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Focus: *Outcomes & Measurement*

GUEST EDITORIAL AND DISCOURSE

Shadow and Substance: Values and Knowledge

**Robin Weir, Gina Bohn Browne,
and Jacqueline Roberts**

Three umpires are sitting discussing the game and one says, "There's balls and there's strikes and I call 'em the way they are." Another says, "There's balls and there's strikes, and I call 'em the way I see 'em." The third says, "There's balls and there's strikes, and they ain't nothin' until I call 'em." (Anderson, 1990)

This editorial is about the factors that influence the making of judgments in science: the shadow and the substance. In this issue, through articles which indicate the clear requirements of quality nursing research, we examine outcomes and measures. The knowledge of methods assumes – and this is particularly true of quantitative traditions – objectivity or neutrality in the science of inquiry. The epistemological problem is that any process that generates and interprets outcome research is value-laden. Often left unexamined is the impact of the researcher's biases and values on the direction of the inquiry and the interpretation of findings. For example, we recently found that 45% of sole-supporting parents on welfare were depressed, as observed by the nurses. Our social scientist colleagues, from the same data set, noted, "Isn't it amazing that as many as 55% of sole-supporting parents on social assistance programs are not depressed?" Given the current emphasis on evidence-based nursing, who will raise questions concerning the impact of this value-laden evidence on practice, and on planning and policies, considering the nature and extent of our services?

Is there such a thing as comprehensiveness in science? What we set out to quantitatively measure or qualitatively *notice* reflects our values and assumptions about important variables, mechanisms, pathways, and interactions. We find what we intend to notice, or indeed fail to find what we did not even know enough to notice. Do we ever consider measuring simultaneously (noticing) the opposite, or the unintended effects – the harms and risks – as well as the benefits and impacts? Is the glass half empty or half full? Is it short or tall? Are the contents 7-Up or another soda? Is this even relevant? How does the reality of the simultaneous nature of multiple effects and states affect our inquiry and our interpretation of events? Will the results of our inquiry be affected by our failure to observe that the glass is opaque, not clear; red, not blue; effective or ineffective in alleviating thirst? We must notice what we intend to effect; however, once we do so, we often fail to notice something else. There is no such thing as value-free and meaning-free knowledge, nor is there objective or comprehensive information.

In the research process, however, the structure of the argument and the design of the study itself may help to control the bias of value-laden knowledge. From this perspective, we are required to seek the outcome in different situations, at controlled points in time, that may challenge assumptions or expectations. Time alone may produce unintended effects and expenses! In their respective papers addressing selected methodological issues, Onyskiw and Sidani acknowledge the importance of the design features, including the need for a control group when evidence for changes in outcome, with or without exposure to the intervention, are required to produce an intended effect.

On the other hand, although certain measures of outcome may be reliable and valid, they assume, by definition, what is favourable and unfavourable – for example, measures of quality of life, coping strategies, and decision-making approaches. Should we wonder about the circumstances under which it is healthier to find a situation intolerable, meaningless, or unmanageable? Does adversity ever provide an advantage? Is adversity always faced alone, and what is most problematic or protective – the circumstance, the event, or the response? In such intolerable situations, what should be measured – the outcome, the input, the pathway, or the mechanism by which individuals succumb to or survive the circumstance? Or should all of the above be measured – the shadow and the substance?

Should we measure the clinically important change between groups or the minimally important change within an individual? Is it our intention to discriminate or to evaluate, to say that there is a differ-

ence or that there is an equivalence? Onyskiw suggests that the significance lies in not only the size of the effect, but also the variation in effectiveness that may lead to further inquiry. Harrison, Juniper, and Mitchell-DiCenso elaborate on the conditions that facilitate the choice of one option over another. Whichever one is chosen, the outcome of interest may be the alleviation of a symptom or a gain in competency. The important issue is whether a state of health has been reached. Onyskiw describes this state as "the level of the variable," Bunn and O'Connor as "the individual's valuation of the achievement of a goal."

Harrison, Juniper, and Mitchell-DiCenso cogently argue that enhanced quality of life is the ultimate goal of most nursing interventions. Nursing practice aims to modify, when necessary, a person's response to their circumstance, to cast a different shadow on the same substance, or indeed to redefine the substance. Consequently, outcomes of interest may be the *capacity* to cope or not to cope with a deteriorating circumstance when other perspectives may view coping as the *mediator* or pathway variable to a state of peaceful death.

Individual, group, and system outcomes coexist. In noticing one level we can ignore another, and generalize that a benefit was produced in a group when in fact a subgroup of individuals deteriorated. People on antidepressant medication may sleep better, have more energy, and cry less, but some of these people may view themselves as broken or defective because they require medication. Gottlieb and Feeley demonstrate the value of studying the mechanisms by which change occurs and the power of analyzing subgroups in detail.

How do we deal with the uncertainty and error inherent in measurement? Does the information obtained from such measures inform the policy for the average (means, modes) or the practice policy for the exception (extremes)? Do we treat, according to the available evidence, on the basis of the "average" dose or the "exceptional"? Are the standardized methods used in the "managed care" approach applicable to all people, across all contexts?

We may think service interventions produce favourable individual outcomes with no more expense to the system, when, in reality, the cost is merely shifted from one sector to another. Consider the shift in expenditures from the health-care system to the family system such as occurs in the case of home care. In contrast, reductions in social services generate health-care services, which shifts costs, however inappropriately, from one entitlement program to another. Outcomes, whether individual, systemic, or societal, require interpretation from multiple

perspectives. We create reality, problems, or resources by the way in which we view them.

Given that reality is created by our view of it, the value of synthesis and integration of findings from a number of authors is clear. Onyskiw describes meta-analysis both as a way of integrating findings from quality studies and as criteria for judging it to be a good primary study to begin with. In this, she alludes to the importance in outcome research of the research design, or the structure of the argument. When, in both the presence and the absence of the circumstance, service, or intervention, should one observe the effect, expense, outcome, or mechanisms?

Outcomes are values at different points in time and should not be considered a final truth. The goal is to "flirt with your hypotheses, but don't marry them!" (Freedman & Combs, 1996). Read with interest a most thought-provoking issue of the *Canadian Journal of Nursing Research* dealing with these complex methodological issues in outcome research.

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Le point : Les résultats et leur mesure

ÉDITORIAL ET DISCOURS INVITÉS

L'ombre et la substance : valeurs et connaissances

**Robin Weir, Gina Bohn Browne
et Jacqueline Roberts**

Trois arbitres, assis, discutaient de la partie. L'un dit : Y a les balles et y a les prises, et je les appelle par leur nom. L'autre dit : Y a les balles et y a les prises, et je les appelle comme je les vois. Le troisième dit : Y a les balles et y a les prises, et elles ont pas de nom tant que je leur en ai point donné. (Anderson, 1990)

Le présent éditorial traite des facteurs influençant le fondement de jugements en sciences, à savoir ce qui reste dans l'ombre et ce qui est essentiel. Dans le présent numéro, nous étudierons les résultats et les mesures, à travers des articles qui indiquent clairement les exigences pour une recherche de qualité en sciences infirmières. Connaître des méthodes, et c'est surtout vrai des traditions quantitatives, implique l'objectivité ou la neutralité dans la science de la recherche. La question épistémologique veut que tout processus générant et interprétant des résultats soit chargé de valeurs. Souvent, ce qu'on n'étudie pas, ce sont les effets du parti-pris et des valeurs du chercheur sur la direction de la recherche et l'interprétation de ses résultats. Par exemple, d'après les observations des infirmières, nous avons découvert dernièrement que 45 % des parents uniques sur le bien-être social étaient déprimés. Nos collègues en sciences sociales, à partir des mêmes données, ont noté : « N'est-il pas étonnant que 55 % des parents uniques sur le bien-être social ne sont pas déprimés ? » Étant donné l'accent que l'on met actuellement sur des sciences infirmières basées sur des preuves, qui soulèvera les questions sur l'effet de ces preuves chargées de valeurs

sur la pratique, la planification et les politiques, compte-tenu de la nature et de l'étendue de nos services ?

Existe-t-il un concept tel que la complétude en sciences ? Ce que nous présentons pour *relever* les mesures quantitatives ou qualitatives reflète nos valeurs et nos hypothèses sur des variables, des mécanismes, des cheminements et des interactions essentiels. Nous trouvons ce que nous avons l'intention de relever, ou plutôt ne trouvons pas ce que nous ne connaissions pas assez pour le relever. Avons-nous jamais pensé à mesurer (relever) simultanément le contraire, ou les effets inattendus – les dommages et les risques – autant que les avantages et les effets positifs ? Le verre est-il à moitié vide ou à moitié plein ? Est-ce petit ou grand ? Le contenu est-il du 7-up ou un autre soda ? Ou cela a-t-il même un rapport ? Comment la réalité de la nature simultanée des effets et des états multiples affecte-t-elle notre recherche et notre interprétation des événements ? Est-ce que le fait de ne pas voir que le verre est opaque, et non pas transparent, que l'objet étudié est rouge et non pas bleu, et que c'est efficace ou non pour étancher la soif a un effet quelconque sur les résultats de notre recherche ? Nous devons relever ce que nous avons l'intention de modifier ; pourtant, même une fois que nous le faisons, souvent nous ne relevons rien d'autre. La connaissance sans valeur et sans signification n'existe pas, ni l'information objective ou complète.

Dans le processus de recherche, toutefois, la structure de l'argument et le plan de l'étude proprement dite peuvent permettre de maîtriser le parti-pris d'une connaissance chargée de valeurs. Ce faisant, nous devons examiner le résultat dans diverses situations, à certains points de repères dans le temps, qui pourraient remettre en question certaines hypothèses ou attentes. Le temps seul peut parfois produire des effets et des dépenses qu'on n'avait pas prévus ! Dans leurs articles qui traitent de certaines questions de méthodologie, mesdames Onyskiw et Sidani précisent toutes deux l'importance des particularités techniques, y compris la nécessité d'un groupe de vérification lorsque la preuve de changements dans le résultat, avec ou sans exposition à l'intervention, est requise pour atteindre l'effet voulu.

D'autre part, même si certaines mesures de résultats peuvent être sûres et valables, par définition, elles tiennent pour acquis ce qui est favorable et ce qui ne l'est pas ; par exemple, les mesures concernant la qualité de la vie, les stratégies d'adaptation et les démarches décisionnelles. Devrions-nous nous demander dans quelles circonstances il est plus sain de trouver une situation intolérable, insensée ou ingérable ? Y a-t-il un quelconque avantage à l'adversité ? Doit-on affronter l'adver-

sité seule ou est-ce la circonstance, l'événement ou la réaction qui est le plus problématique ou salutaire ? Dans ces situations intolérables, que doit-on mesurer : le résultat, les intrants, le cheminement ou le mécanisme par lequel certaines personnes succombent ou survivent à la situation... ou tout ce qui énuméré ci-dessus – ce qui est dans l'ombre et ce qui est essentiel ?

Doit-on mesurer le changement important d'un point de vue clinique entre les groupes ou le changement mineur chez un individu ? Notre intention est-elle de distinguer ou d'évaluer, de dire qu'il y a différence ou équivalence ? Madame Onyskiw suggère que ce n'est pas seulement la grandeur de l'effet qui est importante, mais également les variations dans l'effet qui peuvent conduire à d'autres recherches. Mesdames Harrison, Juniper et Mitchell-DiCenso précisent les conditions facilitant un choix plutôt qu'un autre. Dans tous les cas, le résultat intéressant est la réduction du symptôme ou le gain en compétence. La question essentielle est de savoir si l'on a atteint ou non un bon état de santé. Madame Onyskiw appelle cela *le niveau de la variable*, mesdames Bunn et O'Connor *l'évaluation que fait la personne de l'atteinte d'un objectif*.

Mesdames Harrison, Juniper et Mitchell-DiCenso estiment pertinemment que l'amélioration de la qualité de la vie est l'objectif ultime de la plupart des interventions en soins infirmiers. La pratique des sciences infirmières vise à modifier, le cas échéant, la réaction de la personne face à la situation, à projeter une ombre différente sur la même substance ou, en fait, à redéfinir la substance. En conséquence, le résultat intéressant peut être la **capacité** à s'adapter ou l'incapacité à le faire face à une situation qui se dégrade tandis que d'autres points de vue peuvent voir l'adaptation comme la variable **médiatrice** ou la variable du cheminement vers un état de mort paisible.

Les résultats individuels, de groupes et systémiques coexistent. Il se peut qu'en relevant un niveau, on en ignore un autre et qu'on en conclue que quelque chose de positif s'est produit dans un groupe alors qu'en réalité un sous-groupe de personnes a subi des effets négatifs. Les gens qui prennent des antidépresseurs éventuellement dorment mieux, ont davantage d'énergie et pleurent moins, pourtant certains peuvent se considérer affaiblis ou déficients parce qu'ils ont justement besoin de médicaments. Mesdames Gottlieb et Feeley montrent combien il est important d'étudier les mécanismes par lesquels les changements adviennent, ainsi que le pouvoir d'analyser des sous-groupes en détails.

Comment gérons-nous l'incertitude et les erreurs dues aux méthodes de mesure ? Est-ce que les renseignements obtenus grâce à ces

méthodes de mesure informent sur la politique pour la moyenne (moyens, modes) ou la procédure pour l'exception (extrêmes)? À partir des données disponibles, traitons-nous sur la base d'une dose *moyenne* ou sur celle d'une dose *exceptionnelle*? Est-ce que les méthodes normalisées que l'on utilise dans les *soins gérés* sont valables pour tout le monde dans toutes les situations?

Il se peut que nous pensions que les interventions de service produisent des résultats individuels positifs, sans davantage de dépenses pour le système alors qu'en réalité, les coûts ont basculé d'un secteur à un autre. Examinons le transfert des dépenses de l'infrastructure sanitaire à la famille pour le cas de soins à domicile. Par contre, la diminution des services sociaux entraîne des services sanitaires dont les transferts de coûts, même tout à fait inappropriés, se font d'un programme à un autre. Les résultats, qu'ils soient individuels, systémiques ou sociétaux, exigent une interprétation à partir de divers points de vue. Nous créons la réalité, les difficultés et les ressources de la façon dont nous les percevons.

Étant donné que la réalité est construite sur la perception que nous en avons, la valeur de la synthèse et l'intégration des résultats venant de différents auteurs est évidente. Madame Onyskiw décrit la méta-analyse comme une manière d'intégrer les résultats de recherches de qualité et comme critère pour juger que c'est d'abord une bonne étude préliminaire. Dans ce sens, elle fait allusion à l'importance du plan sur le résultat de la recherche ou la structure de l'argument. Quand doit-on observer l'effet, la dépense, le résultat ou les mécanismes en présence ou en l'absence de situation, de service ou d'intervention?

Les résultats sont des valeurs à différentes périodes; on ne doit pas les étudier comme vérité définitive. L'objectif est *de flirter avec vos hypothèses, non pas de les épouser!* (Freedman et Combs, 1996). Lisez avec intérêt un numéro stimulant de la *Revue canadienne de recherche en sciences infirmières* qui traite de ces questions méthodologiques complexes dans la recherche sur les résultats.

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Validation of Client Decision-Making Instruments in the Context of Psychiatry

Helen Bunn and Annette O'Connor

Nous avons évalué les propriétés psychométriques des instruments qui mesurent le conflit décisionnel, l'efficacité personnelle dans la prise de décision et la maîtrise émotionnelle de la décision chez 94 schizophrènes qui envisageaient de poursuivre leur traitement avec des injections de neuroleptiques à action prolongée. Les échelles de décision montraient une bonne cohérence interne (entre 0,78 et 0,84) et se distinguaient de façon significative ($p < 0,000$ à $0,037$) entre les malades qui exprimaient leur certitude et ceux qui exprimaient leur incertitude à propos de leur décision de continuer ou non un traitement. Les échelles peuvent être utiles pour ce qui concerne les gens souffrant de troubles psychiatriques; elles permettent d'établir les facteurs qui participent à la difficulté de prendre une décision concernant le traitement et d'évaluer les interventions possibles pour aider à la prise de décision.

We evaluated the psychometric properties of instruments measuring decisional conflict, decision self-efficacy, and decision emotional control with 94 clients diagnosed with schizophrenia who were considering the continuation of treatment with long-acting antipsychotic injections. The decision scales had adequate internal consistency (range 0.78 to 0.84) and discriminated significantly ($p < 0.000$ to 0.037) between clients who expressed certainty and those who expressed uncertainty regarding decisions to continue with treatment. The scales may be useful in psychiatric populations, in identifying the factors contributing to difficulty in decision-making regarding treatment and evaluating decision-supporting interventions.

In psychiatric/mental health care, as in other health-care contexts, recent trends have been toward increased consumer involvement and empowerment (Graham, 1988; National Health and Welfare, 1991). These changes encompass a reversal of the power relationship between clients and clinicians, with an increase in clients' exercise of control over their own health and treatment decisions (Church, 1989). The *Mental Health Act* (Ministry of Health, 1992) and the proposed *Consent to Treatment Act* (College of Nurses, 1993) are consistent with this new emphasis on informed choice (Evans, 1987), rather than merely informed consent, on the part of the client.

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Research evaluating client decision-making is in its infancy. A review of the psychiatric literature indicated only one study examining psychiatric disturbance and decision-making. Bradford, Mann, and Kalucy (1986) used Janis and Mann's (1977) conflict theory and Edwards' (1961) expectancy-value theory to measure decision-making in a variety of clients with psychiatric disturbance; 59% of the participants were diagnosed with mood disorder; none was diagnosed with schizophrenia. The study focused on decision-making generally rather than on making a specific treatment decision. The authors concluded that measures based on both models yielded results consistent with assumptions that the greater the disturbance the greater the level of decisional conflict, the lower the level of confidence the higher the level of irrational choice and the more pessimistic and distorted the information processing. There are no published studies examining treatment decision-making by clients diagnosed with schizophrenia.

One method of promoting client choice is the use of decision aids; these describe treatment alternatives using probabilities tailored to the client's clinical profile and outlining the consequences of the choices made. In addition, some aids are used to clarify values and assist in applying the decision taken. Decision aids are currently being used to help clients make choices about cancer treatments (Levine, Gafni, Markham, & MacFarlane, 1992), hormone replacement therapy (O'Connor, Tugwell, & Wells, 1995; Rothert, Holmes, & Rovner, 1993), surgery (Kasper, Mulley, & Wennberg, 1992), and clinical trial entry (Llewellyn-Thomas, McGreal, Thiel, Fine, & Erlichman, 1991). Nurses in Canada (Neufeld, Degner, & Dick, 1993), Britain (Greene, 1992), and the U.S. (Phillips, Rempusheski, Puopolo, Naccarato, & Mamallateratt, 1990) are being encouraged to identify clients' information needs and to provide relevant information to facilitate their active and informed participation in their own treatment.

