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CONTENTS - TABLE DES MATIÈRES

- 1 Editorial: Family Nursing Thriving
Le nursing familial en plein essor
Nancy Feeley
- 5 Student-Faculty Joint Authorship: Mentorship in publication
Résumé: Co-rédaction étudiants et professeurs: publication et encadrement
Suzan Banoub-Baddour and Lan T. Gien
- 15 AIDS: Knowledge and attitudes of student nurses in Australia and Canada
Résumé: SIDA: connaissances et attitudes des étudiants-infirmiers en Australie et au Canada
P. Bell and A.K. Williams
- 27 Entry and Exit Characteristics of Baccalaureate Nursing Students
Résumé: Caractéristiques des étudiants de baccalauréat lors de l'admission à l'université et en fin de programme
Stella Dyck, Donna Rae, Joan Sawatzky and Jean Innes
- 41 Mesure de l'attitude des professeurs a l'égard de la créativité de l'étudiante-infirmière (MAPCE)
Abstract: A measure of professors' attitudes toward the creativity of student nurses (MAPCE)
Diane Gravelle, Hélène Lazure et Mary Reidy
- 57 Research Activities in Canadian University Schools and Faculties of Nursing for 1988-1989
Résumé: Activités de recherche dans les écoles et facultés de sciences infirmières des universités canadiennes en 1988-89
Annette M. O'Connor and Jeanette L. Bouchard
-
- 67 Information for authors
68 Renseignements à l'intention des auteurs

FAMILY NURSING THRIVING

The Second International Family Nursing conference took place May 21st-24th in Portland, Oregon. The meeting was sponsored by Oregon Health Sciences University School of Nursing, Montana State University College of Nursing, University of California San Francisco Department of Family Health Care Nursing, and the University of Washington School of Nursing. Over 500 nurse researchers, educators and clinicians from across Canada, the United States and thirteen other countries attended. This conference provides a forum for nurses to exchange ideas, knowledge and research about family nursing. The idea was conceived of by Lorraine Wright, and the first conference took place in Calgary in 1988. At this second conference, Dr. Wright was presented with an award recognizing her efforts in the development of this new tradition.

The program featured three thought-provoking plenary sessions examining the role of family nursing in various domains. Miriam J. Hirshfeld, addressed "Health For All In the Year 2000", Kathryn E. Barnard, "The Early Years of the Family Life Cycle" and Margaritha Lorensen "Aging Families". The plenary speakers highlighted the major challenges that we face in the future; and prompted us to consider some of the broader issues such as poverty, illiteracy and the status of women, and their impact on family health.

Concurrent sessions addressed family nursing education, practice, research and theory, as well as family policy. The majority of concurrent sessions (more than 40) were research presentations. The studies covered a wide range of clinical content areas. Family caregiving, families dealing with chronic illness and families with a member who has cancer were the subject of a significant number of studies. As well, researchers discussed methodological issues and shared their experiences in conducting family research. Certainly the number of research sessions suggests that considerable family research is being conducted.

A significantly smaller number of concurrent sessions focused on clinical practice and family nursing theory. The relatively small number of clinical sessions included descriptions of family nursing practice and interventions. Nurses are beginning to describe the nature of their work with families, but further development and elaboration of practice is clearly required. In addition, clinicians and administrators discussed the implementation of family

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nursing in various settings. For the most part, the settings tended to be those with a tradition of a family focus, such as pediatric and mental health settings. Are nurses developing family nursing in adult, acute care settings? What are the obstacles that we confront in these settings? How are innovative nurses negotiating these obstacles? Just one concurrent session addressed issues in family nursing education. The paucity of sessions exploring education was interesting, given that there appeared to be many educators in attendance. Furthermore, many questions posed by this group during discussion periods demonstrated a high level of interest in exploring how students learn about families, and how to nurse families.

The plenary speakers discussed the importance of nurses working with the political establishments to influence policy-making and family health. However, family policy was the focus of just one concurrent session. Do we consider the impact of health and social policy on the health of families? Are we intervening at this level? Or are nurses not involved in shaping policy that impacts on family health?

Given the large number of papers presented at this conference and the number of enthusiastic participants exchanging ideas and expertise, it would appear that family nursing is thriving. I was left with the impression that nurses are not just paying lip service to this notion of family as the unit of nursing care. Rather, steady progress is being made in our efforts to study families, build knowledge about families and nurse families.

We will have yet another opportunity to mark our progress when The Third International Family Nursing Conference will be held in Montreal in May, 1993. The conference will be organized by McGill University, University of Montreal, and the McGill teaching hospitals. We would like to invite you to join us in Montreal in 1993 to participate in the continued development of family nursing.

Nancy Feeley

LE NURSING FAMILIAL EN PLEIN ESSOR

Le Second colloque international de nursing familial a eu lieu du 21 au 24 mai à Portland (Oregon). Ce congrès était organisé conjointement par l'école de sciences infirmières de l'Oregon Health Sciences University, le collège de sciences infirmières de l'Université d'État du Montana, le département de santé familiale de l'Université de Californie à San Francisco, et l'école de sciences infirmières de l'Université de Washington. Plus de 500 infirmiers, chercheurs, enseignants et cliniciens originaires du Canada, des États-Unis et de treize autres pays ont participé à la rencontre. Le colloque se veut une tribune favorisant les échanges d'idées, de connaissances et de recherches sur le nursing familial. C'est Lorraine Wright qui a eu l'idée d'organiser la première conférence à Calgary en 1988. Ce second colloque a été marqué par la remise d'un prix au Dr Wright en reconnaissance de ses efforts visant à mettre sur pied cette nouvelle tradition.

Le programme prévoyait trois séances plénières de réflexion sur le rôle du nursing familial dans différents domaines. Miriam J. Hirshfeld a parlé de "La santé pour tous en l'an 2000", Kathryn E. Barnard a donné une communication intitulée "Les premières années du cycle vital de la famille" et Margharthe Lorensen a traité des "Familles vieillissantes". Tout en soulignant les principaux défis que nous sommes appelés à relever, les conférencières nous ont amenés à réfléchir à des questions plus générales comme la pauvreté, l'analphabétisme et la condition de la femme et à leurs répercussions sur la santé de la famille.

Les ateliers ont porté sur l'enseignement et l'exercice du nursing familial, sur la recherche et la théorie ainsi que sur les politiques familiales. La majorité des ateliers (plus de 40) s'articulaient autour de présentations de comptes rendus de recherche, les études dont il était question touchant à une gamme étendue de problèmes cliniques. La prestation de soins aux familles, les familles aux prises avec une maladie chronique et les familles dont un membre est atteint de cancer ont été à l'origine d'un nombre important de travaux. Par ailleurs, les chercheurs ont débattu de questions méthodologiques et partagé les expériences qu'ils ont de la prestation de soins aux familles. En juger par le nombre d'ateliers consacrés à la recherche, il semble que le nursing familial suscite un volume de recherche important.

Un nombre nettement moindre d'ateliers étaient axés sur la théorie et l'exercice du nursing familial. Les ateliers consacrés à la clinique, également moins nombreux, ont permis de cerner la nature du nursing familial et de ses interventions. Si les infirmiers commencent à décrire la nature de leurs inter-

ventions auprès des familles, il n'en demeure pas moins qu'il reste à développer et à définir avec plus de précision l'exercice de cette nouvelle discipline. En outre, des cliniciens et des administrateurs ont parlé de l'implantation du nursing familial dans différents milieux. Dans la plupart des cas, on a fait allusion à des milieux traditionnellement axés sur la famille, tels que la pédiatrie et la santé mentale. Les infirmiers entendent-ils introduire le nursing familial dans des établissements de soins aigus pour adultes? Ê quels obstacles de heurtent-ils dans ces milieux? Ê quelles stratégies les infirmiers ingénieux font-ils appel pour vaincre ces obstacles? Un seul atelier a traité de questions relatives à l'enseignement du nursing familial. Le petit nombre d'ateliers consacrés à l'enseignement est très révélateur, compte tenu de l'importante délégation de professeurs inscrits au colloque. Par ailleurs, maintes questions posées dans le cadre des périodes de discussion ont témoigné du niveau d'intérêt élevé pour la façon dont les étudiants approfondissent la notion de famille ainsi que pour les modalités du nursing familial.

Dans le cadre des séances plénières, les conférenciers ont traité de l'importance de la concertation entre les milieux infirmiers et les différents paliers de gouvernement qui interviennent dans l'élaboration des politiques relatives à la santé de la famille. Les politiques familiales n'ont pourtant fait l'objet que d'un seul atelier. Tenons-nous compte de l'effet des politiques relatives à la famille et à la santé sur la santé de la famille? Intervenons-nous à ce niveau? Ou bien les infirmiers se tiennent-ils à l'écart de l'élaboration des politiques de nature à influencer sur la santé de la famille?

En juger par les multiples ateliers présentés dans le cadre de ce colloque et par le nombre de participants enthousiastes venus échanger des idées et des connaissances, le nursing familial est en plein essor. J'ai eu l'impression très nette que loin de parler du nursing familial pour la forme uniquement, les infirmiers y souscrivent à part entière, ayant intégré cette discipline dans leur profession. Au reste, nos efforts pour étudier la famille et approfondir les modalités des soins à la famille ne cessent de progresser.

Nous aurons à nouveau l'occasion de souligner nos progrès en la matière lors du Troisième colloque international de nursing familial qui aura lieu à Montréal en mai 1993. Ce colloque sera organisé conjointement par l'Université McGill, l'Université de Montréal et les hôpitaux d'enseignement de l'Université McGill. Nous profitons de l'occasion pour vous inviter à vous joindre à nous en 1993 et à participer activement à l'essor du nursing familial.

Nancy Feeley

STUDENT-FACULTY JOINT-AUTHORSHIP: MENTORSHIP IN PUBLICATION

Suzan Banoub-Baddour and Lan T. Gien

As nurses pursue knowledge and their research becomes increasingly complex and sophisticated, collaboration among nurses with various kinds of expertise becomes a necessity. This trend is clearly reflected in the multi-authored articles that are published in many nursing research journals. Brown, Tanner, and Padrick (1984) reported an increase in the percentage of such articles, from 7% in 1952-53 to 40% in 1980.

Collaborative research and resulting multiple authorship have usually developed among colleagues from within the nursing community and from other disciplines. This joint-authorship process has been defined by Nehring and Durham (1986) as "collaboration between two or more persons with a common goal of producing a published professional journal article" (p. 15). While the issue of co-authorship among colleagues has received some attention in the literature, the role of this process in guiding or mentoring students to meet the demands of their future working world has not received much emphasis.

In this paper, we will propose a concept of student-faculty joint-authorship, outlining some advantages for both the faculty mentor and the students. As well, we will explore the potential problems of such joint-authorship and its implications. Finally, based on the literature review, on the results of a small, informal survey of Canadian faculty members, and on our own personal experiences, we will discuss principles for assigning credits and suggest guidelines to deal with those problems.

Advantages of joint-authorship among faculty and students

Nursing graduates often find themselves in positions that demand frequent publications and involvement in scholarly works as part of the requirements for their professional advancement. Furthermore, with increasing emphasis on interdisciplinary work as one of the criteria for receiving research grants, the new graduates are often ill-prepared for this collaborative process. This is

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mainly because of the graduates' lack of exposure to the joint-authorship process, coupled with their often limited understanding of the etiquette of assigning credits in publication. Thus, graduate nursing programs should make stronger commitment to help students meet this reality in their future working world. This objective could be partially met by encouraging co-authorship between students and faculty in papers arising from a thesis or other scholarly work. Collaboration would not only provide students the needed mentorship in publication and rightful recognition for all contributions, but would also improve the scholarly productivity of all involved. Faculty members, especially those directly involved in graduate education, would have opportunities to reconcile their teaching requirements with research and scholarly productivity by initiating joint-authorship processes with their students. Thus, the two functions of teaching and scholarly productivity would, indeed, be complementary, instead of just being convergent in principle and divergent in practice (Cameron, 1985; Tebbutt, 1973).

In contrast to most doctoral students, few master's candidates reach a level of conceptual clarity while writing their thesis proposals and final reports. It is those writing skills that Allen, Bower and Diekelmann (1989) believe must be improved in order to reach conceptual maturity. Just writing the thesis report, although a complex task, may not always provide sufficient learning experience. Graduate students are often reluctant, ill-prepared and unmotivated to publish their research, and poorly socialized about the importance of publishing and the etiquette of co-authorship. Therefore, writing for professional publication with the mentorship of a faculty joint-author and exposure to peer review is essential to a quality education. Co-authoring with a faculty supervisor, and with other thesis member(s) who have been closely involved, offers and sustains the much-needed motivation. Indeed, joint publishing with the faculty supervisor allows students to benefit from a mentorship experience that unfortunately has not been well developed, either in academic or in clinical nursing settings (Powell, Roskoski & Ostmo, 1979). More importantly, the inspiration offered by their teachers can get these graduates to be "research-minded" and later involved in clinical research (Ritchie, 1988).

Potential problems of joint-authorship

Despite many advantages, joint-authorship involves problems arising from differences in power base, personality, writing style, level of motivation and working pace. Other difficulties may arise from problems not anticipated at the beginning of the student-faculty contract (e.g. smaller sample size, poor reliability of instrument, inability to complete the project within a reasonable time-frame). As well, incorrect assignment of authorship credits has generated much discussion and therefore, will be discussed at length in this article.

The process whereby researchers "record officially their methods and results in the archives of science" (Downs, 1989, p.195) can occasionally lead to "irresponsible authorship" (Jackson, 1984, quoted in Huth, 1986a, p. 273). There have been, for instance, situations in which individuals listed among the authors were unaware that their names had been included or had not approved the submitted manuscript. In one case, each one of the two co-authors had independently submitted the manuscript to a different journal (Yankauer, 1987). Authorship has also sometimes been assigned for reasons of reciprocity or autocracy, rather than on the basis of real contribution. In other instance, persons who made major contributions to the work were not given recognition.

The editor of the *American Journal of Public Health* has complained that, "it is not always easy these days to know who is the author of a paper" (Yankauer, 1987 p.272). He points out that this may mislead both readers and members of tenure review committees; further, potential employers of graduating students may be misled in case of student-faculty collaborative research and joint publication.

More than just irresponsible authorship, the issue at hand is one of "intellectual property and research coordination" (Cameron, 1985, p.69). Although it is believed that ideas cannot be owned (Hanson, 1988), the thorny issue of intellectual property is, and has been, the focus of much debate among scholars. It has constituted the central theme of two workshops conducted during the 25th annual session of the Canadian Association of Graduate Schools, in 1985. The concept of intellectual property, according to Morin (1985, p. 13), stems mainly from the seventeenth-century conception of the individual as "essentially the sole proprietor" of his or her own person and capacities, and owing little if anything to society. Based on this concept, the proof of existence and originality of such intellectual property becomes vital. Inspired by the 1984 federal government's White Paper On Copyrights, entitled *From Gutenberg to Telidon* (Minister of Supply and Service Canada, 1984), Morin (1985) further discussed the elements of fixation and originality which the White Paper describes as the "two basic criteria for copyright protection" (p.5-6). Proof of existence for an intellectual property means that the creation or idea is being "fixed in material form", publicly visible and accessible. Originality does not refer, in this White Paper, to originality in thought but rather to "originality in expression and independence of effort".

