management Studies; Hospital Abstract; International Nursing Index; Nursing Abstracts; Point de repère (1988–present)

Dépot légal – 3^e trimestre 1993; Bibliothèque Nationale du Québec

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Typography: Kate McDonnell

The Canadian Journal of Nursing Research
Revue canadienne de recherche en sciences infirmières

Volume 25, No. 3

Fall/Automne 1993

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LOOK WHAT'S COMING TO THE CANADIAN JOURNAL OF NURSING RESEARCH!

The Canadian Journal of Nursing Research is pleased to announce a new section entitled **Focus: Research and Issues**. Starting with the 1994 Fall issue (vol. 26, no. 3), our section editors will take their turn as a guest editor for articles featuring an important nursing topic. This section will lend added depth to the diverse subject matter that we currently enjoy in each issue.

Over the coming months other sections will be introduced periodically: **DISCOURSE**, for critical thoughts on substantive issues; **BRIEFS**, for research reports and commentaries; **PLAUDITS AND GRIPES**, for letters to the editor; **DESIGNER'S CORNER**, for tools and techniques required to build knowledge; **HAPPENINGS**, for reports on innovative research and clinical programs; **BOOK REVIEWS**; and **PUBLICITY** for announcements of new positions, career opportunities, conferences, and so on.

This broadened format will provide a more comprehensive, up-to-date coverage of issues and concerns pertinent to the development of nursing. Your comments, reflections, news items, and manuscripts will make **The Canadian Journal of Nursing Research** a truly Canadian voice for nursing research. We invite submissions for any of these sections.

UPCOMING FOCUS ISSUES

Coping and Adaptation

Guest Editor: Dr. Judith Ritchie

Submission Deadline: June 15, 1994

To appear: Fall 1994 (vol. 26, no. 3)

Women's Health

Guest Editor: Dr. Ellen Hodnett

Submission Deadline: September 15, 1994

To appear: Winter 1994 (vol. 26, no. 4)

DU NOUVEAU À LA REVUE CANADIENNE DE RECHERCHE EN SCIENCES INFIRMIÈRES!

La rédaction de la *Revue canadienne de recherche en sciences infirmières* est heureuse de vous annoncer la création d'une nouvelle rubrique, intitulée : **Le Point : recherche et actualité**. Dès le numéro d'automne 1994 (vol. 26, n° 3), nos chroniqueurs prendront alternativement la parole en tant que rédacteurs invités sur un sujet d'importance touchant les soins infirmiers. Cette nouvelle rubrique permettra d'approfondir, pour le plus grand plaisir des lecteurs, les nombreux sujets abordés dans chacun des numéros de la revue.

Au cours des mois à venir, d'autres rubriques viendront périodiquement étoffer la publication : **DISCOURS** portera un regard critique sur des questions d'envergure; **EN BREF** s'intéressera aux rapports de recherches et à leurs commentaires; **ÉLOGES ET REPROCHES** recevra le courrier des lecteurs; **LE COIN DU CONCEPTEUR** recueillera outils et techniques d'apprentissage; **L'ÉVÉNEMENT** mettra en lumière les recherches et les programmes cliniques novateurs; **PUBLICATIONS**, fera le compte rendu de livres récents; enfin, **PUBLICITÉ** annoncera les nouvelles nominations, les possibilités de carrière, les conférences, etc.

Ce format élargi permettra une couverture plus exhaustive et plus à jour des questions et défis touchant le développement des sciences infirmières. Vos commentaires, réflexions, nouvelles et manuscrits donneront à la *Revue canadienne de recherche en sciences infirmières* un ton résolument canadien dans le concert des publications sur les sciences infirmières. Nous vous invitons à contribuer à l'une ou l'autre des rubriques.

PROCHAINS NUMÉROS

Soutien et adaptation

rédactrice invitée : Dr^e Judith Ritchie
date-butoir des soumissions : 15 juin 1994
publication : automne 1994 (vol. 26, n° 3)

Les femmes et leur santé

rédactrice invitée : Dr^e Ellen Hodnett
date-butoir des soumissions : 15 septembre 1994
publication : hiver 1994 (vol. 26, n° 4)

CALL FOR PAPERS

COPING

Fall 1994 (vol. 26, no 3)

We invite submissions of empirical reports on individuals and families coping with acute and chronic illnesses; the social support processes involved in coping; and the outcomes of coping behaviors or nursing interventions that enable coping and adaptation.

Guest Editor: Dr. Judith Ritchie

Submission Deadline: June 15, 1994

Please send manuscripts to:

The Editor,

Canadian Journal of Nursing Research,

McGill University School of Nursing,

3506 University Ave., Montreal, Qc H3A 2A7

CALL FOR PAPERS

WOMEN'S HEALTH

Winter 1994 (vol. 26, no 4)

We invite submissions of manuscripts in the field of health. Topics include but are not restricted to reproduction and gynecological health, breast cancer, abuse and assault, cultural variations, child care, aging, health promotion and illness prevention. While theoretical and literature review papers may be submitted, priority will be given to reports and research projects.

Guest Editor: Dr. Ellen Hodnett

Submission Deadline: September 15, 1994

Please send manuscripts to:

The Editor,

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McGill University School of Nursing,

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LE SOUTIEN

publication : automne 1994 (vol. 26, n° 3)

Nous vous invitons à soumettre des rapports empiriques touchant des personnes et des familles aux prises avec des affections chroniques aiguës; les processus sociaux de soutien; et les conséquences de comportements de soutien ou des interventions en soins infirmiers qui permettent le soutien et l'adaptation.

Rédactrice invitée : D^{re} Judith Ritchie

date-butoir des soumissions: 15 juin 1994

Prière de faire parvenir les manuscrits à la :

Rédactrice en chef

Revue canadienne de recherche en sciences infirmières

École des sciences infirmières de l'Université McGill

3506, rue University, Montréal (Québec) H3A 2A7

LES FEMMES ET LEUR SANTÉ

publication : hiver 1994 (vol. 26, n° 4)

Nous vous invitons à soumettre des manuscrits portant sur le domaine de la santé. Sujets proposés (non limitatifs): techniques de reproduction et santé gynécologique, cancer du sein, abus et agressions, variantes culturelles, puériculture, vieillesse, promotion de la santé et prévention des maladies. Bien que les textes théoriques et les critiques de documents soient appréciés, la priorité sera donnée aux rapports et aux projets de recherche.

Rédactrice invitée : D^{re} Judith Ritchie

date-butoir des soumissions: 15 juin 1994

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FALL EDITORIAL

Mentorship: Bonds that Strengthen Professions

In June, 1993 I travelled to Madrid, Spain to attend Sigma Theta Tau's Sixth International Nursing Research Congress. A principal theme of the opening session was the importance of developing an international network of nurse researchers. Several strategies that ranged from collaborating on research projects to sharing academic expertise and financial resources were proposed. The plans for strengthening nursing's visibility on the international stage were exciting – and the next obvious step in the coming of age of our profession. As I listened, however, I was wondering how these researchers, at the cutting edge of our profession, are paving the way at a more personal level for the career scientists to follow – so that the next generation may fully benefit from their hard won political achievements.

As might be expected at a congress, discussions tended to be general, dangling in the macroscopic field, and falling short of specific actions or personal accounts that might be instructive for those in the audience concerned about getting funded in a recession, developing multidisciplinary projects or, yes, making an impact on national health policies. One presentation that I heard however seemed to get down to basics and, in doing so, underscored the virtues of special relationships in the workplace, specifically, the contribution of mentor-protégé relationships in promoting nursing research.

In an inspirational talk on establishing a clinical nursing research program at the National Institute of Health Hospital, Ms. Gladys Campbell and Dr. Marianne Chulay described how senior nurse researchers and administrators on a multidisciplinary research team helped novice researchers to recognize their own potential for changing clinical policies. They happened to do this by using a research project as the vehicle for developing the scientific capabilities, confidence and political connections of all participants. In the process, they created a core group of proactive and empowered protégés, hooked on research, keen to develop greater methodological expertise and determined to address other clinical questions related to their practice. In helping others to realize their career aspirations, Campbell and Chulay also expanded their own political sphere of influence.

Campbell and Chulay exemplify some of the key characteristics of mentors: nurturer, advisor, educator and protector. Unlike role modelling or

preceptorship, mentorship offers a longlasting, intimate, and mutually beneficial relationship between someone who is wiser, more experienced and politically more powerful, and, someone who is younger, relatively inexperienced but brimming with potential. Although the first recorded reference to a mentor was Odysseus' friend Mentor, who actually was Athena in disguise, female professions such as nursing have not actualized the concept of mentorship to the full extent that male dominated professions have (Jeruchim & Shapiro, 1992). One reason for this may be that female professions generally do not hold political power in the workplace. Thus nurses typically tend to feel uncomfortable advancing a career over which they wield little real authority. Given the paucity of successful women, there also may be a competitive element underlying a mentor-protégé relationship.

Whatever the reasons for failing to evolve in nursing, it is time that we recognize the critical role that mentorship must play in carving out the professional paths of future nurse scientists. One can easily imagine that an upcoming scientist would benefit from the timely mentorship of a supportive professor, an experienced researcher or a powerful administrator at different phases of her or his career. Each phase requires a different set of skills and knowledge and political acumen. Since the destinies of nurse scientists are inextricably linked to research programs and health policy at national and international levels we need to expand our notions of mentorship in these areas so that those who follow may build on the knowledge and experience of those who toiled before. Specifically, young scientists need mentors to master the art of getting grants and learn the artful game of lobbying front and center nursing's political agenda.

Today's political and economic climate further underscores the importance of mentorship for the continued development of the profession. Funding agencies today favor (with good reason) multidisciplinary research teams consisting of members from different health professions, including the politically adroit field of medicine. Serving as principal or co-investigator on these teams will depend in part on who you know and how well connected you are. A protégé who is associated with a well known mentor signifies to the research community that she or he has research potential and should, be given an opportunity to demonstrate it. Thus a mentor with recognized research experience and interdisciplinary connections can boost the fledgling career of a beginning scientist.

In summary, the stuff that nobody likes to talk about, that is, the political pitfalls, the power brokers, the invaluable connections that lead to career opportunities, and that ultimately reflect on the discipline itself, may be revealed within the special sphere of a mentor/protégé relationship. This rela-

tionship arguably is the glue within which the national and international network of scholars and researchers is embedded. For too long nursing's vanguard has forged ahead, the weight of the discipline squarely positioned on a few strong shoulders. In their book *Women, Mentors and Success* (1992), Joan Jeruchim and Pat Shapiro state that successful, career-oriented women, especially in female professions, no longer should feel alone. There is power in numbers, power in the growing presence of a mass of critical thinkers, and power in the help and advice of a few treasured mentors along the way.

Mary Grossman
Assistant Editor

Jeruchim, Joan & Shapiro, Pat (1992). *Women, mentors and success*. Toronto: Random House.

Le parrainage: un lien qui renforce les professions

En juin 1993, je me rendis à Madrid, en Espagne, pour y assister au Sixième congrès international de recherche en sciences infirmières de *Sigma Theta Tau*. Un thème majeur de la séance d'ouverture concernait l'importance de mettre sur pied un réseau international de chercheurs en sciences infirmières. On proposa plusieurs stratégies, allant de la collaboration à des projets de recherche au partage du savoir-faire universitaire, en passant par les ressources financières. Les propositions destinées à accroître la visibilité des sciences infirmières sur le plan international étaient enthousiasmantes et constituent la prochaine étape normale dans l'accession de notre profession à une plus grande maturité. Pendant que j'écoutais, je me pris cependant à songer à la façon dont ces chercheurs de premier plan en sciences infirmières étaient en fait à paver la voie, sur un plan plus personnel, aux futurs scientifiques de carrière, afin que la prochaine génération puisse tirer le plein profit de leurs acquis politiques si durement arrachés.

Comme on pouvait s'y attendre à un congrès, les discussions furent surtout d'ordre général, macrocosmique. Elles n'aboutirent pas en mesures précises et ne donnèrent pas l'occasion d'entendre des récits personnels susceptibles d'intéresser les personnes de l'auditoire qui se demandaient, par exemple, comment trouver des fonds en période de récession, mettre sur pied des projets pluridisciplinaires ou, pourquoi pas, influencer sur les politiques nationales de santé. L'un des exposés auxquels j'assistai sembla cependant cerner les problèmes fondamentaux et mit en relief les avantages de liens spéciaux établis en milieu de travail, en particulier, l'apport d'un lien parrain-stagiaire dans la promotion de la recherche en sciences infirmières.

Dans une brillante présentation concernant la mise en place d'un programme de recherche clinique en sciences infirmières à l'hôpital du *National Institute of Health*, M^{me} Gladys Campbell et la D^{re} Marianne Chulay décrivirent comment des chercheurs et des administrateurs chevronnés en sciences infirmières au sein d'une équipe de recherche pluridisciplinaire aidèrent les chercheurs débutants à se rendre compte de leur capacité à faire modifier les politiques cliniques. C'est en utilisant un projet de recherche comme outil destiné à accroître les capacités scientifiques, la confiance en soi et les relations politiques de tous les membres de l'équipe qu'ils atteignirent cet objectif. Ce faisant, ils rassemblèrent un groupe central de stagiaires proactifs et responsabilisés, passionnés par la recherche, désireux d'améliorer leurs compétences

méthodologiques et déterminés à aborder d'autres questions d'ordre clinique touchant leur profession. En aidant d'autres personnes à réaliser leurs objectifs professionnels, M^{me} Campbell et la D^{re} Chulay étendirent également leur propre sphère d'influence politique.

M^{me} Campbell et la D^{re} Chulay illustrent certaines des caractéristiques clés du parrain, à la fois modèle, conseiller, éducateur et protecteur. Contrairement à l'imitation de rôles ou au préceptorat, le parrainage constitue une relation de longue durée, intime et mutuellement avantageuse entre une personne plus sage, plus aguerrie et politiquement plus puissante, et une autre personne, plus jeune, relativement inexpérimentée mais pleine de potentiel. Bien qu'historiquement la première occurrence consignée de parrainage ait été celle qu'établit Mentor (en réalité Athéna déguisée) avec son ami Ulysse, les professions à forte présence féminine telles que les soins infirmiers n'ont pas vu, selon Jeruchim et Shapiro (1992), se réaliser chez elles l'idée du parrainage avec la même intensité que les professions dominées par les hommes. L'une des raisons de cet état de choses est peut-être que les membres de professions à forte présence féminine ne détiennent généralement pas de pouvoir politique dans le milieu de travail. Par conséquent, les infirmières se sentent généralement mal à l'aise à l'idée de gravir les échelons d'une carrière où elles exerceront peu de pouvoir réel. Étant donné le petit nombre de femmes qui réussissent, il se peut également qu'entre en jeu un facteur de compétition sous-tendant la relation parrain-stagiaire.

Quelles que soient les raisons qui grèvent l'avancement en sciences infirmières, il est temps de reconnaître le rôle central que doit jouer le parrainage dans la promotion professionnelle des futurs chercheurs en sciences infirmières. On imagine facilement quels avantages un scientifique en devenir pourrait tirer, aux différentes phases de sa carrière, du parrainage opportun d'un professeur qui l'épaula, d'un chercheur expérimenté ou d'un administrateur influent. Chaque échelon professionnel nécessite la mise en jeu de compétences, de connaissances et d'un flair politique différents. Le destin des chercheurs en sciences infirmières étant inextricablement lié aux programmes de recherche et aux politiques de santé de niveau national et international, il est nécessaire d'élargir l'idée qu'on se fait du parrainage de façon que ceux qui suivront profitent des connaissances et de l'expérience acquises par le labeur de leur prédécesseurs. En particulier, les jeunes scientifiques ont besoin d'un parrain pour maîtriser l'art d'obtenir des bourses et le jeu subtil des pressions sous tous azimuts sur les responsables de l'ordre du jour politique des professions des sciences infirmières.

Le climat politique et économique d'aujourd'hui met particulièrement en relief l'importance du parrainage pour le développement continu de la profes-

sion. Aujourd'hui, les organismes de financement privilégient (avec raison) les équipes de recherches pluridisciplinaires composées de membres des différentes professions médicales, dont des représentants de cette discipline politiquement habile qu'est la médecine. Être nommé directeur de recherche ou chercheur au sein de telles équipes est tributaire, du moins en partie, des relations que l'on possède et des ficelles que l'on peut tirer. Le fait pour un stagiaire d'être sous l'aile protectrice d'un parrain connu indique à la communauté des chercheurs qu'il possède un potentiel et qu'on devrait lui donner la possibilité de le démontrer. C'est ainsi qu'un parrain, fort d'une expérience de chercheur reconnue et de relations interdisciplinaires, peut favoriser la carrière d'un chercheur débutant.