Decision aids have not been developed for use in psychiatry. Davidhizar (1982) and Lyons and Fulkerson (1984) have demonstrated that psychiatric clients diagnosed with schizophrenia exhibit difficulties in perception, cognition, and affect. Therefore, it is critical to appropriately modify decision aids and evaluate their adequacy for clients diagnosed with schizophrenia. Do decisional aids contribute to more effective choices, or do they result in an additional burden for clients who are already experiencing difficulty with cognition and affect? Answering this question requires evaluation measures capable of detecting the cognitive, social, and emotional aspects of making an informed choice.

The objective of the present study was to validate instruments developed to measure the cognitive, social, and emotional aspects of decisions made by clients with schizophrenia. Three scales developed by O'Connor for use in non-psychiatric populations were adapted for clients with schizophrenia and evaluated for reliability and validity: the Decisional Conflict Scale (DCS), measuring the cognitive aspects of decision-making (O'Connor, 1995a); the Decision Self-Efficacy Scale (DSES), measuring the social aspects of decision-making; and the Decision Emotional Control Scale (DECS), measuring the affective dimension of decision-making. The information provided by this study would be useful in identifying the difficulties in decision-making experienced by clients with schizophrenia and the factors that contribute to such difficulties. In addition, these data could be used to fine-tune the development of decision aids for clients with schizophrenia as well as for other psychiatric clients.

Conceptual Framework

The original decision scales were developed (O'Connor, 1995a) using a conceptual framework derived from the construct of decisional conflict (Janis & Mann, 1977; North American Nurses Diagnosis Association, 1992; O'Connor, 1993). Decisional conflict, a state of uncertainty about the course of action to take, tends to occur when choices are being made that involve risk, significant gains and losses, the need to make value trade-offs, and anticipated regret over the positive aspects of rejected options (Janis & Mann; North American Nurses Diagnosis Association; O'Connor, 1993; O'Connor & D'Amico, 1990; Sjoberg, 1983). Decisional conflict is characterized by verbalization of uncertainty, vacillation between choices, delayed decision-making, and questioning of personal values and beliefs while attempting to reach a decision. Self-focusing and signs of stress may also be seen (O'Connor, 1995a).

Although decisional conflict often arises from the dilemma inherent in the decision, several modifiable factors are hypothesized to contribute to it, including: lack of information about available alternatives and the accompanying risks and benefits, unclear values, lack of skills or resources needed to make or implement a decision, emotional distress, and unwanted pressure from important others (O'Connor, 1993; O'Connor & D'Amico, 1990). The following empirical evidence supports these hypothesized relationships for health decisions. Surgical patients who felt uninformed about the nature, consequences, and extent of surgical procedures had greater difficulty reaching decisions

(Larsson, Svardsudd, Wedel, & Salio, 1989). Medical patients who experienced high levels of emotional distress had difficulty thinking clearly, which led to interference with decision-making (Fitten & Waite, 1990; Scott, 1983). It has been demonstrated that uncertainty when making a choice is greater among those who feel uninformed about options, are unclear about personal values, and sense pressure from others (O'Connor, 1995a). Moreover, decision-supporting interventions have been shown to reduce uncertainty and improve comprehension and awareness of personal values (O'Connor et al., 1995).

Theoretically, decision aids have the potential to reduce decisional conflict, by tackling the hypothesized causes of the conflict and by increasing self-efficacy and emotional control (O'Connor, 1993, 1995a; O'Connor & D'Amico, 1990). For example, lack of information can be remedied by providing accurate information about alternatives and describing associated risks and benefits. Value-clarification exercises can help clients who are unclear about the relative importance of the attributes in a decision and the implicit trade-offs they will be making in selecting an alternative. Skill deficits in implementing decisions and handling unwanted pressure can be addressed via learning exercises such as rehearsing and role-playing. Decision aids may also reduce emotional distress by increasing clients' personal control over difficult situations. Adequate information and participation in decision-making enhance cognitive and environmental control, which are crucial in reducing stress-related signs and symptoms (Johnson, Fuller, & Endress, 1978; Padilla et al., 1981; Watkins, Weaver, & Odegaard, 1986). Thus decision aids may lead to effective decision-making – whereby clients make and act on choices that are informed and consistent with their personal values.

Methods

Original Decisional Measures

The Decisional Conflict Scale (DCS) includes three subscales, eliciting (1) the client's uncertainty in making a health decision, (2) factors contributing to this uncertainty, and (3) the client's perceived effective decision-making. The items were developed from the construct of decisional conflict and validated by a panel of decision-making experts. The total number of items is 16, three measuring uncertainty, nine measuring contributing factors, and four measuring perception of effective decision-making. Each item is paired with a five-point Likert response

scale anchored by "strongly agree" and "strongly disagree" (O'Connor, 1995a). The DCS has been evaluated with more than 1,000 individuals making preventative decisions about immunization and breast screening (O'Connor, 1995a). The test-retest reliability coefficient is 0.81. Internal consistency coefficients for the scale range from 0.78 to 0.92. The DCS discriminates significantly ($p < 0.001$) between those with (a) strong intentions to either accept or decline invitations to receive health interventions and (b) uncertain intentions. The scale also discriminates significantly ($p < 0.0002$) between (a) those who accept or reject health interventions and (b) those who delay their decision. There is weak inverse correlation ($r = -0.16$, $p < 0.05$) between the DCS and knowledge test scores.

The Decision Self-Efficacy Scale (DSES) was based on Bandura's (1977) concept of self-efficacy. Bandura describes self-efficacy as a feeling of adequacy and efficiency in dealing with life situations. More specifically, O'Connor views self-efficacy as perceived ability to engage in treatment-related behaviours. The DSES is an 11-item instrument with a five-point response scale ranging from 0 (not at all confident) to 4 (very confident). The measure elicits clients' appraisal of their abilities to engage in the task of obtaining information about treatment options, expressing their concerns and views, and making an informed choice. The focus is on their social role in working with their health team to carry out this task. Face validity was established by a panel of experts in decision-making. Internal consistency was established with 60 women considering hormone replacement therapy, and the alpha coefficient was 0.89 (O'Connor, 1995b).

The Decision Emotional Control Scale (DECS) has six items describing various emotions (strong, secure, in control, afraid, confused, and frustrated) related to making an informed choice. Respondents indicate the degree to which they are experiencing each feeling on a five-point response scale ranging from 0 (not at all) to 4 (very much). This measure was validated by an expert panel and is currently being evaluated with women considering hormone replacement therapy (O'Connor, 1995b).

Modification of the Decisional Measures

The original scales were modified for use with clients diagnosed with schizophrenia following consultation with a panel of psychiatric clinicians, including psychiatrists, nurses, and social workers from the schizophrenia clinic. Individual items were also modified to conform to

the choice being made in this study – namely, whether to continue with long-acting antipsychotic injections. Clinicians expressed concern that many of their clients diagnosed with schizophrenia demonstrate concreteness in thinking and would have difficulty with the abstract thinking needed to deal with the five-point scales. For example, they would be unable to distinguish between responses of “agree” and “strongly agree” as well as between “disagree” and “strongly disagree.” They would likely be able to indicate “yes,” “no,” or “unsure” for each item, but not the *degree* of positive or negative agreement. The response scales were simplified to reflect this reality.

The DCS was simplified by reducing the Likert scale from a five-point to a three-point scale. Responses were scored as 1 (yes or agree), 2 (unsure), and 3 (no or disagree), with negative statements having reverse scoring. Therefore, higher scores indicated greater decisional conflict.

Further modifications were made following completion of a small pilot study of the instruments with four randomly selected clients from the clinic who had been diagnosed with schizophrenia. Two of these exhibited concrete thinking. All four experienced difficulty with an item asking them to determine which was most important, controlling the symptoms of schizophrenia or avoiding side effects. For example, the original item was presented as “I’m not sure what’s worse: having the inconvenience and side effects of the injections or getting back my symptoms of schizophrenia.” The item was revised to elicit a clearer response from clients, as follows: “Which is more important? Controlling symptoms of schizophrenia; avoiding side effects of medication; both are equal; unsure.” A second item that caused confusion was originally stated as “I feel that this decision is mine alone.” The item was changed to “I have the right amount of support from others in making this choice.” Likewise, the item “I expect to carry out the decision I made” was changed to “I expect to stick with my decision.” The remainder of the items posed no difficulty for the four pilot clients. All clients suggested that the research assistant be available to read and explain items to participants in the major study.

The DSES was similarly simplified by reducing the five-item summative response scale to three items, consisting of 1 (a lot confident), 2 (a little confident), and 3 (not confident). All items were positively phrased; therefore, higher scoring indicated greater problems with decision self-efficacy. Clients in the pilot study completed the items without difficulty.

The DECS was also reduced from a five-item summative response scale to three items, consisting of 1 (a lot), 2 (a little), and 3 (not at all). Negative feelings had reverse scoring; therefore, higher scoring indicated greater problems with emotions. One item, "strong," was deleted because two clients in the pilot study interpreted it as a physical descriptor rather than an emotional one.

As suggested in the literature (Davidhizar, 1982) and confirmed by clients in the pilot study, the instruments were presented to clients both verbally and visually, to increase the likelihood of comprehension.

Establishing Reliability and Validity of Modified Decision Scales

Psychosocial scales, such as the decision scales used in this study, are frequently evaluated for reliability by examining their internal consistency (Polit & Hungler, 1991). Nunnally (1978) recommends evaluating internal consistency reliability on all new instruments, since item sampling is the major source of error. Cronbach's alpha was used to assess the reliability of the decision scales in this study, since it renders an estimate of the split-half correlations for all possibilities of dividing the measure into two halves (Polit & Hungler).

To ensure that the decision instruments corresponded to the theories of decisional conflict and self-efficacy, construct validity was tested. A common method of construct validation is the known-groups approach (Kerlinger, 1973, p. 467), in which the instruments are administered to groups who are expected to differ on the attributes being measured. Consistent with the theory and research conducted in other contexts (O'Connor, 1995a), we hypothesized that individuals who were unsure or who delayed making their decisions would have higher decisional conflict, decision self-efficacy, and decision emotional control scores than individuals who decided to continue. In this study, following administration of information about the risks and benefits of long-acting injections, participants made a decision. They were then assigned to one of three groups, according to their decision – to continue taking injections, discontinue injections, or delay reaching a decision.

Sample

The modified scales were tested with a convenience sample of 94 clients diagnosed with schizophrenia according to the DSM IIIR. All clients attended the schizophrenia clinic at a major psychiatric hospital in Ottawa over a 10-week period from April to June 1993. Clients who

were deemed by the attending psychiatrists to be acutely psychotic, or those who were diagnosed primarily as schizo-affective, were excluded. Nurses working in the clinic approached eligible clients and asked for their cooperation in meeting with the research assistant, who explained the purpose of the study. Written informed consent was obtained from those clients who agreed to participate. They were told that the purpose of the study was to "help people with schizophrenia make better decisions about taking medicine" and that we needed their help to make sure the information we were providing made sense. Clients were assured of confidentiality and were assured that their decision whether or not to participate would not affect the care they normally received in the clinic.

Procedure

Information about the risks and benefits of taking long-acting antipsychotic injections was presented to clients in a one-to-one setting in the clinic by the research assistant. Clients were then asked to make a decision about continuing with their injections, with either a yes, no, or unsure/delay response. The DCS, DSES, and DECS were then administered and clients were asked to reflect on their choices.

The information about risks and benefits was based on the following evidence: The most common risks associated with antipsychotic injections and the most frequently cited reasons for non-compliance are the extrapyramidal side effects of akathisia, akinesia, rigidity of muscles, tremor, dystonia, and tardive dyskinesia (Anderson et al., 1990; Den Boer et al., 1990; Laux et al., 1990; Lewander, Westerbergh, & Morrison, 1990; Lindstrom et al., 1990; Mendlewicz et al., 1990; Patris et al., 1990). Based on these studies, the side effects of akathisia, akinesia, rigidity of muscles, and tremor were grouped together and the percentage of clients deemed likely to experience them was conservatively set at 40%; dystonia and tardive dyskinesia were also grouped and the percentage of clients likely to experience them was set at 20%. Several studies have identified the benefits of long-acting injections in controlling symptoms of schizophrenia and preventing rehospitalization (Crawford & Forrest, 1974; Dencker, Leep, & Malm, 1980; Hirsch, Gaiend, Rohde, Stevens, & King, 1973; Hogarty, Goldberg, Schooler, & Ulrich, 1974; Hogarty et al., 1979; Rifkin, Quitkin, Rabiner, & Klein, 1977). Based on this research, the likelihood of controlling symptoms was determined to be 75%, of preventing rehospitalization 80%.

Results

Sample

Sixty-eight (72%) of the respondents were male and 26 (28%) were female. Their ages ranged from 27 to 68 years, with a mean age of 41 years. All clients were able to speak and read English. All were presently taking long-acting antipsychotic injections; 86% had been taking them for more than five years, while only 2% had been taking injections for less than one year.

Response Difficulty

The DCS, DSES, and DECS were administered, with some verbal explanation from the research assistant. Four (4%) respondents had some difficulty focusing on the task at hand, but with extra encouragement from the research assistant they were able to focus and continue with the study. All 94 clients completed all items on the DCS. Across all the items in the DSES and the DECS, missing responses ranged from 1% to 3%. One client was unable to complete the DSES and the DECS due to fatigue and inability to concentrate. The DSES and the DECS were the second and third instruments administered in the study. One client, who had been diagnosed with chronic paranoid schizophrenia, refused to complete the DSES because he believed he did not have a choice with respect to taking the long-acting antipsychotic injections.

Reliability

Internal consistency for all scales was adequate, with an alpha coefficient of 0.78 for the DCS, 0.84 for the DSES, and 0.79 for the DECS.

Validity

Eighty-two (87%) of the clients decided to continue treatment, nine (10%) were unsure about what to do or wanted to delay making their decision, and three (3%) decided to discontinue treatment. Because the proportion who decided to discontinue was so small, comparisons were made only between the delayers and the continuers.

As indicated in Table 1, the DCS, DSES, and DECS were consistent in discriminating between those clients who decided to continue treatment on the one hand and those who were unsure about or wanted to delay their decision on the other. As hypothesized, respondents who

were unsure or wanted to delay obtained higher scores on the DCS, indicating greater decisional conflict; higher scores on the DSES, indicating more difficulty with decision self-efficacy; and higher scores on the DECS, indicating greater difficulty with decision emotional control. Because the number of clients who decided to delay their decision was relatively small, we assessed the significant differences to determine whether they were a result of extreme scores for some participants (outliers); there were no outliers to explain the results.

Table 1 <i>Mean Differences in DCS, DSES, and DECS scores between those who decided to continue treatment and those who were unsure or who delayed their decisions</i>			
Scale	Decision Groups		<i>t</i> test <i>p</i> value
	Continue * <i>n</i> = 82	Delay/Unsure <i>n</i> = 9	
Decisional Conflict Possible range 16 = low conflict 48 = high conflict Mean (SD)	20.9 (4.4)	29.8 (3.3)	< 0.000
Decision Self-Efficacy Possible range 11 = no problems 33 = considerable problems Mean (SD)	14.6 (4.3)	16.8 (2.4)	0.037
Decision Emotional Control Possible range 5 = no problems 15 = considerable problems Mean (SD)	6.6 (2.3)	9.7 (2.2)	0.003
* <i>n</i> varied slightly (79-82) for decision groups, due to missing responses.			

Discussion

The DCS, DSES, and DECS met acceptable standards of validity and reliability despite the small numbers in each group. Nunnally (1978) suggests that alpha coefficients of 0.70 are acceptable for immature scales such as these.

The large number of clients who decided to continue with their injections and the accompanying small number who indicated uncertainty could be explained by the nature of the sample. Participants in the study were all being maintained on long-acting antipsychotic injections; they had experienced the risks and benefits and thus may not have perceived the decision as critically as those clients who would be making an initial decision to begin or refuse the injections. In addition, the participants were part of a supportive clinic environment and the majority would be expected to continue with treatment.

Although all three decision scales discriminated significantly among groups, scores were fairly low even in the uncertain group (see Table 1). These results may be attributable to the low-risk decisions studied. In order to evaluate further the usefulness of these decision scales, the study could be repeated with clients diagnosed with schizophrenia who are not linked with a specialized supportive clinic and those who are making initial decisions about beginning treatment. Using these clients and enlarging the sample size might result in larger numbers per group and thus also allow for validation of subscales.

The majority (97-99%) of clients in the study were able to respond to individual items on all three decision scales. This high response rate suggests that the scales are appropriate for use with clients diagnosed with schizophrenia. The majority of clients had no difficulty with the decision scales, perhaps because they were stabilized on medication. With the exception of two clients (2%), respondents accepted the active involvement of the research assistant, who read the items aloud. This involvement may also have contributed to the high completion rate for items on the decision scales.

In future studies, it would be useful to examine additional feeling concepts within the DECS. For example, one client (1%) suggested that anger be included, since many clients with schizophrenia are dealing with this emotion when they make decisions related to treatment.

In conclusion, the adapted DCS, DSES, and DECS met acceptable standards of reliability and validity in a psychiatric context. These decision scales may also be useful tools for assessing the *nature* of decisional

conflict in clients with schizophrenia, so that interventions can be tailored to the individual. For example, those clients who have a high degree of decisional conflict because of information deficits may require interventions that are distinctly different from those needed by clients who are unclear about their values or anticipate having implementation problems. Clinicians would thus have access to information to guide their decisions with respect to the time allotted to various interventions, such as information-giving, values clarification, or emotional support, depending on the deficits demonstrated by the client. In addition, these decision tools may be helpful in establishing optimum relationships with clients diagnosed with schizophrenia and thus contribute to actualizing a philosophy of increased consumer involvement, empowerment, and informed choice.

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

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

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

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

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

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

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

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

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

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

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

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

Methods

Sample and Data Collection

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

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

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

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

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

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

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

Measures

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

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

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

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

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

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

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

Intervention Features

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

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

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

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

Results

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

Characteristics of Improvers, Adjusted, and Clinical Rangers

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

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

Characteristics	Improvers (<i>n</i> = 30)	Adjusted (<i>n</i> = 107)	Clinical Rangers (<i>n</i> = 33)	<i>F</i> (2, 167)
Child age (years)	9.30	9.24	7.79	2.87 [†]
Age at diagnosis (years)	1.20	2.34	1.70	2.04
Gender: male	53.3%	46.7%	66.7%	
Gender: female	46.7%	53.3%	33.3%	
Mother's age	36	38	35	3.90*
Mother's education (years)	11.73	11.80	11.50	0.13
Years partnered	13	14	11	4.73**
Marital status: partnered	79%	93%	17%	$\chi^2(2)=3.53$
Marital status: single	21%	7%	83%	
Maternal distress ¹	4.20	1.80	5.12	10.76***
Maternal competence ¹	34.77	28.50	33.27	19.36***
Role restriction ¹	19.23	16.35	20.01	9.18***
Social isolation ¹	13.03	10.99	13.13	6.0**
Family functioning	2.07	1.60	1.86	13.47***
Confidence to manage child's condition	81.76	85.63	80.21	0.44
Impact of condition on daily routine	41.07	35.10	40.12	0.59
Stress caring for child with condition	40.47	35.64	47.33	1.67
¹ Higher score indicates poorer score [†] $p < .06$ * $p < .05$ ** $p < .01$ *** $p < .001$				

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

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

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

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

Table 2a

Mean Number of Concerns per Nursing Contact among Improvers, Adjusted, and Clinical Rangers¹

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

¹ Based on content analysis of the nurses' notes.