Therefore, can most nursing master's students claim the right to be sole proprietor of publication arising from their thesis work? Does the professor who guides a student in a thesis research, or even invites student's participation in his or her own research, ultimately loose all claim to authorship in such publications? Faculty members who have made significant intellectual

contribution to a student's thesis should consider its "fixation in material form" by co-authoring it with that particular student. Furthermore, Kirkland (1989) suggests that, should the student fail to publish within 18 months of project completion, the professor also has the right to complete an article and submit it for publication - with the student as second author - provided, however, that the student agrees to this course when the project is initiated.

Various viewpoints regarding student-faculty joint-authorship issue

Some nursing professors consider it "unethical" for the faculty to expect any authorship credit in papers arising from theses (Gay, Lavender & McCard, 1987). Supporters of this view see the supervisor's assistance to students in the development of their research as the normal role of a teacher; as such, the contribution is recognized and rewarded with salary. They perceive the faculty member's role in thesis supervision, or in any related publication, as a mere teaching responsibility, possibly implying just "supervising" with minimal or no added creation, input or actual sharing of the faculty member's intellectual property.

Others argue that co-authorship is, in some instances, a normal expectation and, depending on his or her contribution in the mutual endeavor, even the right of the thesis supervisor. They argue that the faculty member's contribution to a student's thesis may vary widely. This is in accordance with the distinctions made by Leyerle (1985) between laboratory sciences and the humanities and social sciences. The style of supervision in these latter disciplines has been described as "hands-off," while it is identified in the laboratory sciences, as "hands-on" (p. 53). In research done in the laboratory sciences, the "graduate student typically works on one or more aspects of his/her supervisor's project and has steady direction and encouragement... The resulting research is published by co-authorship ... and time is of essence in every aspect of the work" (p. 51-52). However, in the humanities and social sciences the thesis topic may not be related to the professor's own research. In such cases co-authorship is not the rule.

We believe that nurse educators practice either the "hands-on" or the "hands-off" supervision styles: there are no universal rules. One single element would, in our view, legitimate student-faculty co-authorship in publications arising from the thesis: that is, that the faculty member's contribution to the student's thesis research conception and development has been significant. When it is deserved, acknowledging the faculty member's contribution by joint-authorship is vital, lest the students misrepresent themselves as being the sole authors responsible for all that an article represents.

Not surprisingly, the debate regarding student-faculty co-authorship has not yielded a common consensus across disciplines - not even within the

same discipline. As Rossner (1987) describes it, there are a number of local and institutional rules, some formal or informal, as well as many unspoken rules and beliefs that have never been ratified. The difficulty in formulating detailed guidelines to fit every possible situation of research collaboration has been described in the study by Werley and her colleagues (1981). In a national survey of 1,693 American nurses aimed at assessing their views on publication credit assignment, Werley and her team identified ten points of agreement which were summarized as possible guidelines for publication credit assignment. Three such points dealt with the professor-student co-authorship issue. Respondents included nurses from the American Academy of Nurses and the Council of Nurse Researchers, deans of nursing schools, authors, and nursing doctoral students. They agreed that a professor must make an important contribution to the student's work, if that professor were to be cited as a co-author. There was even an agreement over the time spent by the dissertation adviser in actual consultation with the student (more than 15 hours over a 16-month period) that would qualify the professor for co-authorship. Although we agree, in principle, with the time factor as one possible indicator of the faculty member's contribution to the student's work, we believe that there are additional elements that should be determined and agreed upon.

Faculty expectation of co-authorship with students - the Canadian context

We decided, in the Fall of 1988, to conduct a small opinion poll within our own university community. About ten coordinators of graduate studies in the various schools and departments were contacted. Despite the absence of a formal written policy, there was general consensus that faculty expected to be cited as co-authors if the degree of faculty's intellectual contribution warranted. Those who definitely expected co-authorship were mostly from science faculties. This seemed to arise from their experiences with their own thesis supervisors, and is consistent with the literature cited above. We did not, however, discuss with these coordinators their definitions of intellectual contribution.

The topic of intellectual contribution was addressed in a national mailed opinion poll conducted by Hardy at the end of 1988 (L.K. Hardy, personal communication, January 23, 1989). All deans or directors of the 11 Canadian schools of nursing with master's programs were sent a short questionnaire. The questions sought information on formal or informal policies regarding faculty co-authorship on publications arising out of the students' theses, and when and how the policy was conveyed to the students. As well, non-nursing faculty members at Memorial University who were involved in students' thesis committees were sent the same questionnaire.

A total of 15 responses were received (seven nursing deans and eight non-nursing faculty). Among the seven nursing schools that responded, only two

had policies regarding student-faculty co-authorship (one formal, the other informal). Three other schools had an "understanding" that co-authorship would occur, another felt it was a matter left between the student and supervisor and one school had yet to address the issue.

Of the eight responses received from the non-nursing faculty, six were in favour of co-authorship. Four of these further specified that a major contribution on the professor's part actually "deserved, if not demanded, co-authorship". One member referred to the guidelines of the *Publication Manual* of the American Psychological Association (1983).

It is evident from this small survey that no consensus on the student-faculty co-authorship issue exists, and that the nursing schools' commitment to providing mentorship in this process varies widely. It would be interesting to quantify the impact of such different levels of expectation on the scholarly productivity of graduates from various schools, and thus on the overall advancement of the Canadian nursing scientific enterprise. Further research is needed to address the need for mentorship in publications in graduate nursing education, and the resultant co-authorship dilemma. Moreover, sensitive qualitative and quantitative research is needed that will find ways to encourage students to speak openly about these issues, thus preventing possible misunderstanding and frustrations.

Recommended principles for student-faculty co-authorship

Because of different opinions and practices, it has been proposed that clearly defined criteria, accepted by all disciplines, are needed (Huth, 1986a, 1986b; Angell, 1986). At the present time, few disciplines appear to have fully developed guidelines for co-authorship. The American Psychological Association (1983), the Council of Biology Editors (1983), the American Chemical Society (1986), and the International Committee of Medical Journal Editors (1985), also known as the Vancouver group, all have published a set of statements either on "authorship" or on ethics of publication based on previously published opinions and guidelines.

Based on the literature review, on the results of the previously mentioned opinion polls and small survey, and on our own personal experiences, we have synthesized the following principles for student-faculty co-authorship. These principles could be applied to situations ranging from multi-disciplinary endeavors to group work within the same discipline. Based on these principles, each school, discipline or group can develop its own guidelines.

Principle 1. The faculty member and student should each have participated sufficiently in the work represented by the article to take public

responsibility for its content. Public responsibility means that an author can defend the content of the article, including the data, other evidence and the related conclusions.

Principle 2. The co-authorship must include three major contributions: conception or design of the work, analysis and interpretation of the data, or both; drafting the article or revising it for critically important content; and final approval of the version to be published.

Principle 3. Faculty who have made minor contributions to the article, are not co-authors, but must be named and their contribution described. Such minor contributions may include supportive functions (e.g. advice; critical review of the proposal, thesis or article or statistical help) and should, with permission, be acknowledged in footnotes. Technical assistance should be acknowledged separately (e.g. assistance in collecting data or modifying or structuring a computer program). A combination of minor contributions, however, may justify authorship (American Psychological Association, 1983).

Based on these principles, we recommend the following guidelines.

1. Students whose supervising professors make significant contributions should include the professor as second author when the manuscript is submitted for publication. A professor has the right to expect the student to publish the results of such work within a mutually-agreed time limit. A multi-staged time span may be proposed. For example, first draft to be completed within eight months following thesis submission, final manuscript submission within 16 months. Past such deadline, and with the student's informed consent, the professor may complete and submit the manuscript for publication, as the first author.

2. If committee members have made major contributions to the student's work, they also should be included as co-authors.

3. A written contract between the faculty member and the student should be made at the outset of the thesis or research project, to avoid misunderstanding about joint-authorship. The contract should allow modifications, as circumstances dictate: for example, in the case of a change in the thesis supervisor.

4. A copy of these principles and the underlying guidelines should be distributed to all graduate students on the first week of classes. Furthermore, graduate courses on research methods should include the discussion of these principles to familiarize students with customary practices.

Conclusion

The pressures to "publish or perish" are mounting, especially for university faculty members. The trend to multi-authorship is increasing. Graduate nursing schools have an obligation to provide mentorship for their students and to encourage student-faculty co-authorship as part of the socialization process. Greater commitment to joint publications would come from a more formal understanding of the expectations and the use of written guidelines and contracts.

Curriculum content of graduate research courses should include thorough discussion of the principles, as well as the etiquette, rights, obligations and ethics of assigning credits. Student-faculty co-authored publications will help disseminate the outcomes of nursing research, improve faculty and student creativity and scholarly productivity, generate nursing knowledge, and, most importantly, promote research in Nursing. We believe that formal co-authorship respects the rights and responsibilities of both faculty and student in the intellectual collaboration, and will benefit the entire nursing scientific enterprise.

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RÉSUMÉ

Co-rédaction étudiants et professeurs: publication et encadrement

Au fur et à mesure que les infirmiers approfondissent leurs connaissances et que leurs recherches deviennent de plus en plus fouillées et complexes, la collaboration s'impose entre praticiens de compétences différentes ou praticiens spécialisés dans des domaines différents.

Cette tendance se reflète nettement dans le nombre d'articles rédigés par plusieurs auteurs qui paraissent dans de nombreuses revues de sciences infirmières. Brown, Tanner et Padrick (1984) signalent que de 1952-53 à 1980, la proportion de ces articles est passée de 7 % à 40 %.

La recherche en collaboration et la co-rédaction d'articles se sont généralement développées entre infirmiers et entre infirmiers et spécialistes d'autres disciplines. Cette démarche fondée sur la concertation de plusieurs auteurs a été définie par Nehring et Durham (1986) comme étant une (p.15). Si la question de la co-rédaction a été abordée à quelques reprises dans la littérature, en revanche, le rôle de ce processus dans l'encadrement des étudiants que l'on entend préparer aux exigences professionnelles du milieu dans lequel ils évolueront n'a été qu'effleuré.

Dans le présent article, nous proposons le concept de co-rédaction par les professeurs et leurs étudiants et soulignons certains des avantages du système tant pour l'enseignant responsable que pour les étudiants. Par ailleurs, nous entendons explorer les problèmes éventuels que soulèvent la co-rédaction et les répercussions qu'elle peut avoir. Enfin, en nous appuyant sur un examen de la littérature pertinente, sur les résultats d'un petit sondage officieux mené auprès de professeurs canadiens et sur notre propre expérience, nous discutons des principes de fond pour l'établissement des unités de valeur et proposons des directives visant à faciliter la résolution de ces problèmes.

AIDS: KNOWLEDGE AND ATTITUDES OF STUDENT NURSES IN AUSTRALIA AND CANADA

Pamela Bell and Ann K. Williams

The impact of AIDS on health care resources and personnel in Australia has been significant. With 2,527 diagnosed cases of Acquired Immunodeficiency Syndrome (AIDS) to March, 1991 (AHSR, 1991), nurses, more than ever, must acquire knowledge and clarify their values about the disease AIDS. This impact has been particularly evident in the State of New South Wales with 1,570 diagnosed cases of AIDS (approximately 30.5 cases per million population per annum), representing 62.5% of the national total (AHSR, 1991). When compared with statistics from other countries, with the exception of the United States and Africa, the number of diagnosed cases of AIDS in Australia (approximately 148 cases per million population), is relatively high. For example, in April 1991 Canada reported 41 cases per million population (WHO 1991a), and a total of 71.6 cases per million were reported in the United Kingdom (WHO 1991b). By contrast, the United States had 145 cases per million population and 650 cases per million were reported from the Congo (WHO, 1991a). Indications are, however, that the numbers diagnosed with AIDS in Australia will increase significantly within the next decade, given the relatively late entry of the disease into this country, the long incubation period of the virus and the numbers of seropositive individuals in Australia. The National Centre In HIV Epidemiology and Clinical Research has estimated the number of seropositive individuals in Australia in March 1991 as between 17,619, approximately 12,769 of whom reside in New South Wales (AHSR, 1991). These figures, however, are conservative estimates, as legislation regarding the notification of HIV-positive cases is ambiguous. It would appear that Australian health care professionals will increasingly be called upon to care for greater numbers of people with AIDS. Furthermore, because of the nature of the disease and the fact that it is largely refractory to medical treatment, nurses, more than any other health care professionals, are, and will increasingly be, on the "front line" of AIDS patient care. (Armstrong-Esther & Hewitt; 1989; Kelly, St. Lawrence, Hood, Smith & Cook, 1988; Lester & Beard, 1988).

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It is, therefore, both timely and appropriate that an assessment of nurses' knowledge of and attitudes towards AIDS be conducted. The intent of this study was to assess what differences, if any, exist between the Australian and Canadian student nurse samples.

Literature Review

As reported by Bowd & Loos (1987) and Van Servellen, Lewis and Leake (1988), studies of AIDS and its transmission are prevalent; however, very little research exists concerning the knowledge and attitudes of nurses with regard to AIDS either in the United States or in Canada. What is frequently reported in these countries, and in the Australian literature, is the epidemiology of the disease as well as its clinical manifestations.

Along with lack of research concerning the knowledge and attitudes of nurses, there is also a relative lack of research data on the knowledge and attitudes of the community, although, as Turtle et al. (1989) report, these studies began to appear in the United States in 1984 and in Australia in 1987. It has been noted that despite the millions of dollars that have been spent on AIDS-related research, relatively less has been spent on determining the beliefs of the community at large in Australia, (Heaven, 1987). Similarly, in North America, Van Servellen et al. (1988) contend that, despite the plethora of published writings on the medical aspects of AIDS, very little attention has been directed to eliciting the responses of health care personnel to the AIDS crisis. In an Australian study measuring community beliefs about the spread of AIDS, Heaven (1987) found that beliefs about the spread of AIDS are quite complex and that negative attitudes are held by a large section of the population.

Studies measuring attitudes among health care workers have reported fear, prejudice and an unwillingness to care for AIDS patients. In a study by Kelly et al. (1987) which surveyed 157 physicians from three large North American cities with moderate but increasing AIDS prevalence, it was found that social stigmatisation and harsher attitudes were associated with AIDS vignette portrayals rather than with identical vignette portrayals when the illness was labelled "leukemia". The authors also reported a positive correlation between stigmatisation and homosexuality. These findings were replicated by the researchers one year later in their study of practising nurses' attitudes towards AIDS, using a 12 scale Prejudicial Evaluation Tool (Kelly et al., 1988). In a study of 3,000 randomly-selected nurses in the State of California, Servellen et al. (1988) found there was not only a fear of AIDS transmission but an unwillingness to care for AIDS patients that was related in part to discomfort in having to care for and counsel homosexuals. A study by Young (1988), measuring attitudes of registered nurses presently working in positions that were related directly to actual or potential AIDS clients,

found negativity towards homosexuality. Barrack (1988) found that while almost all students surveyed felt that AIDS patients were entitled to the same care as any other patient, almost half preferred not to care for AIDS patients.