En résumé, on peut dire que toutes ces choses dont on évite de parler, ces embûches politiques, ces éminences grises, ces inestimables relations qui favorisent les carrières et qui se reflètent en fin de compte sur la discipline elle-même, peuvent être mises au jour au sein de cette sphère privilégiée que forme la relation parrain-stagiaire. On peut dire que cette relation est partie intégrante du réseau national et international des chercheurs et des spécialistes. Depuis trop longtemps, l'avant-garde des sciences infirmières fonce droit devant elle, tout le poids de la profession ne reposant que sur quelques épaules solides. Dans leur livre, *Women, Mentors and Success*, Joan Jeruchim et Pat Shapiro affirment que les femmes axées sur leur carrière et qui réussissent, en particulier dans les professions à forte présence féminine, n'ont plus à se sentir seules. Il y a un réel pouvoir dans le nombre, dans la présence croissante d'une masse critique de penseurs et dans l'aide et les conseils d'un petit nombre de parrains et de marraines qui cheminent à leurs côtés.

Mary Grossman
Rédactrice adjointe

Jeruchim, Joan et Shapiro, Pat (1992), *Women, Mentors and Success*, Toronto, Random House.

Formative Evaluation: Implementation of Primary Nursing

Denise Alcock, Jocelyn Lawrence, Jane Goodman,
and Jacqueline Ellis

Les infirmiers(ières) ont initié le changement d'un système de soins global vers un système de soins intégral. Les effets du changement ont été mesurés selon les critères suivants: la perception des infirmiers(ières) de leur environnement de travail; la communication et la collaboration avec les autres professionnels(les) de la santé; la satisfaction des parents, la qualité des soins et les activités directes ou indirectes de l'infirmier(ière). Les critères ont été mesurés avant l'implantation, six mois et douze mois après l'implantation. Les résultats ont guidé le choix des actions à entreprendre pour faciliter le changement.

Staff nurses initiated the change from a total patient care to a primary nursing delivery system. The effects of the change were measured on the following: nurses' perceptions of their work environment; communication and collaboration with other health care professionals; parent satisfaction and quality of care provided, and direct and indirect nursing activities. The measurements were taken prior to, six months and twelve months post implementation. Action was taken based on the findings of this evaluation process which enabled the facilitation of the change process.

A task force to study the implications of changing from a total patient care nursing delivery system to a primary nursing system was initiated by a core group of Neonatal Intensive Care Unit (NICU) nurses at the Children's Hospital of Eastern Ontario (CHEO) with the approval of nursing administration. In the total patient care system, the team leader manages nurse-patient assignments, reports, rounds and referrals, and coordinates care. The NICU nurses involved in the task force were concerned that the system does not promote optimum continuity of care, maximum support for parents, or opportunities for establishing rapport prior to teaching infant care. They also sought greater recognition for their responsibility and accountability as NICU nurses. The nurses wanted to implement a primary nursing system whereby comprehensive, continuous, coordinated, and individualized nursing care is delivered through a primary nurse who has the autonomy, accountability, and authority to act as the chief nurse for her/his patients (Manthey, 1980; Zander, 1985).

The task force grew to include nurses from other areas of the hospital who had an interest in primary nursing. In order to familiarize themselves

Denise Alcock, R.N., Ph.D., is the Director of the School of Nursing and Associate Dean in the Faculty of Health Sciences at the University of Ottawa. Jocelyn Lawrence, R.N., B.Sc.N., is the Nursing Unit Administrator in the NICU at the Children's Hospital of Eastern Ontario. Jane Goodman, R.N., M.H.A., is a Senior Business Analyst at the Children's Hospital of Eastern Ontario. Jacqueline Ellis, R.N., M.Sc.N., is an Assistant Professor in the University of Ottawa School of Nursing

with the theoretical, practical, and research issues pertinent to primary nursing, the group prepared an annotated bibliography of more than 90 articles and books. The entire group supported the recommendation made by the NICU nurses to nursing administration that primary nursing be implemented and monitored to evaluate the change process.

This manuscript provides an overview of the literature that evaluates the primary nursing system, describes briefly the change process adopted, and reports on the formative evaluation of the change process and its usefulness.

Literature Review

Although the literature on primary nursing is extensive, almost 80% is not based on research, and a number of design flaws have been identified in the empirical studies (Rafferty, 1991). These flaws have included differences in implementation and/or definition of primary nursing on comparison units (Alexander, Weisman & Chase, 1981; Babington, 1986; Thomas & Bond, 1991); non reporting of the reliability and validity of measures (La Forme, 1982); absence of pre-implementation measures (Shukla & Turner, 1984); selective application of measures (Kent & Larson, 1983); and inadequate sample size (Reed, 1988). A cost effectiveness study did not take patient acuity levels into account (Marram, Flynn, Abaravich & Carey, 1976).

Thomas and Bond (1991) reviewed the primary nursing research literature that addressed outcome measures, grouping these according to patient and nursing staff outcomes, cost, and structural factors. They concluded that despite the large number of studies, there is little consensus as to whether primary nursing improves outcomes for patients and nurses. This is due in part to the lack of operational definitions and the failure to recognize that the primary nursing concept is multidimensional. For example, Daeffler (1975) found that patients reported fewer omissions in care under the primary nursing mode, but when Shukla and Turner (1984) replicated Daeffler's study controlling for the variable of nurse competence, no statistical difference was found between team and primary nursing care.

McPhail, Pikula, Roberts, Browne and Harper (1990) conducted a randomized crossover trial to compare primary and team nursing systems with respect to nurses' perceptions of their work environment, patient satisfaction with nursing care, nurse absenteeism, and the quality of patient care as perceived by physicians and allied health colleagues. No differences were found, but this may be attributable to the small sample size used in the study. Thomas (1992) found that qualified nurses and nursing auxiliaries in primary nursing wards perceived greater supervisor support, autonomy, physical comfort, and decreased work pressure than did their counterparts in team or functional nursing environments.

Staff turnover rates on primary nursing units have been variously reported as increased (Betz, 1981), unchanged (Wilson & Dawson, 1989), and decreased (Alexander, Weisman & Chase, 1981; La Forme, 1982). Decreased sick leave (La Forme, 1982), decreased absenteeism (Alexander et al, 1981), no differences (Wilson & Dawson, 1989), and increased sick leave (Chavigny & Lewis, 1984) have been reported for nurses on primary nursing units as compared to those on team nursing units.

Overall findings indicate that primary nursing is not more costly than team nursing (Chavigny & Lewis, 1984; Marram et al, 1976; Wilson & Dawson, 1989). Wolf, Lesic and Leak (1986) controlled for the acuity level and found a lower cost per patient day on a primary as compared to a team nursing unit.

No study was found that addressed inter-professional collaboration and communication as it relates to primary nursing, although this is an important aspect of the multidisciplinary health team delivery of care.

Purpose

The purposes of this study were as follows:

1. To examine the effects of changing from a total patient care nursing delivery system to a primary nursing system at CHEO by monitoring the following:
 - 1.1 The nurses' perceptions of their work involvement, peer cohesion, supervisor support, autonomy, task orientation, work pressure, clarity, control, innovation, and physical comfort;
 - 1.2 The physicians' perceptions of nurse-physician communication and collaboration;
 - 1.3 The allied health professionals' perceptions of nurse-allied health communication and collaboration;
 - 1.4 The parents' perceptions of nurse-parent communication and of care provided;
 - 1.5 The proportion of time nurses spend on direct and indirect patient care activities;
 - 1.6 The extent to which the objectives of the General Nursing Audit are met.
2. To implement changes in practice based on the results of the evaluation.

The Change Process

The NICU nurses on the task force who perceived themselves as the agents of change reviewed some of the related literature (Bennis, Benne, Chin & Core, 1976; Brooten, Hayman & Naylor, 1978; Olson, 1979; Reinkemeyer, 1970). The three phases of Lewin's change theory (Olson, 1979) were implemented: *unfreezing*, *moving* and *refreezing*.

During the first phase in the change process, *unfreezing*, the NICU nurses identified problems in the total patient care system and built an awareness of the need for change. In order to choose the most appropriate nursing delivery system, it was essential that a critical mass of nurses on the unit share the same beliefs and values pertaining to nursing practice. Therefore, the initial meetings centered on discussions around personal philosophies of nursing and value clarification. The nursing administration supported decentralized decision making and the nurses became more outspoken in their requests for input into decision making. Ideally the assistant head nurses would become facilitators and consultants and the staff nurses would assume responsibility and accountability for the patient care rendered. Nurses wanted to provide comprehensive care and expressed concern that the total patient care system contributed to fragmented care, parent teaching, and support. The driving forces that would support primary nursing as well as the restraining forces that would resist its implementation were examined.

During the next phase, *moving*, plans were made to implement primary nursing. This was the longest and most active phase of the process. A nurse with expertise in primary nursing was consulted. Binders containing articles on the subject were made available, and literature review discussions helped the NICU nurses understand the concepts of primary nursing and the roles and responsibilities of primary and associate nurses. Inservices and workshops were held for the staff. Considerable time was spent addressing the mechanics of the new system, such as the assignment of a primary and an associate nurse along with any potential problems. Communication is key to the success of primary nursing. Information exchange processes were reviewed in detail and revised or developed as necessary. Care plans based on nursing diagnosis were developed, card indexes were revised, nurse-directed bedside rounds and patient care conferences were instituted, discharge planning tools were updated, and a centrally located display was mounted of the primary nurse/patient assignments.

After these supporting mechanisms had been integrated into the routine functioning of the unit, primary nursing was implemented. This began a period of *refreezing*, during which time the staff became comfortable in the new system. Primary nursing was internalized and integrated into this unit's approach to nursing.

Method

Design of the Formative Evaluation

Comparison studies across units present difficulties in matching organizational factors, environmental factors, and nurse competencies. The formative evaluation employed in the current study therefore used a before, during, and after implementation design to monitor the effects of changing from a total patient care system to a primary nursing system and to identify problems resulting from the change. This type of design permits the change in nursing system to be examined without the difficulties inherent in comparing across different organizational and structural environments, unit staff, and competency levels. It also helps to identify issues that need to be addressed early in the change process.

Baseline measures were taken prior to the implementation of the primary nursing delivery system, then repeated at six and 12 months post implementation.

Participants

Thirty-one nurses completed the Work Environment Scale at all three testings (pre-, six, and 12 months post implementation). The 12 NICU physicians (neonatologists and consulting specialists) and seven allied health professionals were interviewed for the three repeated measures of the communication and collaboration scale. Thirty-six parents (12 randomly selected parents of neonates present on the NICU during each of the three data collection periods) were interviewed.

Measures

Work Environment Scale. The Work Environment Scale (WES) is comprised of 10 subscales that measure the social climate of a work environment, including: involvement (the extent to which employees are concerned about and committed to their jobs); peer cohesion (the extent to which employees are friendly with and supportive of fellow employees); supervisor support (the extent to which management is supportive of employees and encourages them to be supportive of one another); autonomy (the extent to which employees are encouraged to be self sufficient and make their own decisions); task orientation (the degree to which the pressure of work and time urgency dominate the job milieu); work pressure (the degree to which the press of work and time urgency dominate the work milieu); clarity (how explicitly employees' daily routines, rules, and policies are communicated); control (the extent to which management uses rules and pressures to keep employees under control); innovation (the degree of emphasis on variety, change, and

new approaches); and physical comfort (the extent to which the physical surroundings contribute to a pleasant work environment) (Moos, 1986).

Internal consistencies (Cronbach's alpha) for each of the 10 subscales ranged from .69 to .86. The test-retest reliabilities at a one-month period ranged from .69 to .83. The individual profile stability for 90 people who had not changed work settings was measured 12 months apart and had a mean of .61 (Moos, 1986). A template is provided for scoring this instrument. Both individual subscale scores and group averages can be converted to standard scores using the stated conversion values for the health care work setting. These scores are standardized to a mean of 50 for each subscale. This instrument has been used extensively to monitor the impact of change (Griffin, Alcock, Emmerson & Quintero, 1989; Moos, 1986, p. 18-9).

Communication and collaboration scales. Weiss and Davis (1985) define collaborative practice as a synergistic interaction between nurse and physician that enables the knowledge and skills of both to influence the patient care being provided. The key features of collaboration are: (a) the active and assertive contribution of each party; (b) the receptivity to and respect of each for the other party's contribution; and (c) a negotiating process that builds upon the contributions of both parties to form a new way of conceptualizing the problem. Collaborative practice requires open and clear communication between the parties.

Table 1

Nurse-Physician Communication and Collaboration Interview

1. Nurses are available when I wish to discuss my patients with them.
2. Nurses are knowledgeable about the health care status of their patients.
3. Nurses communicate information about patients clearly.
4. I take the nurses' comments and suggestions into consideration when making treatment decisions.
5. I discuss with the nurses the degree to which I think they should be involved in planning and implementing patient care.
6. I acknowledge to nurses those aspects of health care where they have more expertise than I do.
7. I clarify whether the nurse or I will have the responsibility for discussing different kinds of information with patients.
8. How do you rate nurse-physician communication on NICU?
9. How do you rate nurse-physician collaboration in NICU?

Table 2**Nurse-Allied Health Communication and Collaboration**

1. My patients' nurses are accessible to me.
2. The nurses provide medical information which is useful.
3. The nurses recognize the need for my service.
4. I consider nurses' opinions when developing a treatment plan.
5. I discuss areas of agreement and disagreement with nurses in an effort to develop mutually agreeable health goals.
6. I work toward consensus with nurses regarding the best approach to caring for a patient.
7. How do you rate nurse-allied health professional communication?
8. How do you rate nurse-allied health professional collaboration?

Two interview tools were developed, modelled upon the Collaborative Practice Scales, which are of established validity and reliability (Weiss & Davis, 1985). These were: the nurse-physician communication and collaboration interview (Table 1), and the nurse-allied health communication and collaboration interview (Table 2). Response choices for all but the final two questions were: *always*, *most of the time*, *some of the time* or *never*. The last two questions offered a 6-point Likert scale response choice. Two physicians and two senior nurses who were not study participants examined these tools for face validity. It is a limitation of this study that the reliability and validity of the adapted tools were not established.

Proportion of time nurses spend on direct and indirect patient care activities. Work sampling is a means of measuring and analyzing work activities. It consists of random observations to determine the proportion of predefined elements of work to the total number of observations. The accuracy of the estimate depends on the total number of observations with preset precision limits and confidence levels. The total number of observations was determined using Buffa's (1980, p.632) chart to maintain precision at the 95% confidence level with a $\pm 2.5\%$ error level. Rounds were made at randomly chosen times in the NICU to observe the activities of the nursing staff. The observers were staff not assigned to the NICU, but who were oriented and trained by the nursing department project officer responsible for work sampling studies. Prior to beginning work sampling, sample observations were carried out simultaneously by the trainer and the observer as a routine measure. Observers could proceed with work sampling only after 100% congruence between the trainer and the observer was achieved.

Activities were recorded and coded according to the following definitions: *Direct care*: Any nursing activity performed in physical or communicative contact with the patient or parent; *Indirect care*: Any nursing activity that is performed away from the patient or parent but which is in preparation for or in completion of direct nursing care (e.g. charting, consulting with the physician or another health care professional); *Non-nursing*: Constructive work activities that are not nursing functions (e.g. delivering specimens, stocking shelves); *Non-productive*: Activities not related to nursing or other constructive work activities (e.g. personal time, meal breaks, social interactions). Comparisons were made between the work sampling results taken five months prior to, and seven months after the implementation of primary nursing. It was possible to determine the total amount of time spent on each of the nursing activities.

Nursing audit including parent satisfaction. The Medicus Quality Assurance Audit Tool, which had been in use in the CHEO NICU since early 1984, was used to evaluate the quality of care to infants, and the parents' perceptions of nurse-parent communication and the quality of care provided. The tool was developed by the Medicus Company in conjunction with Rush-Presbyterian/St. Luke's Medical Center in Chicago, Illinois.

The audit tool was used in two ways. Firstly, 12 charts were retrospectively reviewed at each of the three phases: before, during, and after implementation of primary nursing. In order to evaluate the quality of care, the tool measured the degree of compliance with four of the six established standards of care that are routinely audited: (a) the formulation of a nursing care plan; (b) the attendance to the physical needs of patients/parents; (c) the attendance to the non-physical needs (criteria include social, emotional, educational, and hospitality factors) of patients/parents; and (d) the evaluation of the nursing care objectives. A score of 85% compliance was established as the unit goal and a 10% change in the scores was considered to be clinically significant. Secondly, parents' perceptions of nurse-parent communication and the quality of care provided was determined by interviewing 12 parents, using the Medicus Parent Audit Tool during each of the three test periods.

Analysis

The Statistical Package for Social Sciences (SPSS-X) was employed for the MANOVA of the repeated measures of the WES; the paired-comparison t-test on variables demonstrating significant change over time; and the MANOVA of WES with years of nursing experience, years of neonatal nursing experience, and educational backgrounds as covariates. Descriptive statistics were employed on all other measures.

Results

Demographic Data

All nurses participating in this CHEO project were registered nurses with the following group profile: baccalaureate prepared 22%, community college diplomas 40%, hospital school graduates 38%, employed full time 76%, casual or part time nurses 24%, employed in the CHEO NICU for 5 years or more 47%, and 6 years or more experience as an NICU nurse (all hospitals) 56%.