Note: Mean number of health concerns = # of concern/# of contacts.

* $p < .05$ *** $p < .001$

Table 2b

Mean Number of Nursing Strategies per Nursing Contact among Improvers, Adjusted, and Clinical Rangers¹

Characteristics	Improvers (n = 30)	Adjusted (n = 107)	Clinical Rangers (n = 33)	F (2, 167)
Relationship-building	1.01	1.09	1.0	3.69*
Support	.98	.88	.99	1.15
Information-giving	.43	.31	.36	2.87†
Teaching	.23	.22	.23	0.07
Problem-solving	.12	.07	.08	1.96
Restructuring	.37	.26	.38	3.88*
Working the system	.07	.04	.06	1.83
Wait	.03	.02	.03	0.54
¹ Based on content analysis of the nurses' notes. Note: Mean number of nursing strategies = # of strategies/# of contacts. † $p < .06$ * $p < .05$				

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

Profile Analysis of Improvers and Clinical Rangers

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

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

Improvers: Pathways Towards Improvement in Child Psychosocial Adjustment

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

I. Empowering Youth

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

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

II. Parenting the Family

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

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

III. Boosting Competence

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

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

IV. Not Getting to First Base

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

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

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

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

I. Rosy Picture

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

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

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

II. Parenting the Mother

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

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

Discussion

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Quality of Life as an Outcome Measure in Nursing Research

*"May you have
a long and healthy life"*

Margaret B. Harrison, Elizabeth F. Juniper,
and Alba Mitchell-DiCenso

La qualité de la vie émerge comme un concept et un résultat importants dans les soins de santé. Les décideurs, les chercheurs, les cliniciens et le public en général estiment que la perception que l'on a de la qualité de la vie est une dimension importante de la santé d'une population ou d'une personne. La nature des sciences infirmières est telle que beaucoup de leurs résultats escomptés sont liés à l'amélioration de la qualité de vie des personnes et des populations. Le débat demeure ouvert sur la définition exacte de la qualité de la vie; un concept difficile à définir qui posera naturellement des défis aux moyens de le mesurer. Pourtant, cela n'a pas empêché la prolifération d'instruments de mesure de la qualité de la vie car le concept est reconnu comme un résultat clinique et de recherche de plus en plus important. Des progrès ont été accomplis pour clarifier et opérationnaliser le concept. Nous proposons un point de vue conceptuel qui sépare ce que la qualité de vie est de ce qui contribue à la qualité de vie. Cela permettra aux chercheurs en sciences infirmières d'envisager la qualité de vie comme un résultat dans leur évaluation des interventions en soins infirmiers. Dans les situations cliniques ou de recherche, pour ce qui a trait à la mesure, une définition opérationnelle de la qualité de la vie provient d'une définition de la santé. De là dérive une définition d'une qualité de vie liée à la santé. Pour mesurer les résultats, la définition opérationnelle est liée aux domaines importants pour la population étudiée et à l'intervention sanitaire particulière que l'on étudie. On présente également les questions soulevées concernant la mesure de la qualité de vie liée à la santé.

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Quality of life has emerged as an important concept and outcome in health and health care. Policy-makers, researchers, clinicians, and the public at large consider perceived quality of life to be an important dimension of the health of a population or an individual. The nature of nursing is such that many of its anticipated outcomes relate to improvement in the quality of life of individuals and populations. There continues to be debate about the actual definition of quality of life, and a concept that is difficult to define will naturally pose challenges to measurement. This has not impeded the proliferation of quality-of-life instruments, since the concept is recognized as an increasingly important clinical and research outcome. Progress has been made in clarifying and operationalizing the concept. We propose a conceptual viewpoint that separates what quality of life *is* from what *contributes to* quality of life. This will assist nurse researchers planning to use quality of life as an outcome in evaluating nursing interventions. In clinical or research situations, for the purposes of measurement, an operational definition of quality of life stems from a definition of health. From this is drawn a definition of health-related quality of life (HRQL). For the purpose of outcome measurement, the operational definition relates to the domains important to the study population and the particular health intervention under study. Issues that arise in the measurement of HRQL are also presented.

Quality of life has emerged as an important concept and outcome in health and health care. Policy-makers, researchers, clinicians, and the public at large consider perceived quality of life an important dimension of the health of a population or an individual (Campbell, Converse, & Rodgers, 1976; Kinney, Burfitt, Stullenbarger, Rees, & Read-Debolt, 1996). Nursing is, by its nature, holistic, supportive, and focused on the human response to a state of health (Ferrans & Powers, 1985; Padilla & Grant, 1985). Many of the anticipated outcomes of nursing practice relate to improvement in the quality of life of individuals and populations. As a result, quality of life and its measurement have become an important focus in the evaluation of nursing practice. This paper provides a conceptual viewpoint for quality of life as a nursing research outcome and outlines issues that arise in the measurement of health-related quality of life (HRQL).

Quality of Life as a Concept in Health and in Health Care

Following the deprivations of the Great Depression in the 1930s and the upheaval caused by World War II, the concept of quality of life emerged as a result of society's increased attention to achieving a "good life," rather than merely surviving (Campbell et al., 1976). The increased consumer awareness in North America since the end of World War II has had a significant impact on the health field. By the 1970s it was evident that the perspective of the patient was becoming an important consideration (McDowell & Newell, 1987; Ware, 1984). It is now possible to be biologically alive but socially dead (Edlund & Tandcredi, 1985). Technological and other medical advances have increased our ability to keep people alive longer. Society has put the quality of this extended

life under scrutiny, with debates over artificial life supports, euthanasia, and even the meaning and definition of death. Many available therapies offer similar morbidity and mortality outcomes but different effects on quality of life – for example, surgical or medical treatment of ischemic heart disease, chemotherapy or supportive care for advanced lung cancer. Individuals and families are becoming increasingly involved in decisions related to the quality, versus quantity, of life. The “provider paternalism” of the past is no longer widely accepted.

As a result of medical progress, people with chronic or long-term conditions are living longer and more people are surviving serious trauma and accidents (Ontario Ministry of Health, 1993; Strauss, 1984). The goal of their treatment is to maximize quality of life, by alleviating symptoms, maintaining or improving functional capacity, and retarding the progression of the underlying condition or incurable disease (Renwick, Brown, & Nagler, 1996; Stewart et al., 1989). Nursing provides support before, during, and after diagnosis and therapy. In the case of the chronically ill, nursing practice accompanies an individual (and family) on the journey through diagnosis, rehabilitation, and living with the condition day-to-day (Padilla & Grant, 1985; Rideout, 1992). Nursing interventions promote well-being, adjustment, and self-care, and their anticipated outcomes are primarily with improvements in quality of life. Nurses play a vital role in assessing and maintaining “health” for those with chronic or long-term conditions; thus they ultimately influence quality of life.

Quality of life will undoubtedly become an even more important concept in the next few decades. The incidence of chronic or long-term conditions increases as terminal ailments become curable and more individuals survive trauma. A larger aging population further increases the need for quality-of-life assessment. Chronic conditions are more common in the elderly (Kinney et al., 1996; Ontario Ministry of Health, 1993). Demographic data indicate that in Ontario, for example, by the year 2010 the proportion of people over 65 will increase by 68% (Ontario Ministry of Health, 1993, p. 9). The great expectations for technology and science have not been realized. Progress will be characterized by incremental gains in the management of major illnesses, rather than their cure. Thus the need for supportive care will continue to increase, as will its importance. For nursing, the challenge will be to evaluate the effectiveness of such interventions, which will require innovative outcome measurements beyond traditional morbidity and mortality endpoints (Jenkins, Jono, Stanton, & Stroup-Benham, 1990; Kinney et al.; Padilla, Grant, & Ferrell, 1992).

Quality of life offers one approach to this challenge, taking the individual's subjective assessment into account (Oleson, 1990). In a special report, Padilla and colleagues (1992) describe the "vital interest and commitment" of the nursing profession to conceptualizing and measuring quality of life: by actively promoting quality-of-life research (describing quality of life, developing measures, testing interventions); disseminating quality-of-life research through conferences and special issues of journals (for example, *Advances in Nursing Science*, *Seminars in Oncology Nursing*, and *Progress in Cardiovascular Nursing*); establishing pre- and post-doctoral training programs in HRQL; and offering awards for research excellence (Padilla et al.).

Quality of life has already become a major concern in planning, implementing, and evaluating health-care and social policies (see, for example, Spilker, 1990; Ontario's Health Plan in Ontario Ministry of Health, 1993; strategies for cancer care in Ontario Ministry of Health, 1994, and Ortho Biotech, 1993). As the next millennium approaches, decisions concerning quantity versus quality of life will become even more difficult and more prevalent, especially in view of the debt crises facing all levels of government. "Health is generally considered one of the most important determinants of overall quality of life which underscores the relevance of using quality of life as an ultimate outcome of health care" (McDowell & Newell, 1987, p. 205).

For the purposes of outcome measurement in nursing research, a number of practical questions arise: How can HRQL be defined in order to be helpful as a nursing research outcome? How can it best be measured? What are the key considerations in selecting an HRQL instrument?

Definition

The meaning of quality of life is a matter of much debate – even controversy. As yet, there is no agreed upon definition to guide health care and research (Ferrans & Powers, 1985; Gill & Feinstein, 1994; Kinney et al., 1996; McDowell & Newell, 1987; Padilla & Grant, 1985; Schipper, Clinch, & Powell, 1990; Spitzer, 1987). As one researcher bluntly states it, "Quality of life remains more a fashionable idea than a rigorously defined concept in the health sciences" (McDowell & Newell, p. 227).

The debate seems to have divided sociologists and some health researchers into two camps: those who support a broad concept of quality of life (Bergner, 1985; Campbell et al., 1976; Gill & Feinstein, 1994; McDowell & Newell, 1987; Strauss, 1984) and those who take a

more pragmatic view, believing the parts can be reduced for purposes related to health-outcome measurement (Aaronson, 1988; Guyatt & Cook, 1994; Jenkins et al., 1990; Stewart & Ware, 1992; Ware, 1984). In the literature, terms such as health status, functional status, well-being, and life satisfaction are sometimes used interchangeably with "quality of life" (Spitzer, 1987), in other instances as components of an overall concept of quality of life.

There is general agreement on several theoretical aspects of quality of life. It is widely acknowledged to be a multidimensional concept (Ferrans & Powers, 1985; Jenkins et al., 1990; McDowell & Newell, 1987; Schipper et al., 1990; Spilker, Molinek, Johnston, Simpson, & Tilson, 1990; Ware, 1984; WHOQOL Group, 1993). Similar domains of quality of life have been identified by various researchers, and there is an emerging consensus toward the acceptance of four broadly identified domains: physical functional status, symptoms and side effects, social functioning, and psychological state (Aaronson, 1988; Schipper et al.). Examples of definitions and domains are found in Table 1. It is agreed that quality of life is a subjective, patient-perceived phenomenon (Gill & Feinstein, 1994; Guyatt, Feeney, & Patrick, 1993; Juniper, Guyatt, Willan, & Griffith, 1994; McDowell & Newell; Oleson, 1990; Strauss, 1984; Ware, 1984) that can change within the same individual over time (Guyatt, Deyo, Charleson, Levine, & Mitchell, 1989; Juniper et al., 1994; Juniper, Guyatt, & Jaeschke, 1990; Schipper et al.). The conceptualization of quality of life has progressed from a nebulous term about subjective feelings to an accepted concept – albeit, in terms of measurement, an evolving one.

Toward Conceptual and Operational Clarity

The challenge for nurse researchers in using quality of life as a primary or secondary outcome will be to achieve conceptual and operational clarity. The qualification of HRQL would facilitate nurses planning to use quality of life as an outcome when evaluating nursing interventions. Conceptually this approach represents a separation of what quality of life *is* from what *contributes to* quality of life (Stewart, 1992). In clinical or research situations, health, for the purposes of outcome measurement, can be viewed as contributing to overall quality of life, and health care as contributing in some way to the person's health. An operational definition of quality of life should stem from a definition of health, and this definition of health should be in philosophical accord with the ethic, standards, and mission of the profession or discipline.

Table 1	<i>Selected Themes of Quality of Life</i>	
Source	Quality-of-Life Definitions	Domains
Ferrans & Powers (1985, p. 17)	A person's sense of well-being stemming from satisfaction or dissatisfaction with the areas of life that are important to him/her	1. Health and functioning 2. Socio-economic 3. Psychological 4. Family
Gill & Feinstein (1994, p. 619)	Personal perception of health status and/or non-medical aspects of one's life	1. Health-related factors – important clinically – important to patient 2. Non-medical aspects
Guyatt & Jaeschke (1990, p. 37)	The wide variety of subjective experiences related to health	1. Symptoms 2. Physical function 3. Emotional function
Schipper et al. (1990, p.16)	The functional effect of an illness, and its consequent therapy, upon a patient, as perceived by the patient	1. Physical and occupational function 2. Psychological state 3. Social interaction 4. Somatic sensation

(cont'd)

Table 1 (cont'd) *Selected Themes of Quality of Life*

Source	Quality-of-Life Definitions	Domains
Ware (1984); Ware & Shelbourne (1992)	Personal health status and factors such as family life, finances, housing	<ol style="list-style-type: none"> 1. Physical functioning 2. Role functioning – physical 3. Bodily pain 4. General health 5. Vitality 6. Social functioning 7. Role functioning – emotional 8. Mental health 9. Reported health transition
WHOQOL Group (1993, p. 153)	<p>An individual's perception of life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and relationship to salient features of their environment.</p>	<ol style="list-style-type: none"> 1. Physical health (bodily states and functions) 2. Psychological health 3. Level of independence 4. Social relationships 5. Environment

A modification of the broad World Health Organization (WHO) definition, "Health is a resource which permits individuals to achieve their aspirations and cope with or change their environment" (WHO, 1986; personal communication, A.S. Macpherson, McMaster University, Sept. 9, 1996), may be how many nurses would define quality of life. From such a position, one can address the contribution that health-care and nursing interventions might make toward achieving a state of health. A definition of HRQL could then be drawn: a person's "perception of their health status and aspects of their life considered important in relation to their expectations of 'normal' living" (Harrison, 1996). This definition encompasses the notions of a subjective evaluation of one's life against what is normal; an acknowledgement of expectations against natural capacity; and meeting personal goals by narrowing the gap between one's expectations and one's achievements (known as Calman's gap – Calman, 1984). It is recognized that health care and health professionals are limited in what they can change or affect. For the purpose of outcome measurement, the operational definition is more restrictive and situationally specific (Waltz, Strickland, & Lenz, 1991). In the case of HRQL this relates to the domains important to the study population and the health intervention under investigation.

Measurement

Types of HRQL Instrument

There are two types of HRQL instrument, generic and specific. Generic instruments provide a summary of health status, functional status, and/or general quality of life. Specific instruments focus on problems associated with single disease states, patient groups, or areas of function (Guyatt et al., 1993; Guyatt, VanZanten, Feeney, & Patrick, 1989). Generic instruments assess a spectrum of quality-of-life components or domains and are applicable to a variety of populations. Specific measures concentrate on particular conditions or populations. A growing number of researchers have found it necessary to develop specific instruments because the generic measures fail to capture the specific quality-of-life issues associated with the condition of interest – for example, inflammatory bowel disease (Guyatt, Mitchell, et al., 1989) or asthma (Juniper, Guyatt, Ferrie, & Griffith, 1993; Marks, Dunn, & Woolcock, 1992). Additionally, instruments may need to be generated to be developmentally appropriate and specific to a condition – for instance, asthma in children (Juniper et al., 1996).

Another approach is to modify generic instruments for use with particular populations, as Ferrans and colleagues did to create cardiac and cancer versions of their quality-of-life index (Bliley & Ferrans, 1993; Ferrans, 1990; Ferrans & Powers, 1985). However, this approach should be used only with the collaboration of the original developer and with a good understanding of the psychometric issues.

Guyatt and colleagues developed a taxonomy for HRQL measures and evaluated the strengths and weaknesses of each (Guyatt, VanZanten, et al., 1989). A number of authors have systematically catalogued generic and specific quality-of-life measures (Gill & Feinstein, 1994; McDowell & Newell, 1987; Spilker et al., 1990).

Generic measures. These questionnaires are designed for use with patients with any medical condition. Probably the most commonly used and the best validated are the Medical Outcomes Study Short Form 36 (SF-36) (Stewart, Hays, & Ware, 1988; Ware & Shelbourne, 1992), the Sickness Impact Profile (SIP) (Bergner, Bobbitt, Carter, & Gilson, 1981), the Nottingham Health Profile (Hunt et al., 1980), and the McMaster Health Index Questionnaire (Sackett, Chambers, MacPherson, Goldsmith, & McAuley, 1977). Although each health profile is designed to measure all important aspects of HRQL, each does so in a different way. For instance, the SF-36 comprises 36 questions aggregated into two major health attributes (physical health and mental health). In contrast, the 136-question SIP has two domains (physical and psychosocial), which can be combined into one overall score.

The main advantage of generic instruments is that the burden of illness can be compared across medical conditions. However, because they need to be broadly comprehensive to cover all conditions and diseases, they may fail to measure the specific and important impairments associated with any one condition. For instance, the SIP tends to focus on severe impairments (feeding, dressing, etc.) that may not apply to patients with less debilitating illnesses. In addition, there is growing evidence that generic measures may not be responsive to small but important changes when used to assess the effect of an intervention (Hawker, Melfi, Paul, Green, & Bombardier, 1995; Rutten van Molken et al., 1995).

Specific measures. The recognition that generic instruments are often insufficiently responsive to changes or differences in HRQL that are important to individuals has led to the development of specific

instruments, for both adults and children. The strength of specific instruments is that they focus on the areas of function that are most important to patients. Their weakness is that the degree of impairment cannot be compared across conditions.

Evaluating the Quality of HRQL Measures

The essential properties of reliability and validity in a high-quality HRQL instrument are well agreed upon (Feinstein, 1987; Fitzpatrick et al., 1992; Fletcher, Gore, & Jones, 1992; Guyatt, VanZanten, et al., 1989; McDowell & Newell, 1987; Ware, 1987). Reliability is the ability of the instrument to consistently provide similar results when used on the same population in similar circumstances. Validity is its ability to accurately measure what it is intended to measure. McDowell and Newell offer detailed methods for generally assessing these key attributes, including the appropriate statistical tests and a rating framework (p. 8). Particular attention must be paid to certain attributes with HRQL instruments, depending on their purpose. A discriminative measure must be reliable and have cross-sectional construct validity. An evaluative instrument must be responsive and have longitudinal validity.