Studies have also shown a lack of correlation between knowledge and rational beliefs (Bowd & Loos, 1987; Reed, Wise & Mann, 1986). An Australian study of AIDS-related knowledge and behaviour of students at a metropolitan university, (Turtle et al., 1989), found a marked discrepancy between the knowledge and performance of safe sexual behaviours. Results from a study conducted at a Canadian university school of nursing, (Bowd & Loos, 1987) indicated that, whilst a high level of knowledge regarding the transmission of AIDS existed among respondents, there was also a corresponding agreement that nurses should be free to choose whether they directly care for a client with AIDS. Clearly, as these and other studies have demonstrated, there is not always a correlation between knowledge and rational beliefs or behaviours; furthermore, increasing knowledge has also been found to be associated with increasing fear (Lester & Beard, 1988).

The prognosis of AIDS, and the prediction of its course, require that nurses be knowledgeable about the nature of the syndrome and its social and public health implications (Bowd & Loos, 1987). It is also important that appropriate attitudes concerning care of AIDS patients be fostered in students in an attempt to ensure that clients with AIDS will receive holistic nursing care, which involves a psychosocial and spiritual as well as a physiological focus. This study addresses these issues.

Method

One hundred and seventeen students enrolled in the Undergraduate Diploma Course and Postgraduate Degree Conversion Course for registered nurses at a Sydney university participated in the study. This group, a convenience sample, consisted of 50 first year students (47 female, 3 male, mean age 19 years), 50 third year (final year) students (46 female, 4 male, mean age 21 years), and 17 registered nurses enrolled in the degree conversion course (15 female, 2 male, mean age 22 years). First year respondents represented approximately 25% of the total first year student body, third year respondents represented approximately 33% of the total third year body and registered nurse respondents represented approximately 49% of enrolment in the degree conversion course. A fifteen minute questionnaire, which did not require the respondents to identify themselves, was completed in late 1989. This consisted of demographic data, five items assessing knowledge of AIDS, one item concerning knowledge of transmission modes, and one open-ended item requiring the naming of the syndrome. Twelve items, employing a five-point Likert scale, assessed attitudes about AIDS-related issues in nursing practice.

The measurement tool was a direct replication of the instrument used in the Canadian study (Bowd & Loos, 1987). This study surveyed a cohort of nursing students in the Bachelor programme at an Ontario university. No details regarding construct validity or reliability of the tool were available (Bowd & Loos, 1987), however, it was anticipated that data from the present study could provide validity evidence for the tool.

Results

Responses relating to knowledge of AIDS (Tables 1 and 2), reveal differences on seven items. Australian student nurses were more accurate than Canadians in their interpretation of the acronym AIDS (Table 1). The cause of AIDS was also more readily identified by the Australian group. Canadian student nurses however, revealed more knowledge regarding mortality rates, number of persons suffering from the disease and responsibility regarding notification of AIDS. Knowledge concerning the transmission of AIDS revealed few differences between the groups. (Table 2). Australians were more aware that friendly kissing is not a means of transmission and gave more correct responses to the use of contaminated needles.

Subjects indicated their degree of agreement or disagreement with twelve attitude statements relating to social and educational implication of AIDS for nursing practice (Table 3). Of the three questions relating to the nursing of patients, there was a high level of agreement from both groups about the need for care in assisting a client who is bleeding because of possible exposure to HIV infection. (Table 3). Agreement was high in both groups concerning the psychological needs of the client with AIDS. Of the four questions concerning attitudes to AIDS-related education, again there was a high level of agreement between the two groups. Almost total agreement was demonstrated by both groups with regard to the responsibility of the nursing profession to educate and dispel destructive myths about AIDS in the general public. Again, a high level of agreement was reached with respect to the need of nurses for formal and ongoing education about AIDS (Table 3).

In questions relating to screening of students for exposure to AIDS prior to university admission and the exclusion of students who are HIV positive or have the disease AIDS, there was general consensus in favour of disagreement. In these and other questions regarding attitudes however, where both groups showed high levels of disagreement with the question, there was correspondingly high levels of uncertainty as evidenced by the means (Table 3).

Uncertainty was also high in both groups with regard to quarantining of persons with AIDS as a means of restricting the spread of the disease (refer to mean scores, Table 3). Last, on the question of the right of nurses to choose whether they directly care for a client with AIDS, 26% of Canadian respondents disagreed, compared with 7.7% of Australians (Table 3).

Table 1***Percent Correct Responses to Factual Items about AIDS***

Item (Answer)	Australian Student Nurses (N = 117)	Canadian Student Nurses (N = 114)
What do the initials AIDS stand for? (Acquired Immunodeficiency/Immune Deficiency Syndrome)	76.6	32.6
The cause of AIDS is (A virus that attacks the body's immune system)	92.0	85.3
Patients suffering from the disease AIDS currently have a mortality rate of (no client with AIDS is likely to survive the disease because there is currently no successful treatment)	57.0	93.0
The number of persons suffering from the disease AIDS (i.e. not simply carrying anti-bodies) in Australia/Canada as of May 1989 was approximately 700 Canada/1100 Australia)	35.6	50.0
A reportable disease requires that doctors and other health professional report any suspected cases to the local medical officer of health. In New South Wales and in Ontario the disease AIDS (is a reportable disease)	43.6	84.3

Table 2

Knowledge Concerning the Transmission of AIDS

Transmission Mode	Percentage Believing	
	Australian Student Nurses (N = 117)	Canadian Student Nurses (N = 114)
Contact through the air in an enclosed environment (such as an elevator)	-	-
Casual contact such as shaking hands or hugging	-	0.69
Social contact through food preparation and eating utensils	-	3.0
Close contact through friendly kissing	8.0	15.3
* Blood transfusion with infected blood	98.6	98.6
* Use of contaminated needles in drug abuse	98.0	87.0
* Heterosexual intercourse with an infected male	97.3	96.3
* Heterosexual intercourse with an infected female	93.3	94.0
* Homosexual intercourse	83.3	85.0

* Known modes of transmission of the AIDS virus.

Table 3***Attitudes about AIDS-Associated Nursing Issues***

Item	% Agreeing		% Disagreeing		Mean *	
	Aust.	Can.	Aust.	Can.	Aust.	Can.
All students should be screened for exposure to AIDS before admission to University	12.0	20.0	72.0	66.7	3.8	3.6
Any student registering positive antibodies to AIDS should be excluded from University	2.0	3.7	84.0	82.3	4.2	4.5
Any student suffering from the disease AIDS should be excluded from University	7.0	12.7	78.7	63.3	4.0	3.7
The media have exaggerated the significance of AIDS within the community	21.0	28.0	63.0	60.0	3.5	3.5
The responsibility of the nursing profession to educate the public regarding the reality of AIDS and how it can be avoided is a pressing one	86.0	96.0	2.7	2.0	1.8	1.4
Nurses have a responsibility to help dispel some of the more destructive myths that the public accepts about AIDS	97.0	97.0	1.3	2.3	1.7	1.4

* A score of 1 indicates "strongly agree" whilst a score of 5 indicates "strongly disagree". A score of 3 indicates "uncertain".

Table 3

Attitudes about AIDS-Associated Nursing Issues - continued

Item	% Agreeing		% Disagreeing		Mean *	
	Aust.	Can.	Aust.	Can.	Aust.	Can.
All students suffering from AIDS should be quarantined to help restrict the spread of the disease	12.7	12.3	56.0	67.0	3.5	3.7
Nurses need to be careful in assisting any client who is bleeding because of possible exposure to AIDS	96.0	79.0	-	4.7	1.5	1.7
Information concerning AIDS should form part of current staff education programs in health care institutions	99.0	97.0	-	1.3	1.3	1.5
Information about AIDS should be provided within university level nursing programs	98.6	98.0	0.7	0.7	1.4	1.4
Nurses should be well informed concerning the psychological needs of the client with AIDS	100.0	98.7	-	-	1.7	1.4
Nurses should be free to choose whether they directly care for a client with AIDS	78.0	60.0	7.7	26.0	2.0	2.5

* A score of 1 indicates "strongly agree" whilst a score of 5 indicates "strongly disagree". A score of 3 indicates "uncertain".

Discussion

Differences were noted between the findings of this and the Canadian study in the responses to the factual aspects of knowledge concerning AIDS. Australian nursing students were more aware of the acronym, the cause of the disease and in most instances, means of transmission. This could reflect the two-year time lapse between the two studies and the resulting increase in public awareness during the intervening period. Canadian students however, were better informed regarding mortality rates and the need for notification of the disease.

Little difference overall, was found between the two groups with regard to the transmission of the AIDS virus. Homosexual transmission of the disease among Canadian and Australian students was less widely comprehended than other modes of transmission (Table 2). In the original study Bowd and Loos (1987) speculated that the possible reason for low levels of knowledge among the Canadian students about homosexual intercourse, was the current media attention to the spread of AIDS in the heterosexual community. A similar finding in this study however, has led the Australian researchers to look for another possible explanation. Given the preoccupation of the Australian media with homosexual transmission, the low level of knowledge, on a question that was expected to yield a high degree of accuracy, may well have been related to a weakness in the instrument. This hypothesis of the researchers was supported by the large group of Australian students who later questioned the meaning of the statement "homosexual intercourse" and sought clarification whether or not this referred to intercourse with an infected partner.

With regard to social and educational implications of AIDS for nursing practice, there were many similarities between Australian and Canadian respondents. Predictably, there was almost totally unanimous support for the need for inclusion of AIDS-related education, both in formal tertiary programs and current staff education programs in health care institutions. Similarly, there was almost totally unanimous support for the role of nurses in educating the public. Clearly, the implication of these findings is that AIDS education must be given high priority in health care education programs.

On the question of the right to choose to care for a person with AIDS, moderately high agreement amongst both groups was noted. The explanation given by Bowd and Loos (1987) for the Canadian respondents' support of the right of choice relied on an assumption of irrationally-based anxiety about the transmission of the disease. A similar finding was apparent in this study, highlighting the fact that there is not always a correlation between knowledge and rational beliefs and behaviour or lack of fear and prejudice.

These findings provide support for the results of previous research, Lester & Beard (1988), Reed et al. (1986) and Turtle et al. (1989). However, we suggest that it is too simplistic an analysis to ascribe a monocausal explanation, such as irrational fear, to a highly complex phenomenon of nurses' belief in the right to choose whether or not to care for AIDS patients. For example, Kelly et al. (1987) and Van Servellen et al. (1985) have clearly illustrated the influence of stigmatisation, prejudice and homosexuality on nurses' freedom of choice in caring for AIDS patients.

It is our view that the major issue in this context is the implication of a commitment to a right of choice evident in both studies. As the Canadian researchers Bowd and Loos (1987) state, ethical as well as social and psychological considerations are clearly important in determining the quality of care given to the AIDS patient. These considerations, are acknowledged in AIDS units where only those nursing staff who elect to nurse in the unit, are seconded.

On the question of quarantining, uncertainty prevailed amongst both groups. The Australian responses, with their greater tendency to indecision, may well have been influenced by recent extensive media coverage (The Sydney Morning Herald, 1989) of a controversial incident concerning an HIV-positive prostitute who was detained against her will in a major Sydney hospital, two weeks prior to the distribution of the questionnaires. In a highly controversial move, the New South Wales Government invoked Section 32A of the 1902 *Public Health Act* to detain the woman after she admitted she intended to continue to service clients. This caused widespread community protest from such diverse groups as prostitute collectives, AIDS representatives and civil libertarians. Described as both draconian and arcane, the Act, which was originally used to detain tuberculosis patients in the early 20th century, was invoked in an unprecedented move which raises many legal and ethical questions.

Limitations

The authors stress that appropriate caution should be exercised in generalising the results of these relatively small studies to larger populations. The limitation of inaccurate terminology for HIV and AIDS in the present study should also be acknowledged. In the light of current knowledge, it would be more accurate and appropriate to refer to HIV rather than AIDS transmission and to AIDS as a syndrome rather than a disease. No attempt was made to alter terminology used however, as the authors wished to undertake a replication. Furthermore, this study would have been strengthened by the use of psychometric testing for significant differences. The raw data of the original study was not examined however, because of the time lapse between the two studies.

Conclusion

In summary it would appear that Australian and Canadian nursing students, at least in these limited samples, generally have similar knowledge and attitudes regarding AIDS. This study, with its acknowledged limitations, could be regarded as a pilot study for future collaborative comparative research, targeting a wider population of nursing students in two very similar countries.

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RÉSUMÉ

SIDA: connaissances et attitudes des étudiants-infirmiers en Australie et au Canada

Si l'on veut dissiper les mythes qui entourent le sida et les préjugés dont les sidéens sont l'objet, la diffusion de renseignements pertinents doit non seulement être érigée en principe, mais doit influencer directement sur l'exercice de la profession infirmière. Cette étude visait à reproduire un protocole canadien (Bowd & Loos, 1987) sur le sida et plus précisément sur les connaissances et attitudes des étudiants-infirmiers. Malgré leurs différences individuelles et géographiques, l'Australie et le Canada présentent de grandes similitudes au chapitre de la distribution des cas de sida déclarés. Les résultats de la présente étude effectuée en Australie sont comparés aux données canadiennes. Ils font ressortir un niveau de connaissance et des attitudes similaires face au sida dans les deux populations d'étudiants-infirmiers.

ENTRY AND EXIT CHARACTERISTICS OF BACCALAUREATE NURSING STUDENTS

Stella Dyck, Donna Rae, Joan Sawatzky and Jean Innes

The nursing profession endeavours to portray an image of the nurse that embodies autonomy, intelligent problem solving, and leadership in health care (Davenport, 1980; Partridge, 1978; Welch, 1980). Traditionally the nurse has been perceived as nurturing, subservient, and serving (Kaler, Levy, & Schall, 1989; Newton, 1981). As recently as 1989, Kaler et al. reported that the public image of the nurse continues to focus on the traditional feminine characteristics of helping others and demonstrating warmth and concern for others. Consistent with the media image of nurses, the public perceives nurses to be less intelligent, less independent, and less likely to value achievement than are physicians (Kalish & Kalish, 1986). It is therefore, reasonable to expect that the public image plays a major role in determining who enters the profession.

To achieve nursing education goals student characteristics should be taken into consideration during the planning and implementation of the curriculum. If a nursing program aims to prepare nurses who are independent, visionary leaders, then it is important to determine if the students entering the program have an interest in being change agents and have characteristics of autonomy and dominance. If they do not have these characteristics, then a system of challenges and rewards for such behaviour must be built into the curriculum as an integral part of the professionalization process.

This study was conducted to assess the personal preference characteristics of students entering a baccalaureate nursing program in Western Canada, in order to provide the faculty with data relevant to the program planning process during curriculum revision. This paper describes the personal preference profile of one class upon entry to, and exit from, a four year baccalaureate nursing program at the university.