Work Environment Scale (WES)

Significant differences occurred over time ($p < .05$) for involvement ($F=3.67$, df 2,60, $p=.031$), autonomy ($F=5.02$, df 2,60, $p=.010$), innovation ($F=6.57$, df 2,60, $p=.003$), and physical comfort ($F=3.97$, df 2,60, $p=.024$), indicating nurses' decreased satisfaction in these areas. Subsequently, paired t-tests were employed to compare each of these variables across time and results are presented in Table 3.

Table 3

Paired Comparison t-tests ($p < .05$) for the Effect of a Change to Primary Nursing on the Work Environment Scale

	Mean	Mean Diff. over Time	t	p
Involvement				
Baseline	52.32	5.19	2.05	.05
1 year	47.13			
6 months	53.26	6.13	2.59	.02
1 year	47.13			
Autonomy				
6 months	52.13	7.07	3.10	.00
1 year	45.06			
Innovation				
Baseline	45.84	5.71	2.24	.03
6 months	40.13			
Baseline	45.84	7.61	3.30	.00
1 year	38.23			
Physical Comfort				
Baseline	41.19	6.52	2.56	.02
1 year	34.67			
6 months	37.97	3.30	2.01	.05
1 year	34.67			

Repeat analysis of variance of WES subscale scores with nurses' education and experience as covariates demonstrated significant change at the .05 level over time by experience only for innovation ($F=2.93$, $df\ 6,54$, $p=.015$). The means of the scores at baseline, 6 months, and 12 months respectively, were as follows: nurses with less than 5 years experience – 52.2, 42.7, and 35.2; 6 to 10 years – 30.2, 36.8, and 33.6; 11 to 15 years – 41.6, 34.2, and 39.1; and more than 15 years of experience – 50.7, 43.5, and 43.4. No other covariates (experience as a nurse; experience in primary nursing; education) contributed to a significant change in the WES subscale scores over time.

Physician Perception of Nurse-Physician Communication and Collaboration

Baseline results indicated that physicians generally perceived good communication and collaboration with their nursing colleagues. At 6 months post implementation, results suggested an adaptation phase to the new primary nursing system, since there was a decrease in the percentage of physicians who perceived that the nurses were available to discuss, and were knowledgeable about their patients. This information was the basis for discussion with physicians and nurses. At 12 months post implementation, the physicians perceived that there was increased discussion about the degree to which the nurse should be involved in planning and implementing patient care. They also clarified more frequently whether the nurses or they were responsible for discussing different types of information with the parents. The one-year post implementation interview results demonstrated change in a positive direction and maintenance of the physicians' perceptions of good nurse-physician communication and collaboration. Ninety-two percent of the physicians stated that communication was excellent or very good and 100% rated collaboration as excellent or very good.

Allied Health Perception of Nurse-Allied Health Communication and Collaboration

Nurses were perceived by allied health professionals as providing useful medical information and as being accessible. However, allied health professionals consistently reported over the three time periods that nurses did not recognize the need for their services. Although all allied health professionals stated in the one year post implementation interview that they usually worked toward consensus with the nurses regarding the best approach to caring for a patient, there was a consistent decline in the overall rating of collaboration during the study.

Work Sampling Study

One thousand nursing activities were observed during each of the data collection periods. There was no appreciable change in the amount of time that nurses spent on direct or indirect patient care activities; there was a 2% increase in the former and a 7% decrease in the latter. These changes were minimal despite the fact that the primary nurse assumed additional responsibilities in relation to the infant's care (e.g. consultation with other health care professionals, coordination of care).

Nursing Audit including Parent Satisfaction

There was a clinically significant increase ($>10\%$ change) in the formulation of patient care plans (10.75%), in meeting non-physical needs (20.0%), and in the evaluation of care provided (10.5%). The increase in physical needs attended was 6.5%. At one year after implementation of primary nursing the percentage of compliance with the unit standard of 85% ranged from 92.6% to 99.0%. Criteria of the nursing audit indicated that the quality of care had improved. The criteria that were used to determine the non-physical needs scores were: parent orientation to unit/hospital; privacy and rights of parents honored; staff courtesy; emotional needs of family attended to; parent education; and family inclusion in the care process. These scores rose steadily over time with a 12-month post implementation compliance for this objective of 99%.

Actions Based on Feedback

A major benefit of a formative evaluation is that it provides an opportunity to identify and address the concerns of participants before the issues or concerns become insurmountable. When the 6-month post implementation data were analyzed, the principal investigator met with the various health care professionals on the unit who provided feedback. The WES scores indicated that the degree to which the nurses were committed to their work was the same and slightly on the rise. Peer cohesion was the same and the extent to which the staff was encouraged to be self sufficient and make their own decisions was increasing. However, the mean of the standard score for supervisor support was well below the standard score for health care workers provided by Moos (1986). Meetings were held with staff nurses and assistant head nurses on both shifts. The assistant head nurses were experiencing difficulty with their new roles as facilitators of change and educators, and many staff nurses were unfamiliar with referral procedures which had previously been the responsibility of the assistant head nurses. The redefinition of roles and the transfer of information was causing conflict. These issues were addressed by inservices on referral procedures, conflict resolution, and leadership, and both groups met together as well as separately with the nursing consultant. All potential sources of conflict were openly addressed. The 12-hour shifts were a

cause for concern in the areas of continuity of care and parent teaching. It was agreed that if the associate nurse had cared for the infant and family for 3 of the 4 days prior to discharge, that the primary nurse upon return from his/her days off should allow them to complete the discharge teaching. Results of periodic audits indicated that at least 75% of the infants were cared for by his/her primary nurse each day.

Prior to the implementation of primary nursing, the assistant head nurses had been conducting rounds with the physicians. Subsequently, the primary nurses communicated directly with the physicians, but they were not accustomed to detailed, direct two-way communication and appeared to have difficulty eliciting information from physicians. This was reflected in the physicians' 6-month post implementation responses to items that addressed primary nurses' knowledge about the health status of their patients and their clear communication of this information. The primary nurses expressed concern about giving and receiving information when physicians made rounds. They were accustomed to answering questions, but realized that they had to be more proactive in order to be the core coordinators of care.

The interview feedback from the allied health group was presented to nurses and allied health professionals. It facilitated discussion and contributed to a better understanding of what constituted the need for referrals to specific disciplines.

Based on the discussions surrounding the feedback to the nurses, physicians, and allied health professionals at one year post implementation, the primary nurses on the NICU were asked to indicate what advice they would give to nurses on other units who wished to implement primary nursing. The following is a sample of their responses: Clearly define the roles of supervisors prior to starting primary nursing and then continuously review the roles. Involve nurses who do not want primary nursing in the implementation meetings. The implementation committee should consist of as many staff nurses as possible. Make all plans and new protocols visible to all staff. Make everyone feel a part of the change process. Assess the abilities of inexperienced staff to cope with difficult assignments; assistant head nurses should provide assistance as required. Primary nursing works better with 8-hour rather than 12-hour rotations. Adapt the primary nursing system to your needs, do not literally go by the books. Emphasize individual nurse responsibility and provide inservices on coping with change, conflict resolution, and decision making. These suggestions were integrated into the NICU primary nursing protocols and were shared with other units interested in implementing primary nursing.

Conclusion

This study examined the effects of changing the nursing care delivery system in the NICU at the Children's Hospital of Eastern Ontario on the nurses' perceptions of their work environment; on the physicians' and allied health professionals' perceptions of communication and collaboration with nurses; on the parents' perceptions of communication and of care provided; and on the nurses' direct and indirect care activities. The major contribution of this study was to enable all participants to monitor the effects of the change process and to immediately address any areas of concern. One year after implementation, the nursing audit indicated that compliance with all the audit standards ranged from 92.6% to 99%. Parents, in particular, expressed satisfaction with the system. Physician-nurse communication and collaboration grew in a positive direction or remained excellent or very good. The relationship between nurses and allied health professionals continued to require attention, but the communication and collaboration tool permitted areas of concern to be identified and addressed. The nurses' perceptions of their work environment decreased on four of the 10 subscales of the WES. These areas continue to be addressed by the nurse manager of the unit.

The NICU primary nursing task force continues to meet on a regular basis to deal with issues that arose from the evaluation process. Clarification of the role of supervisory staff is an example of an issue that required attention. In addition, ongoing concerns are addressed as they arise. Audits related to compliance with the principles of primary nursing are conducted regularly. In this change process, evaluation has been the key to the continuing success of primary nursing in the NICU at the CHEO.

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Combined Mother and Baby Care: Does it Meet the Needs of Families?

**Patricia Hill Bailey, Sister Jennie Maciejewski,
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On estime que le fait de combiner les soins prodigués à la mère et au nouveau-né prépare efficacement la famille aux changements de rôles et aux responsabilités accrues qu'entraîne l'arrivée d'un bébé à la maison. Peu d'études ont cependant exploré cette infrastructure sanitaire. Voilà pourquoi le personnel de postpartum du Sudbury General Hospital a profité du passage des soins traditionnels aux soins combinés mère/nouveau-né pour mettre sur pied un modèle d'étude post-enquête fonctionnant à l'aide d'un groupe témoin et basé sur un échantillonnage qu'il a lui-même choisi parmi des mères venant d'accoucher. Cent-trois mères recevant des soins traditionnels et cent-deux mères à qui on a prodigué des soins combinés mère/nouveau-né ont rempli un questionnaire destiné à classer la façon dont elles évaluaient leur propre compétence et leur satisfaction face aux soins prodigués. Les deux groupes d'étude ont accusé peu de différences. Le peu de temps écoulé entre la mise sur pied du programme et l'évaluation de celui-ci, et la qualité de l'enseignement prénatal reçu ont peut-être brouillé les résultats de l'étude. Les multipares ont obtenu un meilleur pointage en matière de soins à elles-mêmes, de soins au nouveau-né et de compétence maternelle que les primipares, quelle que fut l'infrastructure sanitaire. Les mères se préoccupaient surtout des besoins immédiats. Les futures recherches devraient tenir compte des différences entre les primipares et les multipares, et s'intéresser aux besoins moins immédiats des mères.

Combined mother/baby care is thought to be an effective way to prepare a family for the changing roles and added responsibilities that the arrival of a new baby entails, but few studies have evaluated this care delivery system. Therefore, the postpartum staff at Sudbury General Hospital conducted a post-test control group study design with a self-selected sample of postpartum mothers when the unit was changing from traditional to combined mother/baby care. One hundred and three mothers who received traditional care and 102 who had combined mother/baby care completed a questionnaire to assess perceptions of their own competence and satisfaction with the type of care administered. There were no significant differences between the two study groups. Factors that may have confounded the results include: insufficient time between institution of the program and its evaluation, and the quality of prenatal education received. Multiparous mothers scored higher on self care, infant care, and maternal competence than did primiparous mothers regardless of the care delivery system. Maternal concerns related to immediate needs. Future research should take the differences between primiparas and multiparas into account, and focus on the less immediate needs of mothers.

The physical needs of Canadian childbearing women and their families are usually met, but their emotional, social, and educational needs are often underestimated. Although family-centered care is available on postpartum units in hospitals, parents continue to identify the need for more infant care support and teaching along with better communication with staff. If the

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length of hospital stay after birth is reduced, it is even more important that postnatal units adopt a care delivery that assists parents with their new responsibilities.

In recent years, several Ontario hospitals have adopted a combined mother/baby approach to care delivery whereby mother and baby have the same nurse. In the traditional method of care delivery, separate nursery and postpartum staff provide care to mother and baby (Fraileigh, 1984; Mansell, 1984; Mizer & Barraro, 1979; Paukert, 1979; Vezeau & Hallsten, 1987; Watters, 1985; Watters & Kristiansen, 1989; Wexler & Bowes, 1982).

Numerous benefits of combined care have been reported in the literature. It promotes continuity of care (Harris, 1990; Harvey, 1982; McGrath, 1990; NAACOG, 1989; Watters, 1985; Watters & Sparrow, 1990), enhances patient teaching (Fraleigh, 1984; Harvey, 1982; Paukert, 1979; Watters, 1986; Watters & Sparrow, 1990; Wilkerson & Barrows, 1988), and facilitates discharge planning (Wilkerson & Barrows, 1988). As a result, it is thought to help mothers to be more confident and competent (NAACOG, 1989; Wilkerson & Barrows, 1988). While combined care purportedly improves patient satisfaction and quality of care (Watters, 1985), there is little empirical evidence to support this view.

Parallel studies conducted in Ottawa and Kingston hospitals by Watters and Kristiansen (1989) and Watters, Gay, and Kristiansen (1988), compared combined mother/baby care and traditional care delivery. Results indicated that maternal competence and maternal satisfaction were significantly greater with mother/baby care, and mothers were more satisfied with the quality of education and the nurse-client relationship. Although both studies showed significant advantages of combined care, in the Kingston study the benefits were more pronounced with multiparas, whereas in the Ottawa study both primiparas and multiparas were satisfied with combined care. However, the fact that Kingston had a lower staff- to-client ratio (1:5-7) than did Ottawa (1:4-5) may have contributed to less satisfaction and maternal competence. It is interesting to note that length of hospital stay did not affect satisfaction with care. Kingston had a 5-day length of stay, and in Ottawa mothers stayed for 3 days post partum.

In Sudbury, staff on the postpartum unit were concerned that there would be insufficient time to prepare families for discharge from hospital since the length of stay had been shortened from 5 to 3 days after birth. The literature indicated that combined care offered numerous benefits in this respect, but there was little empirical evidence to support it. The postpartum staff conducted a comparative study to ascertain that combined care was better or as effective as the traditional method of care.

Method

This study took place in Ontario at Sudbury General Hospital, a modified level III perinatal Unit with 40 postpartum beds which serves a catchment area of 150,000 people. Watters and Kristiansen (1989) used a three-part instrument: a mothers' hospital questionnaire, a mothers' mail questionnaire and a breast-feeding telephone interview schedule. For the purpose of the current study the mothers' hospital questionnaire was used with a minor adaptation of Part 4 to include the sociodemographic and demographic data. Part 1 consisted of 20 closed-choice questions to measure competence with self and infant care, and satisfaction with policies/procedures, parent education and the nurse-client relationship.

Table 1

**Distribution of Respondents (n=205) and Nonrespondents (n=111)
by Age, Marital Status, Parity, Type of Delivery, Nursery and Feeding Method**

Characteristics	Respondents-n (%)	Nonrespondents-n (%)	X ² (df,N)	p
Age			X ² (3,305)	.84
14-19 years	15 (7)	6 (5)		
20-29 years	128 (63)	71 (64)		
30-39 years	53 (26)	28 (25)		
≥40 years	2 (1)	2 (2)		
Missing data	7 (3)	4 (4)		
Marital Status			X ² (1,298)	.90
Married	180 (88)	86 (78)		
Single	22 (11)	10 (9)		
Missing data	3 (1)	15 (13)		
Parity			X ² (1,311)	.59
Primiparas	86 (42)	43 (39)		
Multiparas	116 (57)	66 (59)		
Missing data	3 (1)	2 (2)		
Delivery			X ² (1,314)	.94
Vaginal	158 (77)	86 (78)		
C-Section	45 (22)	25 (22)		
Missing data	2 (1)	—		
Nursery			X ² (1,313)	.90
Regular	127 (62)	69 (62)		
ICN	75 (37)	42 (38)		
Missing data	3 (1)	—		
Feeding			X ² (1,311)	.96
Breast	121 (59)	65 (58)		
Bottle	81 (40)	44 (40)		
Missing data	3 (1)	2 (2)		

Table 2

Distribution of Respondents According to Type of Care Received by Age, Marital Status, and Education (Traditional Care N=103, Combined Care N=102)

Characteristics	Type of Care		$\chi^2(df,N)$	p
	Traditional- n (%)	Combined- n (%)		
Age			$\chi^2(3,198)$	.97
14-19 years	8 (8)	7 (7)		
20-29 years	63 (6)	65 (64)		
30-39 years	28 (27)	25 (25)		
≥40 years	1 (1)	1 (1)		
Missing data	3 (3)	4 (4)		
Marital Status			$\chi^2(1,202)$	.39
Married	89 (86)	91 (89)		
Single	13 (13)	9 (9)		
Missing data	1 (1)	2 (2)		
Education			$\chi^2(2,203)$	.99
Public School	11 (11)	10 (10)		
High School	40 (39)	39 (38)		
College/University	52 (50)	51 (50)		
Missing data	—	2 (2)		

Part 2 was a 17-item checklist of common postpartum concerns, and mothers were asked to rate the adequacy of help they received for each. Part 3 was a 10-point ladder scale to rate the overall quality of care mothers received during their hospital stay.

A post-test control group design with a self-selected sample of postpartum women was used in the current study. Women were given the mothers hospital questionnaire by the unit ward clerk on their first postpartum day and were asked to voluntarily complete it before discharge. Validity and reliability of the mothers' questionnaire was reported by Watters and Kristiansen (1989) to have an internal consistency alpha coefficient of .60 or greater and a test-retest reliability correlation coefficient of .74 or greater.

Results

Of 317 deliveries occurring in the two data collection periods, 42% were primiparas and 56.6% were multiparas. Sixty-five percent of the mothers completed the questionnaire, including 57% (103/182) of those who received traditional care and 75% (102/135) of those who obtained combined care. There were no significant differences between respondents (205 or 65%) and nonrespondents (111 or 35%) in terms of marital status, parity, type of delivery, admission of baby to level I nursery, and method of feeding (Table 1).