Face and content validity. When selecting an instrument, the researcher must first ensure that it has face and content validity; that is to say, that the instrument appears to measure what it is intended to measure and that the items in a questionnaire have been selected using recognized procedures so that all the areas of function considered important by patients will be captured. Unlike other outcome measures, HRQL questionnaires – particularly specific measures in which items have been selected by clinicians – rarely meet this criterion, because some impairments that patients consider important have been omitted.

In order to address clinically important issues of face and content validity, Feinstein (1987) suggests “sensibility” criteria for the questionnaire: applicability, clarity and simplicity, comprehensiveness, unlikelihood of bias, and elimination of redundant items. Feinstein argues that a sensibility screen judges instruments, rather than mathematically testing them. This would be in addition to empirical appraisals carried out in the selection of HRQL instruments.

Once content validity has been established, the measurement properties are examined to ensure that the instrument is capable of carrying out the intended task. Instruments that are to be used in cross-sectional studies (e.g., surveys) require different measurement properties from those to be used in longitudinal studies (e.g., clinical trials) (Guyatt, Kirshner, & Jaeschke, 1992).

Discriminative Instruments

These instruments are used to distinguish among individuals or among groups of patients – for example, among individuals who do or do not have a chronic condition such as congestive heart failure (CHF), or, within a CHF population, among those who have mild, moderate, or severe impairment. Discriminative instruments are most commonly used in screening and in cross-sectional surveys. Their essential measurement properties are reliability and cross-sectional construct validity (Guyatt et al., 1992).

Reliability. The signal-to-noise ratio is a simple method of deciding which measurement properties will be required in a particular situation. The “signal” is the true difference or change that is to be measured, and the “noise” is the variance, unrelated to the true signal, that will interfere with the detection of the signal. Discriminative instruments must be able to detect differences among individuals or among groups of patients. Therefore, the signal is the between-subject difference at one point in time. The noise that will tend to mask this signal is the within-subject variance. The test statistic usually used to express the relationship between the signal and the noise for discriminative instruments is the intraclass correlation coefficient (ICC), which relates the between-subject variance to the total variance (Cronbach’s alpha, which measures the internal consistency, does not give an indication of this property).

Cross-sectional construct validity. Where there is no gold standard against which to determine whether the instrument is actually measuring what it is intended to measure, the developer puts forward hypotheses or constructs, which, if met, provide evidence that the instrument is valid. The most common approach is to demonstrate that the various domains of the new HRQL instrument correlate in a predicted manner with other indices of severity and with other HRQL instruments (see Table 2).

Table 2

*Measurement Properties Necessary for
Evaluative and Discriminative Instruments*

	Discrimination	Evaluation
Signal	Between-subject differences	Within-subject differences related to true within-subject change
Noise	Within-subject differences	Within-subject differences unrelated to true within-subject change
Signal-to-noise ratio: descriptive term	Reliability	Responsiveness
Construct validity	Cross-sectional	Longitudinal
Source: Assessment of asthma control: Quality of life. In N.C. Thomson & P.M. O'Bryne, <i>Manual of asthma control</i> . London: W.B. Saunders, 1995.		

Evaluative Instruments

These instruments are required to measure longitudinal change in an individual or within a group of patients and are often used in clinical trials. The essential measurement properties of evaluative instruments are responsiveness and longitudinal validity (Guyatt et al., 1992).

Responsiveness. Evaluative instruments must be responsive to small but clinically important changes that occur either spontaneously or as the result of an intervention. The signal is the true within-subject change over time, and the noise is the within-subject variance unrelated to the true within-subject change. The relationship between the two represents the responsiveness of the instrument (Guyatt, Walter, & Norman, 1987).

Longitudinal construct validity. Evaluative instruments also require longitudinal validity. Any change in score must reflect a true change in HRQL. Longitudinal validity is usually demonstrated by showing that changes in the various domains of the new HRQL instrument correlate in a predicted manner with changes in other outcome measures, such as disease severity and generic HRQL.

Interpretability

An additional requirement, "interpretability" (Juniper et al., 1994; Juniper et al., 1990; Juniper, Guyatt, & Griffith, 1993), deals with interpreting the clinical importance of a change in a quality-of-life score and the smallest difference in a score that patients would perceive as important. Repeated experience with a wide variety of physiological measures allows clinicians to interpret results meaningfully. For instance, the experienced clinician will have little difficulty interpreting a blood pressure change of 20 mmHg or an increase in respiratory rate of 20 breaths per minute. In contrast, the meaning of a change in score of 1.0 on an HRQL instrument is not obvious, not only because there are no units, but also because health professionals seldom use HRQL measures in clinical practice and each instrument has its own scoring system.

Two approaches have been suggested for interpreting HRQL data (Lydick & Epstein, 1993). The "distribution-based" approach is based entirely on the statistical distribution of the results, the most commonly used being the effect size, which is derived from the magnitude of the change and the variability in stable subjects. The disadvantage of this approach is that there is still no indication of whether the effect is important to the patient. In the "anchor-based" approach, the changes in quality-of-life measures are compared, or anchored, to other clinically meaningful outcomes. A minimal important difference (MID) is defined as "the smallest difference in score in the domain of interest which patients perceive as beneficial and would mandate, in the absence of troublesome side-effects or excessive cost, a change in the patient's management" (Juniper et al., 1994). One method of determining the MID is global rating of changes. Briefly: on a global rating of change questionnaire, a person with asthma, for example, is asked whether he or she has experienced change in HRQL since the last visit. To obtain the MID, the researcher calculates the change in HRQL score that corresponds to the smallest global change that patients consider important. On the St. George's Respiratory Questionnaire the MID was determined by asking patients, at the end of a clinical trial, whether they felt the treatment was effective (Jones & Lasserson, 1994).

Feasibility

Feasibility of the instrument concerns the practical factors that arise in administering the tool and, given the subjective nature of HRQL, are highly consequential in the selection of a quality-of-life instrument. Consideration should be given to the means of administration. Paper-

and-pen self-report instruments may be a challenge for older, sight-impaired people. Telephone interviews are difficult for hearing-impaired subjects. Administration of questionnaires by trained interviewers is resource-intensive and therefore costly, but ensures compliance and minimizes errors and the number of missing items (Guyatt et al., 1993). Long surveys or batteries of instruments impose additional risk to recruitment and retention of subjects. Instruments that have been used successfully elsewhere may challenge particularly complex medical populations. A pilot test on the study population is advisable, even with established instruments. Poor instrument feasibility is costly and will endanger successful completion of the study.

On a practical note, many adequately developed and tested instruments (for example, Ware's SF-36 instrument and Ferrans's Quality of Life Index) come with a manual to guide administration, data entry, and analysis, providing detail that is not possible in the published accounts of the measurement. The researcher should ask the developer for full documentation.

When a patient is unable to participate, a surrogate respondent, usually the family member closest to the patient, may be asked to complete the questionnaire on behalf of the patient. Comparison of responses provided by patients and provided by close relatives has shown a correlation of 0.55 between the two sets of responses and a difference greater than 6 on a 100-point scale for 50% of the patients (McCusker & Stoddard, 1984). A relative may not be able to discern the individual's response accurately; therefore, surrogate responses must be interpreted with care. Other research with children has shown that a parent can have a very poor perception of the child's HRQL (Guyatt, Juniper, Feeney, & Griffith, in press).

The Choice: Generic, Specific, or Both Types of HRQL Measure

The choice of a generic or a specific quality-of-life instrument, or both, depends on the question under study. Use of both types is warranted in the following circumstances: to measure the effect of an intervention (specific) *and* the evaluated actual burden of illness experienced by individuals (generic); and to measure the effect of an intervention (specific) when there is uncertainty whether the specific instrument will capture all areas of interest *or* when the specific instrument is fairly new and the measurement properties are not well established. A well-established generic instrument may have poor responsiveness yet still be preferable to a specific measure that proves to have inadequate measurement properties.

Table 3 *Comparison of Use of Generic, Specific, and Multiple HRQP Instruments*

Instruments	Strengths	Limitations
Generic Summary of HRQL (Guyatt, VanZanten, et al., 1989) Capture important differences in health in any adult population (Ware, 1987)	Global/comprehensive: full range of domains relevant to quality of life Applicable to wide variety of populations Comparability, generalizability Established reliability and validity Total and subscale score measures available Single instrument, improves feasibility Short-form versions improve feasibility	May not focus adequately on area of interest May not be responsive Overuse within certain populations Many indices are long, posing feasibility problems
Specific Focus on problems associated with single disease states, patient groups or areas of function (Guyatt, VanZanten, et al., 1989)	Unidimensional: focus on aspects of primary interest – function, age, condition, disease Increased responsiveness Clinically sensible Single instrument, improves feasibility	Application limited No comparability possible across conditions Less established validity and reliability
Multiple Capture information on global and specific aspects for quality of life or multiple specific aspects Greater proportion of conceptual domain of quality of life will be tapped (Jalowiec, 1990)	Triangulation of measurement approaches Enhanced conceptualization of domains Comparability across studies and populations Improved specificity and sensitivity to QL data High responsiveness and reliability	Multiple tools, more variable, larger sample Questionable practicality/feasibility Potential for missing data Difficulty interpreting relationships between variables Redundancy Mixed strengths with reliability and validity
Source: Guyatt et al., 1993; Guyatt & Jaeshke, 1990; Guyatt, VanZanten, et al., 1989; Jalowiec, 1990; Juniper et al., 1990; Ware, 1987.		

Some disadvantages of using both a generic and a specific measure are lack of practicality and feasibility; poor reliability of multiple forms due to incomplete or missing data; redundancy or non-comprehension; increased need for sophisticated statistical expertise in interpreting multivariate statistics; and difficulty interpreting complex relationships or contradictory results. The strengths and limitations of the generic, specific, and multiple-instrument approaches are summarized in Table 3.

If both a generic and a specific measure of HRQL are used, the investigator should declare a priori which measure is the primary outcome and what degree of change will be considered a clinically important difference.

Development of New HRQL Measures

The development of any new instrument is a science in itself. The development of an HRQL instrument takes a number of particular steps: identification of all possible suitable items; reduction of this list to the most frequently applicable and most important items; formulation of these items into specific questions or statements; pretesting of the instrument for clarity and completion time; and testing of the instrument for its psychometric properties, including reliability, validity, and responsiveness. While published resources for instrument development may provide guidance (Guyatt et al., 1992; Juniper et al., 1990), the researcher is advised to link up with an expert in measurement development.

Summary

There continues to be debate about the definition and dimensions of quality of life, but there is general agreement that it is a subjective phenomenon that changes over time. With respect to its measurement, significant progress has been made over the past two decades in its acceptance and use in clinical trials as an important outcome measure, and in the development of explicit guidelines for the selection and development of quality-of-life instruments. The decision framework in selecting an instrument is a stepwise one: determining the purpose of the instrument (evaluative or discriminative), identifying the type of instrument (generic or specific), and assessing the instrument's measurement properties and feasibility.

Nursing is by its nature supportive and focused on the human response to a health state. The anticipated outcomes of nursing interventions often relate to elements of quality of life. Because of nursing's

broad scope, its evaluation requires the frequent use of quality-of-life measurements. The concept of quality of life as an outcome for nursing studies has been examined from two broad viewpoints: conceptual advancement and measurement progress. HRQL and its components of well-being, adjustment, and functional capacities offer promise as appropriate and sensitive outcomes for evaluating nursing interventions.

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The Meta-Analytic Approach to Research Integration

Judee E. Onyskiw

La méthode de recherche quantitative pour rassembler des résultats à partir de la méta-analyse d'une recherche empirique est utile pour intégrer systématiquement les résultats glanés dans des recherches individuelles. La méta-analyse va au-delà de la simple récapitulation et critique des résultats de la recherche; on procède à des analyses statistiques sur les résultats de recherches similaires. Globalement, la méta-analyse représente une immense amélioration par rapport aux méthodes traditionnelles de l'examen de la recherche; elle donne une description plus complète du statut actuel de la recherche dans un domaine et une évaluation plus précise des effets des traitements ou des interventions. Le présent article décrit la méta-analyse appliquée à l'intégration de la recherche. Il présente les avantages que cette méthode offre à l'intégration de la recherche en sciences infirmières et met en lumière quelques questions méthodologiques concernant cette méthode.

A quantitative research method for aggregating findings from empirical research, meta-analysis is useful for systematically integrating findings gleaned from individual studies. Meta-analysis goes beyond the mere summarization and critique of research findings, to conducting statistical analyses on the outcomes of similar studies. Overall, meta-analysis represents a vast improvement over traditional methods of research review, by providing a more thorough description of the current status of research in an area and a more precise estimate of the effects of treatments or interventions. This article describes the meta-analytic approach to research integration, discusses the advantages that it offers for integrating nursing research, and highlights some of the methodological issues surrounding this approach.

Synthesizing and integrating research findings is integral to most research endeavours. Before embarking on a new research project, the investigator must put results of past research into a coherent form, in order to understand the current state of knowledge and to identify areas that require further investigation (Reynolds, Timmerman, Anderson, & Stevenson, 1992). Reviews not only form a critical link between past and future research but are fundamental to the accumulation of knowledge – because knowledge does not accumulate from the results of any single study. It is only when findings from numerous

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studies of the same phenomenon are integrated, synthesized, and organized into a rational pattern that knowledge in any discipline develops.

The traditional approach to integrating findings from previous research has been the narrative review. Literature on a topic is collected, reviewed, and summarized based on the criteria deemed important by the reviewer. This approach has been criticized because it lacks formal rules, poses difficulties when the literature base is large, and often leads to conflicting reviews of the same literature by different reviewers (Curlette & Cannella, 1985). Meta-analysis was developed to overcome some of the problems inherent in the narrative review, by increasing the objectivity of the review process. As a quantitative method, it goes beyond the mere summarization and critique of research findings, by providing statistical analyses on the outcomes of similar studies (Pillemer & Light, 1980). This approach can be taken by nurses to meet the challenge of making sense of the growing body of nursing research in order to guide knowledge development and practice.

The purpose of this article is to describe the meta-analytic approach to research integration, discuss the advantages it offers to integrating nursing research, and highlight some of the methodological issues surrounding this approach.

Definition

The term "meta-analysis," which was coined by Gene Glass in 1976, is derived from the Greek prefix "meta," meaning "transcending," and the root, analysis. Glass differentiates meta-analysis from primary analysis, which is the original analysis of data, and from secondary analysis, which is the re-analysis of data either to answer the original research question with more sophisticated statistical techniques or to answer an entirely new research question. Glass defines meta-analysis as "the statistical analysis of a large collection of results from individual studies for the purpose of integrating findings" (1976, p. 3). Individual research studies are the subjects in a meta-analytic study as well as the unit of analysis (Devine, 1990). Since meta-analysis depends on the findings of primary research for its data, it is often referred to as an *analysis of analyses*.

Procedures

A meta-analytic study uses formal procedures to combine the findings of several empirical studies. It incorporates a systematic and objective process that parallels the research process in terms of scientific inquiry,

analogous phrases, and attempts to minimize threats to internal and external validity (McCain, Smith, & Abraham, 1986; Smith & Naftel, 1984). The researcher must carefully document the procedures used and the decisions made in order to allow others to assess the adequacy of the study and to allow for replication. Other researchers employing the same techniques should arrive at the same statistical conclusion (Pillemer & Light, 1980).

A meta-analysis involves the following steps: (1) defining the problem and establishing inclusion criteria for admissible studies, (2) retrieving relevant studies, (3) classifying and coding the study characteristics, (4) converting the outcome measure to a common scale or metric, (5) aggregating the study findings, and (6) interpreting the study findings. While meta-analysis was initially developed as a tool to integrate research from experimental or quasi-experimental designs, mathematical estimations have been developed to allow the technique to be used with descriptive research as well (Hedges & Olkin, 1985; Reynolds et al., 1992).

Defining the Problem and Establishing Inclusion Criteria for Admissible Studies

Clearly defining the research question is the first step in any study. The meta-analysis is driven by a specific research question, clearly formulated in terms of the target population, the treatment or intervention of interest, and the outcome measure. Next, systematic, objective, explicit procedures are developed to guide the retrieval of relevant studies. The systematic and objective nature of meta-analysis minimizes the potential for bias, while making the procedures explicit ensures that the study can be replicated (Petitti, 1994). Criteria are defined to determine which studies will be included in the meta-analysis. These criteria should be specific and the rationale for each criterion should be carefully documented in the study protocol.

Retrieving Relevant Studies

The second step is a thorough search of the literature to locate all studies pertinent to the topic. To avoid publication bias, it is critical that both published and unpublished studies be included (Dickerson, 1990; Smith, 1980). Cooper (1982) describes five approaches to locating studies: (1) computer searches, (2) abstracting services, (3) the descendancy approach, (4) the ancestry approach, and (5) the invisible college approach. In the first approach, computerized literature searches are

conducted of databases such as CINAHL, MEDLINE, PsycLIT, and SocioFile. The second approach involves scanning nursing, medical, psychological, sociological, dissertation, and other abstracts; dissertation abstracts are particularly useful for locating unpublished studies. In the descendancy approach, citation indexes are used to identify studies that cite papers central to a topic. The ancestry approach involves checking reference lists to identify relevant publications that have not been previously identified. Finally, the invisible college approach is an informal approach, to obtain unpublished studies, conference papers, and government, agency, and foundation reports through professional networks (Cooper). Details of the search procedure, including the approaches used, the years searched, and the search terms used, should be reported so others can evaluate the adequacy of the retrieval process.

Once the search is completed, two investigators independently review all retrieved studies to determine whether they meet the inclusion criteria. Cohen's (1960) kappa correlational statistic is used to determine the extent of agreement between the two investigators; a kappa of .80 is generally considered acceptable (Waltz, Strickland, & Lenz, 1991).

Classifying and Coding Study Characteristics

The third step in a meta-analysis consists of classifying and coding the characteristics of all studies meeting the inclusion criteria. These study characteristics are the independent variables in the meta-analysis and are commonly classified into methodological and substantive features of the studies (Glass, McGaw, & Smith, 1981). Methodological features refers to variables related to the research design and methodology for each study, as well as publication information. Examples of methodological features include research design, sample size, sampling method, attrition rate, degree of blinding of experimenter, rating of study quality, source of the publication (e.g., journal, dissertation, book), date of publication, and form of study (e.g., published or unpublished). Substantive features refers to the research domain or question that the meta-analysis is addressing. Examples include demographic characteristics of the sample in the primary study (e.g., age, gender, ethnicity, health status), theoretical framework for the primary study, type of nursing intervention administered, and the outcome measure.