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Literature Review

Numerous studies to determine particular profiles that correlated with specific professional groups have been reported in the literature. Studies in the sixties and seventies found that nursing students demonstrated fairly consistent characteristics that have contributed to the stereotypical image of the tender, motherly figure who did not challenge authority but who was devoted to her duty as the care-giver. With the increased educational and career opportunities for women since that time we expected that this image had changed. We predicted that the women's movement had encouraged more assertive traits in all young women, and hence, also in those choosing nursing as a career. The pattern of traits in which nurses consistently scored high were: affiliation, deference, endurance, intraception, nurturing, and order (Baily & Clause, 1969; Levitt, Lubin, & Zuckerman, 1962; Mauksch, 1977; Reece, 1961; Smith, 1968; Webb & Herman, 1978). Conversely nurses consistently scored low on: achievement, aggression, autonomy, change, dominance, exhibition, and heterosexuality (Baily & Clause, 1969; Levitt et al., 1962; Reece, 1961; Smith, 1968; Webb & Herman, 1978). Two traits, succorance and abasement, demonstrated an inconsistent pattern in the different studies. Kahn, in 1980, using a small sample size of 27 with a control of 13, found that nursing students were comparable to the college norm on the above listed characteristics, and that the traits unique to nursing students earlier identified no longer existed. Birdsell and Herman (1983) showed that women in medicine were significantly higher in endurance and understanding than women in nursing, and significantly lower than nursing students in play and social recognition. However, the nursing population did not differ on the latter two from the college norm in their study. The most popular measurement scale in all these studies was the *Edwards Personal Preference Schedule (EPPS)*, but study findings were similar irrespective of the measurement tools used to make these assessments (Lewis & Cooper, 1976).

Research questions

As part of curriculum revision activities faculty in a College of Nursing at a western Canadian University decided that it was important to ascertain the answers to the following questions:

What personality profiles do students entering our nursing program predominantly manifest?

Are personality profiles of nursing students different from personality profiles of the college norm?

Is there a significant change in personality profiles between entry to, and exit from, the educational program?

Is there a significant difference in personality profiles between students who complete the educational program in four years and those who discontinue or delay completion of the program?

Do personality characteristics predict high achievement in the program as measured by the overall four-year Grade Point Average (GPA)?

Method

A non-experimental pre-test, post-test design was used to collect data. The EPPS was administered to a class of first-year baccalaureate nursing students during their second week in the program and repeated with the same students during the final month of their fourth year.

The EPPS is a classic personality test, designed primarily as an instrument for research and counseling purposes to provide quick and convenient measures of 15 relatively independent normal personality variables. The split-half reliability coefficients for the 15 variables range from .60 to .87 with the majority better than .74. The test-retest reliability coefficients at a one-week interval for the separate variables range from .74 to .87. Validity has been established through acceptable correlations with other scales purporting to test similar personality characteristics (Edwards, 1959). The EPPS was chosen for its established reliability and validity, its control for social desirability of alternatives, its ease in administration and scoring, and the forced choice format. It was the most frequently used personality measure cited in the literature (Lewis & Cooper, 1976), and therefore enabled us to make direct comparisons with the findings from previous studies. Although the scale was developed some time ago the questions posed do not carry any obvious time related content and it continues to be considered a classic personality preference scale. (See Figure 1 for paraphrased definitions of the 15 variables in the EPPS.)

All criteria for ethical consideration were met; approval for the study was granted by the college ethics review committee. Participation in the study was voluntary.

Students recorded their responses on optic scan sheets which were scored by computer. Data analyses included t-test for independent and paired samples, Bonferroni correction for multiple t-tests, Pearson's correlation, and discriminant analyses. Level of significance was determined at $p < .05$. When the results were subjected to the Bonferroni correction (Marascuilo & McSweeney, 1977) to correct for the multiple t effect, the level of significance was raised to $p < .003$.

Results

Seventy-two (71 female, 1 male) out of a class of 80, first-year students entered the study, representing a 90% participation rate of the total class. Thirty-eight students completed both the pre- and post-questionnaire,

accounting for an 86% response rate of the 44 eligible students who completed the program in four years. Three students who did not participate in the pre-questionnaire responded to the post-questionnaire resulting in a total of 41 fourth-year questionnaire returns.

Personality Preference	
Variables	Definition
Achievement	To do one's best, to be successful
Deference	To respect authority, to conform to custom
Order	To have things planned and organized
Exhibition	To be the center of attention, say witty and clever things
Autonomy	To be independent and do what one wants, to be critical of those in authority
Affiliation	To make many friends, to be loyal to friends, and do things for them
Intracception	To analyze motives and feelings of self and others
Succorance	To seek help and encouragement from others and have others interested in one's own problems
Dominance	To be a leader, to influence the actions of others
Abasement	To feel inferior, timid, guilty, and give in rather than fight
Nurturing	To be kind, generous, sympathetic to those less fortunate, to have others confide in one about personal problems
Change	To do new and different things, to experiment
Endurance	To keep at a job until it is done, to persist
Heterosexuality	To be interested in the opposite sex and sexual themes
Aggression	To attack contrary points of view, to become angry, to tell others what one thinks of them

(Edwards, 1959)

Figure 1
Definitions of Personality Preference Characteristics
According to Edwards

Entry and exit comparison to college norms

Results indicated that the students in this study were similar to nursing students who participated in previous studies. To compare the personality profiles of the students to those of given college norms (Edwards, 1959), the t-test for independent samples was computed for each of 15 variables. Year 1 Nursing students scored significantly higher in succorance, nurturing, and endurance than the college norms. They scored significantly lower in dominance, change, and heterosexuality (Table 1). In year 4, the students still differed from the college norm, but to a lesser extent. They ranked significantly higher than the college norm on succorance and nurturing and significantly lower on dominance and deference (Table 2). Following the Bon-

ferroni correction, year 1 students scored significantly higher only on nurturing and significantly lower only on dominance and heterosexuality. In year 4 there were no personal preference categories that were significantly different from the college norm after the Bonferroni correction.

Table 1

Mean Scores on the EPPS of First Year Nursing Students Compared with the College Norm

Variable	Nursing student Mean (n=72)	College norm* Mean (n=749)	Nursing student S.D.	College norm S.D.#	t-value
Achievement	12.72	13.08	4.27	4.19	0.69
Deference	11.88	12.40	3.11	3.72	1.33
Order	11.04	10.24	3.76	4.37	1.70
Exhibition	14.07	14.28	3.36	3.65	0.50
Autonomy	11.43	12.29	4.14	4.34	1.67
Affiliation	18.08	17.40	4.50	4.07	1.24
Intracception	16.96	17.32	4.54	4.70	0.64
Succorance	14.38	12.53	4.55	4.42	3.30**
Dominance	11.17	14.18	4.54	4.60	5.38*** +
Abasement	15.99	15.11	4.62	4.94	1.54
Nurturing	19.67	16.42	4.60	4.41	5.75*** +
Change	16.07	17.20	4.23	4.87	2.13*
Endurance	14.39	12.63	4.15	5.19	3.36**
Heterosexuality	11.92	14.34	4.86	5.39	3.99*** +
Aggression	10.10	10.59	3.32	4.61	1.15

d.f.=71

* from Edwards Personal Preference Schedule Manual

* p<.05 level of significance

** p<.01 level of significance

*** p<.001 level of significance

+ p<.5 level of significance after Bonferroni correction

Profile changes from entry to exit

Discriminant analyses were conducted between year 1 (n=72) and year 4 (n=41) students to determine changes in personality profiles between entry to and exit from the program. Five variables accounted for 15% of the difference. These were heterosexuality, order, change, deference and endurance. Year 4 students showed increased need for heterosexuality, order and change, and decreased need for deference and endurance (Table 3).

Table 2***Mean Scores on the EPPS of Fourth Year Nursing Students Compared with the College Norm***

Variable	Nursing student Mean (n=72)	College norm Mean# (n=749)	Nursing student S.D.	College norm S.D.#	t-value
Achievement	12.27	13.08	4.16	4.19	1.21
Deference	10.56	12.40	3.38	3.72	3.38**
Order	11.54	10.24	4.96	4.37	1.65
Exhibition	13.95	14.28	3.32	3.65	0.62
Autonomy	11.80	12.29	4.03	4.34	0.76
Affiliation	16.51	17.40	4.44	4.07	1.25
Intraception	16.68	17.32	5.37	4.70	0.74
Succorance	14.27	12.53	4.92	4.42	2.22*
Dominance	12.00	14.18	4.59	4.60	2.96**
Abasement	15.05	15.11	5.12	4.94	0.07
Nurturing	18.29	16.42	4.17	4.41	2.79**
Change	17.32	17.20	4.42	4.87	0.17
Endurance	14.15	12.63	5.19	5.19	1.83
Heterosexuality	15.44	14.34	5.77	5.39	1.19
Aggression	10.10	10.12	4.18	4.61	0.70

d.f.=71

from Edwards Personal Preference Schedule Manual

* p<.05 level of significance

** p<.01 level of significance

*** p<.001 level of significance

Table 3***EPPS Predictor Variables that Differentiate the First Year Students from Fourth Year Students***

VARIABLE	Wilks-Lambda	Significance
Heterosexuality	.90278	.0008
Order	.88710	.0014
Change	.87247	.0019
Deference	.86119	.0027
Endurance	.85227	.0039

These five variables accounted for 15% of the variance between the two groups.

Thirty-eight of the 41 Year Four students who completed the post-test questionnaire were members of the entry sample. A paired t-test was computed with the scores of subjects who had responded to both the pre- and post-questionnaires. In this group there were three significant changes. The need for affiliation was lower in year 4 at .004 level of significance, the need for nurturing was also lower in year 4 at .02 level of significance. The need for heterosexuality was higher in year 4 at .001 level of significance (Table 4). After the Bonferroni correction the only significant difference was found in the preference for heterosexuality.

Table 4

Mean Scores on the EPPS of Paired Year 1 Nursing Students and Year 4 Nursing Students (n=38)

Variable	Year 1 Nursing Student Mean	Year 4 Nursing Student Mean	Year 1 Nursing Student S.D.	Year 4 Nursing Student S.D.	t-value
Achievement	12.32	12.24	3.62	4.17	0.12
Deference	11.50	10.63	3.28	3.47	1.18
Order	10.18	11.53	3.27	4.85	-1.66
Exhibition	14.39	13.89	3.50	3.31	0.65
Autonomy	11.53	11.55	4.04	3.95	-0.03
Affiliation	19.26	16.29	4.27	4.51	2.88**
Intraception	16.89	16.87	4.09	5.29	0.02
Succorance	14.55	14.39	4.81	4.73	0.15
Dominance	11.18	12.08	4.54	4.64	-0.87
Abasement	16.08	14.92	4.33	5.04	1.08
Nurturing	20.68	18.34	4.60	4.27	2.33*
Change	15.58	16.97	4.32	4.21	-1.43
Endurance	13.58	14.26	4.03	5.23	-0.73
Heterosexuality	12.16	15.66	4.77	5.73	-3.65*** +
Aggression	10.05	10.32	3.37	4.12	-0.29

d.f.=37

* p<.05 level of significance

** p<.01 level of significance

*** p<.001 level of significance

+ p<.05 level of significance after Bonferroni correction

Predictions of successful completion

Discriminant analyses were calculated between the entry scores of those students who completed the program in four years and those who withdrew or delayed completion of the program. Only two variables demonstrated an ability to separate the two groups accounting for 10% of the variance: these were affiliation and autonomy, accounting for 6% and 4% of the variance respectively. The students who remained in the program to complete it in four years scored higher on both these variables than those who left the program or delayed completion.

Pearson's correlation was calculated between cumulative GPA and each of the 15 EPPS variables to identify personality preferences that predicted high achievement in the program (Table 5). Results showed achievement and order had a significant positive correlation to high GPA; affiliation had a significant negative correlation. We recognized that correlations of .418 and .349 are really only moderate correlations and .263 is in fact a weak correlation. Multiple stepwise regression analyses with the GPA as the dependent variable were computed. The R^2 indicated that 25% of the variance was accounted for by the variables of achievement and order with all other variables non-significant (Table 6).

Table 5

Correlations Between Grade Point Average and First Year Scores on EPPS Variables (n=44)

Variables	Grade Point Average
Achievement	.418**
Deference	.208
Order	.349**
Exhibition	-.050
Autonomy	-.016
Affiliation	-.263*
Intraception	.118
Succorance	-.080
Dominance	.097
Abasement	-.231
Nurturing	-.196
Change	-.006
Endurance	.187
Heterosexuality	-.179
Aggression	-.192

* $p < .05$ level of significance; ** $p < .01$ level of significance

Table 6

Stepwise Multiple Regression Analysis Overall GPA and First Year Scores on 15 EPPS Variables (n=44)

Step Variable Entered	Dependent Variable: Grade Point Average				
	Standardize B	R ²	D.F.	F-Value	Significance
1 Achievement	.418313	.175	1	8.908	.005
			Residual 42		
			<i>Final Step</i>		
1 Achievement	.365605	.250	2	6.847	.003
2 Order	.279563		Residual 41		

Limitations

The major limitations of the study was the lack of a concurrent age and gender equivalent group for comparison at entry to the program and change over time during the university experience. The results were compared to the college norm data in the test manual (Edwards, 1959). The use of multiple t-test can result in the galloping-t effect; therefore, the data must be interpreted with that in mind. The use of the Bonferroni correction addressed this effect and resulted in fewer significant differences. The t-test was used because the 15 variables are considered to be relatively independent personality traits. Using the t-test also allowed for comparison with previous studies that used this analysis. In previous studies (Ventura, 1976) differences were found between students in diploma, associate degree, and baccalaureate nursing programs; therefore, it cannot be assumed that the findings in this study are indicative of nursing students in other programs.

A further limitation of the study was the large attrition of students from the entry sample, which might suggest a large attrition from the class or program. The four-year nursing program was known to be very rigorous, with certain academic terms considered to be particularly heavy. Consequently, students sometimes elected to reduce their study load by taking partial loads and extending their program by an additional year. The overall attrition rate from the program was consistently in the range of 20-22%, as experienced by other Canadian nursing programs. The revised curriculum addresses the problem of heavy credit years by introducing a prerequisite university year.

Discussion

This study suggests that some changes may have occurred in the nursing student population in relation to characteristics of achievement and autonomy. For the students surveyed in this study, although still scoring slightly lower than the college norm on these traits, the differences were not significant. Their low need for dominance was consistent with patterns from other studies, as was their high need for nurturing. The study group also demonstrated a relatively high need for succorance, a trait that received inconsistent scoring among nursing students in previous studies. A lower score on the heterosexuality scale was found in two previous studies (Figure 2).

Literature	1985 (Year 1)	1989 (Year 4)
<i>Nurses' characteristics higher than college norms</i>		
affiliation		
deference		
endurance	endurance	
intraception		
nurturing	nurturing	nurturing
order		
(abasement)		
(succorance)	succorance	succorance
<i>Nurses' characteristics lower than college norm</i>		
achievement		
aggression		
autonomy		
change	change	
dominance	dominance	dominance
exhibition		
heterosexuality	heterosexuality	

Figure 2
Comparison of Characteristic Scores for Nurses
as Reported in the Literature, Year 1, and Year 4

Two of the changes between year 1 and year 4, a lower need for affiliation and a higher score for heterosexuality, may reflect the particular timing of questionnaire administration. Two weeks into the university term everyone was ill at ease and looking for new friendships in order to survive. By the end of fourth year the students were confident within their friendship circle and many were in committed heterosexual relationships.