The group of mothers who received traditional care (103) was similar to those who received combined care (102) (Table 2): in both groups ages ranged from 14 to 45 years with 62.4% of the sample being 20 to 29 years of age; most of the mothers were married (87.8%) and half (50.5%) had post secondary education. Approximately 22% of all deliveries were by C-section and 36.6% of the babies were admitted to the observational or intensive care nursery post partum (Table 3); most mothers described their labor as fairly hard (32%) to very hard (31.1%); slightly more than half of those whose babies were admitted to level I nursery held their newborns immediately after birth (50.5%) with an additional 25.2% having initial contact within 1 to 6 hours post partum. The only factor for which the difference between the two groups approached significance was the amount of time newborns spent

Table 3

Distribution of Respondents According to Type of Care Received by Delivery, Nursery, Birthing Experience, Held Baby Post Partum, and Baby in Room Day 1 (Traditional Care N=103, Combined Care N=102)

Characteristics	Type of Care		$X^2(df,N)$	p
	Traditional- n (%)	Combined- n (%)		
Delivery			$X^2(1,203)$	.54
Vaginal	82 (80)	76 (75)		
C-Section	21 (20)	24 (24)		
Missing data	—	2 (1)		
Nursery			$X^2(1,202)$	.36
Regular	61 (59)	66 (65)		
ICN	41 (40)	34 (33)		
Missing data	1 (1)	2 (2)		
Birthing Experience			$X^2(3,191)$	.73
Very hard	32 (31)	24 (23)		
Fairly Hard	33 (32)	34 (33)		
Fairly Easy	26 (25)	26 (26)		
Very Easy	7 (7)	9 (9)		
Missing data	5 (5)	9 (9)		
Held Baby Post Partum			$X^2(3,203)$	.71
Immediately	52 (50)	58 (57)		
1-6 hours	26 (25)	23 (22)		
7-12 hours	13 (13)	9 (9)		
>12 hours	12 (12)	10 (10)		
Missing data	—	2 (2)		
Baby in Room Day 1			$X^2(3,188)$	.06
0-5 hours	79 (77)	68 (67)		
6-9 hours	6 (6)	17 (16)		
10-18 hours	7 (7)	10 (10)		
19-24 hours	—	1 (1)		
Missing data	11 (10)	6 (6)		

Table 4

**Distribution of Respondents by Demographic Characteristics
(Traditional Care N=103, Combined Care N=102)**

Characteristics	Type of Care		$X^2(df,N)$	p
	Traditional- n (%)	Combined- n (%)		
Parity			$X^2(1,202)$	.01
Primiparas	53 (52)	33 (33)		
Multiparas	50 (48)	66 (65)		
Missing data	—	3 (3)		
Prenatal Classes			$X^2(1,200)$	.05
Yes	61 (59)	46 (45)		
No	40 (39)	53 (52)		
Missing data	2 (2)	3 (3)		
Postnatal CareClass			$X^2(1,111)$	.04
Yes	39 (38)	16 (16)		
No	29 (28)	27 (26)		
Missing data	35 (34)	59 (58)		
Feeding			$X^2(1,202)$	.01
Breast	70 (68)	51 (50)		
Bottle	32 (31)	49 (48)		
Missing data	1 (1)	2 (2)		

in mothers' rooms on day 1 ($X^2=7.53$, $p<0.06$); 27.5% of combined care babies spent more than 5 hours with their mothers, versus 12.6% of traditional care babies. There was no significant difference between the groups for this variable on subsequent days.

There were other significant differences between the traditional and combined care groups (Table 4): more of the mothers who had received traditional care were breast-feeding their babies (68.0% versus 50.0%, $X^2=6.53$, $p<.01$) and had attended prenatal classes (59.2% versus 45.1%, $X^2=3.90$, $p<.05$) and classes on the postnatal period (37.9% versus 15.7%, $X^2=4.27$, $p<.04$); more of the mothers in the combined care system were multiparous (64.7% versus 48.5%, $X^2=6.78$, $p<.01$).

Initial analyses examined the reliability of the scales and subscales of the mothers' hospital questionnaire. For the traditional care group Cronbach's alpha ranged from .60 to .80 with the exception of the subscale policies/routines where an alpha of .40 was obtained. For the combined care group Cronbach's alpha ranged from .60 to .80 with the exception of two subscales: competence for self care .40 and policies/routines .40 .

To reduce the probability of type I errors, multivariate analysis of variance (MANOVA) was used to compare the outcomes associated with tradi-

Table 5**Distribution of Mothers' Scores for Competence and Satisfaction According to Parity**

Variable	Maximum Possible Score		Primiparous	Multiparous	F	df	p
Total Score	80	M	66.91	67.74	.49	1	.48
		SD	7.87	7.34			
Competence	32	M	26.65	27.99	7.32	1,190	.01
		SD	3.55	3.27			
Self Care	12	M	9.55	1.14	7.29	1,190	.01
		SD	1.48	1.52			
Infant Care	20	M	15.84	17.10	1.99	1,190	.001
		SD	2.86	2.39			
Satisfaction	48	M	38.95	39.32	.13	1,119	.72
		SD	5.88	5.22			
Policies/Routines	16	M	12.37	12.56	.24	1,119	.63
		SD	1.98	2.11			
Parent Education	16	M	12.86	13.36	1.36	1,119	.25
		SD	2.74	1.93			
Nurse Client Relationship	16	M	13.72	13.40	.60	1,119	.44
		SD	2.20	2.21			
Overall Rating	10	M	8.65	8.39	.99	1,119	.32
		SD	1.38	1.42			

tional and combined care. These outcomes included: maternal rating of competence (with self-care and infant-care) and satisfaction (with policies/routines, parent education, nurse-client relationship, and 10-point ladder scale).

A simple one-way analysis of variance indicated no significant differences between the traditional and combined care groups with regards to total score on the mothers' hospital questionnaire or its components. A one-way analysis of variance examining the effect of parity indicated significant differences: regardless of the care delivery system, multiparas scored higher in terms of self care ($p < .01$), infant care ($p = .001$), and overall maternal competence ($p < .01$) than did primiparas (Table 5).

Maternal Competence

Analyses of variance of scores for the competence scale and corresponding subscales indicated no differences between the traditional and combined care groups (Table 6). The effect of parity, however, was significant (Pillai's Trace $V = .09$ $p < .001$). On univariate tests multiparas had higher scores for

Table 6

Distribution of Mothers' Scores for Competence and Satisfaction According to Type of Care Received by Parity

Variable	Maximum Possible Score		Traditional		Combined		F	df	p
			Primi	Multi	Primi	Multi			
Total Score	80	M	66.03	67.63	68.03	67.82	.57	1	.45
		SD	8.16	7.42	7.45	7.35			
Competence	32	M	26.28	28.29	27.18	27.77	6.70	1,188	.01
		SD	3.70	3.16	3.30	3.35			
Self Care	12	M	9.47	10.25	9.67	10.06	6.96	1,188	.001
		SD	1.61	1.61	1.27	1.46			
Infant Care	20	M	15.57	17.29	16.21	16.95	10.15	1,188	
		SD	2.95	2.27	2.74	2.49			
Satisfaction	48	M	37.77	39.47	40.77	39.23	2.34	1,117	.13
		SD	6.15	5.13	5.08	5.33			
Policies/Routines	16	M	12.08	12.70	12.82	12.48	1.45	1,117	.23
		SD	1.92	2.00	2.04	2.18			
Parent Education	16	M	12.58	13.17	13.29	13.48	.21	1,117	.65
		SD	2.82	2.04	2.64	1.87			
Nurse Client Relationship	16	M	13.12	13.60	13.48	13.27	4.84	1,188	.03*
		SD	2.34	2.21	1.87	2.23			
Overall Rating	10	M	8.46	8.57	8.94	8.27	2.00	1,117	.16
		SD	1.56	1.33	1.03	1.48			

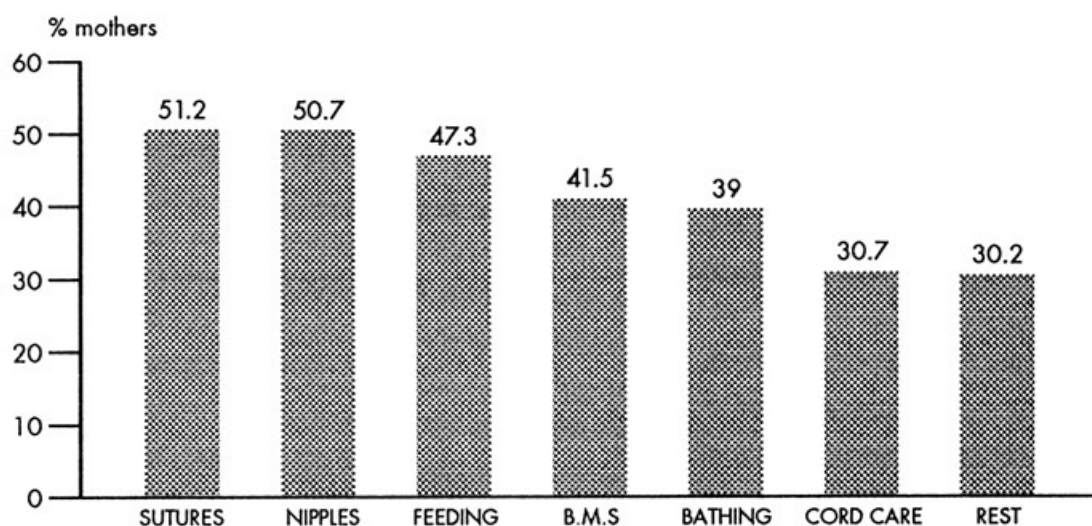
Two-Way Interaction Time by Parity: $p < .03$

overall competence ($F(1,188)=6.70$ $p=.01$), and competence for self care ($F(1,188)=6.96$ $p<.01$) and for infant care ($F(1,188)=1.15$ $p<.01$) than did primiparas. Although not statistically significant, it is of interest to note that scores for competence among primiparas were higher with combined than traditional care, while the reverse was true of the multiparas' scores.

Maternal Satisfaction

Univariate tests revealed that primiparas receiving combined care had higher scores for satisfaction with the nurse-client relationship than did those in traditional care. Multiparas in the combined care group indicated less satisfaction with the nurse-client relationship than did those in the traditional care group ($F(1,117)=4.84$ $p<.04$).

Figure 1 presents the ranked distribution of mothers' concerns, whether they received traditional or combined care. Slightly more than half of the sample indicated that their perineal incision/abdominal sutures (51.2%) and

Figure 1**Distribution of Mothers' Concerns**

breast and nipples (5.7%) were areas of concern; more than 40% expressed concern with their bowel movements and breast-feeding.

Discussion

Does the type of care delivery system used in a community hospital setting (traditional versus combined) affect maternal competence and maternal satisfaction? Initial analysis revealed that the reliability of the mothers' hospital questionnaire was satisfactory, with the exception of the subscales policies/routines for both care delivery groups and competence for self care in the combined care system. Our results are similar to those reported elsewhere (Watters, Gay & Kristiansen, 1988; Watters & Kristiansen, 1989). To improve internal reliability of the policies/routines subscale, Watters and Kristiansen (1989) removed items that showed weak or negative correlations. The present study may be limited by the fact that this adjustment was not made.

It is of interest that there was a high prevalence of multiparas and bottle feeders in the combined care group relative to the traditional care group. As more of the mothers in the latter group were primiparas and had attended prenatal classes, they might have been more influenced by prenatal teaching regarding the benefits of breast-feeding.

It is not surprising that multiparous mothers, regardless of the care delivery system, scored higher on self care, infant care, and maternal competence than did primiparas. However, several factors may have contributed to the fact that no significant differences were observed between the two care systems in terms of competence or satisfaction: because nurses had to develop

new skills to practice combined care, the evaluation may have occurred too soon after the institution of the new delivery system. The benefits of combined care seen in other centers might have become evident in this center had the staff been given more time to adjust.

Finally, the concerns expressed by mothers were related to immediate needs, as they had not begun to anticipate those that would occur after discharge. This may have been related to the fact that the questionnaire was completed before discharge from the hospital.

Conclusion

Although the results of this study do not statistically support the greater efficacy of combined care over traditional care in meeting the needs of families, evidence suggests that further study may provide more conclusive results in this respect. The needs of primiparas differ from those of multiparas, and routines surrounding the implementation of combined care should respect these differences. Postnatal schedules, routines, education, and support should be adjusted according to the needs of postpartum women and their families.

With the decrease in length of the postpartum hospital stay, postpartum care must be tailored to clients' needs. Continuity of caregiver provides more opportunity to get to know the short stay family. New mothers may not anticipate what their needs will be after discharge. Immediate and long term emotional, social, and educational needs should therefore be addressed by a combined care delivery system.

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The research team wishes to thank all the postpartum staff and new mothers at Sudbury General Hospital who supported this project. Special thanks are given to the members of the combined care committee: Sue Cormier, Julie Lafontaine, Barbara McMorran, Marilyn Prime, Sharon Kutchaw, Jenny Lynott, Toni Berardi, Janet Gasparini, Karen Volpel, Arlene Jackson, Betty Anne Dixon, Audrey D'Arcy, and Shari Klus.

The Admissions Process of a Bachelor of Science in Nursing Program: Initial Reliability and Validity of the Personal Interview

Barbara Carpio and Barbara Brown

Le programme de premier cycle en sciences infirmières à l'École des sciences infirmières de l'université McMaster fonctionne par petits groupes. Il est axé sur l'étudiant et sur les problèmes rencontrés. Au cours des cycles d'admission de 1991, une étude a été menée afin de déterminer la fiabilité initiale et la validité des entrevues personnelles semi-structurées qui constituent l'étape ultime de la sélection des candidats au programme.

Des équipes de trois membres évaluent l'éligibilité du candidat au programme en se basant sur six facteurs : la motivation, la connaissance du programme, la capacité à résoudre les difficultés, la qualité de la relation avec les autres, la capacité d'auto-évaluation et les objectifs de carrière. Chaque intervieweur accorde au candidat un pointage global sur une échelle de sept paliers. Aux fins de la présente étude, quatre équipes d'intervieweurs ont été choisies au hasard parmi 31 équipes pour faire passer des entrevues à quatre candidats fictifs (préprogrammés). À l'aide d'une analyse des variances dans une formule de mesures répétées à deux facteurs destinée à analyser les pointages résultant des entrevues, on calcula les coefficients d'objectivité et de corrélation interne entre les équipes. La fiabilité parmi les équipes s'étendit de 0,64 à 0,97 pour les facteurs individuels, et de 0,66 à 0,89 pour les pointages d'ensemble. Pour les six facteurs, le coefficient d'objectivité et de corrélation interne s'étendit de 0,81 à 0,99 et de 0,96 à 0,99 pour les pointages d'ensemble. Les coefficients de corrélation entre les facteurs individuels et les pointages d'ensemble varièrent de 0,875 à 0,995. Les coefficients de corrélation de Pearson entre les postes allaient de 0,774 à 0,999. On calcula ensuite les coefficients de corrélation interne des entrevues individuelles de 108 vrais candidats au programme. Le coefficient de fiabilité, basé sur les pointages d'ensemble, était de 0,79 pour l'observation unique (à 1 évaluateur), et de 0,91 pour les observations multiples (à 3 évaluateurs). Ces conclusions appuyent l'idée de poursuivre l'utilisation des entrevues, qui se révèlent un outil fiable et d'une apparente validité. Des études de validité prédictive seront également entreprises.

The undergraduate nursing degree program (B.Sc.N.) at McMaster University School of Nursing uses small groups, and is learner-centered and problem-based. A study was conducted during the 1991 admissions cycle to determine the initial reliability and validity of the semi-structured personal interview which constitutes the final component of candidate selection for this program. During the interview, three-member teams assess applicant suitability to the program based on six dimensions: applicant motivation, awareness of the program, problem-solving abilities, ability to relate to others, self-appraisal skills, and career goals. Each interviewer assigns the applicant a global rating using a seven-point scale. For the purposes of this study four interviewer teams were randomly selected from the pool of 31 teams to interview four simulated (pre-programmed) applicants. Using two-factor repeated-measures ANOVA to analyze interview ratings, inter-rater and inter-team intraclass correlation coefficients (ICC) were calculated. Inter-

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team reliability ranged from .64 to .97 for the individual dimensions, and .66 to .89 on global ratings. Inter-rater ICC for the six dimensions ranged from .81 to .99, and .96 to .99 for the global ratings. The item-to-total correlation coefficients between individual dimensions and global ratings ranged from .8 to 1.0. Pearson correlations between items ranged from .77 to 1.0. The ICC were then calculated for the interview scores of 108 actual applicants to the program. Inter-rater reliability based on global ratings was .79 for the single (1 rater) observation, and .91 for the multiple (3 rater) observation. These findings support the continued use of the interview as a reliable instrument with face validity. Studies of predictive validity will be undertaken.