The study characteristics are then coded to determine whether the meta-analytic findings differ according to the nature of the primary studies. A coding form is developed to ensure a valid and reliable

process of collecting data (McCain et al., 1986). The coding form, often referred to as a codebook, is a compilation of the computer coding information of all the study characteristics. The coding form is valid to the extent that all relevant study characteristics are included, and it is reliable to the extent that the codes are used consistently and accurately. Investigators must be trained to use the coding form, and both inter- and intra-rater reliability should be assessed. All procedures used for ensuring reliability and validity should be as rigorous as those used in primary research and should be reported in detail in the final report (McCain et al.).

Converting the Outcome Measure to a Common Scale or Metric

Pooling the results from individual studies is simplified when research studies measure outcomes with the same instrument. Outcomes can be added up and then divided by the total number of studies to obtain an average effect size. More commonly, though, different investigators study the same construct using instruments that yield numbers on completely different scales. Consequently, a common scale or metric is needed to aggregate findings across studies. Indices of effect magnitude provide this common metric because they do not depend on the arbitrary scaling of the outcome measure. Two scale-free metrics are recommended for analyzing outcomes measured on a continuous scale: the effect size statistic (d) and the correlational statistic (r). The discussion that follows will focus on using the effect size (d) as an index of effect magnitude. Interested readers should refer to Rosenthal (1984) for a discussion of meta-analysis using the correlational statistic (r).

Effect size (d) is a measure of the mean difference between the experimental and the control group measured in standard deviation units (Cohen, 1988). This statistic provides information about the direction and magnitude of the effect, and is used for expressing the effectiveness of experimental treatments. It is interpreted as the number of standard deviation units by which the control group could have benefited or failed to benefit (depending on the sign) had they been exposed to the experimental treatment. When calculating the effect size, it is important to remember that some outcome measures assign a high score for the desired outcome of a treatment, while others assign a low score for the same outcome. It must be ensured that all outcomes in the desired direction have the same sign; otherwise, combining effect sizes will be meaningless. The effect size can be calculated in absolute terms and assigned a positive sign when the experimental group had higher values than the control group (Devine, 1990).

Although the d statistic can simply be calculated as the difference between the mean of the treatment group and the mean of the control group divided by the standard deviation, effect sizes that have been adjusted for sample-size discrepancies provide more stable estimates of population effect sizes. The following formula estimates an effect size that is adjusted for sample-size discrepancies (Hedges & Olkin, 1985):

$$d_i = \left(\frac{3}{1 - 4(n_e + n_c) - 9} \right) \left(\frac{\bar{x}_e - \bar{x}_c}{Sp} \right)$$

where: d_i = effect size for each individual study
 n_e = sample size for the experimental group
 n_c = sample size for the control group
 \bar{x}_e = mean for the experimental group
 \bar{x}_c = mean for the control group
 Sp = pooled within-group standard deviation

The effect size is generally standardized by using the pooled within-group standard deviation, since this provides an unbiased estimator of effect size (Hedges & Olkin; Hunter & Schmidt, 1990). However, when the assumption of equal variance between the groups is not satisfied, Glass and his colleagues (1981) recommend using the control-group standard deviation. When means and standard deviations are not available, the effect size can be estimated from other statistics, such as the t , F , or correlational statistic (Hedges & Olkin).

Cohen (1988) provides standards for interpreting effect sizes in terms of absolute numbers, but warns that these standards are still being refined. An effect size from .20 to .49 is considered a small effect, .50 to .79 a medium effect, and .80 or greater a large effect.

Studies often contain more than one outcome measure, especially in non-experimental research; however, meta-analytic procedures require the calculation of a single effect size per eligible study (Petitti, 1994). Inclusion of more than one effect size per study inappropriately weights studies and violates the statistical assumption of independence. Several options are available for dealing with multiple outcomes. The researcher may choose the most conceptually congruent outcome, select an outcome randomly, average the effect sizes to provide a single estimate, or use multivariate meta-analytic procedures (Hedges & Olkin, 1985). Whatever option is chosen, it should be decided a priori, used consistently throughout the study, and documented in the study protocol.

The effect size is the dependent variable in the meta-analysis. Despite the fact that common statistics such as means and standard

deviations are used to calculate the effect size, studies with missing data are common (Devine & Cook, 1983; McCain & Lynn, 1990). When the publication includes the author's address, it may be possible to obtain the required data. If the information is unavailable, the study cannot contribute to the summary estimate. However, the study should not be considered ineligible for inclusion in the meta-analysis. Rather, it should be reported as having missing data. Otherwise, researchers evaluating the retrieval process will assume that the study was missed in the literature search (Petitti, 1994).

Aggregating the Study Findings

The next step in the meta-analysis is aggregation of the study findings. Statistical analyses for combining data from several studies involves (1) estimating a summary measure of effect size, (2) estimating the variance of the summary measure, (3) testing for homogeneity, and (4) placing a confidence interval around the summary measure.

Estimating a summary measure of effect size. The summary measure of effect size is a descriptive statistic of central tendency providing a single summary value for the effect of an independent variable on a dependent variable within an entire area of study. Of the several methods for estimating this summary statistic, the simplest is to add up all the effect sizes from each individual study and divide the figure by the total number of studies. This provides an unweighted summary measure of effect size. A second method is to weight effect sizes before calculating the summary measure. This is done because Hedges and Olkin (1985) found that d is a slightly biased estimator of effect size. To provide an unbiased estimator, they recommend weighting each effect size by the reciprocal of the estimated variance of d in each of the studies to be aggregated in the meta-analysis. When sample sizes in the experimental and control groups are almost equal and greater than 10, the following formula provided by Rosenthal and Rubin (1982) can be used to estimate the weight of each study:

$$w_i = \frac{2N_i}{8 + d_i^2}$$

where: w_i = weight for each individual study
 N_i = total sample size for each individual study
 d_i = effect size for each individual study

A weighted summary measure of effect size is then calculated as the sum of the products of the weights times the effect sizes from each

of the individual studies divided by the sum of the weights from each of the individual studies.

$$d_s = \frac{\sum(w_i \times d_i)}{\sum w_i}$$

where: d_s = weighted summary measure of effect size
 w_i = weight for each individual study
 d_i = effect size for each individual study

This formula now provides a summary measure that is weighted for sample-size discrepancies and has the smallest possible variance. Frequently, both weighted and unweighted summary measures are reported.

Individual effect sizes that are extreme in relation to the rest of the values (i.e., outliers) distort the summary measure and the observed variance (Huffcutt & Arthur, 1995). One method for dealing with outliers is to use the median effect size, since this measure of central tendency is less sensitive to outliers (Light, 1980). Alternatively, outliers can be "winsorized" – which is a procedure for trimming the data by discarding outliers from both tails of the distribution to make the data set more representative of the population. Light recommends deleting the largest 5% and the smallest 5% of the values and using the remaining effect sizes to calculate the summary measure. In addition, the study characteristics of studies with outlying effect sizes should always be examined to determine why they are atypical. These studies may reveal interesting patterns that could contribute significant information about an intervention. For example, it may be that an intervention was more effective for certain subgroups of the population or in certain settings.

Variance of the summary measure. The variance of the summary measure is calculated to provide an index of the variability associated with the summary measure. If the variance is large, the summary effect size may be misleading when interpreted in isolation. A large variance suggests the presence of confounding variables. The variance is estimated by calculating the inverse of the sum of all the weights for each independent study, as follows (Rosenthal & Rubin, 1982):

$$\sigma_s^2 = \frac{1}{\sum w_i}$$

where: σ_s^2 = variance of the summary measure of effect size
 w_i = weight for each individual study

Testing for homogeneity. Although the summary measure of effect size provides important descriptive information, it can be interpreted with confidence only if the effect sizes from the individual studies are homogeneous. Testing for homogeneity is essentially an attempt to discover whether the variation in effect sizes can be attributed to sampling error. This tests the hypothesis that all effect sizes are equal against the alternative hypothesis that at least one effect size is different (Hedges & Olkin, 1985). It is computed using a Q statistic, which has an asymptotic chi-square distribution with degrees of freedom equal to the number of studies minus one ($df = k - 1$), and is calculated as sum of the weights multiplied by the squared difference between the summary effect size and the individual effect sizes:

$$Q = \sum [w_i (d_i - d_s)^2]$$

where: d_i = effect size for each individual study
 d_s = summary measure of effect size
 w_i = weight for each individual study

A nonsignificant Q statistic indicates that the effect sizes are homogeneous (i.e., variation is due to sampling error) and that effect sizes can be pooled, since they estimate the same population parameter. A statistically significant Q statistic, however, indicates rejection of the null hypothesis that the study effect sizes are homogeneous. Since the effect sizes are heterogeneous, they do not estimate the same population parameter and should not be pooled.

Once again, efforts should be made to search for the study characteristics that account for the variability. It may be that the primary studies were not testing the same hypothesis and should not be included in the same meta-analysis. Alternatively, some particular study characteristic (e.g., subject gender, length of treatment, or type of study) may account for the variability. When certain study characteristics mediate the relationship between the treatment and the outcome, consideration should be given to how these mediating variables might explain the heterogeneity. When heterogeneity exists, Hedges and Olkin (1985) advocate clustering the effect sizes into more homogeneous groups, and testing for homogeneity within these subgroups.

It should be noted, however, that testing for homogeneity is a controversial technique in meta-analysis (Hunter & Schmidt, 1990; Petitti, 1994). Hunter and Schmidt criticize this technique because it focuses solely on sampling error and ignores other artifactual sources of between-study variation such as that caused by computational or tran-

scriptional errors, or differences between studies in reliability of measurement. Further, they caution that even when effect sizes are the same across studies, artifactual sources of variation alone may create variance beyond sampling error, causing a significant test when the sample size is large and statistical power is high. For further discussion of the controversy and the various approaches that can be taken when heterogeneity exists, refer to Hunter and Schmidt and to Petitti.

Confidence intervals. Although the summary measure is the "best" estimate of the true effect size, confidence intervals provide an estimate of the possible range of values for effect sizes within a given probability (Hedges, 1982). By convention, 95% confidence intervals are generally used. A confidence interval that does not include zero indicates that the summary measure is significantly different from zero. As the width of the confidence interval increases, less confidence can be placed in the summary measure. A 95% confidence interval (CI) for the summary measure of effect size is calculated as follows:

$$95\%CI = d_s \pm (1.96 \sqrt{\sigma_s^2})$$

where: d_s = summary measure of effect size
 σ_s^2 = variance of the summary measure of effect size

Interpreting the Study Findings

The final step in the meta-analytic procedure is relating the findings to the study characteristics in order to explain the results theoretically and to discuss its implications. Although meta-analysis provides a quantitative approach to resolving contradictory findings, the investigator must have a thorough understanding of the substantive area to make sense of the results and to derive meaningful conclusions. The quantitative findings of the meta-analysis must be discussed in relation to the current level of knowledge. The final report should include a discussion of the results, including the implications, and recommendations for further primary research or additional meta-analyses (Smith, 1994).

Advantages of Meta-Analysis

When rigorously used, meta-analysis can lead to an improved quality of research integration. It is more systematic, explicit, and objective than other methods currently used to summarize data (Mintz, 1983; Rosenthal, 1984). This approach uses formal procedures for combining the findings from empirical studies and requires fewer subjective judge-

ments. Because the study protocol is explicitly documented in the final report, other researchers can evaluate the adequacy of the method – which is important if the findings are to establish evidence of the efficacy of interventions. In addition, the explicit nature of the procedure allows for replication, a significant aspect of scientific inquiry.

A meta-analysis is more likely than other methods to lead to summary statements of greater thoroughness and precision. Meta-analytic results provide a more precise statement about the magnitude of effectiveness of an intervention, sample variability, and the interrelationships between variables and differences, as well as lists of descriptive data that allow for the identification of patterns (Smith, 1994). While summary measures of effect size provide important information about the effectiveness of interventions, the variation in effectiveness may also help identify particular groups that did or did not benefit from the experimental condition, thus leading to insightful information and areas for further research.

Conclusions reached in meta-analytic reviews are more definitive about the effects of an intervention than are those of narrative reviews (Devine, 1990). Because meta-analytic studies have more statistical power than primary studies, they are more likely to detect a consistent treatment effect, even when the power in the primary studies is low (Devine; Petitti, 1994). This feature is a particularly important one for clinical nursing research. It is often difficult to obtain large enough samples and sufficient statistical power to detect clinically relevant effects in a single study (Devine). The greater power of meta-analysis means less likelihood of accepting that there is no effect or relationship when an intervention really is effective (i.e., less chance of Type II errors).

Finally, a meta-analysis provides a more thorough description of the current status of research in a domain, identifies gaps in the knowledge base (Fiske, 1983), and gives directions for further research, by generating hypotheses for more primary research or additional meta-analyses (Smith, 1994). This method can help resolve uncertainty about the effects of interventions, which is essential given the current emphasis on establishing evidenced-based practice. When studies do not fit together well, researchers can better determine, when using the meta-analytic approach, where the inconsistencies and incongruencies lie. When a few studies present findings that are in marked contrast to the rest, isolating them may result in the identification of certain common characteristics, leading to discovery of meaningful information for designing more effective interventions. A major strength of this tech-

nique is that it encourages the researcher to view conflicting findings constructively (Light, 1980; Pillemer & Light, 1980).

Methodological Issues

Meta-analytic techniques are still relatively new and are continually being refined. The techniques presented above were based on Glass and his colleagues (1981), Hedges and Olkin (1985), and Rosenthal (1984), but other methodologies considered rigorous have been developed as well (Hunter & Schmidt, 1990). Selection of an approach is influenced by the research question, the level of data, and the educational background of the researcher. Regardless of the meta-analytic approach used, certain methodological issues are common to all approaches, and a researcher should be aware of these when planning to conduct a meta-analysis or when interpreting the findings of a meta-analysis.

Adequacy of the Database

A primary concern in meta-analysis is that the database be representative of all studies conducted on a phenomenon of interest. External validity is threatened when important strata of the population of studies are missing. Unfortunately, though, representativeness is difficult to ensure. Even when the topic area is well defined, it is often difficult to locate all relevant studies (Oxman & Guyatt, 1988). They may be in press or not yet indexed in computerized databases. Papers presented at conferences, theses, dissertations, government studies, and other unpublished studies are difficult to identify and obtain. Because of its limited circulation, such literature is often referred to as fugitive literature (Smith, 1980). Finally, in most disciplines there is a tendency to publish only research with significant findings. Rosenthal (1980) describes this phenomenon as the "file drawer problem," because studies that fail to reach statistical significance are more likely to remain in researcher's file drawers. When a meta-analysis uses only published studies, the sample may be biased; results of the meta-analysis will be skewed toward positive findings (Hunter & Schmidt, 1990; Lynn, 1989). To minimize this bias, every effort should be made to retrieve unpublished reports. When only published studies are used, this limitation of the meta-analysis should be acknowledged.

Variation in Study Quality

Another important issue in meta-analysis concerns variation in the quality of studies incorporated into the analysis. There is ongoing

debate whether all studies on a given topic should be included or whether inclusion should depend on a certain level of study quality. Glass (1976) argues that, to avoid a systematic investigator bias, all studies should be included. Other meta-analysts argue that there should be some differentiation of studies based on quality, because meta-analytic procedures are insensitive to the validity of the findings of primary research (Brown, 1991; Hedges & Olkin, 1985; Petitti, 1994; Rosenthal, 1984). Studies with low validity will contribute just as much to the summary measure as studies with comparable sample size but greater validity. Further, including studies of poorer quality may yield information that is not valid, which threatens the validity of the meta-analytic findings.

There is strong potential in meta-analysis for uncontrolled validity threats if many of the aggregated studies were poor in quality for the same reason (Petitti, 1994). For example, when several studies failed to randomly assign subjects to treatment groups, there is greater chance for error that is non-random and systematic. Statistical aggregation methods cannot overcome problems of bias and uncontrolled confounding. This is potentially a serious problem in any meta-analysis involving non-experimental studies that lack randomization to minimize bias and confounding.

One strategy to deal with this issue is to assess and code study quality as an additional study characteristic, and to examine the relationship between study quality and effect size (Mintz, 1983; Petitti, 1994; Rosenthal, 1984). The decision to include or exclude studies of poorer quality may be facilitated by examining the correlation between effect sizes and ratings of study quality. If the rating of study quality does not correlate with the effect size, there is less reason to exclude the study from the analysis. If a correlation is observed, the conclusions of higher-quality studies should be given greater weight, since these studies are more likely to yield valid information (Mintz). A system of weighting studies based on their rating of study quality can be employed (Rosenthal, 1984). Studies of low quality will be given a weight of zero and contribute no information. An alternative strategy is to stratify effect sizes based on the rating of study quality, and then examine effect sizes within each stratum.

Several instruments have been developed to rate research quality (Chalmers et al., 1981; Duffy, 1985; Smith, 1988). Research quality can also be rated using Cook and Campbell's (1979) list of threats to internal and external validity and coding studies for the presence or absence of these threats (Cooper, 1982; Mitchell, 1985). Rating study quality

often needs to be specifically tailored for the type of research the meta-analysis is addressing. Criteria that define quality have to be identified and a standardized system of rating each criterion has to be devised. To minimize investigator bias, two raters who are blinded to the study investigator, the affiliated institution, and the journal of publication should independently rate study quality according to the predefined criteria (Rosenthal, 1984). Inter- and intra-rater reliability should be assessed to ensure consistency in ratings.

Variation in Method

A common criticism of meta-analysis is that the procedure aggregates data from studies in which the independent variable, the dependent variable, and the sampling units are not uniform (Rosenthal, 1984). For example, in Blegen's (1993) meta-analysis of 48 studies to determine factors contributing to job satisfaction among nurses, satisfaction was measured using 21 different instruments. In Brown and Hellings's (1988) meta-analysis of 10 studies that examined early maternal-infant contact and attachment behaviour, the dependent variable varied considerably from observations of maternal gazing, affectionate behaviour, tender touching, interaction and stimulation, demonstrating proximal behaviours, and using a mother-infant feeding profile. When the conceptual congruence of the dependent variables used in the primary studies are debatable, aggregating the effect sizes to provide a single summary measure of effectiveness may be theoretically meaningless and will not provide sound evidence for establishing an evidential base for nursing practice. Concern about conceptual congruence – an important issue in any discipline – may have special relevance for nursing research, because constructs from other disciplines are frequently used. Even constructs with the same name may differ significantly in conceptual meaning across disciplines (Smith, 1994).

Concern about conceptual and methodological variation is commonly referred to as the "apples and oranges" issue. Glass and his colleagues (1981) argue that it is no more problematic to pool data across studies than it is to generalize across subjects in primary research, and that if interactions between study characteristics and effect sizes are suspected, they can be tested in the context of a meta-analysis. Other investigators (Moody, 1990; Slavin, 1984) argue that it is inappropriate to combine studies when the settings, subjects, or empirical qualities are drastically different. For a meta-analysis to be valid, the studies combined must address common hypotheses and be conceptually and methodologically equivalent. Further, when the primary studies are

similar, then differences in effect sizes are more likely to be explained by chance (Oxman & Guyatt, 1988).