Lewis and Cooper (1976), in an exhaustive literature survey, looked at the feasibility of personality testing as a means of predicting the survival and success of "trainee nurses" in educational programs and their eventual professional longevity. They concluded that no clear directions emerged from the numerous and diverse studies conducted. Lewis (1980) persisted in her efforts to find some predictive value in personality profile testing, for purposes of recruitment and selection of student candidates for nursing to reduce attrition. Her study intimated that students who score high in intelligence, conscientiousness, perseverance, imagination, creativeness, social awareness, emotional maturity and experimentation are less likely to drop out of nursing studies. In our study the difference in personality preference between students who discontinued versus those who completed was minimal; only the needs for affiliation and autonomy were higher for those who graduated within four years. Needs for achievement and order were correlated with a high GPA. This suggests limited utility of EPPS as a predictor of success in nursing programs or as a tool to guide selection of student candidates.

The extent to which personality characteristics are influenced by the educational experience remains a debatable point. Bradham, Dalme and Thompson (1990) suggested that there may be minimal effect. Feldman and Crook (1984) concluded that curricula can be designed to influence "potentially changeable traits" (p.168). Even when trait changes occur by the end of an educational experience these may revert to entry score level after time has elapsed, as was found by Bruhn, Floyd and Bunce (1978). In our study the personality preferences appeared to be relatively enduring, and major shifts in preferences from entry to exit were not observed. The conservative statistics indicated that the students had assimilated into the college norm by the time of graduation. However, it is our conclusion that preferences that showed a difference from the college norm at both entry and exit points still merit attention when making curriculum decisions.

As educators we could pay additional heed to the students' need for succorance. Increased small group activities would promote student interaction and bonding through peer support. A readily accessible counselling service would provide an opportunity for students to discuss their personal problems and help build self-confidence, self-esteem, and independence. The need for succorance remained high at the time of graduation; as such, attention to this need will continue to be important for the retention of nurses in the profession. In the senior year students could be assigned to a preceptor, a practising nurse, to serve as mentor, exemplar, and supporter in the transition phase to practicing graduate nurse. From past experience we know that students frequently elect to seek initial employment in the setting where they have had their senior experience. When this occurs, the preceptor often serves as the initial support system to the neophyte employee.

The students' need for nurturing is consistent with previous studies and with personality traits identified as desirable by practicing nurses (Bradham et al., 1990). In curriculum planning the challenge lies in blending the traditional feminine nurturing role with the more masculine values of autonomy, scholarly research, and scientific problem solving (Partridge, 1978). We can ill afford to lose one trait for the sake of the other. As Newton (1981) postulates, in an ever increasing technical and bureaucratic health care system, "Only the nurse makes the system morally tolerable" (p.353). A strong case can be made for fostering and supporting the students' natural need to nurture, both during the educational program and in their future practice. Nurturing is a unique role function that appears to match personal preferences and public expectations of people choosing to come into Nursing. Nurturing may be fostered through increased emphasis on values clarification and on sensitivity to socio-cultural differences. Throughout the program students frequently need supportive guidance to progress from the "idealist state" of wanting to carry the patients' loads to one of supporting the patients as they learn or relearn strategies of independence.

The students entering the program scored above the college norm in endurance. This trait, in part, ensured success in their educational program and would be expected to continue to serve them well as graduates in their commitment to the profession. The decreased score in this preference upon program exit, as suggested by Bradham et al. (1990), may be a reflection of the long hours that have gone into the achievement of their goals.

The students' lower than college norm scores in dominance and change indicate there is a possibility of perpetuating the stereotyped nurse image in relation to submissiveness and traditional functions. This may be discouraging for visionary nurses. Conversely, it may result in nurses meeting the continued needs of society as proposed by Newton (1981) in her highly controversial paper. She stated that there is a need to maintain "the traditional ideal of the skilled and gentle care-giver, whose role in health care requires submission to authority" (Newton, 1981, p.348).

The profession seeks to convey an image and a reality of autonomy and leadership. Therefore, one of the aims of nursing educators at the baccalaureate level is to foster leadership skills and prepare nurses to be innovative in their approach to nursing situations (Peterson, 1983). To achieve this with individuals who have a low need for dominance and change requires specially designed learning activities, with repeated positive reinforcements to encourage development of these traits. Teaching strategies that contribute to these goals are: more independent study, including case studies; student presentations; and debate on issues where students learn to defend their point of view, listen to divergent opinions, and assume leadership with peers. In our program, teaching of cardio-pulmonary resuscitation is done almost

exclusively by students, giving them experience with leadership, organization and teaching. All of these strategies can be expected to contribute to increased self esteem, self reliance and leadership ability.

The students' low need for change has implications for a positive professional career where change is a daily reality. If nursing is to become a major force for change and reform in the health care system, educators must model and teach change process and identify the need for reform. Curriculum content should introduce the rationale for, and the process of, change. Faculty will have to demonstrate effective change. Learning experiences should provide for analysis of successful and unsuccessful change attempts.

Through recognition of natural tendencies and cultural stereotypes we believe it is possible to promote the development of personal characteristics in students that are consistent with the future needs of the nursing profession and the needs of our clients in health care.

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RÉSUMÉ

Caractéristiques des étudiants de baccalauréat lors de l'admission à l'université et en fin de programme

Cet article compare les résultats d'un inventaire de réponses au Edwards Personal Preference Schedule (EPPS) administré à des étudiants de baccalauréat lors de leur admission et à la fin du programme dans une université de l'Ouest du Canada. Le test T mesurant les échantillons indépendants révèle que les étudiants en première année de sciences infirmières obtiennent des scores nettement plus élevés que la moyenne universitaire sur le plan du maternage et nettement inférieurs sur le plan de la dominance et de l'hétérosexualité. En revanche, les étudiants de quatrième année ne s'écartent pas de la norme universitaire. Une analyse discriminante a démontré que les étudiants de quatrième année ont un plus grand besoin d'ordre, de changement et d'hétérosexualité et un moindre besoin de déférence et d'endurance que les étudiants de première année. Les corrélations de Pearson établies entre les moyennes pondérées cumulatives (MPC) et chacune des variables EPPS ont démontré qu'il existait une corrélation positive importante entre le succès et l'ordre d'une part et une MPC élevée d'autre part; par contre il existait une corrélation négative importante entre le MPC et l'affiliation. Dans les analyses de régression par degrés, le R² indiquait que 25 % de la variance était imputable aux variables d'accomplissement et d'ordre, les autres variables étant négligeables. Ces résultats soulèvent d'importantes questions sur le plan de la planification des expériences d'apprentissage des étudiants en vue de préparer les praticiens à satisfaire aux besoins futurs de notre société en matière de soins.

MESURE DE L'ATTITUDE DES PROFESSEURS A L'ÉGARD DE LA CRÉATIVITÉ DE L'ÉTUDIANTE-INFIRMIERE (MAPCE)

Diane Gravelle, Hélène Lazure et Mary Reidy

En dépit du fait que l'enseignement théorique de la démarche de soins infirmiers soit au programme de tous les collèges québécois offrant la formation de techniques infirmières (Ministère de l'Éducation du Québec, 1983-1986), certains auteurs ont constaté chez les infirmières une insuffisance d'habiletés en résolution de problèmes.

Les auteurs précisent que dans le but d'individualiser les soins, l'infirmière ne devrait pas se limiter aux solutions connues (Beverly, 1974; Brained La Monica, 1975; Clark, 1977; Collières, 1982; Donovan, 1964; Fortier-Havelka, 1984; Gohen, 1976; Gravelle, 1986; Hollingworth, 1979; King, 1970; Marriner, 1977, Thibodeau, 1977 et Watson, 1981). Pour ce faire, plusieurs auteurs proposent l'approche créative de résolution de problèmes, laquelle est flexible et évite de déboucher sur les mêmes solutions (Hollingworth, 1979; Lazure, 1980; Snyder, 1981; Steele & Maravaglia, 1981; Stepp-Gilbert et Wong, 1985).

C'est ainsi que plusieurs auteurs (Bailey & Claus, 1971; Beverly, 1974; Gravelle, 1991; Jones, 1983; Schweer & Gebbie, 1976; Thomas, 1979) préconisent l'enseignement du processus créatif de résolution de problèmes sans pourtant que ce type de formation apparaisse dans le programme de techniques infirmières.

L'attitude des professeurs joue une part importante dans les apprentissages des étudiants (Bourdeau et Ryan, 1978; Murphy, Friedman et Tollefson, 1984). Avant d'implanter une approche créative de résolution de problèmes dans les programmes de formation des infirmières, il apparaît primordial de connaître l'attitude des professeurs de techniques infirmières en regard des traits créatifs de leurs étudiants(es).

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Pour connaître cette attitude, il existait un seul instrument valide et fidèle mais ce dernier le "Ideal Pupil Checklist (I.P.C.)" de Torrance (1963, 1965, 1975) existe seulement en langue anglaise. Il s'imposait donc d'effectuer une adaptation française de cet instrument puis d'en établir les validités nominale, de contenu, de construit et de critères de même que les fidélités d'homogénéité et de stabilité.

Le but

L'étude a pour but d'établir la validité et la fidélité de l'adaptation française du "I.P.C." auprès des professeurs francophones de techniques infirmières du Québec.

Recension des écrits

Programmes qui favorisent le développement d'habiletés créatives chez les infirmières.

Plusieurs programmes visant le développement d'habiletés créatives chez les étudiantes-infirmières ont fait l'objet de recherche. En effet, Torrance (1964) dans une étude expérimentale, sans groupe témoin toutefois, voulait vérifier si un programme d'approche créative de résolution de problèmes favorisait les habiletés créatives des étudiantes-infirmières. Les résultats de l'étude ont révélé une augmentation significative des habiletés créatives des étudiantes. Dans leur étude expérimentale et longitudinale, Bailey, McDonald et Claus (1979) avaient pour but d'augmenter les habiletés créatives des étudiantes-infirmières en utilisant un curriculum favorisant l'approche créative à la résolution de problèmes. L'étude comprenait trois groupes qui reçurent respectivement la formation appropriée pendant un, deux et trois ans. Dans l'ensemble, le groupe ayant reçu la formation de trois ans présenta des résultats significativement supérieurs aux autres groupes en ce qui a trait à la créativité verbale, laquelle est importante pour regarder les problèmes sous des aspects différents. Pour sa part, l'étude expérimentale de Lazure (1980), voulait vérifier l'hypothèse selon laquelle un programme créatif de problématique favorisait les capacités d'idéation créatives d'infirmières psychiatriques. A la suite du programme, le groupe expérimental présenta une capacité d'idéation créative significativement supérieure.

Selon Onuschak (1983), la résolution de problèmes demande une adaptation constante laquelle peut être facilitée par le développement d'habiletés créatives. En guidant nos étudiantes dans le développement de telles habiletés à travers un processus systématique de résolution de problèmes, nous les aiderons à s'adapter efficacement aux changements qui surviennent. Allen (1985) partage cet avis et croit que si nous voulons que nos étudiantes développent des aptitudes à la pensée créative, nous devons construire des

objectifs précis et développer des activités pour accroître le développement de ces aptitudes.

Gravelle (1986) croit que le processus de résolution de problèmes débouche trop souvent sur une solution rapide et connue. Cette solution est sécurisante parce qu'elle a déjà fait ses preuves dans le passé. Cette façon d'aborder les problèmes requiert davantage le produit de la pensée convergente. Adams (1989) affirme que nous n'aimons pas les problèmes d'où notre tendance naturelle, quant il faut les résoudre à prendre la première solution qui se présente et à nous y tenir. Notre réaction naturelle est d'essayer de nous en débarrasser en trouvant une solution qui est souvent la première venue.

Pelletier, Noiseux et Bujold (1974) rapportent des résultats d'études confirmant la possibilité d'améliorer la créativité des individus peu importe leur milieu de travail. Toutefois, depuis les cinq dernières années, très peu de recherches ne sont intéressées à l'effet d'une approche créative à la résolution de problèmes sur le processus d'intervention de l'infirmière.

A la question soulevée par Pelletier, Noiseux et Bujold (1974) à savoir si on peut stimuler divers modes de pensée, Gravelle (recherche en cours) répond qu'il est tout à fait possible et même souhaitable de favoriser la pensée divergente au même titre que la pensée convergente. La recherche de Gravelle (1991) de type quasi-expérimental avec groupe expérimental et groupe de contrôle mesure l'effet d'un programme en approche créative de résolution de problèmes sur la capacité des infirmières à identifier les problèmes de santé des patients et à y apporter des solutions adéquates.

Lors des modifications majeures et fondamentales de son programme de baccalauréat de perfectionnement en sciences infirmières en 1989, l'Université du Québec à Hull a ajouté un cours en approche créative intitulé: "Approche créative à la résolution de problèmes en pratique infirmière." La recherche de Gravelle s'est déroulée dans le cadre de ce cours. Les résultats obtenus permettront de tirer des conclusions quant à l'effet d'une approche créative à la résolution de problèmes sur le processus d'intervention de l'infirmière.

Le "Ideal Pupil Checklist" (IPC)

Le "IPC" de Torrance (1963) a été utilisé pour identifier tant les attitudes des professeurs face aux caractéristiques de personnalité créative de leurs étudiants (Cannella, 1978; Cohen, 1971; Crow, 1980; Dettmer, 1981; Kaltsounis et Higdon, 1976; Torrance, 1975) que celles des parents face à ces mêmes caractéristiques chez leurs enfants (Bachtold, 1974; Paguio, 1983).

Selon Torrance (1975), en déterminant les caractéristiques favorisées et défavorisées par les parents et les professeurs, cela permet de comprendre et

de prédire les comportements des individus sous leur tutelle. A partir de telles informations on peut aider les individus à développer leurs potentialités et aider les professeurs à modifier leurs comportements pour faciliter la croissance de la créativité chez les étudiant(e)s.

La version définitive du IPC composée de 66 caractéristiques est issue de plusieurs études et ces dernières en ont déterminé la validité et la fidélité (Torrance, 1963; 1965; 1970; 1972; 1975). La validité de contenu du IPC fut établie par 10 experts en créativité à l'aide de la technique du Q-sort de Stephenson (Torrance, 1975). C'est dans une étude interculturelle auprès de professeurs et d'étudiants de 10 ethnies différentes que la validité concurrente fut vérifiée. Simultanément le IPC et le "Torrance Test of Creative Thinking" furent administrés aux enfants de ces ethnies (n variant de 500 à 1 100 selon les ethnies). Un coefficient de corrélation de .94 fut obtenu entre les résultats aux deux tests.

Pour établir la fidélité de l'instrument, le IPC fut administré au début d'un cours universitaire de créativité à 43 étudiants puis à la fin du cours, huit semaines plus tard. Les résultats au test de fidélité ont obtenu un coefficient de corrélation de .91 entre les deux moments d'administration (Torrance, 1975). Plusieurs études utilisèrent le IPC pour mesurer les attitudes envers les caractéristiques de personnalité créative (Bachtold, 1974; Cannella, 1978; Cohen, 1971; Dettmer, 1981; Kaltsounis et Higdon, 1976; Murphy, Friedman et Tollefson, 1984; Paguio, 1983). A notre connaissance, seule l'étude de Crow (1980) utilisa le IPC en soins infirmiers. Cette recherche voulait identifier la relation entre les attitudes des professeurs de différents types de programmes et la présence de traits de personnalité créative chez les étudiants(es) tout en voulant connaître les effets de ces attitudes sur la capacité de l'étudiant(e) à identifier les problèmes de soins. Les résultats démontrèrent que les professeurs du baccalauréat favorisaient davantage les caractéristiques de créativité, ce qui pouvait expliquer en partie le fait que leurs étudiant(e)s présentaient des habiletés supérieures pour identifier certains problèmes psycho-sociaux.