The purpose of the nursing admissions process is to identify, from a pool of well qualified applicants, those who will be most successful academically and professionally. A selective admissions process is needed when the number of (eligible) applicants to a program exceeds the employment opportunities or available educational resources, or includes those who are poorly suited to the program (Haglund, 1978). Canadian nursing programs have been urged to develop selection criteria and processes that are in keeping with their educational beliefs and curricula (Registered Nurses' Association of Ontario, 1981), and to periodically re-evaluate their selection processes and criteria.

The McMaster University School of Nursing offers a B.Sc.N. program that is "...learner-centered, focused on solving clinical problems through the use of inductive and deductive reasoning and requires the acquisition of appropriate knowledge, skill and personal qualities" (McMaster University School of Nursing, 1986). There are two routes to obtaining the degree: a four-year program of study (basic stream) for applicants who apply directly from secondary school or have other qualifications (referred to as mature students in some programs), and a two-year stream (post diploma) for graduates of diploma nursing programs (community college or hospital school nursing programs). Secondary school applicants are selected on the basis of academic performance alone, while those with a diploma or other qualifications undergo a selection process which assesses personal qualities in addition to academic ability. A semi-structured team interview is one component of the latter type of selection process. Since the reliability and validity of the autobiographical letter used in the admissions process was previously examined (Brown, Carpio & Roberts, 1991), the purpose of the present study, conducted during the 1991 admission cycle, was to determine the initial reliability and validity of the admission interview.

Literature Review

Admission criteria

As nursing education has evolved, academic requirements for admission have become progressively more stringent. There has been considerable research to assess the academic predictors of success in nursing (Alichnie & Bellucci, 1981; Clemence & Brink, 1978; Felts, 1986; Higgs, 1984; Jacono, Keehn &

Corrigan, 1987; Oliver, 1985; Sharp, 1984; Weinstein, Brown & Wahlstrom, 1982) and other health sciences (Balogun, Karacoloff & Farina, 1986; Posthuma & Noh, 1990). It has been conjectured that personality attributes could also serve as predictors of program success, "...particularly as the [pool of] applicants becomes more homogeneous in terms of academic potential" (Beale & McCutcheon, 1980, p. 31). However, cognitive variables continue to be the most widely used selection criteria. Those that have been studied include reading ability and comprehension (Backman & Steindler, 1971; Outtz, 1979; Seither, 1980; Smith & Pervanger, 1974), verbal ability (Backman & Steindler, 1971), critical thinking (Bauwens & Gerhard, 1987; Berger, 1984), personality attributes (George & Owens, 1983), and age (Froman & Owen, 1989). Grant (1986) concluded that reading skill is the one variable that is consistently predictive of achievement in a nursing program as well as state board licensing examinations (NCLEX). The only consistent finding of studies investigating non-cognitive variables is that successful students are more mature, older, and achievement-oriented.

Admission interview

No studies on the use of a personal interview for admission were found in the nursing literature, although its use in selection of medical students has been widely reported (Burgess, Calkins & Richards, 1974; Calkins, Richards, McCanse, Burgess & Willoughby, 1974; McManus & Richards, 1984; Powis, Neame, Bristow & Murphy, 1988). Edwards, Johnson and Molidar (1990) identified four objectives of the personal interview in the selection process: to gather information for the applicant profile, to assist the selections committee in making definitive decisions, to provide an opportunity to verify applicant data, and as a recruitment activity. The reported inter-rater reliability for interviews varies from a low of $r=.32$ (Vojir & Bronstein, 1983) to a high of $r=.90$ (Richards, McManus & Maitlis, 1988). Overall, the literature favors a panel or team interview to reduce the effects of individual bias. Evidence indicates that the reliability of the interview improves when a structured format is used (Edwards, Johnson & Molidar, 1990). Tarico, Smith, Altmaier, Franken, and Van Velzen (1984) suggest that a formal job analysis will identify the critical factors to be included in the interview, thus improving the validity. Consistency improves with standardization of questions; reliability is increased by using sample questions and behavioral anchors to describe levels of performance such as "good," "satisfactory" or "outstanding" (Edwards, Johnson & Molidar, 1990). Moreover, because personal interviews are labor intensive, their use needs to be considered carefully (Cascio & Ramos, 1986). Overall, studies have shown that the personal interview is useful as a selection criterion to address non-academic qualities of applicants to health sciences educational programs, and the reliability and validity are improved through the use of a structured format and multiple interviewers.

Method

Applicants to the basic four-year program who are not admitted directly from high school and registered nurses applying to the degree completion stream have to meet a minimum academic standard, submit an autobiographical questionnaire and provide personal references in support of their application. Applicants who achieve the highest ratings are invited to a personal interview. After the interviews, applicant files are collated and offers of admission made.

The interview format used at McMaster University is a 30-minute semi-structured, panel interview. Interview teams consist of a faculty member, a student or alumnus of the program, and a community representative. The community representative may be "nursing service personnel, other faculty and consumers of health care [who have] an awareness of those personal characteristics perceived as necessary in health care workers" (McMaster University School of Nursing, 1983). The only information interviewers have about the applicant is a one-page autobiographical sketch provided by the applicant at the time of the interview.

The measures taken to establish face validity of the interview were similar to those reported in the study of the autobiographical letter (Brown, Carpio & Roberts, 1991). A formal job analysis to identify attributes of the successful nursing student was not conducted at the time that the interview guidelines were developed in 1981. However, six themes or dimensions were identified by faculty as being essential prerequisites to success in this small-group, student-centered, problem-based nursing program: motivation, awareness of the McMaster University nursing program, problem-solving abilities, ability to relate to others, self-appraisal skills and career goals. Interviewers independently assess the applicant in each of the six dimensions using a five-point Likert scale. Since interviewers are not provided with formal behavioral descriptions of each point on the scale, they are asked to provide written descriptions of the applicant's responses to support their assessment. Interview guidelines and sample questions are provided in the interviewer packages (Figure 1).

Interviewers, particularly those new to the interview process, attend an annual orientation session immediately prior to the interview dates. These briefing sessions provide an opportunity to ask questions, meet the other team members, practice interviewing, and receive instruction packages.

During the interview, each rater independently assesses an applicant and records his/her comments and ratings on the personal interview assessment form. Each interviewer assigns the applicant a 1-5 rating for each of the six

Figure 1**Sample interview guidelines for the dimension “self-appraisal ability”**

Self-appraisal ability	Suggested Approaches and Questions
Students in the B.Sc.N. program are expected to increasingly assume responsibility for self-evaluation.	What is your greatest asset in working with people?
Does the candidate demonstrate insight into:	What do you do if peers become angry with you?
1. strengths/weaknesses in working with people;	What do you do if authority figures tell you that your work performance is falling below what is expected?
2. strengths/weaknesses in educational pursuits;	How do you handle this yourself?
3. strengths/weaknesses in being independent;	What is your greatest asset in learning?
4. feeling self-confident;	Have other people told you this?
5. seeking out other people to validate self-performance.	Is this what you think?
	How independent do you think you are?
	Give an example of when you exercised independence.
	Have you ever had an experience where you had to ask others to tell you what they think of your work?
	How do you react when the feedback is negative?

dimensions, and a global rating using a 7-point Likert scale categorizing them as “unacceptable” (1-2), “acceptable” (3-5), “good” (6), or “outstanding” (7) for the program. The 7-point scale for overall assessment is distinct from the sum or average of the numerical rating assigned to each dimension.

The three interviewer ratings are summed, providing an interview score out of a maximum possible 21 (three ratings of 7). This number is then combined with the academic rating (out of a maximum possible 6), the personal references (maximum 5), and the autobiographical questionnaire (maximum 21) to calculate the applicant’s overall admission score (out of a maximum possible 53). During the collation process faculty-student teams independently review the complete files for consistency of comments and ratings within and between teams. Although some variation between interviewers in terms of their comments and ratings of an applicant is desired, wide discrepancies warrant careful review of the file by the collation group. Interviewers’ comments are reviewed, and unusually lenient or harsh ratings by a team are thoroughly discussed.

Unsuccessful applicants can discuss the outcome of the selection process and their individual performance with the Chairperson of the Undergraduate

Nursing Admissions Committee. The Faculty of Health Sciences does not store application information; unsuccessful applicants can reapply in subsequent years without being recognized as repeat applicants. Thus, there are no data to indicate whether any of the applicants in the 1991 admission cycle had previously applied unsuccessfully, or sought assistance to prepare themselves for the interview.

Two study designs were used: four pre-programmed simulated applicants were each interviewed by four selected interviewer teams, and 140 actual applicants were interviewed by 31 teams in the regular admission cycle.

Simulated applicant design

To assess the reliability and validity of the personal interview, four applicant profiles, representative of "unacceptable," "acceptable," "good," and "outstanding" suitability to the program were developed by the research team based on the six dimensions addressed in the interview guide. These profiles were then used as the basis for training four simulated applicants. All four simulations were of applicants to the basic stream, as it would have been very difficult to develop a credible simulation of a registered nurse, and local nurses might have been recognized by the interviewers and/or been future applicants to the program.

The Standardized Patient Program of the Faculty of Health Sciences helped the research team to recruit and train three women and one man. Their own personal experiences were integrated into the simulations. To avoid their being recognized as actors by the interviewers, none of the simulated applicants had acted as simulated patients for the B.Sc.N. program during the previous few years. After the training sessions, each applicant participated in a mock interview with the research team in order to fine-tune the simulation.

Four interviewer teams were randomly selected from the pool of interviewers who had provided written consent to participate in the study. All interviewers were blind to the final selection of study teams. The study teams were identical in composition to the other interview teams, participated in the regular orientation session, and received the same instructions during the actual interview process. All four simulated applicants were interviewed by each of the study interviewer teams, but in different order to control for order effect.

Actual applicants

Thirty-one teams interviewed a total of 140 applicants; 86 were applying to the post diploma stream and 54 to the basic stream. Inter-rater and inter-

team reliability of interview scores of all applicants were assessed. Due to logistic problems, including last-minute cancellations by interviewers, only 108 applicants were interviewed by complete three-member teams and included in the study. For the purposes of data analysis, applicants were identified only by an assigned number, and interviewers by team and category (e.g. the faculty member of the third team was coded as 3F, the student as 3S, the community representative as 3C, and so forth).

Statistical analysis

The Biomedical Data Package Statistical Software (University of California, 1990) (BMDP) routines were used to analyze the data. A two-factor repeated-measures ANOVA was used where the explicit factors were team (level=4) and rater (level=3). The mean square error terms for subjects and the factors of interest (rater and then team) were used to calculate intra-class correlation coefficients (ICC) (also known as weighted Kappa or generalizability coefficients). Generalizability theory on which calculations were based allows identification and measurement of the sources of variation which contribute error to an estimate (Streiner & Norman, 1989). The interview ratings were analyzed to measure ICC among interviewers and teams. Reliability was measured through inter-rater and inter-team correlations of global ratings.

Results

Simulated applicant design

The ICC of global ratings and of the ratings on the six dimensions were calculated to determine both inter-rater and inter-team reliability (Table 1). The ICC ranged from .66 for the single observation inter-team correlation, to .99 for the multiple observation inter-rater correlation. In order to determine if the global ratings were a true reflection of the ratings on the six component dimensions, ICC were calculated. The ICC ranged from .64 on the inter-team single observation for the dimension of "self-appraisal" to .99 for the inter-rater multiple observation for the dimension of "motivation."

To examine the contribution of each of the six dimensions to the overall rating, item-to-total correlations were calculated for each of the dimensions as compared with the global rating. The Pearson correlation coefficients between any pairing of dimensions, or of individual dimensions with the global rating were all very high: the correlations for community interviewers ranged from .88 to 1.00; for faculty raters, from .88 and 1.00; and for student/alumnus interviewers, .77 to 1.00. For each of the interviewer categories, it was the dimension "career goals" that yielded the lowest correlation coefficient when paired with another dimension.

Table 1

Inter-team and Inter-rater Intraclass Correlation Coefficients (r) of Interviews of Four Simulated Applicants (n=4 applicants x 4 teams x 3 raters/team)

	Inter-Team		Inter-Rater	
	1 Team	4 Teams	1 Rater	3 Raters
Motivation	.75	.93	.92	.99
Awareness	.88	.97	.93	.98
Problem-solving	.72	.93	.84	.97
Self-appraisal	.64	.90	.88	.98
Ability to Relate	.69	.93	.85	.98
Career Goals	.67	.93	.81	.97
Global Rating	.66	.89	.96	.99

To ascertain that interviewers could discriminate between applicants highly suited to the program and those less suited, the four randomly selected interviewer teams (each consisting of three members) interviewed all four simulated applicants. This resulted in a total of 12 interview scores for each applicant.

The differences between mean global ratings assigned by the four teams to each of the four applicants (between-subject difference, wherein the implicit between-subject factor is assigned by default) was statistically significant ANOVA $F(1,3)=19.91$, $p=.02$). The differences were statistically significant at $p=.01$ for five of the six dimensions, and at $p=.02$ for the dimension of "awareness of the McMaster program" and for global ratings (Table 2).

The mean global ratings reflected the simulations, in that the applicant programmed to be unsuitable (Applicant D) was identified as such by all four

Table 2

Repeated Measures ANOVA to Detect a Rater or Team Effect in the Interview Subscale Scores and Global Rating (n=4 applicants x 3 teams x 3 raters/team)

	F (1, 3)	P
Motivation	24.15	.01*
Awareness	20.32	.02*
Problem-solving	31.14	.01*
Self-appraisal	33.54	.01*
Ability to Relate	34.37	.01*
Career Goals	28.81	.01*
Global Rating	19.91	.02*

* $p \leq 0.05$

teams, the outstanding applicant (Applicant B) was rated outstanding, and so forth. This established a measure of concurrent validity. Not only did the teams all consistently distinguish between suitable and unsuitable applicants, but there was also consistency between teams in terms of overall ratings. When many different interviewers are used, teams may differ in terms of their assessment of the same applicant (Burns & Grove, 1987). To examine this possibility, the mean scores of each team were compared and it was found that there was no significant difference between the means of the global ratings across teams ANOVA $F(3,3)=.50$, $p=ns$).

The researchers questioned whether the high correlations based on the global ratings might have resulted from the interview teams adjusting their individual ratings to a common or team score, despite being specifically instructed not to do so at the orientation session. In an attempt to explore this possibility, the data were reanalyzed using a total score, a number obtained by summing the ratings on the six dimensions. However, as shown in Table 3, this maneuver resulted in even higher ICCs.

Table 3

Inter-team and Inter-rater Intraclass Correlation Coefficients (r) of Global Rating and Team Scores (n=4 applicants x 4 teams x 3 raters/team)

	Inter-Team		Inter-Rater	
	1 Team	4 Teams	1 Rater	3 Raters
Global Rating	.66	.89	.96	.99
Total Score	.81	.95	.97	.99

Actual applicants

Team interview scores (the sum of the three assigned global ratings) for individual applicants ranged from 3/21 to 21/21, with faculty, student/alumnus, and community interviewers using the full 7-point range in assigning ratings. Inter-team and inter-rater reliability of global ratings for the total applicant group ranged from .79 for the single observation, to .91 for the multiple (3 rater) observation.

Concurrent validity was assessed by comparing interview scores with scores obtained by the applicants on other admission criteria (i.e. academic, personal references, and autobiographical questionnaire). Since only those applicants who achieve high ratings on each criterion proceed to the subsequent step in the selection process, this can reduce the range of ratings. Only those applicants who achieved high ratings (5/7 to 7/7) on their autobiographical questionnaires were invited to be interviewed. The effect of this reduction in variance can be illustrated by comparing the correlation between

interview scores and overall collation ranking in the total interview pool with the correlation among these measures in the subgroup accepted into the program. The correlation was .82 ($p=.01$) in the total interview pool, and .77 ($p=.02$) among the accepted applicants.

Discussion

The personal interview is the final step in candidate selection and contributes proportionately more weight to the overall process than any other step. It is therefore important to assess its reliability and validity. The high correlations between applicant ratings (inter-rater and inter-team ICC), demonstrate that multiple interviewers were able to clearly differentiate between applicants who had various degrees of suitability to the program using the existing interview criteria and format. The results support the continued use of a semi-structured team interview, and are consistent with other recent research findings (Edwards, Johnson & Molidar, 1990; Posthuma & Noh, 1990; Richards, McManus & Maitlis, 1988).

The fact that "career goals" was the dimension that yielded the lowest correlations with the global rating may be due to the fact that it assesses the clarity of the applicant's goals rather than their appropriateness. Thus, an applicant with a high rating in this dimension might not have a high global rating, whereas the other five dimensions may be more closely linked to applicant suitability. The guidelines for the dimension "career goals" will be revised to bring them more in line with the other dimensions.

The personal interview assessment form was reported by the interviewers to have a useful format. The interviewers stated that the orientation sessions held immediately prior to the interviews increased the consistency of expectations and ratings, a statement that was supported by the research findings. Since the ICCs for the total score were even higher than those for the team global rating, the global rating will continue to be used as an accurate measure of applicant assessment.