Conclusion

With the increasing amount of research being conducted in nursing, integrating findings systematically is integral to understanding the current status of knowledge in an area and to obtaining direction for further investigative efforts. Meta-analysis provides for rigorous synthesizing and integrating the results of a large body of literature and determining the efficacy of nursing interventions, and is also a means for incorporating the information obtained from individual studies into the discipline's knowledge base.

While meta-analysis represents a significant improvement over traditional methods of reviewing research, it is limited by the methodological and theoretical constraints of the primary studies included in the analysis. Nevertheless, when meta-analytic techniques are rigorously applied, they provide researchers with a powerful tool to help make sense of nursing's increasing body of research.

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Designer's Corner

Methodological Issues in Outcomes Research

Souraya Sidani

Introduction

With the increasing societal demand for professional and financial accountability, nurses and other health-care professionals are challenged to demonstrate that the care they provide "makes a difference" – that their interventions achieve positive client outcomes effectively and efficiently. Effective interventions produce the desired responses. In nursing, desired responses refers to measurable changes in the client's health status, condition, or behaviour that indicate the resolution of a presenting problem or diagnosis or the prevention of a condition (Hegyvary, 1993; Lang & Marek, 1990).

Demonstrating that nursing interventions are effective rests on the ability to detect the expected changes. The ability to detect the changes depends, in turn, on selecting outcomes that are attributable to the antecedent care, sensitive to nursing care, and congruent with the unit of analysis, and on assessing the outcomes at the appropriate time (Bond & Thomas, 1991; Griffiths, 1995; Hegyvary, 1991; Jones, 1993; Stewart & Archbold, 1992). Even if the right outcomes are selected and assessed at the right time, detecting the expected changes requires that two methodological issues, selection of outcome measures and implementation of the intervention, be appropriately addressed; otherwise there is the likelihood that "real" intervention effects, when present, will not be detected and, subsequently, that the validity of conclusions regarding effectiveness of the intervention in achieving the desired outcomes will be threatened (Lipsey, 1990; Scheirer & Rezmovic, 1983).

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Selection of Outcome Measures

If they are to detect real intervention effects, outcome measures must be maximally responsive to any changes brought about by the intervention and minimally responsive to anything else (Lipsey, 1990). For the measures to respond to the treatment effects, they must be valid, reliable, and sensitive to change.

To be maximally responsive to the intervention effects, outcome measures must be construct valid. They should represent, accurately, the particular outcome concept or the characteristic that the intervention is expected to affect or change. A measure with established validity represents all the domains of the concept being examined and does not capture variability in the participants' responses associated with the method of data collection (i.e., has minimal method bias) and/or with the influence of distinct outcome concepts that could be either related or unrelated to the concept of interest (Cook & Campbell, 1979). Using instruments with no established construct validity may lead to difficulty in interpreting the findings. Non-statistically significant findings could indicate either that the intervention is not effective in producing the desired outcome or that the measure did not validly capture the intended outcome. Significant findings are questionable, since it is difficult to know exactly what was measured by the instrument – the intended outcome or a different but related concept. Both situations have the potential for incorrect conclusions. For example, symptom retrenchment – defined as a reduction in the frequency, intensity, duration, and intrusiveness of symptoms – is the expected outcome of a psycho-educational intervention directed at instructing clients in management of symptoms associated with their presenting illness and its treatment. It is inappropriate to measure symptom retrenchment with a symptom-transition scale that incorporates items representing both positive and negative changes in symptoms, especially if a total-scale score is used to reflect the expected outcome. The total-scale score captures the negative changes, representing symptom extension, which is another intended outcome and is therefore invalid in reflecting the specific changes expected of this intervention.

Instruments must be reliable in order to be valid and capable of detecting the intended intervention effects. Reliable instruments measure the outcome variable consistently and with minimal error. Error represents fluctuations in the measure scores that are unrelated to the characteristic being measured. These fluctuations are either random – related to chance factors such as the clarity of instructions or the subjects' motivation or fatigue at the time of measurement – or systematic –

related to factors such as the subjects' comprehension, acquiescence, or social desirability (Waltz, Strickland, & Lenz, 1991).

Error of measurement, whether random or systematic, increases variability in the distribution of scores for subjects in the experimental groups, leading to increased within-group variance. Increased within-group variance, in turn, reduces the statistical power to detect significant intervention effects, increasing the potential for erroneous conclusions regarding effectiveness of the intervention in achieving the expected outcomes (Lipsey, 1990; Stuccliffe, 1980).

Valid and reliable measures are sensitive to change. The term "sensitivity to change" refers to two properties of outcome measures: ability to detect differences in the outcome between individuals who received the intervention and those who did not (i.e., inter-individual differences), and ability to detect change in the outcome, within the same individual, over time (i.e., intra-individual differences) (Guyatt, Kirshner, & Jaeschke, 1992; Stewart & Archbold, 1993). It is generally believed that measures sensitive to inter-individual differences are not necessarily responsive to intra-individual change. These measures usually focus on measuring true or stable between-subject differences (Carver, 1974). Thus differences in the outcome observed after implementation of the intervention could be due to the true between-subject differences, rather than to the effects of intervention. True between-subject differences – related to personal characteristics, for example – contribute to the undesirable within-group variance; this variance is not accounted for by the intervention, and is considered error variance, which can obscure the treatment effects (Lipsey, 1990). Furthermore, outcome measures that reflect stable inter-individual differences are less likely to capture clinically important changes expected as a result of the intervention (Stewart & Archbold, 1992). Therefore, outcome measures need not discriminate among participants with different levels on the outcome being measured, but they must be able to capture the intra-individual changes in the outcome resulting from the intervention. Such responsive instruments draw upon salient aspects of the outcome that are likely to undergo changes. They inquire about the extent of change in the outcome, using a Likert-type scale ranging from "no change" to "problem resolved," for example. They are characterized by their ability to detect minimal score variability in the outcome measured before and after treatment, and to show observable difference in the scores between the two occasions of measurement. Low variability is desirable, since it reflects the participants' homogeneity with respect to the characteristic being measured at pre-test (i.e., initial equivalence) and with respect to their response to the treatment (such as whether

they responded in a uniform manner to the intervention) (Nicewander & Price, 1983). Measures with a fine-grained scaling method, representing the range of responses over a continuum, are sensitive to changes on the scores over time. Coarse-grained measures may lead to floor or ceiling effects, thus limiting upward or downward changes in the responses over time (Kirshner & Guyatt, 1985; Lipsey). Examples of such instruments are criterion-referenced measures, such as those designed to detect the participants' acquisition of health-related knowledge or behaviour as a result of a psycho-educational intervention. For a discussion of methods for developing instruments sensitive to intra-individual change and testing their responsiveness, see Deyo and Centor (1986), Deyo and Inui (1984), Guyatt, Deyo, Charlson, Levine, & Mitchell (1989), Guyatt et al. (1992), and Kirshner and Guyatt).

Hegyvary (1993) expresses some concern regarding outcomes measurement when the outcome variable, such as symptoms, is both the indicator for the treatment and the outcome of treatment. In fact, any nursing intervention is a response to a clinical problem, whether actual or potential, with the goal of resolving or preventing it. For instance, diet therapy involving reduced sodium intake is prescribed to lower blood pressure in cardiac patients. Thus hypertension is the indicator for diet therapy, while an improved blood-pressure level is the expected outcome. It is true that, conceptually, the same variable – blood pressure – is considered the indicator for treatment and the outcome of treatment; however, what is actually the indicator is the *level* of the variable, and the expected outcome is the *change* in its level. Researchers deal with this issue by using the indicator as the pre-test measure and the outcome as the post-test measure. Alternatively, goal-attainment – lowered blood pressure – could be used as the outcome for nursing care (Lang & Marek, 1990). Methods for developing goal-attainment scaling techniques are offered by Inzer and Aspinall (1981) and Martin and Scheet (1992). These techniques include assessing the client's progress toward resolution of the presenting problem (i.e., the indicator for treatment). A Likert-type scale, ranging from "no change" to "problem resolved," is used to determine where the client stands. These scales tend to be sensitive to clinically significant intra-individual differences.

Implementation of the Intervention

The method used to implement an intervention influences the ability to detect significant intervention effects. In particular, selecting the control group and maintaining integrity in implementation have a direct impact on the extent of the observed effect.

It is essential that a control group be included in a study evaluating the impact of an intervention on selected outcomes, in order to rule out threats to the internal validity. A control group is needed to enhance the attribution of the observed effects to the *intervention*, and not to *random* or *systematic irrelevancies* correlated with factors other than the treatment (Cook & Campbell, 1979). The contrast, on the outcome variables, between the means of control group and experimental group indicates the effectiveness of the intervention. Selection of the control group influences whether this contrast reflects a significant difference between the experimental groups in the outcome measured at post-test. If the control condition chosen does not differ greatly from the treatment condition, the contrast between the means of the group is small. That is, if treatment-as-usual, which may incorporate some components of the treatment being evaluated, is selected as the control condition, then the contrast is reduced. Similarly, placebo conditions are often similar to the treatment conditions for which they serve as controls, potentially achieving outcomes similar to those expected for the intervention being evaluated; thus the contrast is decreased, manifested by non-significant differences among the groups that might be mistakenly taken for treatment ineffectiveness (Lipsey, 1990). For example, if the intervention being evaluated consists of a comprehensive discharge plan addressing the social needs of elderly patients, in addition to their physical needs, and the control condition is the usual discharge plan limited to meeting their physical needs, the contrast between the two groups may not be statistically significant, because of the overlapping physical component. While there is no well-determined strategy for addressing this issue, the rule is to select controls who would maximize the contrast between the experimental groups.

For the intervention to produce the expected effects, it should be implemented as designed and in a consistent manner across the participants. A treatment protocol developed to guide the intervention delivery specifies the purpose of the intervention; the equipment required; and the activities to be undertaken or the procedures to be performed, as well as their frequency and duration. Professionals are required to follow the protocol faithfully when delivering the intervention, in order to implement it consistently and as designed. While it is possible to maintain the integrity of treatment implementation under controlled laboratory conditions, this is difficult under less controlled field conditions. As a result, the intervention may be delivered inconsistently, thus reducing the power to detect any significant effect (Kirchhoff & Dille, 1994; Scheirer & Rezmovic, 1983; Sechrest, Ametrano, & Ametrano, 1983).

An intervention that is not well defined, specifically described, clearly circumscribed, and carefully operationalized is difficult to deliver, especially if several interveners are responsible for implementing it at different times and in different clinical settings. Interveners who do not have a clear understanding of what activities to perform, when, for how long, and with whom will provide the intervention as they perceive it, and not necessarily as prescribed. This variability in implementation will necessarily result in difficulty determining the exact type, duration, and frequency of care provided, thus making it even more difficult to anticipate the consequences of this intervention and when they can be expected to occur. The end result of this lack of integrity in implementation is an observed variability in outcomes, which obscures the effects of the intervention (Sechrest et al., 1983). For instance, the intervention "provide psychological support" may have different meanings: listen to the client, hold the client's hand, encourage the client to ventilate feelings, or give positive feedback. Consider what the results would be if the intervener provided positive feedback instead of encouraging ventilation of feelings, as designed. The intended outcome, let's say of reduced emotional distress, may not be achieved. The problem of inconsistent implementation becomes more acute and complicated when the client is responsible for or actively involved in the process of care delivery, without the researcher's or the clinician's supervision. For instance, it may be difficult to know what type of exercises a cardiac patient performs at home, how frequently, and for how long, as compared to the prescribed exercise program. Therefore, it becomes important to develop mechanisms for monitoring implementation and collecting relevant data – for instance, the researcher or clinician can keep track of how many educational sessions each client attended. Data representing the intervention-as-delivered could then be used in outcomes analysis, as they are directly linked to, and account for, the variability in the observed outcomes.

Conclusions

Demonstrating the effectiveness of nursing interventions in producing the desired outcome is essential for examining the contribution of nursing care to clinical outcomes, and for maintaining the professional and financial accountability of nursing. The ability to demonstrate the effectiveness of the intervention depends on selecting measures that are maximally responsive to the intervention, and not to other true individual differences; on selecting the appropriate control group, maximizing the contrast between the treatment groups; and on maintaining the integrity of the intervention during implementation. Disregarding

the potential influence of these factors on the intervention outcomes threatens the validity of the conclusions.

Strategies for dealing with these methodological issues have been suggested. These must be further examined in order to determine their feasibility and appropriateness in various situations. Alternative strategies are also needed. Researchers are strongly encouraged to develop mechanisms to deal with these methodological issues appropriately, and a priori, in order to enhance the validity of their findings.

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Bases conceptuelles et théoriques d'un instrument développé en vue d'identifier les nécessités d'autosoin de femmes traitées pour un trouble dépressif

Claire Page et Nicole Ricard

Nursing research in the field of psychiatry and mental health must be based on nursing models if it is to make a real contribution to the development of a body of knowledge specific to nursing. This article describes the conceptual foundations and different stages involved in the development of an instrument (The Self-care Needs Inventory) in the framework of a study based on the Orem self-care nursing model (1991, 1995). The objective of this comparative descriptive study was to describe self-care requisites of women treated for depression. The concept of self-care requisites, the fundamental aspect on which this research is based, refers to the expression of a general goal that individuals pursue or should pursue in order to maintain or improve their health and well-being (Orem, 1991). To study the concept and pinpoint its major components, we correlated the concept with intermediate-level theories : social adjustment of women during and after an acute depressive episode, self-affirmation and realization, clinical manifestations of depression and how they are treated. These components were then made operational, i.e. measurable in concrete terms. A list of statements of specific self-care requisites was put together from various measurement tools used to evaluate identified components. The list was submitted to experts to establish its nominal validity. The instrument thus constituted was used with two groups : a group of women treated for depression ($n = 30$) and a group of women not treated for depression ($n = 30$). The women were asked to assign a value to each statement to reflect the importance they attached to the statement. The values were then compared to identify self-care requisites specific to women treated for depression.

La recherche infirmière dans le domaine de la psychiatrie et de la santé mentale doit s'inspirer de modèles infirmiers pour contribuer au développement d'un corps de connaissances spécifiques à la discipline infirmière. Cet article décrit les bases conceptuelles et les différentes étapes ayant conduit à l'élaboration d'un instrument (l'Inventaire des nécessités d'autosoin) dans le cadre d'une étude s'inspirant du modèle infirmier de l'autosoin d'Orem (1991, 1995). Cette étude descriptive comparative avait pour but de décrire les nécessités d'autosoin (self-care requisites) de femmes traitées pour un trouble dépressif.

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Le concept de nécessité d'autosoin, l'élément fondamental à la base de cette recherche, désigne l'expression d'un but général que les personnes poursuivent ou devraient poursuivre pour maintenir ou améliorer leur santé et leur bien-être (Orem, 1991). En vue de l'étudier et d'en préciser les principales composantes, nous avons mis ce concept en relation avec des théories de niveau intermédiaire, soit l'ajustement social des femmes pendant et après un épisode dépressif aigu, l'affirmation et la réalisation de soi, les manifestations cliniques de la dépression et leur traitement. Ces composantes ont ensuite été rendues opérationnelles, c'est-à-dire mesurables concrètement. Une liste d'énoncés de nécessités d'autosoin spécifiques a été construite à partir de divers outils de mesure évaluant les composantes identifiées dans les écrits. Cette liste a été soumise à des expertes et experts en vue d'en établir la validité nominale. L'instrument ainsi bâti a été utilisé auprès de deux groupes, l'un étant composé de femmes traitées pour un trouble dépressif ($n = 30$) et l'autre, de femmes non traitées pour ce trouble ($n = 30$). Ces femmes devaient attribuer à chaque énoncé une valeur reflétant l'importance qu'elles leur accordaient. Ces valeurs ont pu être comparées afin d'identifier les nécessités d'autosoin particulières aux femmes traitées pour un trouble dépressif.

Introduction

La dépression est un problème sérieux qui affecte une grande partie de la population, plus souvent les femmes que les hommes. Boyer (1990) estime que 8 % des femmes ont déjà présenté une dépression majeure au moins une fois dans leur vie, comparativement à une proportion de 4,2 % chez les hommes. Les troubles dépressifs entraînent des modifications importantes du comportement et des habitudes de vie des personnes, ainsi que de leurs processus physiologiques. La personne déprimée ressent une perte d'intérêt ou de plaisir, des sentiments de tristesse ; elle présente souvent des troubles de l'appétit ou du sommeil, une diminution de l'énergie, une faible estime de soi. Certaines personnes peuvent aussi exprimer des pensées de mort, des idées suicidaires ou même tenter de s'enlever la vie.

Les infirmières et infirmiers désirent apporter une aide substantielle aux femmes traitées pour un trouble dépressif. Cependant, les soins infirmiers en santé mentale et en psychiatrie se sont surtout développés à partir du modèle médical ou de théories psychosociales empruntées à d'autres disciplines. Afin de développer une expertise en soins infirmiers, la majorité des infirmiers ou infirmières cliniciennes et chercheuses reconnaissent maintenant la nécessité de développer un corps de connaissances distinct, spécifique à la discipline infirmière. Ceci exige que les questions de recherche soient posées à partir d'une perspective infirmière (Adam, 1991 ; Dashiff, 1988 ; Fawcett, 1978, 1991 ; Frederickson, 1992 ; Gast, Denyes, Campbell, Hartweg, Schott-Baer et Isenberg, 1989 ; Pepin, Ducharme, Kérouac, Lévesque, Ricard et Duquette, 1993).

Le modèle infirmier de l'autosoin (*self-care framework*), développé par Orem (1991, 1995), a servi de guide dans cette étude. Les principaux concepts de ce modèle sont présentés au tableau 1. L'autosoin (*self-care*) désigne des actions qu'une personne entreprend pour améliorer sa vie, sa santé et son bien-être. Selon Orem, c'est lorsqu'il y a un déficit d'autosoin (*self-care deficit*) chez les personnes que l'assistance de l'infirmière devient nécessaire. Un déficit d'autosoin survient lorsque la capacité d'autosoin (*self-care agency*) d'une personne n'est pas adéquate pour satisfaire son exigence d'autosoin thérapeutique (*therapeutic self-care demand*) ou celle d'une personne à sa charge. L'exigence d'autosoin thérapeutique désigne l'ensemble des mesures de soin qu'une personne doit accomplir pour satisfaire ses nécessités d'autosoin ou celles d'une personne à sa charge. Les nécessités d'autosoin constituent « des généralisations des buts que poursuivent les personnes ou de ceux qu'elles devraient poursuivre en s'engageant dans l'auto-soin » (Orem, 1987, p. 116). Elles sont les raisons pour lesquelles les autosoins sont entrepris, les résultats attendus ou souhaités.