La méthode

Définition des variables

La *créativité*, dans le cadre de la présente étude, correspond à l'aspect de la personnalité créative qui comprend les items déterminés par Torrance: la détermination, la curiosité, l'intuition, l'indépendance de pensée et de jugement, la disposition à prendre des risques, le courage de ses convictions, l'esprit d'initiative et l'autonomie. La créativité caractérise également l'individu persévérant, préoccupé par le travail à accomplir, qui entreprend des tâches difficiles, poursuit des objectifs lointains, doute, s'interroge sur des sujets épineux et formule des hypothèses.

L'attitude représente la somme des opinions, sentiments et orientations à l'action qui se traduit par l'intensité de l'affect positif ou négatif à l'égard d'un objet, d'une personne ou d'une situation (Myers et Myers, 1984).

Population et échantillon

Cette étude méthodologique a été effectuée à partir d'un échantillon non probabiliste où tous les sujets qui acceptaient de répondre au questionnaire étaient retenus. Les sujets au nombre de 321 provenaient de 29 Cégep du Québec. Cependant, l'étude de fidélité de stabilité a été effectuée à partir du choix aléatoire de 53 sujets répartis dans 18 Cégep. Les caractéristiques générales des sujets regroupent des données démographiques, éducationnelles et occupationnelles.

Processus d'adaptation française, validité nominale et de contenu de la traduction du IPC

L'instrument intitulé "Mesure de l'attitude du professeur face à la créativité de l'étudiant" (MAPCE) est le produit de la traduction et de l'adaptation française du "Ideal Pupil Checklist" (IPC) de Torrance (1963).

Afin de permettre la traduction et l'adaptation française du IPC, cet instrument fut présenté à une équipe de 7 experts travaillant à temps complet dans un service de traduction de l'anglais au français. Pour vérifier la cohérence interne de chacun des items du IPC, la traduction inverse fut ensuite effectuée à l'aide d'une deuxième équipe de trois autres traducteurs mais cette fois du français vers l'anglais. Afin de s'assurer que les caractéristiques traduites soient étroitement liées aux caractéristiques de créativité, le travail des traducteurs fut ensuite présenté à trois juges, professeurs universitaires enseignant en créativité. La dernière étape consistait à présenter la version finale à un expert en docimologie afin de déterminer s'il y avait dédoublement d'items et de planifier la codification et la quantification des réponses.

Les 66 caractéristiques de personnalité de la version finale de l'adaptation du questionnaire à valider étaient accompagnées d'une échelle de type Likert dont les cinq classes ordinales variaient de "encourage très peu" à "encourage très fortement". L'identification des données démographiques, éducationnelles et occupationnelles étaient effectuées à l'aide de questions fermées à choix multiples.

Validité

La validité de construit se basait sur l'hypothèse que les professeurs qui possèdent une attitude ouverte favorisent davantage les caractéristiques créa-

tives de leurs étudiant(e)s que les professeurs qui présentent une attitude fermée. Ainsi les responsables régionaux divisèrent en trois catégories, selon leur perception personnelle, l'attitude d'ouverture envers les étudiant(e)s de chacun de leurs professeurs: attitude ouverte, attitude plutôt neutre et attitude fermée. Les responsables régionaux devaient respecter les règles de confidentialité. C'est en comparant les résultats des sujets de chaque catégorie avec leur réponse respective à l'adaptation française du IPC que la validité de construit a été établie.

La validité de critère a été jugée à l'aide de deux épreuves: le test "Type de responsabilité" partie A de Allen et Reidy (1972 traduit par Riopelle en 1978) et le test "Situation hypothétique" construit par Gravelle (1986). Pour éprouver la validité de critère, il n'existe aucune échelle dont le contenu mesure exactement le même aspect que le IPC. Pour combler cette lacune, nous avons planifié l'utilisation de deux mesures; soit celle du test "Type de responsabilité" dont la validité a déjà été mesurée (Allen et Reidy; 1971 et Riopelle, 1978) et la mesure "Situation hypothétique" dont la validité de construit fut mesurée à l'intérieur de la présente étude. Comme nous voulions mesurer la validité de critère de la version française, nous avons utilisé pour ce faire, des critères de mesures de langue française.

Le test "Type de responsabilité" partie A peut être associé aux caractéristiques de personnalité créative puisqu'il s'intéresse aux comportements de responsabilité manifestés par l'autonomie de l'infirmière lors de l'utilisation du processus de résolution de problèmes de ses clients. Ainsi, l'infirmière "responsable de" ses décisions ne sollicite pas constamment l'avis de l'autorité pour agir. Un test de corrélation a été appliqué aux résultats obtenus aux items de personnalité créative de l'adaptation française du IPC et à ceux obtenus à la partie A du test "Type de responsabilité".

La "Situation hypothétique" a été construite par Gravelle (1986) à partir du profil de personnalité créative décrit par Raudsepp (1981). Cette "Situation hypothétique" proposait un portrait type de l'étudiante créative, portrait à partir duquel les sujets devaient déterminer sur une échelle de type Likert variant de 1 à 5, à quel point ils aimeraient travailler avec une telle étudiante. La validité de construit de cette mesure a été vérifiée à l'aide de trois juges experts en créativité (Gravelle, 1986). Le test de corrélation de Kendall Tau fut appliqué aux réponses obtenus aux items de personnalité créative de l'adaptation française du IPC et la réponse obtenue à partir de la "Situation hypothétique".

Fidélité

Le test alpha de Cronback a servi à établir la fidélité d'homogénéité à l'aide des réponses des 321 sujets de l'étude. Pour sa part, la fidélité de stabilité fut

obtenue en administrant à nouveau, huit semaines après l'administration initiale, l'adaptation du IPC à un échantillon de 53 sujets choisis aléatoirement parmi le premier échantillon. A cet effet, le test de corrélation r de Pearson fut appliqué.

Analyse des résultats

Validité nominale et de contenu

En raison des 29 Cégep qui ont participé à l'étude, toutes les régions du Québec, étaient représentées. Les sept traducteurs identifièrent le terme français le plus approprié pour chacune des 66 caractéristiques de la version originale du IPC. Chaque item devait recevoir un accord d'au moins quatre traducteurs. Deux items ne reçurent pas cet accord et l'investigatrice a choisi, parmi les possibilités offertes par les traducteurs, les termes qui semblaient les plus adéquats. Ces deux termes français furent l'objet d'une attention accrue lors des étapes subséquentes.

L'étape qui devait assurer la pertinence des 66 caractéristiques dans un contexte de créativité, révéla que cinq d'entre elles n'obtenaient pas l'accord de la majorité des juges. A partir de l'interprétation personnelle des trois juges, chacune de ces caractéristiques fut reformulée de façon à obtenir un accord des juges. A cette étape, la version du test fut présentée à un docimologue qui identifia onze items qui n'étaient pas mutuellement exclusifs et des corrections furent apportées. Enfin, le test final fut à nouveau présenté aux trois experts en créativité pour obtenir un fort degré d'accord pour l'ensemble des caractéristiques.

Le test ainsi adapté présentait de fortes similitudes avec les résultats obtenus par les experts en créativité de Torrance (1963). Ainsi, des 66 caractéristiques, nous avons pu déterminer 21 caractéristiques très créatives, 17 peu ou pas créatives et enfin, 28 caractéristiques neutres. Ces catégories devaient permettre de quantifier les réponses des sujets en ce qui a trait à leur attitude envers les différentes caractéristiques créatives de leurs étudiant(e)s.

Validité de construit

La validité de construit a été jugée à partir des réponses obtenues auprès des 321 sujets. Les sujets furent répartis en 3 catégories d'attitude: 170 sujets furent classés dans la catégorie ouverte, 111 sujets dans la catégorie neutre et 40 sujets dans la catégorie fermée. Certains responsables régionaux avaient classifié tous leurs professeurs dans la même catégorie. Ces derniers furent éliminés de l'étude pour l'analyse de la validité de construit. Nous retrouvons donc 113 professeurs qui présentent une attitude ouverte. Les résultats démontrèrent que les sujets qui possèdent une attitude ouverte avec

les étudiants obtiennent un score plus élevé à l'adaptation française du IPC que ceux qui adoptent une attitude fermée ($t=2.32$ à $p=.02$). Le tableau 1 présente les résultats obtenus pour établir la validité de construit.

Tableau 1

Test de t pour les valeurs obtenues aux tests de validité de construit de l'adaptation française du IPC

Hypotheses	Types	N	t	p(t)
Les professeurs qui ont une attitude ouverte obtiendront un score plus élevé au IPC que les professeurs qui ont une attitude fermée	Validité de construit	113 40		
a) IPC total			2.32	.02
b) 38 items de créativité			2.60	.01

La validité de critère de l'adaptation française du IPC a été établie par le calcul du coefficient de corrélation de Pearson entre le score obtenu à l'adaptation du IPC et celui obtenu au test "Type de responsabilité". Les résultats démontrent une corrélation significative, positive et modérée ($r=.31$, $p=.001$). Cette modération de corrélation significativement positive est intéressante car le test "Type de responsabilité" ne mesure pas exactement et directement la même dimension que l'adaptation française du IPC.

Une deuxième vérification de la validité de critère a été effectuée au moyen du coefficient de Kendall Tau appliqué aux scores obtenus à l'adaptation française du IPC et à la "Situation hypothétique". Il existe une corrélation modérée, positive et significative ($r=.37$, $p=.001$) entre les réponses obtenues à la "Situation hypothétique" et celles obtenues aux 38 caractéristiques servant à mesurer l'attitude en regard de la personnalité créative. Ainsi les professeurs qui favorisent les caractéristiques de créativité à l'échelle IPC choisissent de travailler avec l'étudiante qui présente un profil de personnalité créative. Les résultats concernant la validité de critère se retrouvent au tableau 2.

Tableau 2

Sommaire des hypothèses et des résultats aux tests de validité de critère de l'adaptation française du IPC

Hypothèses	Types	N	Test stat.	Résultats		
				↑	p(↑)	p(r)
Corrélation positive entre les scores à l'adaptation du IPC et le score au test de Riopelle	Validité de critère: validité concurrente		corr. r de Pearson			
a) IPC total		321			.31	.001
b) 38 items de créativité		321			.16	.02
Corrélation positive entre les scores obtenus aux caractéristiques de créativité de l'adaptation du IPC et les core obtenu à la situation hypothétique	Validité de critère: Validité concurrente					
a) IPC total		317	Kendall ↑	.1558	.001	
		317	Corr. r de Pearson		.17	.002
b) 38 items de créativité					.37	.001

Fidélité

Pour établir la fidélité d'homogénéité le coefficient alpha de Cronbach de .79 a été calculé à partir de l'ensemble des résultats obtenus, auprès des 321 sujets, aux 66 caractéristiques de l'adaptation du IPC.

Une étude minutieuse de chaque item pris isolément révèle que tous les items de l'échelle concourent de façon similaire à vérifier la consistance interne de l'adaptation du IPC. En retirant le score de l'un ou l'autre item, les coefficients alpha varient entre .78 et .80. Ils oscillent tous autour de l'alpha total de l'ensemble de l'échelle. Ainsi, aucune caractéristique n'est à éliminer et la consistance interne est très élevée.

Pour sa part, la fidélité de stabilité du IPC fut obtenue en l'administrant, dans un premier temps, aux 321 sujets de l'étude puis, dans un deuxième temps huit semaines plus tard, à 53 de ces sujets choisis de façon aléatoire. Le coefficient de corrélation r de Pearson fut utilisé pour évaluer la stabilité test-retest. Pour l'ensemble, les résultats présentent un coefficient de corrélation r de Pearson de .74 pour un seuil de signification de $p=.0001$ ce qui assure la fidélité de stabilité. Lorsqu'on évalue la fidélité des 38 items qui mesurent tant les attitudes favorables (21) que les attitudes peu ou pas favorables (17) envers la créativité, un coefficient de corrélation élevé de $r=.79$; $p=.0001$ vient renforcer la fidélité de stabilité précédente. Le tableau 3 résume les analyses effectuées pour les mesures de fidélité.

Tableau 3

Sommaire des hypothèses et des résultats concernant les fidélités d'homogénéité et de stabilité de l'adaptation française du IPC

Hypothèses	N	Types	Tests stat.	r	Résultats p(r)	.δ
Corrélation positive entre test re-test de l'adaptation du IPC	53	Fidélité stabilité	r de Pearson			
a) IPC adapté total					.74	.0001
b) 38 items de créativité					.79	.0001
Constance dans les réponses	321	Fidélité d'homogénéité	Alpha de Cronbach			
a) IPC total						.7902
b) 21 items de personnalité très créative						.8001
c) 17 items de personnalité très peu créative						.7543
d) b et c ensemble: 38 items de créativité						.6675

Etude secondaire

Outre la primauté du caractère méthodologique de l'étude, les résultats permirent d'effectuer des analyses secondaires pour dégager le profil de l'attitude des sujets en ce qui concerne les caractéristiques créatives de leurs étudiants.

Nous étions intéressées, tout en mesurant les validités et fidélités de la MAPCE, de dégager le profil de l'attitude des professeurs de techniques infirmières des Cégeps du Québec face aux traits de personnalité créative de leurs étudiant(e)s. Nous nous sommes servis de la médiane afin de classifier par ordre décroissant de 1 à 66 les caractéristiques de personnalité créative des étudiant(e)s favorisées par les professeurs (Gravelle, 1986). Ces résultats, tout comme ceux des études de Bachtold (1974), Kalsounis (1977) et Torrance (1965) mettent en évidence le fait que les professeurs n'encouragent pas principalement les traits de personnalité créative chez leurs étudiant(e)s. En effet, parmi le premier tiers des caractéristiques les plus encouragées par les professeurs de techniques infirmières, nous retrouvons seulement 7 caractéristiques de personnalité créative. Les professeurs de soins infirmiers de la présente étude favorisent davantage les étudiants respectueux des autres, sincères, courtois, polis, travaillants, réceptifs aux idées des autres, simples et naturels, propres et ordonnés, respec-

tueux des délais, bien adaptés et bien intégrés à la société; ce qui correspond aux caractéristiques reliées au conformisme social.

Par ailleurs, il est intéressant de constater leur attitude relativement aux caractéristiques de créativité chez leurs étudiant(e)s car celles-ci ne se retrouvent pas au dernier rang. Bien au contraire, les résultats démontrent que les sujets classent 11 caractéristiques de personnalité peu ou pas créative comme étant des caractéristiques qu'ils favorisent le moins. Ceci nous amène à constater que dans cette étude, les caractéristiques de personnalité créative ont tendance à être encouragées moyennement par les sujets de l'étude. Ainsi, les caractéristiques créatives décrivant l'individu comme un être indépendant dans ses pensées, indépendant dans ses jugements, intuitif, idéaliste, prêt à prendre des risques, posant des questions sur des sujets épineux, entreprenant des tâches difficiles, cherchant à deviner et menant des enquêtes approfondies sont perçues comme des caractéristiques d'importance moyenne qui se classent juste en dessous des caractéristiques de conformité sociale. L'étude nous permet ainsi de constater que les caractéristiques de personnalité créative ont tendance à être encouragées moyennement par les sujets de l'étude en se classant juste après les caractéristiques de conformisme.