However, as Haglund (1978) cautioned: "When a faculty decides to develop specialized programs to prepare individuals to meet the requirement for admissions *it needs to be aware of the decreased efficiency of the admission process*" (p. 241, italics added). Through repeated applications for admission to programs, applicants may merely "learn the process" rather than truly improve their suitability. The Admissions Committees of the Faculty of Health Sciences undergraduate programs are currently reviewing the policy and procedures for providing feedback to unsuccessful applicants to be equitable for all applicants, yet not provide coaching for future applications.

Both in-course progress and licensure examination results of students in the B.Sc.N. program will be monitored to ascertain the levels of predictive validity of both the autobiographical letter (Brown, Carpio & Roberts, 1991) and the personal interview.

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This research was supported by the Neimeier Fund of the School of Nursing, and the statistical analysis provided by the Program for Educational Development of the Faculty of Health Sciences, McMaster University.

Bilan des causes d'invalidité chez les infirmières québécoises

Jacqueline Dionne-Proulx

Disability Causes in Quebec Nurses: an evaluation. More and more data demonstrate that nursing can be a particularly stressful career (Jones, 1987). One of the objectives of this study was to determine if the work organisation and its resulting stress had long-term effects on the health of Quebec nurses. The second objective was to confirm the results from our first analysis through empirical research. This study has determined a main target regarding preventive strategies for these professionals: mental health.

Key words: Mental health, psychological distress, work organization, permanent disability, nurses.

Il existe de plus en plus de données qui démontrent que la profession d'infirmière peut s'avérer particulièrement stressante (Jones, 1987). La présente recherche a été entreprise, d'une part, afin de déterminer si l'organisation du travail et le stress qui en résulte ont des conséquences à long terme sur la santé des infirmières québécoises et, d'autre part, pour tenter, à partir de rapports de recherches empiriques, de confirmer les résultats de notre première analyse.

Cette recherche a permis de déterminer une cible prioritaire en matière de stratégies préventives pour ces professionnelles: la santé mentale.

Mots clés : santé mentale, détresse psychologique, organisation du travail, stress, invalidité permanente, infirmières.

L'intérêt des chercheurs pour les relations entre le stress et les problèmes de santé physique et mentale s'est traduit par une quantité appréciable de publications au cours des deux dernières décennies. La recherche recense certains problèmes de santé majeurs, tels l'hypertension, l'augmentation du taux de cholestérol sanguin, les troubles gastro-intestinaux et les problèmes cardiaques, ainsi que d'autres désordres physiques mineurs (Pépin, 1991). Le stress au travail a également un impact important sur la santé mentale des travailleurs. La plupart des recherches sur le sujet ont, en fait, utilisé des indicateurs de détresse psychologique comme l'anxiété, la dépression (Cooper et Roden, 1985 ; Van Ameringen et Arsenault, 1990), l'irritation (Van Ameringen et Arsenault, 1990) et la diminution de l'estime de soi (French, Caplan et Van Harrison, 1982) pour mesurer la santé mentale. Par ailleurs, Streptoe (1991) constate que les liens entre l'organisation du travail, le stress et les maladies (physiques et mentales) n'ont pas été étudiés. Par maladie mentale, il faut entendre un syndrome ou un ensemble comportemental ou psychologique cliniquement significatif et typiquement associé à un symptôme de détresse ou à l'incapacité de fonctionner (Pichot et Guelfi, 1983).

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Les recherches menées auprès des infirmières indiquent que les difficultés qu'elles vivent dans l'exercice de leur profession (charge de travail, problèmes de rôle...) sont étroitement associées à l'épuisement professionnel (Duquette, Kérouac et Beaudet, 1990), à des désordres psychosomatiques et somatiques (Walters et Haines, 1989; Jamal, 1990) et à des problèmes émotionnels (Motowildo, Packard et Manning, 1986 ; Walters et Haines, 1989; Olsson, Kandolin et Kaupinen-Toropainen, 1990).

La présente recherche a été entreprise, d'une part, afin de déterminer si l'organisation du travail et le stress qui y est associé ont des conséquences à long terme sur la santé physique et mentale des infirmières et, d'autre part, pour tenter, à partir de rapports de recherches empiriques, de confirmer les résultats de notre première analyse.

Abordée sous cet angle, cette recherche permet de traiter la question du stress chez les infirmières de façon plus objective, au-delà des perceptions et des expériences individuelles. De façon plus précise, cette étude vise les objectifs suivants :

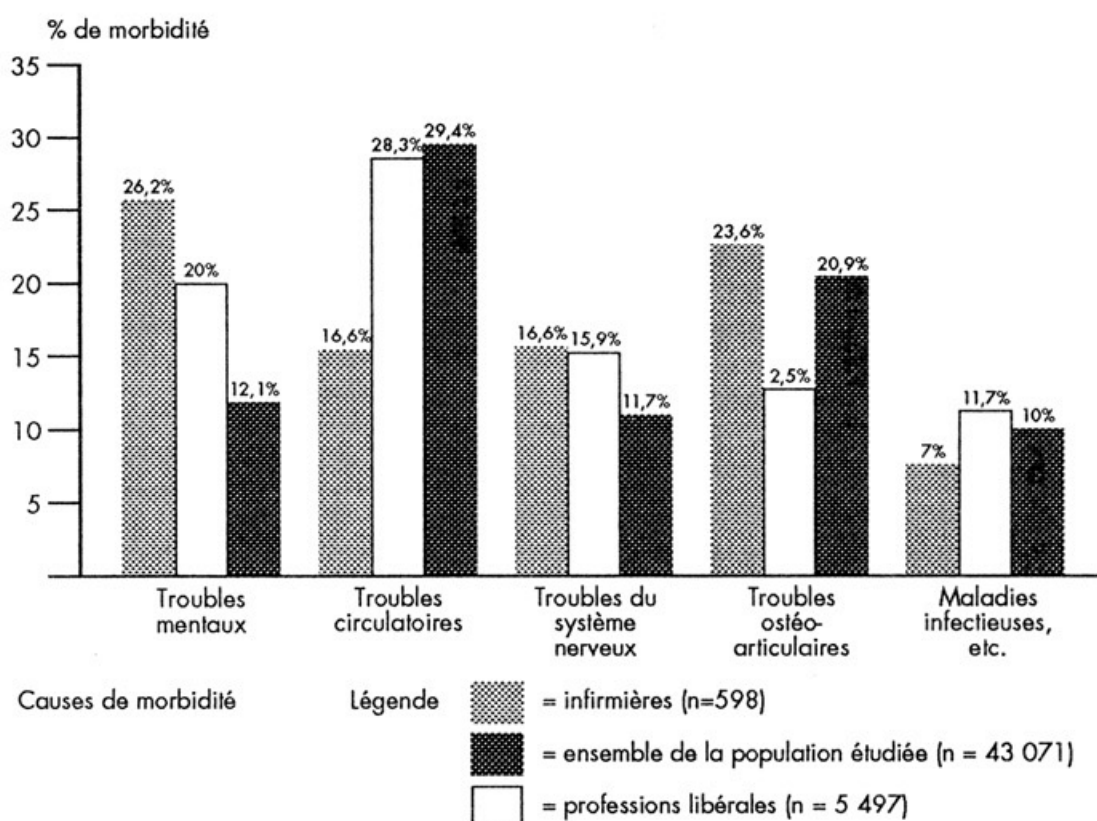
- dresser une synthèse des informations statistiques disponibles sur l'invalidité permanente des infirmières;
- comparer ce bilan à une population de référence et aux données empiriques existantes;
- établir des priorités de recherche et d'intervention auprès de ce groupe professionnel.

La démarche

L'étude a été réalisée à partir du fichier informatique d'invalidité de la Régie des rentes du Québec (RRQ), organisme gouvernemental chargé de gérer le régime des rentes au Québec. Les informations recueillies concernent toutes les causes d'invalidité permanente telles qu'elles apparaissent sur le formulaire d'invalidité signé par le médecin et sont codifiées selon la classification internationale des maladies (CIMA) de l'Organisation mondiale de la santé (OMS, 1977)¹, l'occupation du cotisant au moment de l'invalidité et son âge lors du versement du premier chèque. La première analyse descriptive, qui portait sur l'ensemble des dossiers actifs ($n = 43\,071$), visait à déterminer quelle proportion des prestataires occupaient une profession libérale (professionnels, techniciens et administrateurs) au moment de leur invalidité. L'analyse des données pour les infirmières a permis de synthétiser les informations disponibles relativement à l'invalidité permanente telle qu'elle est reconnue par la RRQ. Le bilan obtenu a ensuite été comparé aux résultats pour l'ensemble des prestataires de rentes d'invalidité et à ceux d'un sous-groupe de référence (professions libérales). Ces données ont également été ventilées par groupes d'âge et par année de déclaration.

Tableau 1

Pourcentage de morbidité pour les groupes « infirmières », « professions libérales » et « population totale étudiée » en fonction des causes de morbidité



La deuxième phase de l'étude consistait en une recension de la littérature scientifique ayant trait aux conditions de travail des infirmières et à leurs conséquences sur le plan de la santé physique et mentale.

Cette revue de la littérature avait pour but d'inventorier les domaines déjà étudiés et de voir si certaines recherches confirmaient les résultats obtenus en première analyse. Au terme de ces deux phases, certaines priorités de recherche et d'intervention se dégagent.

Les résultats

L'analyse descriptive des données du fichier de la RRQ a permis d'établir à 43 071 le nombre total de rentes actives. Le nombre de cotisants qui occupaient une profession libérale au moment de leur invalidité était de 5 497, soit une proportion de 12,8%. Pour leur part, les infirmières totalisaient 0,01% de l'ensemble des invalidités avec 598 rentes (voir le tableau 1).

- L'analyse en fonction des causes d'invalidité est également fort révélatrice :
- sur l'ensemble des rentes chez les infirmières, 157 sont associées à des désordres mentaux, soit 26,2%. Cette proportion est beaucoup plus élevée que dans la population totale étudiée (12,1%) ou dans le sous-groupe «professions libérales» (20%);
 - les maladies de l'appareil circulatoire sont responsables de 16,6% des invalidités comparativement à 28,3% pour le sous-groupe «professions libérales» et à 29,4% pour la population totale;
 - les troubles du système nerveux interviennent dans 16,6% des cas d'invalidité chez les infirmières, ce qui est sensiblement la même proportion que dans le sous-groupe «professions libérales» (15,9%);
 - les problèmes ostéo-articulaires comptent pour 23,6% de l'ensemble de leurs invalidités alors que ce pourcentage atteint 20,9% pour l'ensemble des bénéficiaires et 12,5% dans le sous-groupe «professions libérales»;
 - enfin, dans la catégorie «maladies infectieuses et parasitaires, tumeurs, maladies du sang et des organes hématopoïétiques, maladies des glandes endocrines et du métabolisme» les résultats sont relativement homogènes : les infirmières totalisent 7% contre 10% dans la population totale étudiée et 11,7% dans le sous-groupe «professions libérales». Ces cinq catégories regroupent 90% de l'ensemble des rentes actives chez les infirmières.

Lorsque les données sont ventilées par groupes d'âge, on constate que les infirmières se retrouvent en invalidité permanente relativement plus jeunes que les autres bénéficiaires de rentes (33,1% ont moins de 44 ans comparativement à 12,5% pour le groupe «professions libérales» et à 10% pour toute la population étudiée). L'écart se maintient toujours pour le groupe des 45-54 ans quoique de façon moins prononcée (32,3%, 22,7% et 18% respectivement (voir le tableau 2).

Ces résultats suscitent une réflexion sérieuse, d'autant plus que 30% des infirmières en invalidité à long terme pour troubles mentaux ont moins de 44 ans à la date de déclaration de leur invalidité alors que 39,5% ont entre 45 et 54 ans. En ce qui concerne les catégories «maladies du système nerveux»

Tableau 2

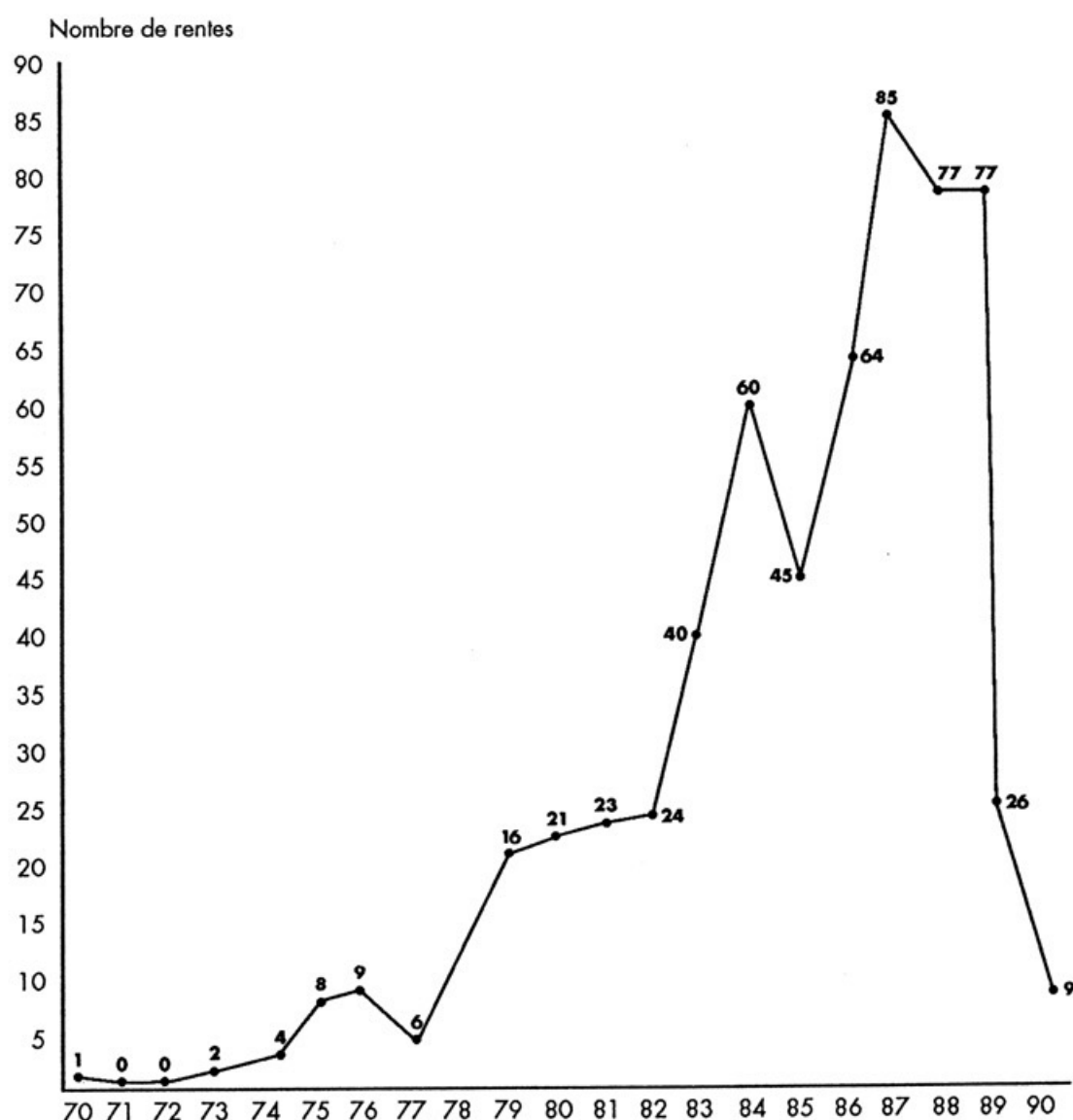
Répartition des rentes d'invalidité en fonction de l'âge

Catégories	Age (ans)							
	≤44		45-54		≥55		Total	
	N	%	N	%	N	%	N	%
Population totale étudiée	4292	10	7771	18	31 008	72	43 071	100
Professions libérales	688	12,5	1249	22,7	3560	64,8	5497	100
Infirmiers(ères)	198	33,1	193	32,2	207	34,6	598	100

et «maladies du système osteo-articulaire, etc.» les pourcentages d'infirmières de moins de 44 ans atteignent respectivement 62,6% et 24,1%. La situation est très différente sur le plan des «troubles circulatoires» où 15,2% avaient moins de 44 ans au moment de leur invalidité. En poussant encore davantage l'analyse, cette fois en fonction de l'année d'invalidité, on obtient des résultats intéressants (voir le tableau 3). Entre 1970 (année d'entrée en vigueur du régime) et 1981, 114 cas d'invalidité ont été reconnus et indemnités par la Régie. De 1982 à 1988, 439 infirmières ont quitté la vie active en raison d'une pathologie invalidante reconnue par la RRQ, les deux principales causes étant les troubles mentaux et les lésions ostéo-articulaires. Depuis 1989, le nombre de nouveaux cas d'invalidité tend à se stabiliser à des niveaux comparables à ceux des années 1975-1981.