La première étape pour arriver à mesurer l'exigence d'autosoin thérapeutique d'une personne consiste, selon Orem (1991, 1995), à identifier et à formuler les nécessités d'autosoin particulières à celle-ci, c'est-à-dire en relation avec son fonctionnement et son développement humain. Toujours selon Orem, il convient aussi de préciser ces nécessités d'autosoin en fonction de leur valeur, à savoir si elles correspondent vraiment aux résultats désirés par la personne, et jusqu'à quel point il importe de les satisfaire en vue de préserver ou de restaurer la santé ou le bien-être. Jusqu'à présent, aucune étude ne s'est intéressée de façon spécifique, dans un contexte d'appropriation de soi et de sa santé, aux nécessités d'autosoin telles que reconnues, perçues et comprises par les femmes suivies pour un état dépressif. Il n'existe aucun instrument de mesure du concept de nécessité d'autosoin adapté à cette clientèle.

En les situant sur le continuum de la connaissance infirmière contemporaine, les concepts provenant des modèles infirmiers, tel que celui de nécessité d'autosoin, servent d'éléments structuraux, fondamentaux, à la base d'une recherche. Cependant, étant abstraits et généraux, ces concepts ne peuvent pas être amenés, en soi, à l'observation directe dans le monde réel. Fawcett et Downs (1986, Fawcett, 1991, 1995) soutiennent qu'une structure comportant trois niveaux d'abstraction, soit conceptuel, théorique et empirique, est à la base du développement des connaissances en sciences infirmières. Selon cette structure, une deuxième étape consiste donc à lier ces concepts à d'autres concepts

provenant de théories de niveau intermédiaire compatibles (*middle range theories*). Ces théories sont moins abstraites que les modèles conceptuels, se limitant plus précisément à des individus ou des groupes particuliers, ou encore à certaines situations. Dans le même sens, Orem (1991) soutient que pour comprendre les nécessités d'autosoin spécifiques des personnes, il est nécessaire de posséder des connaissances sur l'évolution naturelle des troubles structuraux et fonctionnels, sur la vie courante et sur l'histoire des groupes concernés, ainsi que sur le contexte culturel dans lequel évoluent ces groupes. Enfin, les indicateurs empiriques correspondent au troisième niveau de la structure proposée par Fawcett et Downs (1986, Fawcett, 1991, 1995). Découlant des théories intermédiaires, ce sont les caractéristiques observables ou mesurables dans le monde réel. Ils constituent la composante la plus concrète de la structure à trois niveaux.

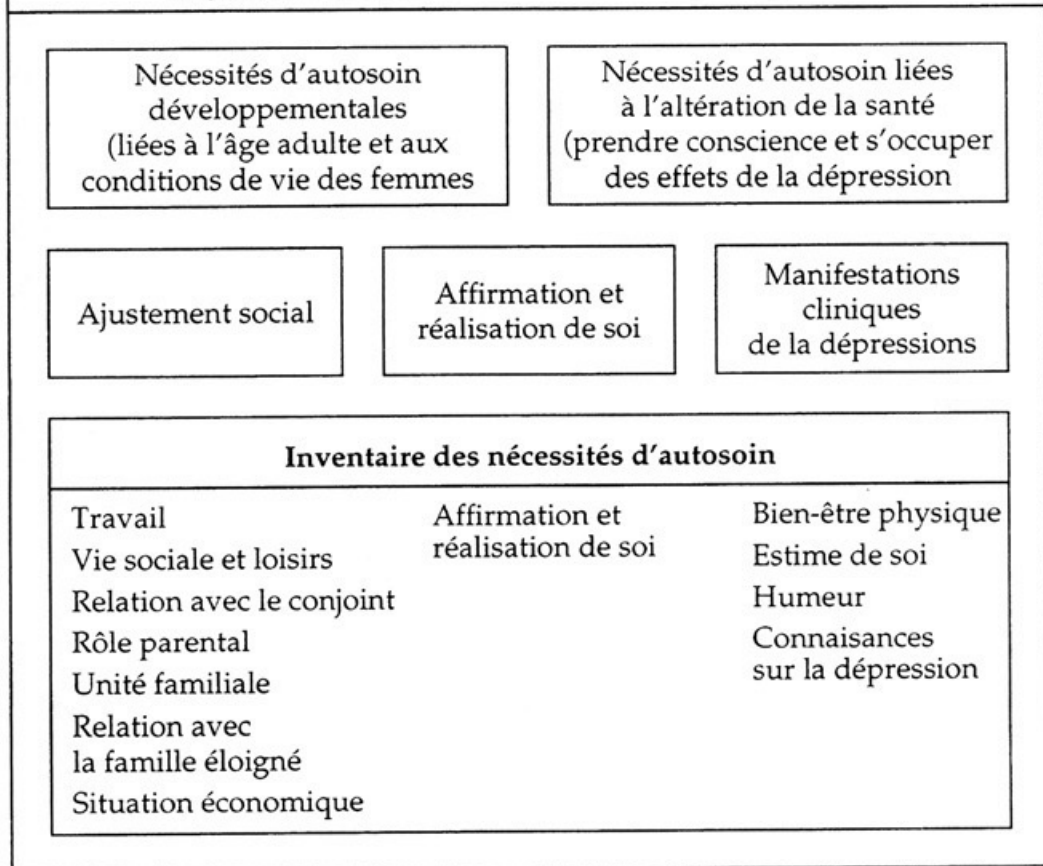
Le but de cet article est de décrire les liens établis entre ces trois niveaux d'abstraction, soit conceptuel, théorique et empirique, qui constituent les phases préliminaires essentielles au développement d'un instrument utilisé dans le cadre d'une étude visant à décrire les nécessités d'autosoin d'une clientèle féminine traitée pour un trouble dépressif. Premièrement, sont présentées les idées principales du modèle de l'autosoin, lequel a servi de base conceptuelle à l'instrument développé. Deuxièmement, sont explicités les liens établis entre le concept de nécessité d'autosoin et des concepts provenant de connaissances théoriques sur les troubles dépressifs. Troisièmement, le processus qui a permis de rendre opérationnel le concept de nécessité d'autosoin est précisé. Il en résulte un outil de mesure de la valeur accordée à différentes nécessités d'autosoin par des femmes présentant un trouble dépressif. Nous avons nommé cet outil l'*Inventaire des nécessités d'autosoin* (INAS). Les résultats de l'étude pour laquelle l'INAS a été développé font l'objet d'une autre publication (Page et Ricard, 1995). L'acquisition de connaissances sur les nécessités d'autosoin des femmes présentant un trouble dépressif permettra de préciser l'exigence d'autosoin thérapeutique de cette clientèle. Documenter et comprendre la dépression selon une perspective infirmière contribuera au développement d'interventions infirmières spécifiques et appropriées à ce groupe de femmes.

Cadre conceptuel : le modèle de l'autosoin (Orem 1991, 1995)

Le modèle de l'autosoin, développé par Orem (1991, 1995), constitue le premier niveau de la structure que proposent Fawcett et Downs (1986 ;

Fawcett, 1991, 1995) (voir la figure 1). Orem nomme son modèle la « théorie infirmière du déficit de l'autosoin » (*Self-Care Deficit Theory of Nursing*). Cette « théorie générale » est formée de trois théories dont les interrelations entre plusieurs concepts constituent les idées centrales. Ces trois théories sont la « théorie du déficit de l'autosoin » (*Theory of Self-Care Deficit*), la « théorie de l'autosoin » (*Theory of Self-Care*) et la « théorie du ou des systèmes de soins infirmiers » (*Theory of Nursing System*). Fawcett (1995) soutient que le niveau d'abstraction des concepts et des propositions à la base de la théorie développée par Orem rejoint celui d'un modèle conceptuel. Pour éviter la confusion qui existe souvent entre une théorie et un modèle conceptuel, Fawcett (1995) désigne la conception d'Orem « le modèle de l'autosoin » (*Self-Care Framework*). Nous avons opté pour cette appellation puisque le concept de nécessité d'autosoin est utilisé à un niveau d'abstraction conceptuel dans cette recherche.

Figure 1 *Structure conceptuelle – théorique – empirique à la base de l'Inventaire des nécessités d'autosoin (INAS) de femmes présentant un trouble dépressif*



Le modèle de l'autosoin est constitué de six concepts centraux, soit l'autosoin, l'exigence d'autosoin thérapeutique, la capacité d'autosoin, le déficit d'autosoin, la capacité des soins infirmiers et les systèmes de soins infirmiers (voir le tableau 1). Orem (1991, 1995) décrit l'être humain comme un tout intégré qui fonctionne biologiquement, symboliquement et socialement. La personne est généralement capable d'accomplir efficacement des actions d'autosoin pour elle-même ou pour des personnes à sa charge. L'autosoin consiste en des comportements orientés vers soi ou vers l'extérieur, adaptés en vue de contrôler les facteurs qui affectent le développement ou le fonctionnement d'une personne, dans le but de préserver sa vie, sa santé et son bien-être. Le but de l'autosoin est de répondre à l'exigence d'autosoin thérapeutique, afin de satisfaire les nécessités d'autosoin.

Orem (1991, 1995) identifie trois types de nécessités d'autosoin, soit universelles, développementales et liées à l'altération de la santé. Les premières sont communes à tous les êtres humains pendant toutes les étapes du cycle de la vie. Les deuxièmes sont associées aux processus du développement humain ou aux conditions et aux événements se produisant aux différentes étapes du cycle de la vie. Les nécessités d'autosoin liées à l'altération de la santé se rapportent aux anomalies génétiques ou constitutionnelles, aux différentes altérations structurales ou fonctionnelles, ainsi qu'aux moyens utilisés pour les diagnostiquer et les traiter. Compte tenu des contextes de vie en constante évolution, les personnes peuvent avoir besoin d'aide pour acquérir de nouvelles connaissances ou pour développer certaines habiletés afin d'être capables de satisfaire des nécessités d'autosoin particulières ou inhabituelles. Par ailleurs, certaines nécessités d'autosoin peuvent apparaître très importantes à certains individus, tandis que pour d'autres, elles peuvent être complètement ignorées ou négligées, ou même rejetées.

La capacité d'autosoin correspond à la « capacité complexe d'agir qui s'exerce par l'exécution des actions et des opérations d'auto-soin » (Orem, 1987, p. 49). Lorsque la capacité d'autosoin d'une personne n'est pas adéquate pour satisfaire son exigence d'autosoin thérapeutique ou celle d'une personne à sa charge, il y a un déficit d'autosoin. Le déficit d'autosoin n'est donc pas une maladie ou un trouble de la santé, mais il peut y être associé. Orem (1991) spécifie que l'exigence d'autosoin thérapeutique et la capacité d'autosoin sont influencées par les dix facteurs de conditionnement fondamentaux (*basic conditioning factors*) suivants : l'âge, le sexe, l'état de développement, l'état de santé, l'orientation socioculturelle, les facteurs liés au système de la santé, ceux liés au système familial et à l'environnement, le style de vie, la disponibilité des ressources et le fait qu'elles soient adéquates.

Tableau 1 *Principaux concepts du Modèle de l'autosoin (Orem, 1987, 1991, 1995)*

- **Autosoin**
Production d'actions délibérées que les personnes initient et accomplissent dans l'intérêt du maintien de leur vie, de leur santé, de leur développement personnel et de leur bien-être.
- **Exigence d'autosoin thérapeutique**
Ensemble des mesures de soin nécessaires à un moment donné ou durant un certain temps pour satisfaire des nécessités d'autosoin particulières selon les conditions et les circonstances existantes d'une personne, ou celles de quelqu'un à sa charge.
- **Nécessités d'autosoin**
Buts que poursuivent ou devraient poursuivre les personnes en s'engageant dans l'autosoin. Elles sont les raisons pour lesquelles les autosoins sont entrepris, les résultats attendus ou souhaités.
- **Capacité d'autosoin**
Capacité complexe et acquise d'agir qui s'exerce par l'exécution des actions et des opérations d'autosoin.
- **Déficit d'autosoin**
Relation entre les propriétés de l'exigence d'autosoin thérapeutique et la capacité d'autosoin dans laquelle la capacité d'autosoin d'une personne n'est pas suffisante pour comprendre et satisfaire certaines ou toutes les composantes de l'exigence d'autosoin thérapeutique existante ou projetée.
- **Capacité des soins infirmiers**
Capacité de déterminer les besoins d'assistance en soins infirmiers chez une personne, de concevoir et de dispenser les soins requis.
- **Systèmes de soins infirmiers**
Actions produites afin de satisfaire les exigences d'autosoin thérapeutiques d'une personne ou d'aider celle-ci à assurer la régulation de sa capacité d'autosoin.

Enfin, le concept de capacité des soins infirmiers signifie la capacité de déterminer les besoins d'assistance en soins infirmiers chez une personne, de concevoir et de dispenser les soins requis (Orem, 1991, 1995). Le système de soins infirmiers désigne les actions produites afin de satisfaire les exigences d'autosoin thérapeutiques d'une personne ou d'aider celle-ci à assurer la régulation de sa capacité d'autosoin (Orem, 1991, 1995).

Théories de niveau intermédiaire

Pour identifier les nécessités d'autosoin spécifiques susceptibles d'être reconnues comme prioritaires par les femmes traitées pour un trouble dépressif, il est nécessaire d'établir des liens entre le concept de nécessités d'autosoin et la dépression, ce qui correspond au deuxième niveau de la structure décrite par Fawcett et Downs (1986, Fawcett, 1991, 1995) (voir la figure 1). Dans cette étude, seules les nécessités d'autosoin développementales et liées à l'altération de la santé ont été explorées. Cette décision repose sur le danger de redondance dans les nécessités d'autosoin formulées qu'aurait entraîné le fait de traiter également des nécessités d'autosoin universelles. À cet égard, Orem (1987) mentionne que les nécessités d'autosoin développementales sont « soit l'expression particulière des nécessités d'autosoin universelles identifiées en fonction des divers processus de développement, soit de nouvelles nécessités provenant d'une condition spécifique » (p. 126). Les nécessités d'autosoin liées à l'altération de la santé consistent, entre autres, à s'occuper des effets produits par les conditions pathologiques. Dans cette étude, les différentes nécessités d'autosoin universelles relatives à l'apport satisfaisant d'aliments, au maintien d'un équilibre entre la solitude et l'interaction sociale, entre l'activité et le repos, et ainsi de suite, ont été adaptées en fonction des difficultés psychosociales affectant le développement des femmes traitées ou ayant été traitées pour un trouble dépressif, ou des effets de la dépression.

Nécessités d'autosoin développementales

Les nécessités d'autosoin développementales visent à « apporter et maintenir des conditions de vie qui...favorisent le développement, c'est-à-dire l'évolution humaine vers de plus hauts niveaux d'organisation structurale et vers la maturité » (Orem, 1987, p. 126). Elles visent aussi à prévenir, à diminuer ou à surmonter les effets nocifs de conditions pouvant affecter le développement humain (Orem, 1987). La majorité des nécessités d'autosoin développementales des femmes suivies pour un trouble dépressif ont été précisées, dans cette étude, à partir des connaissances théoriques sur l'ajustement social des femmes lors d'un épisode dépressif ou à la suite de cet épisode. D'autres nécessités d'autosoin ont trait à l'affirmation et à la réalisation de soi. Ces concepts proviennent de l'étude des modèles psychosociaux de la dépression et des facteurs de risques contribuant au développement d'un trouble dépressif chez les femmes adultes.

Ajustement social. Weissman et Paykel (1974) rapportent que l'ajustement social est généralement défini comme étant l'interaction entre l'individu et son environnement social. Des façons spécifiques de se comporter selon certains rôles sont communément considérées comme appropriées dans un milieu donné, et on s'attend à ce que l'individu performe dans ces rôles plus ou moins explicites. Ces rôles englobent l'ensemble des activités quotidiennes y compris le travail, les loisirs, les relations avec les membres de la famille éloignée, le conjoint et les enfants.

Plusieurs recherches ayant documenté de façon importante l'évolution de la dépression chez les femmes adultes indiquent que les antidépresseurs peuvent réduire les symptômes d'un épisode dépressif aigu dans un temps relativement court, mais l'ajustement social des femmes s'effectue beaucoup plus lentement et demeure souvent incomplet (Bothwell et Weissman, 1977; Coryell, Scheftner, Keller, Endicott, Maser et Klerman, 1993; Goering, Wasylenki, Lancee et Freeman, 1983; Paykel et Weissman, 1973; Weissman, Kals et Klerman, 1976; Weissman et Klerman, 1974; Weissman et Klerman, 1977b, Weissman et Paykel, 1974). La persistance de l'altération du fonctionnement social se situe surtout sur le plan des relations interpersonnelles. Des conflits fréquents avec les autres, particulièrement avec le conjoint, une communication inhibée, la diminution des performances au travail et la tendance à ressasser des idées noires sont les difficultés les plus souvent identifiées chez les femmes et ce, même quatre ans après un épisode dépressif aigu (Bothwell et Weissman, 1977).

Ces données apportent des précisions sur plusieurs nécessités d'autosoin pouvant être reconnues spécifiquement par les femmes traitées pour un trouble dépressif. Par exemple, plusieurs d'entre elles peuvent désirer améliorer leurs relations interpersonnelles, rendre plus harmonieuse la relation qu'elles vivent avec leur conjoint. Certaines nécessités d'autosoin pourraient viser le développement de leur capacité de communiquer plus librement et plus ouvertement avec les autres, d'éviter les frictions, de savoir comment réagir pour le mieux, de façon affirmative, lorsqu'elles entrent en conflit avec certaines personnes. La diminution des tensions occasionnées par le travail peut apparaître prioritaire à plusieurs d'entre elles, de même que l'allègement des sentiments pénibles de tristesse, d'inquiétude et de culpabilité qu'elles sont particulièrement susceptibles d'éprouver.

Affirmation et réalisation de soi. Le développement de l'affirmation et de la réalisation de soi apparaît primordial chez les femmes présentant un trouble dépressif. Le taux de dépression plus élevé chez les femmes que chez les hommes semble être étroitement lié au rôle social dévolu aux femmes dans notre société (Akiskal & McKinney, 1975; Belle, 1982; Breytspraak, Bull, Gumbhir, & Rinck, 1988; Brown, Andrews, Harris, Adler, & Bridge, 1986; Brown & Harris, 1978; Corbeil, Pâquet-Deehy, Lazure, & Legault, 1983; Costello, 1982; Doré, 1984; Fréden, 1982; Gove & Tudor, 1973; Guyon, Nadeau, & Simard, 1981; Hall, Williams, & Greenberg, 1985; Julien et al., 1981; Streit & Tanguay, 1993; Warren & McEachren, 1983); Weissman & Klerman, 1977a). En effet, plusieurs femmes, en raison de leur apprentissage au rôle féminin qui valorise le don de soi, la disponibilité aux autres, la douceur, ont tendance à se sous-estimer, à manquer de confiance en elles. Plusieurs se croient incapables de prendre des décisions optimales pour elles-mêmes et d'accomplir efficacement les actions qui en découlent. S'ajoute aux effets de la socialisation des femmes un sentiment d'impuissance ayant été reconnu comme facteur explicatif de la dépression. C'est ce qui ressort du modèle de la résignation acquise développé par Abramson, Seligman et Teasdale (1978; Nelson McDermott, 1993). En effet, ayant appris à partir de ses propres expériences que ses efforts pour améliorer sa vie ne font aucune différence, la personne présentant un état dépressif tend à demeurer passive, à cesser de s'engager dans des actions nécessaires à l'atteinte de ses objectifs. Pour sa part, Lewinsohn (1974) croit qu'une personne devient déprimée lorsqu'elle ne reçoit plus de renforcements positifs provenant de son environnement ou de ses relations avec les autres.