Discussion

Cette étude méthodologique avait pour but d'établir les différents types de validité et de fidélité d'une adaptation française d'un instrument de mesure le IPC conçu pour connaître l'attitude des professeurs à l'égard des caractéristiques créatives de leurs étudiants. En dépit du fait que notre échantillon était un échantillon de convenance et n'a donc pas fait l'objet d'un choix aléatoire, le haut taux de participation des professeurs de techniques infirmières du Québec (53%) de même que la représentativité de toutes les régions de la province permettent d'avoir un degré de confiance élevé dans les résultats de l'étude.

Les diverses analyses pour connaître la validité et la fidélité nous permettent toutes de considérer l'adaptation française du IPC la MAPCE comme un instrument valide et fidèle qui pourra mesurer avec assurance l'attitude des professeurs francophones de sciences infirmières envers la créativité de leurs étudiant(e)s. De plus, dans le but de connaître les attitudes envers les caractéristiques des individus, la MAPCE pourra être utilisée auprès des autres populations francophones telles celles des professeurs dans différents programmes.

Les analyses secondaires ont permis de dégager le profil d'attitude des professeurs envers les caractéristiques de créativité de leurs étudiant(e)s et suscitent l'optimisme. Les attitudes favorisant la créativité arrivent spontanément

ment en deuxième place, ce qui crée une base appréciable à l'implantation d'un programme de soins infirmiers axé sur l'approche créative de résolution de problèmes.

L'utilisation de la MAPCE peut essentiellement nous indiquer la procédure à suivre pour l'implantation d'un tel programme. En effet, avant de penser implanter des programmes qui favorisent l'approche créative à la résolution de problèmes en soins infirmiers, il devient fondamental de connaître à l'aide de la MAPCE, l'attitude des professeurs enseignant les soins infirmiers relativement à la présence de traits de personnalité créative chez l'étudiante-infirmière. Si les résultats s'avèrent négatifs et que les professeurs défavorisent nettement les caractéristiques de créativité chez l'étudiant(e), il y aurait lieu d'élaborer un cours de sensibilisation à la créativité et à l'apport du processus créatif lors de la résolution de problèmes en soins infirmiers et d'offrir ce cours aux professeurs qui défavorisent les caractéristiques de créativité chez leurs étudiant(e)s afin de leur aider d'abord à changer d'attitude à cet égard.

Dans la perspective de résultats positifs à l'échelle MAPCE, la voie serait ouverte pour intégrer un cours favorisant l'approche créative à la résolution de problèmes à l'intérieur des programmes de soins infirmiers. Une recherche de type expérimental pourrait permettre, d'une part, d'identifier les effets de ce programme tant sur la capacité des étudiants à cerner efficacement les problèmes qu'à identifier des solutions spécifiques à chacun d'eux.

Recommandations

Il serait intéressant d'utiliser l'échelle MAPCE pour connaître l'attitude des professeurs de soins infirmiers des divers niveaux de formation c'est-à-dire au collégial, au baccalauréat de base, au baccalauréat de perfectionnement et à la maîtrise. Une autre possibilité pourrait être explorée soit celle d'étudier de façon comparative les résultats obtenus à l'échelle MAPCE par différents groupes de professeurs de même que par leurs étudiants. De plus, la MAPCE pourrait être utilisée dans une étude visant à connaître les caractéristiques de créativité les plus reliées aux habiletés d'identification et de résolution de problèmes de soins. On peut aussi penser que la MAPCE, utilisé dans une étude longitudinale pendant la formation des étudiantes infirmières, pourrait mettre en évidence des variations dans leurs caractéristiques de créativité. Enfin, des résultats positifs à l'échelle MAPCE, pourraient constituer un des critères d'admission à l'étude de la profession puisque les caractéristiques qu'elle mesure sont un atout important dans la résolution de problèmes visant l'unicité des soins.

En continuité avec la préoccupation à l'origine de cette recherche, les analyses secondaires de l'étude amènent à penser qu'avant d'implanter au

Québec des programmes pour développer l'approche créative de résolution de problèmes en soins infirmiers, une connaissance précise de l'attitude des professeurs à cet égard s'impose. Le processus d'une telle implantation devrait tenir compte des divers types d'attitudes qui commanderont des stratégies et des durées différentes. Quoiqu'il en soit, les résultats des analyses secondaires laissent présager un processus d'implantation qui ne devrait être ni trop ardu, ni trop long.

Conclusion

Les résultats obtenus dans cette étude permettent de conclure que l'adaptation française du "IPC" la "MAPCE", est une mesure qui répond aux critères de validité et de fidélité. De plus, le taux élevé (53%) de participation des professeurs francophones de techniques infirmières du Québec offre une très bonne représentativité de toutes les régions et permet d'avoir un degré élevé de confiance dans les résultats obtenus. Par ses résultats, l'étude vient combler le vide qui existait en matière d'instrument de mesure en français pour connaître l'attitude des professeurs à l'égard des caractéristiques de la personnalité créative de leurs étudiants.

Enfin, des analyses secondaires ont permis de dégager le profil d'attitudes des professeurs de techniques infirmières face à la créativité de l'étudiante.

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Une subvention interne de recherche de l'Université du Québec à Hull a permis d'assurer le parachèvement de cette étude conduite dans le cadre d'un mémoire de maîtrise à l'Université de Montréal, faculté des sciences infirmières. Auparavant, une bourse d'études du fonds institutionnel de recherche (F.C.A.R.) avait permis de compléter la scolarité relative aux études de maîtrise.

ABSTRACT

A measure of professors' attitudes toward the creativity of student nurses (MAPCE)

Creativity and problem solving are closely related in the learning and practice of nursing. The problem underlying this study concerns the attitudes of professors of nursing in 321 French language community colleges in Quebec toward the creative characteristics of their students. However, given the absence of a valid and reliable French instrument, this study focused on the validation of a French version of Torrance's Ideal Pupil Checklist. Content, construct and criteria validity were all verified, as well as the stability and homogeneity aspects of reliability.

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RESEARCH ACTIVITIES IN CANADIAN UNIVERSITY SCHOOLS AND FACULTIES OF NURSING FOR 1988-1989

Annette M. O'Connor and Jeanette L. Bouchard

In November 1987, the Canadian Association of University Schools of Nursing (CAUSN) passed a motion that CAUSN council take responsibility for preparing an annual report of research activities in schools and faculties of nursing. The motion stemmed from the need for a better national data base to assess the current status, to plan strategies for developing research and to track future progress. The purpose of this paper is to describe the research activities for 1988-89, as reported during the first annual survey.

Methods

The methods of data collection and compilation used by Ontario Region of the Canadian Association of University Schools of Nursing (ORCAUSN) over the past five years were adopted for the first annual CAUSN survey (Mohide & O'Connor, 1986; Mohide, O'Connor, & Cameron, 1987, 1989; O'Connor, Cameron & Mohide, 1988, 1989). An explanatory letter and structured response forms were mailed to the directors and deans of the 27 CAUSN member schools or faculties; two non-CAUSN members in Quebec were also surveyed. Data regarding faculty personnel resources and personnel awards were elicited using summary report forms. A structured response sheet was also completed for each research project. As survey results were obtained, questionable responses were verified by personal communication. The research categories were developed using key terms and project titles. The data were reduced and analyzed using the SPSSX statistical package.

Results

All schools and faculties responded to the survey. The deans made suggestions for improving the next annual survey, including more specific definitions of faculty employment status and research personnel awards, and the addition of a question on programmatic research.

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Table 1

Faculty Personnel Data for Canadian University Schools of Nursing, 1988-89

University/School	# Faculty			Education (FT & PT)			F.T. Fac. Res. Workload (%time)					# Funded P.I.'s
	FT	PT	Tot	Ph.D.	Masters	Bacc.	>50	26-50	11-25	1-10	0%	
Memorial	25	1	26	3	22	1	-	-	25	-	-	4
Dalhousie	34	10	44	7	26	11	-	27	-	3	4	3
St. Francis X	10	1	11	-	10	1	-	-	10	-	-	2
Moncton	14	18	32	-	32	-	-	-	14	-	-	1
New Brunswick	27	17	44	1	25	18	-	-	-	17	10	3
Atlantic total:	110	47	157	11	115	31	0	27	49	20	14	13
Bull-Quebec	6	8	14	-	14	-	-	-	6	-	-	0
Laval	15	3	18	6	12	-	2	5	-	5	3	6
McGill	16	5	21	9	12	-	-	1	4	8	3	9
Montreal	37	60	97	15	50	26	7	6	1	3	20	6
Sherbrooke	7	15	22	1	15	4	-	-	3	3	1	1
Trois-Riv.-Quebec	5	0	5	1	NR	-	NR	NR	NR	NR	NR	0
Quebec total:	86	91	177	32	107	30	9	12	14	19	27	22
Lakehead	14	17	31	1	11	19	-	3	2	8	1	5
Laurentian	20	13	33	1	14	18	-	-	-	15	5	4
McMaster	38	1	39	10	29	-	5	4	11	14	4	15
Ottawa	32	48	80	7	44	29	4	-	7	12	9	17
Queens	15	11	26	6	19	1	2	-	6	5	2	6
Ryerson	35	7	42	1	33	8	-	1	2	7	25	4
Toronto	33	20	53	11	35	7	3	6	5	4	15	15
Windsor	17	21	38	8	13	17	-	-	5	12	-	9
Western Ontario	21	15	36	7	25	4	-	-	11	8	2	9
Ontario total:	225	153	378	52	223	103	14	14	49	85	63	84
Brandon	4	0	4	-	3	1	-	1	2	-	1	1
Manitoba	24	44	68	6	31	27	-	-	24	-	-	7
Saskatchewan	24	12	36	2	20	13	-	-	-	24	-	7
Alberta	45	33	78	28	33	17	-	-	-	45	-	11
Athabasca	1	-	1	1	-	-	-	-	-	1	-	0
Calgary	34	26	60	16	20	23	-	4	7	8	15	10
Lethbridge	5	1	6	2	3	1	-	5	-	-	-	1
British Columbia	38	2	40	7	33	-	-	2	8	16	12	11
Victoria	9	5	14	5	9	-	-	-	-	-	-	2
Western total:	184	123	307	67	152	82	0	12	41	94	28	50
TOTAL	605	414	1,019	162	597	246	23	65	153	218	132	169
%	59	41		16	59	25	4	11	26	37	22	37

Faculty resources

Information about research manpower in each school or faculty is presented in Table 1. Of the 1,019 full-time and part-time faculty employed in 29 schools on October 31, 1989, 59% held full-time positions. Graduate degrees were held by seventy-five percent of full-time and part-time faculty. There were 162 faculty with earned doctorates. Seventy-eight percent (n=459) of full-time faculty and 8% (n=34) of part-time faculty were engaged in research. The majority of full-time faculty had minimal time allocated to research (1-10%). Only 5 faculty had 75% time protection. The number of faculty involved in research varied widely across the schools and faculties (minimum 1; maximum 45). Of those involved in research, only 169 (37%) held grants as principal investigators.

Research projects

The funding status of all research projects conducted in Canadian university schools and faculties of nursing is provided in Table 2. Of the 390 projects reported, 62% were funded. Ninety-three percent of the funded projects had nurse principal investigators. Similarly, 93% of unfunded projects were led by faculty nurses.

Table 2

Funding Status for all Research Projects 1988-89

Funding Status	Role of Faculty Nurse			%
	Principal investigator*	Co-investigator	Total	
Funded	225	16	241	
Not funded	138	11	149	
Total	363	27	390	100

* 170 nurses held grants as principal investigators; mean number of grants per faculty nurse as principal investigator = 1.7 (range 1-6).

Total operating grants. The total funding for all operating grants where faculty nurses served as principal or co-investigators is shown in Table 3. This table includes only those projects that received funding in 1988-89. For projects funded over more than the 1988-89 fiscal year, the portion reported was estimated by dividing the total amount of the award by the number of years of funding. Funding for the 242 projects totalled \$4,490,761. The largest contributors were the Provincial Ministries of Health, MRC, American sources, Health and Welfare, and other provincial ministries. Several agencies contributed funds around the \$150-300,000 level, including local agencies, SSHRC, internal university sources, and provincial and national foundations.

Total operating grants for faculty nurses as principal investigators. Funding for the 225 projects conducted by nurse principal investigators totaled \$3,053,639 (see Table 4). One-quarter of the funding was obtained from the provincial ministries of health, followed by Health and Welfare, other provincial ministries, and local agencies. Awards at the 150-200,000 dollar level were obtained from SSHRC, local agencies, internal university sources, MRC, and national foundations. The total amount of funding across the schools and faculties ranged from a high of \$493,222 to a low of \$0. Number of funded studies per faculty or school ranged from 0 to 25.

Table 3

All Operating Grants by Funding Source and University, 1988-89

University/School	MRC	Health/ Welfare	SSHRC	Other Feds	Prov.Min. Health	Other Prov.	Nat'l Found	Prov. Found	Corp'n	Local Agency	Int. Univ.	Other Source	Total(n) \$
Memorial	-	-	5760	-	-	700	-	-	-	-	831	-	7291 (4)
St. Francis Xavier	-	-	-	-	-	-	5000	-	-	-	3030	-	8030 (2)
Dalhousie	-	-	-	-	-	-	-	3445	-	4997	-	-	8442 (4)
Moncton	-	-	-	-	-	-	-	-	-	2000	-	-	2000 (1)
New Brunswick	-	27600	-	-	-	-	2000	-	-	-	1000	-	30600 (3)
Atlantic total:	0	27600	5760	0	0	700	7000	3445	0	4997	6861	0	56363(14)
Hull	-	-	-	-	-	-	-	-	-	-	-	-	0 (0)
Laval	-	-	43241	-	77438	85812	12180	8000	-	48142	-	-	274813(11)
McGill	133488	137179	60568	1526	-	26500	5000	1500	-	8660	2174	69440	413035(16)
Montreal	-	34435	-	-	6000	-	-	-	-	38000	25000	-	136435 (9)
Sherbrooke	-	-	-	-	-	-	-	-	-	-	1300	-	1300 (1)
Trois-Riv.-Que	-	-	-	-	-	-	-	-	-	-	-	-	0 (0)
Quebec total:	133488	171614	103809	1526	83438	112312	17180	9500	0	94802	28474	69440	825583(37)
Lakehead	-	-	528	-	-	-	-	-	-	-	192	-	720 (6)
Laurentian	-	-	-	-	-	-	-	-	-	-	2505	-	2505 (4)
McMaster	590000	32000	-	2625	456047	35000	-	-	5000	81274	88195	416667	1706808(26)
Ottawa	-	47527	-	2548	160726	-	6633	29000	2410	58226	9616	6500	323186(25)
Queens	-	-	-	1528	-	49469	1035	17685	10000	-	6941	3750	90408(11)
Ryerson	-	23500	-	-	-	-	-	-	-	-	3557	-	27057 (4)
Toronto	67790	114250	29453	-	54003	15000	112056	97500	2780	36667	-	-	526997(27)
Windsor	-	-	-	9218	-	83854	6986	-	-	500	7600	-	108158(16)
Western Ontario	-	-	-	8952	15362	-	1000	-	-	-	5325	-	30639(12)
Ontario total:	657790	217277	29981	24871	686138	183323	127710	144185	17688	176667	123931	426917	2816478(131)
Brandon	-	-	-	-	-	-	-	-	-	-	3902	-	3902 (2)
Manitoba	-	-	-	-	14500	-	11000	21354	20000	-	3700	12000	82554 (9)
Saskatchewan	-	48000	1200	34750	-	-	-	-	2780	-	6500	-	93230 (7)
Alberta	-	41600	-	-	-	80826	-	-	-	3000	4500	110826	238952(12)
Athabasca	-	-	-	-	-	-	-	-	-	-	-	-	0 (0)
Calgary	-	2000	2000	-	22500	95841	-	-	-	13243	5000	-	140584(11)
Lethbridge	-	5750	500	-	-	14160	-	-	-	-	4000	-	24410 (3)
British Columbia	-	-	-	-	116500	-	1004	-	-	250	16151	-	133405(13)
Victoria	-	-	67000	-	-	-	-	-	-	6000	-	-	73000 (2)
Western total:	0	97350	70700	34750	153500	190827	12004	21354	22780	22493	43753	122826	792337 (59)
TOTAL	791287	513841	210250	61147	923096	487162	163896	178484	40468	298959	203019	619183	4490761 (242)

- several projects had multiple sources of funding.
- Funds for operating grants running over more than the 1988-1989 fiscal year were derived by dividing the total grant number of years of funding.