Tableau 3

Distribution numérique des rentes d'invalidité selon l'année en cause



Analyse de la documentation internationale

La documentation scientifique révèle que la profession d'infirmière est potentiellement stressante (Marshall, 1980) et que le phénomène va en s'amplifiant (Walters et Haines, 1989). On trouve divers facteurs de stress dans plusieurs facettes de la vie professionnelle et de la structure organisationnelle. Les facteurs de stress intrinsèques de l'emploi y sont décrits comme résultant de l'incertitude face aux traitements, l'incapacité à satisfaire les attentes et les besoins des patients, des horaires de travail rotatifs, de la pression pour obtenir des résultats immédiats, des fréquentes interruptions, de la peur de faire des erreurs, des défaillances de l'équipement, des possibilités restreintes de carrière (Lee, 1987) et du fait de devoir côtoyer la souffrance et la mort (Cooper et Mitchell, 1990).

Les infirmières doivent également faire face à de nombreux problèmes de rôle (Jamal, 1984; Arsenault, Dolan, Van Ameringen, 1990; Walters et Haines, 1989). Elles sont appelées à travailler dans un contexte où leur sécurité d'emploi est menacée (Jick, 1987) en plus de vivre une disparité importante entre leur statut réel et celui auquel elles aspiraient (Jacobson et McGraw, 1983).

Elles doivent maintenir une relation empathique avec les patients mourants et leurs proches (Cooper et Mitchell, 1990) et certains malades difficiles (Shouksmith et Wallis, 1988). La structure et le climat organisationnels peuvent également créer un stress important lorsqu'ils réduisent les possibilités de soutien social (Cooper et Mitchell, 1990) et la participation aux décisions (Hingley et Cooper, 1986). On a établi des relations significatives entre certains facteurs de stress et des désordres psychosomatiques, notamment des symptômes ostéo-articulaires tels les maux de dos et les douleurs au cou et aux épaules (Walters et Haines, 1989; Olsson et al., 1990), des troubles gastro-intestinaux (douleurs à l'estomac, perte d'appétit, constipation), des problèmes de sommeil et la fatigue (Olsson et al., 1990; Estry-Behar et Fonchain, 1986), ainsi qu'une augmentation de l'hypertension artérielle diastolique (Van Ameringen, Arsenault et Dolan, 1988).

Le stress au travail a également un impact sur la santé psychologique des infirmières. La profession d'infirmière a été associée à l'épuisement professionnel (Duquette et al., 1990) comme plusieurs professions d'assistance à autrui. La recherche indique que le stress perçu est en relation avec divers problèmes émotionnels comme l'anxiété, l'irritation, la dépression (Walters et Haines, 1989; Van Ameringen et Arsenault, 1990; Motowildo, Packard et Manning, 1986), l'épuisement et la frustration (Olson et al. 1990). Humphrey (1988) conclut également que cette profession génère une très grande anxiété. Cette détresse psychologique semble avoir des répercussions importantes. Les infirmières présentent un des taux de suicide les plus élevés (Jones, 1987) et

elles sont fréquemment dirigées vers des soins psychiatriques (Humphrey, 1988). Il semble que les facteurs de stress inhérents à l'environnement hospitalier peuvent conduire au développement de désordres mentaux (Lee, 1987). Le fait que Parkes (1980) ait constaté des niveaux similaires de détresse chez les étudiantes infirmières et dans un large échantillon d'infirmières diplômées tend à confirmer cette hypothèse. Depuis, Van Ameringen et Arsenault (1990) ont analysé les relations entre les facteurs de stress et un indice global de santé mentale et sociale qui tient compte de la personnalité des individus. Ils ont découvert que ce sont principalement les facteurs de stress psychosociaux dans l'organisation du travail qui provoquent le détresse psychologique.

Discussion

La présente recherche montre que les infirmières sont moins fréquemment atteintes de troubles de l'appareil cardio-vasculaire que les membres de tous les autres groupes d'emplois réunis (16,6% contre 29,4%). Cela confirme les résultats de Boulard (1980) concernant les pourcentages de décès dus aux maladies cardio-vasculaires au Québec. Ces maladies sont responsables de 26,7% des décès chez les travailleurs du secteur des Affaires sociales, de 48,5% chez les cadres, de 53,6% chez les professionnels et de 34,6% des décès dans l'ensemble de la population du Québec. Il est difficile de tenter une explication si ce n'est la répartition par sexe et par âge dans chacun des groupes. En effet, la part relativement faible des problèmes cardio-vasculaires chez les infirmières ne reflète-t-elle pas le fait que la profession regroupe surtout des femmes (94%)? Cette hypothèse est étayée par le fait que les femmes comptent seulement pour 26% de l'ensemble des rentes actives au Québec, alors qu'elles représentent près de 45% de la main-d'oeuvre active. Par ailleurs, si on isole le groupe des moins de 45 ans, elles comptent pour 62% des invalidités. Ces chiffres laissent supposer que certains ghettos d'emploi féminins sont particulièrement nocifs et entraînent la détérioration très rapide de l'état de santé et le vieillissement prématuré. Certains secteurs d'emplois féminins sont d'ailleurs reconnus pour l'intensité des contraintes de temps et d'organisation qui y règnent (Teiger, 1989).

L'analyse des données fait nettement ressortir un accroissement considérable du nombre de rentes permanentes chez les infirmières durant la période 1982-1988. À première vue, ces résultats étonnent puisque, la loi et la réglementation n'ont subi aucun changement pendant cette période. Quant au fichier, il doit constamment être mis à jour puisque son utilité principale est de fournir les données servant à l'émission des prestations d'invalidité. Il est donc très improbable qu'on y ait omis des dossiers avant 1982 et après 1988 puisque les prestataires auraient alors été privés de leurs rentes. Comment alors expliquer une telle augmentation? Tout porte à croire que les coupures budgétaires et la rationalisation des effectifs dans les années 1980 ont

fait grimper le nombre de rentes d'invalidité. Ceux et celles qui n'ont pu s'ajuster aux nouvelles exigences se sont retirés de la vie active à ce moment. Cette hausse remarquable du nombre de rentes d'invalidité a entraîné des coûts très importants pour la société québécoise, d'autant plus que les prestataires étaient relativement jeunes, comme nous l'avons déjà vu.

L'existence de problèmes mentaux graves qui sont responsables d'une très large proportion des invalidités permanentes chez les infirmières ne fait aucun doute. Plus de 26% des rentes actives chez les infirmières québécoises sont reliées à cette cause. Cette proportion est beaucoup plus élevée que pour l'ensemble des prestataires, pour qui ces problèmes sont responsables de 12,1% des rentes. Dans le sous-groupe «professions libérales», cette cause d'invalidité est responsable de 20% des rentes actives. La proportion élevée, dans la profession d'infirmières de femmes qui se trouvent parfois dans des situations difficiles tant dans leur milieu familial que dans leur environnement professionnel, ne constitue-t-elle pas l'explication la plus plausible? Déjà, l'enquête *Santé Québec*, 1987 indiquait que 26% de l'ensemble des femmes souffraient de détresse psychologique contre 16% des hommes. Cette enquête fait également ressortir que la détresse psychologique décroît au fur et à mesure que le niveau de scolarité s'accroît. La part relativement élevée de troubles mentaux pour la population d'infirmières serait-elle associée à une déficience de leur formation de base compte tenu du rôle et des exigences de la profession qui connaissent une transformation en profondeur? L'hypothèse est intéressante, mais il n'existe encore aucun consensus sur le sujet. Alors que la plupart des associations professionnelles d'infirmières à travers le monde, de même que les directeurs des programmes universitaires de sciences infirmières et les directeurs de soins infirmiers des établissements de santé québécois soutiennent que la formation en technique infirmière est insuffisante et que la formation universitaire doit être reconnue comme critère d'admission à la profession, le Rapport du Comité d'étude sur la main-d'oeuvre en soins infirmiers du Ministère de la Santé et des Services sociaux lui préfère l'expérience et la formation en cours d'emploi (OIIQ, 1989).

Par ailleurs, cette part relativement élevée des invalidités pour troubles mentaux ne peut être la conséquence d'une faible occurrence des autres pathologies puisque la fréquence globale d'invalidité chez les infirmières est à peu près équivalente à celle de la population générale soit 0,009% contre 0,013%.

La question est maintenant de savoir s'il existe un lien privilégié entre le stress inhérent aux conditions d'exercice de la profession infirmière et les troubles mentaux dont plusieurs membres de cette profession sont victimes au Québec. La présente étude ne permet pas de faire une telle association. D'une part, la catégorie «troubles mentaux» regroupe toute une panoplie de

désordres qui, dans certains cas, n'ont rien à voir avec le stress, et cela tant chez les infirmières que dans les groupes témoins. D'autre part, les statistiques de la RRQ ignorent les conditions dans lesquelles travaillent les prestataires au moment de leur invalidité de même que leurs antécédents professionnels. Toutefois, les écarts observés entre les groupes étudiés (26,2% pour les infirmières, 20% pour les professions libérales et 12,1% pour tous les prestataires de rentes d'invalidité au Québec) sont réels et reflètent les conditions de vie, notamment la vie professionnelle. Quant à la pertinence d'utiliser l'invalidité permanente pour mesurer les contraintes d'un métier donné, Vézina, Vinet et Brisson (1989) l'expliquent de la façon suivante. Alors que certaines caractéristiques de l'organisation du travail (facteurs de stress environnementales et organisationnelles, tels le bruit, les cadences et les gestes répétitifs...) peuvent être associées à des réactions physiologiques et à des problèmes de santé à court terme, les connaissances sont malheureusement plus pauvres en ce qui concerne les effets cumulatifs ou à long terme des divers paramètres de l'organisation du travail. Les contraintes méthodologiques (nature et intensité de l'exposition) ainsi que la difficulté de trouver un indicateur de santé acceptable et mesurable constituent les principales raisons de cette lacune. Même si le vieillissement prématuré constitue une mesure appropriée, il est encore difficile de l'utiliser. Le calcul du taux d'invalidité permanente dans une population donnée peut contribuer à contourner cette difficulté, car il recouvre le concept de vieillissement. Une telle mesure peut donc donner une bonne idée des effets à long terme du travail. Il serait, en effet, difficile de croire que les infirmières présentent des caractéristiques personnelles particulières qui mettent en péril leur équilibre mental. D'ailleurs, la littérature tend davantage à associer la détresse psychologique aux facteurs de stress psychosociaux dans l'organisation du travail (Van Ameringen et Arsenault, 1990).

Cette recherche a un poids certain. L'utilisation du fichier de la RRQ garantit la qualité de l'information sur la gravité de l'invalidité des infirmières. Elle permet de poser l'hypothèse d'un lien entre les caractéristiques de l'organisation du travail dans le milieu hospitalier et les problèmes mentaux dont plusieurs infirmières sont victimes au Québec. Cependant, une question subsiste en matière de prévention. Quelles sont les variables à l'origine de ces difficultés? La littérature propose déjà des embryons d'explications, notamment en ce qui a trait aux facteurs de stress psychosociaux dans l'organisation du travail. Il y a donc place pour des recherches plus approfondies en ce sens, qui utiliseraient des analyses longitudinales et qui tiendraient compte des pratiques de gestion dans les organisations, de la liberté de décision et des possibilités de soutien social. De telles recherches sont susceptibles de conduire à un diagnostic adéquat et, subséquentement, à des interventions préventives efficaces.

Conclusion

Cette recherche a permis de dresser le bilan des causes d'invalidité chez les infirmières du Québec. Les constatations qui en découlent invitent à une réflexion sérieuse: les troubles mentaux sont à l'origine d'une proportion importante des invalidités permanentes, et les infirmières deviennent invalides relativement plus jeunes que l'ensemble des prestataires. Elles sont toutefois moins fréquemment atteintes de problèmes cardio-vasculaires que les autres professionnels.

Seules des études complémentaires permettraient d'établir adéquatement les facteurs à l'origine des troubles psychologiques dont traite la littérature. Par ailleurs, en faisant ressortir les causes d'invalidité chez les infirmières québécoises, cette recherche a permis de fixer une cible prioritaire en matière de stratégies préventives pour cette catégorie de travailleuses: la santé mentale.

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Important Nurse Caring Behaviors: Perceptions of Oncology Patients and Nurses

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Le concept de soins ou de bienveillance est considéré comme une clé de voûte des sciences infirmières. Peu d'enquêtes systématiques ont cependant examiné les rapports existant entre la bienveillance professionnelle et l'acte de soigner. Cette étude a mis à profit une démarche corrélative et comparative afin d'explorer les divers pointages accordés par des patients et des infirmières de services d'oncologie aux soins prodigués par des infirmières. L'étude a également étudié les différences entre les pointages inférieurs obtenus. Quarante-deux patients et quarante-six infirmières ont participé à l'étude. Les résultats ont montré des différences et des similitudes quant aux pointages accordés par les deux groupes aux soins prodigués par les infirmières. Cinq nouvelles sous-échelles ont été reconnues et nommées en fonction du genre de soins prodigués par les infirmières. Les patients ont classé au premier plan les aspects cliniques des soins, suivis par l'empathie manifestée lors de ceux-ci. Les infirmières ont mis au premier chef l'empathie manifestée envers le patient, suivi de l'aspect continu des soins. Cette étude permet de mieux comprendre les perceptions qu'ont les patients et les infirmières d'oncologie sur les façons de soigner des infirmières.

The concept of care or caring is considered to be a salient feature of nursing practice yet there has been little systematic investigation of caring as related to nursing. This study used a correlational, comparative design to explore rankings of nurse caring behaviors by oncology patients and nurses including the investigation of differences between subscale scores of these caring behaviors. Forty two patients and 46 nurses participated in the study. The results demonstrate differences and similarities between these two groups in their ranking of nurse caring behaviors. Five new subscales were identified and labelled according to kinds of caring demonstrated by the nurse. Patients ranked as most important the clinical aspects of care followed by the empathetic manner of caring. Nurses chose as most important the empathetic manner of caring followed by the continuity of caring. This study provides increased understanding of the perceptions of oncology patients and nurses about nurse caring behaviors.

Care is a salient feature of the practice of nursing. Leininger (1977, 1988), Watson (1979), Brown (1981), Gaut (1984), and Benner & Wrubel (1989) are among those who have contributed to the current understanding of this concept. Their efforts notwithstanding, there has been little systematic investigation of this subject. Larson (1981, 1984) conducted an important study comparing the perceptions of nurses and patients regarding nurse caring behaviors. The current study is a replication and elaboration of that original work to obtain further information about this phenomenon.

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The conceptual framework of this project was based on the McGill Model of Nursing introduced by Dr. Moyra Allen in 1977 and elaborated upon by Gottlieb and Rowat (1987). Health is a learning process to enhance life and promote coping, and the health of the individual or family is the goal of nursing. The context within which health and healthy ways of living are learned comprises the environment for nursing. In this study, care was viewed as a component of that learning environment.

Literature Review

The word "care" has been linked to the nursing profession since the time of Florence Nightingale, yet its usage remains elusive and leads to confusing interpretations (Forrest, 1989). Further research is needed to reduce these ambiguities and provide an understanding of caring that accounts for all aspects of nursing practices (Leininger, 1977).

Caring has been characterized as a natural and essential element of human existence that enhances growth and development towards actualization (Erikson, 1950; Gaylin, 1976; Heidegger, 1962; Mayeroff, 1971). Commonly discussed in the context of a relationship, psychologists and psychiatrists have identified caring within a familial (Erikson, 1950; Gaylin, 1976; Simon, 1976), or therapeutic (Gaut, 1984; May, 1969; Rogers, 1965) relationship, one that allows mutual attainment of goals (May, 1969). Several constructs such as touch (Simon, 1976), empathy (Rogers, 1965), positive regard (Jourard, 1971; Rogers, 1965), and congruence (Rogers, 1965) have been used to describe the concept of caring. Research has drawn upon these approaches to explain caring both in the universal sense and within the profession of nursing.

In the nursing literature, care is considered to be a prominent feature of the nurse-patient relationship (King, 1981; Orlando, 1961; Pepleau, 1952), one that is relevant for theory development and nursing practice (Leininger, 1986; Watson, 1979). Watson (1979) and Leininger (1977) suggested that further research is needed to identify caring behaviors that could enhance recovery, positive health behaviors, and health maintenance.

Numerous qualitative studies have examined the experience and perception of patients as recipients of care (Brown, 1981; Cronin & Harrison, 1988; Harris, 1989; Henry, 1975; Larson, 1979; Reimen, 1986; Watson, 1979). Patients referred to the quality of the nurse's presence that conveyed a sense of personal value to them (Reimen, 1986). Other studies have examined the nurses' perceptions of caring (Ford, 1981; Forrest, 1989; Ray, 1987; Watson, 1979); their view of caring incorporated "being with" rather than "doing to" a client. These two perspectives have contributed greatly to the identification and classification of nurse caring behaviors (Brown, 1981; Ford, 1981; Harris, 1989; Henry, 1975; Larson, 1979; Reiman, 1986; Watson, 1979).

The nurse caring behaviors were identified as expressive or instrumental according to the classification of Watson (1979) and Brown (1981) described above. According to Watson (1979) and Brown (1981) nurse caring behaviors can be classified along two dimensions: the task or instrumental dimension refers to those nursing activities that focus more on the physical and treatment needs of the client; the affective dimension alludes to the more psychosocially oriented behaviors, such as offering emotional support and listening. Both dimensions of care are equally important to the hospitalized clients (Brown, 1981; Harris, 1989).

Larson (1981, 1987) and Mayer (1987) examined the relative importance of specific nurse caring behaviors from the perspective of nurses and patients. The Care-Q Sort Instrument was developed by Larson (1981) to measure the ranked importance of 50 nurse caring behaviors classified under six themes of care: anticipates; comforts; explains and facilitates; develops and sustains trusting relationships; monitors and follows through; and is accessible. Fifty-seven oncology patients and nurses ranked the items by importance. Mayer (1987) replicated Larson's study with 28 oncology nurses and 57 cancer patients using this same instrument. The findings of both studies demonstrated that nurses and patients held different perceptions of important nurse caring behaviors. Nurses ranked expressive behaviors as indicators of care more frequently than did patients, whereas patients ranked instrumental nursing behaviors as most important (Mayer, 1987).

Purpose

The purpose of the study was to examine this phenomenon of care/caring as perceived by oncology patients and nurses. The current study used a correlational, comparative design to address the following research questions:

1. How do oncology patients and nurses rank caring behaviors in order of importance?
2. What is the relationship between these rankings of caring behaviors?
3. Are there differences between subscale scores of these caring behaviors for oncology patients and nurses?

Method

A descriptive correlational and comparative study design was implemented to address the research questions. Descriptive statistics were used to illustrate the characteristics of individuals in the sample groups and to report the scores for individual Q sort items. An analysis comparing subscale scores for patients and nurses was conducted using t-tests.

The Care-Q Sort does not specify the nursing care setting in which the instrument should be administered. The oncology setting was chosen because it is an area of care where both patients and nurses place a strong emphasis on repeated nursing care behaviors. The patients were interviewed in an outpatient setting because: their perceptions would have developed over a period of time, they were likely to have an overall view of caring behaviors, and they would not be concerned that their responses would affect the quality of care they were receiving. This choice of setting also helped to ensure a relatively consistent state of well-being in the study sample; hospitalized patients demonstrate greater variability in their state of health.

The patient sample was drawn from two university teaching hospital outpatient departments. The inclusion criteria were:

1. Malignant tumor/disease diagnosed at least three months prior to Care-Q sort to permit time for internalization of the diagnosis (Weisman, 1979).
2. At least one hospitalization within the year to control for memory bias.
3. Alert as described by the clinic nurse; perceptions can otherwise be clouded by altered states of consciousness.
4. Willingness to participate.
5. Literate in the English language.

Nurses were selected for this study from various hospital units where care was provided to oncology patients. These units were in the same hospitals as those from which the patients were selected. All nurses who took part in the study were willing to participate and held a licence to practise nursing in the province of Quebec.

The convenience sample consisted of 42 oncology patients and 46 oncology nurses. Characteristics of the patient sample included: 23 males and 19 females; an age range of 18 to 74 years with a mean of 46.9 years for males and 55.6 years for females; 52.4% had greater than high school education; 33.4% was found to be functioning outside the organized labor market (including homemakers, students, and retired people); nearly one quarter held professional occupations; and 52.4% had been hospitalized within 3 months prior to their participation.

Fifty nurses from day and evening shifts completed Care-Q sorts, but four of these data sets were completed incorrectly and were omitted from the data analysis. The nurses practiced on 12 different hospital units. Characteristics of the nurse sample included: one male, and 45 females; an age range of 20 to 53 years with a mean of 27 years; 56.6% were educated in diploma

programs; more than 45% had three years or less experience; 82% worked full time; and 78.3% rotated through the various shifts. The sample as a whole was well experienced in nursing oncology patients.

Instruments

Each participant completed the Care-Q Sort Instrument designed by Larson in 1981. It is based upon Q-technique designed for ranking of items (in this case, nurse caring behaviors) according to perceived importance. Item identification was initiated by a Delphi survey of practicing nurses on caring. An expert nurse panel reviewed the instrument for validity and reached universal agreement on 60 of 69 items. A psychometric consultation panel provided clarification as needed, and a set of 52 items was submitted to a patient and nurse panel. Reliability of the Care-Q Instrument was addressed through a small test-retest study with nine undergraduate nursing students. A perfect correlation (+1.0) was found between the first and second sorting on items selected as most important and least important (Larson, 1981, 1984). The advantage of using Q-technique in this study is that it allows fine discriminations of caring behaviors. In addition, social desirability, response set bias, and missing data were eliminated with Q-technique because the items have to be ranked in a forced choice quasi-normal distribution (Dennis, 1986).

For the current study, each of the 50 nurse caring behaviors was printed on a 3" x 5" card. Participants were requested to sort the cards along a quasi-normal distribution into seven categories or ranks of importance, requiring a forced choice: the participants chose one most important and one least important caring behavior, then four each of fairly important and fairly unimportant, 10 each of somewhat important and somewhat unimportant, and the remaining items were ranked as neither important nor unimportant. A score of 7 was given to the one item considered most important and a score of 1 to the least important item. The scores in between were assigned to each category in the order just described.

Data Collection

Potential subjects were approached by oncology clinic nurses, and if they were willing a nurse researcher further explained the study to them and obtained informed consent. Demographic information was collected through interview. The Care-Q Sort was completed by the patient alone, in a designated quiet area of the clinic with the researcher available to answer technical questions related to the instrument. The entire procedure took approximately 20 to 45 minutes per subject.

Table 1

Oncology Patients' (n=42) Perceptions of Most Important Nurse Caring Behaviors: The Five High Mean (Standard Deviation) Score Care-Q Items

Care-Q Item	Mean	S.D.
Knows how to give shots, IVs, etc. manage equipment like IVs, suction machines, etc.	5.26	(1.36)
Gives a quick response to patient's call.	5.19	(0.94)
Gives the patient's treatments and medications on time.	5.05	(1.13)
Knows when to call the doctor.	5.02	(1.18)
*Is perceptive of patient's needs and plans and acts accordingly (e.g. gives anti-nausea medication when patient is receiving medication that will probably induce nausea).	4.93	(1.09)

*Item also ranked in five highest mean items of nurses.

Nurse participants from various oncology units were notified about the study by their respective nurse managers. Nurses completed their Q-sort packets at home within a given period of time because of their busy work schedules.

Results

In response to the first research question, the five items with the highest mean scores (most important) and the five items with the lowest mean scores (least important) of the Care-Q instrument were chosen for examination. The caring behaviors which received the highest mean scores from the patients are shown in Table 1. Table 2 contains the items obtaining the lowest mean scores from patients. The corresponding ratings from the nurses appear in Tables 3 and 4.

Table 2

Oncology Patients' (n=42) Perceptions of Least Important Nurse Caring Behaviors: The Five Low Mean (Standard Deviation) Score Care-Q Items

Care-Q Item	Mean	S.D.
Checks out with the patient best time to talk with the patient about changes in his/her condition.	3.45	(0.94)
Offers reasonable alternatives to the patient, such as choice of appointment times, bath times etc.	3.30	(0.91)
Volunteers to do "little things" for the patient e.g. brings a cup of coffee, paper etc.	3.00	(1.17)
*Is professional in appearance - wears appropriate identifiable clothing and identification.	2.88	(1.25)
*Asks the patient what name he/she prefers to be called	2.45	(1.13)

*Item also ranked in five least important nurse caring behaviors by oncology nurses.

Table 3**Oncology Nurses' (n=46) Perceptions of Most Important Nurse Caring Behaviors: The Five High Mean (Standard Deviation) Score Care-Q Items**

Care-Q Item	Mean	S.D.
Listens to the patient.	5.91	(0.89)
Allows the patient to express his feelings and his/her disease and treatment fully and treats the information confidentially.	5.39	(0.95)
Realizes that the patient knows himself best and whenever possible includes the patient in planning and management of his/her disease.	4.93	(1.02)
*Is perceptive of patient's needs and plans and acts accordingly (e.g. gives anti-nausea medication when patient is receiving medication which will probably induce nausea).	4.76	(1.16)
Gets to know the patient as a person.	4.76	(1.28)

*Item also ranked in five highest mean items of oncology patient group.

Both patients and nurses placed the item related to acting on patient's needs among the five highest mean scores, and professional appearance and calling the patient by a preferred name among the lowest mean scores.

In an effort to further explore the groupings of these nurse caring behaviors, five new subscales were identified and labelled according to kinds of caring demonstrated by the nurse. After each item was assigned to a subscale, the mean rankings of items by the patients and nurses were evaluated. Items showing low (<0.40) correlations with the subscale scores were removed. The titles of the new subscales and the number of items contained in each were as follows: (a) clinical caring [7 items] (e.g., "Gives the patient's treatments and medications on time"); (b) attentive caring [7 items] (e.g., "Gives a quick response to the patient's call"); (c) continuity of caring [6 items] (e.g., "Tells

Table 4**Oncology Nurses' (n=46) Perceptions of Least Important Nurse Caring Behaviors: The Five Low Mean (Standard Deviation) Score Care-Q Items**

Care-Q Item	Mean	S.D.
Is patient even with "difficult patients."	3.24	(0.79)
Is cheerful.	3.22	(1.19)
Suggests questions for the patient to ask doctor.	2.89	(1.04)
*Asks the patient what name they prefer to be called	2.76	(1.08)
*Is professional in appearance – wears appropriate identifiable clothing and identification.	2.54	(1.36)

*Item also ranked in five least important nurse caring behaviors by oncology nurses.

the patient of support systems"); (d) empathetic manner of caring [4 items] (e.g., "Realizes that the patient knows himself best and includes patient in planning"); and (e) disposition of the nurse caring [5 items] (e.g., "Is cheerful").

The titles for these subscales were validated through review by two nurse experts. Intercorrelations for the new subscales were low and not significant (Table 5). No analysis was made to determine the significance of removing 21 items from the caring behaviors in order to establish the new set of subscales.

Table 5

Pearson Correlation Coefficient Matrix of Current Care-Q Subscales

	Clinical	Attentive	Continuity	Disposition	Empathetic
Clinical	1.00	-0.09	-0.43	0.26	-0.27
Attentive	-0.09	1.00	-0.24	-0.12	-0.20
Continuity	-0.43	-0.24	1.00	-0.08	0.06
Disposition	0.26	-0.12	-0.09	1.00	-0.15
Empathetic	-0.27	-0.20	0.06	-0.15	1.00

The scores of the oncology patient and nurse groups were compared on the basis of the new subscales (Table 6). Two-tailed t-tests revealed that there were statistically significant differences ($p < .001$) between the patients and nurses with respect to their ranking of the subscales of clinical caring, disposition of nurse caring, and continuity of caring.

Table 6

**Comparison of Oncology Patients' (n=42) and Nurses' (n=46)
Mean Subscale Scores (Standard Deviation)**

Subscales	Patients		Rank	Nurses		Rank	Significance*
	Mean	(S.D.)		Mean	(S.D.)		
Clinical Caring	4.44	(0.43)	1	3.91	(0.48)	4	$p < .001$
Empathetic Manner of Caring	4.17	(0.57)	2	4.32	(0.50)	1	n.s.
Attentive Caring	4.09	(0.57)	3	4.07	(0.33)	3	n.s.
Disposition of Nurse Caring	3.94	(0.65)	4	3.43	(0.73)	5	$p < .001$
Continuity of Nurse Caring	3.74	(0.35)	5	4.28	(0.43)	2	$p < .001$

*Two-tailed test

Discussion

Reimen (1986) supported the notion that perceptions of important nurse caring behaviours differ among nurses and patients in the clinical practice of oncology nursing. More studies are needed to clarify what the differences in perception of care mean to clinical practice. For example, the current study could be repeated to determine if perceptions of care vary with patient diagnostic group or treatment group. Mangold (1991) compared perceptions of senior nursing students and professional nurses, and a recent nursing study addressed nurse caring behaviors as perceived by family members in the intensive care setting (Gagnon, 1992).

In the current study patients emphasized the technical care given by the nurse as being most important in making them feel cared for. Perhaps patients had been socialized by the media to expect the nurse's job to center around the technical aspects of care, or perhaps they recognized that other aspects of caring are not appreciated until the basic physical needs are met. Clinical caring might be viewed as a stepping stone to the provision of other aspects of care. Clearly, more research is required to investigate such possibilities.

Conversely, nurses did not rank the clinical caring subscale highly. Perhaps they recognized that a certain level of expertise was necessary to care for the oncology patient and took clinical competence for granted, thereby underestimating the value of technical skills in making patients feel cared for. Social desirability may also have played a part in their rankings. At the time of the study, the departments of nursing at the two hospitals were attempting to implement a family-centered approach to health care with an emphasis on psychosocial aspects. Therefore, the nurses may have been influenced by this new emphasis.

Larson (1981) and Mayer (1987) also reported that patients valued technical skills more, and expressive caring behaviors less than the nurses did. The findings of the two aforementioned studies and the data from the current study support the notion that perceptions of caring behavior by oncology patients are similar from setting to setting.

Nurses emphasized the importance of continuity of caring significantly more than the patients did. While the study was underway primary nursing care, which emphasizes the continuity of care for the patient and family, was being implemented in both hospitals. Therefore the nurses' heightened awareness may have influenced their higher ranking of items in this subscale.

Patients assigned a lower priority to the continuity of caring subscale. Weisman (1979) suggested that oncology patients receiving active treatment

for their disease may not be able to envision life beyond the treatments. Therefore, they may not be thinking of their post discharge period, and would not expect the nurse to be doing so either. In addition, oncology patients may not expect hospital nurses to be concerned with support systems and resources outside the hospital. Finally, the approach of professionals to disease management during the acute phases may give the patient the message that they are more concerned with the disease process than with coping with daily living outside the hospital. Glaser and Strauss (1968) and Brown (1986) have supported this notion.

The oncology patients generally valued nurses' cheerfulness, calmness, and organizational skills (disposition of the nurse caring) more highly than did the nurses. This finding may be related to the results of a study by Brown (1981) in which patients valued equally the aspects of care that reflected "what the nurse does" and "what the nurse is."

The two subscales that showed no statistically significant difference in mean ratings between the two groups were empathetic manner of caring and attentive caring. The behaviors representative of these two subscales included, for example, a quick response to patient's call, a consistent approach to the patient, and the provision of basic comfort measures. These behaviors may represent the basis upon which a caring relationship between a nurse and patient is generally established. Further research within this area of study is required to substantiate this premise.

Implications

The design and sampling procedures of this project preclude generalizing to other populations. However, the findings do suggest several implications for nursing practice. Firstly, perceptions of nurse caring behaviors are individual and varied and must therefore be explicated within the context of each nurse-patient interaction or relationship. Secondly, by recognizing that perceptions of important caring behaviors vary with the individual, the assessment, planning, implementation, and evaluation of care can be tailored to each oncology patient. Thirdly, differences in the way nurses perceive the importance of specific nurse caring behaviors may influence the way they interact with one another. And lastly, information about the importance given to various nurse caring behaviors by patients and nurses may be useful in planning educational programs for nursing students and practising nurses.

Conclusion

This study contributes information to Larson's (1981) original study, which developed and tested the Care-Q Instrument. It contributes empirical evidence towards the body of knowledge related to caring behaviors, and suggests that further research is needed in the area of caring with other patient populations. Time spent caring for the oncology patient might become more meaningful for both patient and nurse if there is a greater understanding of caring behaviors as significant elements of the caring environment.

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LETTER TO THE EDITOR

Recent studies in several disciplines reveal that journal authorship patterns have changed considerably in the last 20 years. Evidence suggests that the pattern has gone from predominantly single authorships to a combination of co- and multiple authorships. To date, there have been no systematic studies in nursing *per se*, although there have been studies in related disciplines such as medicine and life sciences. I decided, therefore, to launch an investigation in nursing. I chose *The Canadian Journal of Nursing Research* as my target journal because it is the oldest national refereed journal in nursing that is devoted almost exclusively to research in the field.

I examined all major articles from 1970 to 1991. Excluded were abstracts, book reviews, briefs submitted to commissions, critiques, and rebuttals, editorials, letters to the editor, reports of conference proceedings, special columns such as "Query and Theory" or "Viewpoint," tributes, and works with an unspecified number of authors. The data were grouped into one seven-year interval and three five-year intervals as follows: 1970-1976, 1977-1981, 1982-1986, and 1987-1991. Each interval contained 20 issues. A record sheet for each of the intervals was compiled. The number of authors, that is, single, double, and multiple for each of the years and for the total period was calculated. Then the number of authors was converted to percentages for each year and for the total period.

I found that nursing was not unlike other disciplines, that it too has experienced changes in authorship patterns. Specifically, single authorships accounted for nearly 82% of all publications during the 1970-1981 period. However, the pattern shifted in 1982. In particular, co- and multiple authorships combined accounted for about 43% of all publications between 1982 and 1986. This number further increased to approximately 66% between 1987 and 1991. This means, in essence, that there has been a dramatic reversal in authorship patterns in the *CJNR* in the last 10 years.

Reasons for this increase in collaborative publication are speculative, but as a rule, are attributed to three factors. First, is the ever-increasing pressure on nursing faculty to "publish or perish". Second, is the ever-increasing complexity of nursing research itself, and third, is the increase in the mentorship of graduate students.

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Information for Authors

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should also be made to the
Associate Director, Graduate Programs