Table 4

Funding Sources of Operating Grants (Faculty Nurse as Principal Investigator) 1988-89

University/School	MRC	Health/ Welfare	SSHRC	Other Federal	Prov.Min. Health	Other Prov.	Nat'l Found	Prov. Found	Corp'n	Local Agency	Int. Univ.	Other Source	Total(n) \$
Memorial	-	-	5760	-	-	700	-	-	-	-	831	-	7291 (4)
St. Francis Xavier	-	-	-	-	-	-	5000	-	-	-	3030	-	8030 (2)
Dalhousie	-	-	-	-	-	-	-	3445	-	4997	-	-	8442 (4)
Moncton	-	-	-	-	-	-	-	-	-	-	2000	-	2000 (1)
New Brunswick	-	27600	-	-	-	-	2000	-	-	-	1000	-	30600 (3)
Atlantic total:	0	27600	5760	0	0	700	7000	3445	0	4997	6861	0	56363(14)
Mull	-	-	-	-	-	-	-	-	-	-	-	-	0 (0)
Laval	-	-	43241	-	77438	85812	12180	8000	-	48142	-	-	274813(11)
McGill	107488	125752	60568	1526	-	-	-	-	-	8660	2174	69440	375608(14)
Montreal	-	34435	-	-	6000	26500	5000	1500	-	38000	25000	-	136435(10)
Sherbrooke	-	-	-	-	-	-	-	-	-	-	1300	-	1300 (1)
Trois-Riv.-Que	-	-	-	-	-	-	-	-	-	-	-	-	0 (0)
Quebec total:	107488	160187	103809	1526	83438	112312	17180	9500	0	94802	28474	69440	788150(35)
Lakehead	-	-	528	-	-	-	-	-	-	-	192	-	720 (6)
Laurentian	-	-	-	-	-	-	-	-	-	-	2505	-	2505 (4)
McMaster	-	32000	-	2625	320444	-	-	-	5000	44958	88195	-	493222(19)
Ottawa	-	47520	-	2548	156784	-	4970	29000	2410	58226	3500	-	304955(24)
Queens	-	-	-	1528	-	44903	1034	19	10000	-	6941	3750	68175 (9)
Ryerson	-	23500	-	-	-	-	-	-	-	-	3557	-	27057 (4)
Toronto	48131	114250	29453	-	34003	15000	112056	3500	278	34167	-	-	390838(25)
Windsor	-	-	-	9218	-	83854	-	-	-	-	7600	-	100672(15)
Western Ontario	-	-	-	8952	15362	-	1000	-	-	500	5325	-	31139(12)
Ontario total:	48131	217270	29981	24871	526590	143757	119060	32519	17688	137851	117815	3750	1419283(118)
Brandon	-	-	-	-	-	-	-	-	-	-	3902	-	3902 (2)
Manitoba	-	-	-	-	14500	-	11000	21354	20000	-	3700	12000	82554 (9)
Saskatchewan	-	48000	1200	34750	-	-	-	-	2780	-	6500	-	93230 (7)
Alberta	-	41600	-	-	-	78326	-	-	-	3000	4500	110826	236452(11)
Athabasca	-	-	-	-	-	-	-	-	-	-	-	-	0 (0)
Calgary	-	2000	2000	-	22500	95841	-	-	-	13243	5000	-	140584(11)
Lethbridge	-	5750	500	-	-	14160	-	-	-	-	4000	-	24410 (3)
British Columbia	-	-	-	-	116500	-	1004	-	-	250	16151	-	133405(13)
Victoria	-	-	67000	-	-	-	-	-	-	6000	-	-	73000 (2)
Western total:	0	97350	70700	34750	153500	188327	12004	21354	22780	22493	43753	122826	789837(58)
TOTAL	155619	582487	210250	61147	763531	445096	155244	66818	40968	260143	196903	196016	3053639(225)

1. Funds for operating grants running over more than the 1988-1989 fiscal year were derived by dividing the total grant by the number of years of funding.

Foci of the research projects. Table 5 summarizes the characteristics of the funded and unfunded projects. The studies involved all age groups. Projects focussed most frequently on the young or middle aged adults, followed by a combination of age groups, children and adolescents, the elderly, and maternal populations. Clinical practice studies predominated, followed by a combination of functional types, education studies, research methods studies and administration studies. For the nursing practice studies, the most frequent studies were multifocal in their classification. The second most frequent studies focussed on health promotion, followed by curative or restorative care studies and last, studies of illness prevention and maintenance of functioning.

Table 5***Foci of Research Projects, 1988-89***

Variable	#Projects
<i>Population</i>	
Elderly	41
Maternal	23
Child/adolescent	47
Middle-aged/young adult	95
Combination	76
Not applicable	21
Missing	2
Other	70
<i>Primary Area of Study</i>	
Practice	180
Education	43
Administration	10
Research methodology	11
Combination	44
Not applicable	15
Missing	10
Other	62
<i>Focus of Health Care</i>	
Health promotion	64
Prevention	29
Curative/restorative	42
Maintenance	27
Combination	74
Not applicable	69
Missing	18
Other	52

Research personnel funding. Four faculty members received career scholar funding from the Ontario Ministry of Health (n=3) and NHRDP (n=1). Eight faculty received fellowship awards from the following sources: national foundations, internal university sources, NHRDP, provincial ministries of health, and other sources (a hospital foundation and an overseas scholarship). The number of awards given varied from 9 in the Ontario region to 0 in the Atlantic region.

Table 6

Canadian University Schools/Faculties of Nursing Support of Research Personnel and Trainees by Funding Source and University, 1988-89

University/School	NHRDP	Prov Min of Health	Funding Source		Other	TOTAL \$	TOTAL# Awards	Total # Awardees
			Nat'l Found	Int.Univ. Source				
Memorial Dalhousie St. Francis Xavier Moncton New Brunswick								
Atlantic total:	0	0	0	0	0	0	0	0
Mull Laval McGill Montreal	18000 (1)			40000 (3)		58000	4	3
Sherbrooke Trois-Rivières								
Quebec total:	18000 (1)			40000 (3)		58000	4	3
Lakehead Laurentian McMaster		54700* (1)				54700	1	1
Ottawa		26545 (1)	12760 (1)		2000 (1)	41305	3	2
Queens		32960* (1)				32960	1	1
Ryerson Toronto		48555* (1)	17500 (2)		500 (1)	66555	4	2
Windsor Western Ontario								
Ontario total:		162760 (4)	30260 (3)		2500 (2)	195520	9	6
Brandon Manitoba		12500 (1)				12500	1	1
Saskatchewan Alberta Athabasca Calgary	19600 (1)					19600	1	1
Lethbridge British Columbia	33773* (1)					33773	1	1
Victoria								
Western total:	53373 (2)	12500 (1)				65873	3	3
TOTAL #	71373 (3)	175260 (5)	30260 (3)	40000 (3)	2500 (2)	319393	16	12

*Career Scientist

Discussion

Nursing research manpower in Canadian schools of nursing appears to be very inadequate. Eighty-four percent of part-time faculty are reported not to be engaged in research, and the majority of full-time faculty have 1-10% of their workload allocated to research. These poor results may reflect the reality of heavy teaching loads that faculty are asked to carry, or, they may reflect the difficulty some deans may have had in responding to the workload question as it was posed. In defense of the question's reliability, the ORCAUSN survey has produced consistent results over the last five years: the majority of full-time faculty devote 1-10 percent of their time to

research. However, the validity of the question can be raised as an issue. In some universities, faculty unions and associations have mandated workload percentages for scholarly work. The deans may not be reflecting those mandates but, rather, the actual percentage their faculty devote to research. Alternatively, many other schools have limited time devoted to research, in part, because of the clinical courses offered during intercession and the summer semesters. Given the time allocated for holidays, the proportion remaining for research is indeed miniscule. In future surveys, a distinction should be made between mandated time for scholarly work and actual time devoted to research. However, even if deans are stating the reality, rather than the mandate, the fact remains that research is indeed a small part of a faculty member's workload.

It is noteworthy to observe that a profession of over a quarter of a million nurses and over a thousand nursing faculty has only four career scientists devoting 75 percent of their time to research. These statistics should improve over the next three years as NHRDP/MRC development awards are reported; however, the numbers are still small for the size of the profession we serve and the important research questions that need answering.

It is encouraging to note the substantial number of projects (390) being conducted by faculty and the appropriate emphasis on practice research. However, 38% of the studies are not funded, and many funded studies are underfunded. The reasons for the lack of funding must be explored. Is it lack of faculty grantsmanship skills; inadequate protected time to make grant applications; or, the poor fit between faculty research problems or methods and mandates or preferences of funding agencies? Probably, a combination of causes exist. More effort needs to be directed toward assisting faculty to obtain large-scale grants for their projects. Mechanisms for adjusting research workloads should be explored so that faculty have the time to make these major grant applications. Strategies for improving the fit between our research problems and approaches and those of the funding agencies must be developed.

Last, the nursing profession must lobby for better allocation of health research funding. According to the *Reference List of Health Science Research in Canada*, \$378.5 million was spent on Health research in Canada for 1988-89. This list contains 80 percent of the funding for university and hospital research in Canada. Therefore, a conservative estimate of the percentage allocated to Nursing would be less than one percent. It is difficult to estimate the level of funding that is needed to register an impact on nursing practice. However, it is clear that a level of less than one percent of the total funding is not sufficient for the largest health professional group in Canada. The 3.05 million dollars received for nursing research also fades in comparison to 1986-87 spending of over 5 billion dollars for hospital nursing salaries alone (Statistics Canada, 1990).

In conclusion, the first annual CAUSN survey of research activities has produced evidence of the amount and scope of nursing research in Canada. The survey has identified the severe underfunding of Canadian nursing research and has provided a useful benchmark against which to track future progress and trends.

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RÉSUMÉ

Activités de recherche dans les écoles et facultés de sciences infirmières des universités canadiennes en 1988-89

Le présent article résume les résultats du premier sondage annuel de l'ACEUN sur les activités de recherche dans les écoles et facultés de sciences infirmières des universités canadiennes. Les données recueillies portent sur les chercheurs, les projets de recherche et le soutien des équipes de chercheurs. Du premier juillet 1988 au 30 juin 1989, 78 % des professeurs à plein temps et 8 % des professeurs à temps partiel ont participé activement à 390 projets de recherche. Sur les 459 chercheurs en exercice, 37 % avaient reçu une subvention de chercheur principal. Au total, les professeurs de sciences infirmières travaillant comme chercheurs principaux ont reçu 3 053 639 \$ pour 225 projets. En 1988-89, 169 études non subventionnées ont été effectuées. La recherche a surtout porté sur l'exercice clinique. Huit bourses de recherche et 4 prix de chercheur de carrière d'un montant de 319 393 \$ ont été attribuées à des professeurs de sciences infirmières. Ces données révèlent une importante disproportion entre le financement de la recherche en sciences infirmières et celui de l'ensemble des recherches en sciences de la santé dont il représente moins d'un pour cent ($< 1\%$). L'insignifiance de la somme est d'autant plus criante si l'on tient compte du grand nombre d'infirmiers en exercice et de la grande variété des domaines de recherche qu'il y a lieu d'approfondir.

RENSEIGNEMENTS A L'INTENTION DES AUTEURS

La revue canadienne de recherche en sciences infirmières accueille avec plaisir des articles de recherche ayant trait aux sciences infirmières et aux soins de la santé. Veuillez adresser vos manuscrits à la rédactrice en chef, *La revue canadienne de recherche en sciences infirmières*, Ecole des sciences infirmières, Université McGill, 3506 rue University, Montréal, QC, H3A 2A7.

Modalités: Veuillez envoyer trois exemplaires de votre article dactylographié à double interligne sur des feuilles de papier de 216mm x 279mm en respectant des marges généreuses, accompagné d'une lettre qui indiquera le nom, l'adresse et l'affiliation de l'auteur ou des auteurs. Il est entendu que les articles soumis n'ont pas été simultanément présentés à d'autres revues. Veuillez inclure avec votre article une déclaration de propriété et de cession de droit d'auteur conformément à la formule suivante: "Je déclare par la présente que je suis le seul propriétaire de tous droits relatifs à mon article intitulé ' ' et je cède mon droit d'auteur à l'École des sciences infirmières de l'Université McGill, pour fins de publication dans *The Canadian Journal of Nursing Research/La revue canadienne de recherche en sciences infirmières*. Date _____, Signature _____."

Style de présentation: La longueur acceptable d'un article doit osciller entre 10 et 15 pages. Les articles peuvent être rédigés soit en anglais, soit en français et ils doivent être accompagnés d'un résumé de 100 à 200 mots (si possible, dans l'autre langue). Veuillez remettre l'original des schémas, dessinés à l'encre de Chine et prêts à être photographiés. Les auteurs sont tenus de fournir les références à leurs propres oeuvres sur une feuille séparée et de suivre les consignes énoncées dans le Publication Manual of the American Psychological Association (3rd. ed.), Washington, D.C.: APA, 1983, en ce qui concerne le style et le contenu de leurs articles.

Examen des manuscrits: Les manuscrits présentés à la revue sont évalués de façon anonyme par deux lectrices selon les critères suivants:

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Validité externe: Le problème soulevé présente-t-il un intérêt véritable? Ce problème est-il d'actualité? Existe-t-il des problèmes de divulgation ou de déontologie? Les conclusions de la recherche ou de l'article sont-elles importantes? Ces conclusions ou résultats peuvent-ils s'appliquer à d'autres situations? Est-ce que l'article contribue à l'avancement du savoir dans le domaine des sciences infirmières? De quelle façon?

Evaluation de la présentation

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