Ces données indiquent qu'il importe avant tout que les femmes suivies pour un trouble dépressif arrivent à percevoir la possibilité d'améliorer leur situation par des actions qu'elles peuvent produire. Plusieurs nécessités d'autosoin peuvent avoir trait au développement d'habiletés qui leur permettraient de mieux contrôler leur environnement et les événements, de se réaliser personnellement. Ces nécessités d'autosoin peuvent viser le développement d'habiletés sociales, d'habiletés en rapport avec les processus de résolution de problème ou de prise de décision, de l'autonomie sur les plans psychologique et économique. Il importe pour plusieurs femmes d'arriver à prendre conscience de leur potentiel, à développer l'estime qu'elles ont d'elles-mêmes. Il peut apparaître essentiel pour plusieurs de se définir davantage en fonction de ce qu'elles sont réellement ou de ce qu'elles désirent être, plutôt qu'en fonction de « l'idéal féminin ». Pour se procurer des

renforcements positifs, plusieurs peuvent avoir besoin d'identifier des activités gratifiantes et de se les permettre davantage. Pour accéder à un niveau plus élevé de bien-être, il peut être primordial pour plusieurs femmes de développer leur capacité de s'affirmer dans tous les rôles qu'elles assument. Ainsi, elles peuvent avoir besoin d'apprendre à exprimer leurs besoins et leurs désirs directement, à utiliser leur agressivité de façon constructive. En général, les personnes déprimées doivent arriver à briser leurs sentiments d'isolement et d'impuissance.

Ces concepts de l'ajustement social, de l'affirmation et de la réalisation de soi apparaissent compatibles avec le concept de nécessités d'autosoin développementales défini par Orem (1987, 1991, 1995). L'ajustement des femmes dans les rôles qu'elles occupent, le développement de leur capacité de s'affirmer et de se réaliser, constituent des aspects étroitement liés à l'évolution humaine à laquelle Orem fait référence.

Nécessités d'autosoin liées à l'altération de la santé

Les nécessités d'autosoin liées à l'altération de la santé proviennent d'une maladie, d'une blessure ou d'une invalidité, ainsi que des traitements médicaux requis (Orem, 1991, 1995). Considéré selon le point de vue médical, le terme dépression réfère à un syndrome pathologique qui se reconnaît par un ensemble de manifestations cliniques. Le DSM-IV (American Psychiatric Association, 1994) identifie deux types de troubles dépressifs, soit la dépression majeure et la dysthymie. La dépression majeure correspond à une humeur dépressive ou à une perte d'intérêt ou de plaisir, associée à d'autres symptômes présents depuis une période d'au moins deux semaines. Ces symptômes sont les suivants : troubles de l'appétit ou du sommeil, agitation ou ralentissement psychomoteur, diminution de l'énergie, sentiments d'indignité ou de culpabilité excessive, diminution de la concentration et pensées récurrentes de mort, idées ou tentatives de suicide. Quant à la dysthymie, sa caractéristique essentielle est l'humeur dépressive persistant depuis au moins deux ans, à laquelle sont associés certains des symptômes suivants : troubles de l'appétit ou du sommeil, fatigue, faible estime de soi, difficulté à prendre des décisions et sentiment de perte d'espoir. Les troubles dépressifs entraînent donc des altérations fonctionnelles importantes donnant lieu à plusieurs nécessités d'autosoin particulières. Celles-ci peuvent viser la réduction des diverses conséquences physiologiques, cognitives et affectives du trouble dépressif sur le bien-être des femmes. Elles peuvent aussi viser l'acquisition de

connaissances sur cette pathologie, sur les moyens de la traiter et de prévenir de nouveaux épisodes dépressifs.

Indicateur empirique

Cette section décrit comment les concepts de nécessités d'autosoin développementales et liées à l'altération de la santé ont été transformés en un indicateur empirique mesurable, observable dans le monde réel, à partir des nombreuses indications provenant des aspects théoriques étudiés. Ceci correspond au troisième niveau d'abstraction (voir la figure 1). La méthode utilisée pour valider la formulation et le contenu des nécessités d'autosoin identifiées est également présentée.

Nécessités d'autosoin développementales

Les nécessités d'autosoin développementales sont regroupées dans les huit catégories suivantes : travail, vie sociale et loisirs, relation avec le conjoint, rôle parental, unité familiale, relation avec la famille éloignée, affirmation et réalisation de soi et situation économique (voir le tableau 2). Ces catégories se rapportent étroitement au développement humain des femmes à l'âge adulte, ainsi qu'au contexte spécifique qui est le leur dans notre société. Pour formuler la majorité des nécessités d'autosoin développementales, nous nous sommes inspirées des éléments de la *Social Adjustment Scale* (SAS). Cet instrument a été développé par Weissman et Paykel (1974) dans le but d'être utilisé spécifiquement dans plusieurs études auprès de femmes adultes présentant un trouble dépressif. Ses éléments ont permis d'identifier plusieurs difficultés d'ajustement social chez des femmes présentant ou ayant présenté un épisode dépressif. Ils peuvent donc être à la base de plusieurs nécessités d'autosoin développementales dont la satisfaction peut apparaître particulièrement importante à ces femmes. De plus, plusieurs éléments du questionnaire indiquent des buts importants que l'on peut déduire à partir des théories et des études sur la dépression. Par exemple, l'importance de se procurer des renforcements positifs, soulevée par le modèle du manque de renforcements positifs, peut être relevée par le biais de différents énoncés de la SAS appartenant, entre autres, à la catégorie « vie sociale et loisirs ». Les éléments de la SAS ont donc été transformés en énoncés de nécessités d'autosoin. Ainsi, l'élément « Se désintéresse énormément de son travail » a été traduit de la façon suivante : « Me sentir plus intéressée par mon occupation principale ». Une liste des dimensions à la base de chacune des nécessités d'autosoin développementales énoncées apparaît au tableau 2.

Tableau 2 Dimensions à la base des nécessités d'autosoin

Nécessités d'autosoin développementales		Nécessités d'autosoin reliées à l'altération de la santé
A. Travail	D. Rôle parental	I. Bien-être physique
1. Intérêt	32. Présence auprès des enfants	60. Durée du sommeil
2. Tension	33. Communication	61. Qualité du sommeil
3. Effort requis	34. Tensions	62. Appétit
4. Quantité	35. Marques d'affection	63. Poids
5. Efficacité	36. Implication du conjoint	64. Fatigue
6. Conflits	37. Établissement de limites	65. Malaises
7. Culpabilité : garde des enfants	E. Unité familiale	66. Préoccupations somatiques
8. Conciliation des rôles	38. Souci	67. Concentration
9. Ampleur du fardeau	39. Culpabilité	J. Humeur
10. Services de garderie	40. Sentiment d'abandon	68. Insatisfaction
11. Travail apprécié par les autres	41. Collaboration des membres	69. Contrariétés
B. Vie sociale et loisirs	F. Relation avec la famille éloignée	70. Tristesse
12. Réseau social	42. Fréquence des contacts	71. Idées noires
13. Interactions sociales	43. Communication	72. Pleurs
14. Communication	44. Conflits	73. Irritabilité
15. Activités récréatives	45. Souci	74. Intérêt pour les autres
16. Conflits	46. Culpabilité	75. Idées suicidaires
17. Sensibilité	47. Sentiment d'abandon	K. Estime de soi
18. Aisance en société	48. Autonomie	76. Valeur personnelle
19. Solitude	G. Affirmation et réalisation de soi	77. Image corporelle négative
20. Ennui	49. Défendre son point de vue	78. Sentiment d'être un échec
21. Loisirs	50. Besoin d'approbation	79. Déception de soi-même
C. Relation amoureuse	51. Capacité de refuser	80. Blâme
22. Communication	52. Précision de ses buts	81. Acceptation de soi
23. Expression de son désaccord	53. Choix des changements	L. Connaissances sur la dépression
24. Comportement de domination	54. Confiance en soi	82. Compréhension de la dépression
25. Conflits	55. Sentiment d'impuissance	83. Médicaments prescrits
26. Autonomie	56. Autonomie financière	84. Croyance en amélioration
27. Expression de ses besoins	57. Prise de décision	85. Moyens pour éviter une rechute
28. Marques d'affection	H. Situation économique	86. Crainte d'une rechute
29. Intérêt pour la sexualité	58. Gestion financière	87. Impression de manquer de courage
30. Problèmes sexuels	59. Problèmes financiers	88. Échanges avec des pairs
31. Rencontres amoureuses		89. Moyens à prendre pour s'en sortir
		90. Peur d'être jugée

La SAS comprenait sept catégories de rôles. Ces mêmes catégories ont été utilisées pour classer les différentes nécessités d'autosoin développementales formulées dans cette étude. Ce sont les catégories suivantes : travail, vie sociale et loisirs, relation amoureuse, rôle parental, unité familiale, relation avec la famille éloignée et situation économique. Ces dimensions, qui couvrent de façon systématique l'ensemble des rôles généralement occupés par les femmes adultes, nous ont guidées dans le choix des dimensions à la base des éléments de l'INAS. Nous avons créé une huitième catégorie en rapport avec l'affirmation et la réalisation de soi. Les nécessités d'autosoin de cette catégorie découlent essentiellement du modèle de la résignation acquise et des études sur les facteurs de risques de la dépression. Au total, 59 énoncés de nécessités d'autosoin développementales ont été formulés. Pour chacun d'entre eux, une valeur entre 0 (pas du tout important) et 4 (excessivement important) peut être attribuée.

Nécessités d'autosoin liées à l'altération de la santé

L'*Inventaire de dépression de Beck* (IDB) (Beck, Ward, Mendelson, Moch, & Erbaugh, 1961 ; Gauthier, Morin, Thériault, & Lawson, 1982), qui est l'adaptation française d'une mesure d'auto-évaluation de l'intensité de la dépression à partir des manifestations cliniques de ce trouble, a servi de guide pour la formulation de la majorité des nécessités d'autosoin de ce type. Cependant, comme les éléments de l'IDB n'étaient pas formulés en termes d'objectifs à atteindre, mais plutôt de déficits présents, nous les avons transformés en expressions de nécessités d'autosoin telles que définies par Orem. Par exemple, un des choix de réponses possibles apparaissant dans l'IDB est le suivant : « Je suis tellement triste ou malheureux que cela me fait mal ». La reformulation de cette question en nécessité d'autosoin apparaît comme suit : « Cesser de me sentir très triste ou malheureuse aussi souvent ». Les dimensions à la base de ces nécessités d'autosoin apparaissent au tableau 2.

La structure de l'IDB met en évidence trois principaux modes d'expression de la dépression, soit : (a) l'affect négatif envers soi (sentiment d'échec, culpabilité...), (b) les difficultés physiologiques ou somatiques (insomnie, fatigue, anorexie...) et (c) les troubles de l'humeur (tristesse, pessimisme, irritabilité...). Ces distinctions ont servi de fondements théoriques permettant d'identifier de façon systématique les buts liés au trouble dépressif. Donc, inspirées de l'IDB, trois catégories de nécessités d'autosoin liées à l'altération de la santé ont été retenues, soit le bien-être physique, l'estime de soi et l'humeur dépressive. Une quatrième catégorie, nommée « connaissances sur la dépression », a été ajoutée

aux trois premières. Cette catégorie regroupe des nécessités d'autosoin en rapport avec les connaissances sur les troubles dépressifs, sur les mesures de prévention, de traitement et de réadaptation de ce problème de santé. Cette opérationnalisation a donné lieu à une liste de 31 énoncés de nécessités d'autosoin liées à l'altération de la santé. Pour chacun d'entre eux, il est possible d'attribuer une valeur entre 0 (pas du tout important) et 4 (extrêmement important).

Validité nominale des nécessités d'autosoin identifiées

Partant des concepts décrits précédemment et de leur opérationnalisation, une première liste de 88 nécessités d'autosoin a été soumise à sept expertes et experts dans le domaine des soins infirmiers en psychiatrie, pour des fins de validité nominale. Ces personnes se sont prononcées sur la clarté des énoncés, sur leur pertinence en fonction du concept à l'étude, ainsi que sur leurs caractères exclusif et exhaustif. Les commentaires reçus ont permis d'améliorer la formulation de quelques énoncés. Trois énoncés ont été ajoutés et un a été rejeté. La validité des différentes catégories de nécessités d'autosoin a ensuite été vérifiée avec la collaboration de cinq autres expertes et experts dont le rôle consistait, à partir d'une liste de tous les énoncés mis en désordre, à replacer chaque énoncé dans la catégorie à laquelle il appartenait. Les résultats obtenus ont indiqué un accord acceptable, c'est-à-dire entre trois expertes et experts sur cinq quant à la catégorie pour 77 énoncés, sur un total de 90. L'accord quant à la catégorie de huit énoncés a été obtenu après discussion avec les personnes consultées. Cinq énoncés ont été classés dans des catégories différentes.

Conclusion

Le travail de conceptualisation présenté dans cet article constitue la première étape réalisée dans le cadre d'une étude descriptive comparative sur les nécessités d'autosoin reconnues par des femmes traitées pour un trouble dépressif. Il a permis de développer une liste de plusieurs nécessités d'autosoin spécifiques possibles, lesquelles correspondent à un indicateur empirique opérationnel, en ce sens qu'une valeur numérique traduisant l'importance que les femmes leur attribuent peut être déterminée. L'originalité de l'instrument qui en résulte réside dans le fait que, découlant d'une perspective infirmière distincte, il est centré essentiellement sur la reconnaissance du potentiel des femmes présentant un trouble dépressif à parvenir à un mieux-être, plutôt que d'être axé prioritairement sur les déficits de ces femmes. L'*Inventaire des nécessités d'autosoin* a servi à mesurer la valeur qu'une

clientèle féminine traitée pour un trouble dépressif accorde à plusieurs nécessités d'autosoin, et à la comparer à celle que leur attribuent des femmes non traitées pour un problème émotif. À partir des différences observées, il a été possible de décrire les nécessités d'autosoin spécifiques, c'est-à-dire particulières à des femmes traitées pour un trouble dépressif (Page, 1991 ; Page et Ricard, 1995). D'autres recherches seront nécessaires pour préciser, à partir des nécessités d'autosoin identifiées, l'exigence d'autosoin thérapeutique de cette clientèle. De plus, la capacité d'autosoin de ces femmes pourra être mesurée, ce qui permettra d'identifier les limitations d'autosoin. Ces connaissances mèneront à une meilleure compréhension des déficits d'autosoin des femmes suivies pour un trouble dépressif, ainsi qu'au développement de modèles d'intervention infirmiers dont pourrait bénéficier cette clientèle.

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Frontier Nursing: Nursing Work and Training in Alberta, 1890-1905

Sharon Richardson

Le présent article analyse la relation entre le travail et la formation des infirmières de 1890 à 1905 dans cette partie du territoire du Nord-Ouest qui devait s'appeler à partir de 1905 la province de l'Alberta. On a examiné les données primaires (archives) et secondaires (documents publiés) afin d'établir la nature du travail salarié des infirmières, la façon dont celles-ci étaient recrutées, les conditions de travail, la manière dont les femmes étaient préparées au travail infirmier ainsi que la relation entre les programmes de formation en hôpital et le travail salarié des infirmières diplômées.

Avant 1905, la plupart des infirmières diplômées travaillaient dans les hôpitaux. En plus des tâches administratives, elles s'occupaient des malades et aidaient les médecins. Les directions d'hôpitaux avaient du mal à recruter des infirmières diplômées et elles mirent en place des programmes de formation afin de pallier leur manque de main d'œuvre. Le Medicine Hat General Hospital débuta les programmes en 1894, le Calgary General Hospital en 1895. Les hôpitaux ayant des programmes de formation commencèrent alors à avoir pour personnel des élèves infirmières. Le succès de ces programmes incita les autres hôpitaux de l'Alberta à mettre en place des programmes de formation; en 1915, dix programmes étaient en place. On s'attendait à ce que les diplômées des programmes hospitaliers travaillent à leur compte ou cherchent de l'emploi dans le secteur privé et soient remboursées sur une base d'honoraires payés par leurs malades.

Bien qu'ils n'aient pas été élaborés pour préparer les infirmières à la pratique privée, les programmes de formation en hôpital sont cependant parvenus à une certaine intégration entre l'hôpital et le travail infirmier à domicile, en partie parce que les conditions primitives des hôpitaux de l'Alberta équivalaient à celles des ranchs, des fermes et mêmes des habitations citadines. Les élèves infirmières se tournèrent vers le secteur privé parce que leurs services étaient «loués», durant leur période de formation, pour prendre soin des malades à leur domicile.

This article analyzes the relationship of nursing work and training from 1890 to 1905 in that part of the North West Territory which in 1905 became the province of Alberta. Primary (archival) and secondary (published) data are analyzed to determine the nature of salaried nursing work, how nurses were recruited, the conditions of employment, how women were prepared for nursing work, and the relationship between hospital training programs and the salaried work of graduate nurses.

Prior to 1905, most graduate nurses in Alberta were employed in hospitals. Their work involved administration as well as attending to patients and assisting physicians. Hospital boards had difficulty recruiting graduate nurses and began training programs to remedy their labour shortage. Programs were begun by the Medicine Hat General Hospital in 1894 and the Calgary General Hospital in 1895. Hospitals with training

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programs soon came to rely on pupil nurses for staffing. The success of these programs stimulated other Alberta hospitals to begin training programs, and by 1915 there were 10 programs in existence. Graduates of hospital programs were expected to be entrepreneurs, seeking employment in private practice and being reimbursed on a fee-for-service basis by their patients.

Although they were not designed to prepare nurses for private practice, hospital training programs did achieve some integration between hospital and home nursing work, partly because the primitive conditions of Alberta hospitals matched those of the ranches, homesteads, and even town homes. Pupil nurses became oriented to private duty when they were "hired out" during their period of training to care for ill individuals in their homes.

Providing help to the ill and the injured was a major challenge in that part of the North West Territory which, in 1905, became the province of Alberta. Single men building the transcontinental railway had no family resources to help them through periods of sickness. Typhoid epidemics plagued Canadian Pacific Railway work camps and the dangerous nature of railroading led to many injuries. Ranching and homesteading were also fraught with physical risk. As families of settlers occupied more of the previously uncultivated southern and central regions, the demand for health care intensified. Small hospitals were built in Medicine Hat, Lethbridge, Calgary, and Edmonton to provide a place for the ill and injured to recover, and to provide centralization of physician services. Early in the history of Alberta, hospitals became the focal point of health-care delivery.

Hospitals needed nurses, and as the number and size of hospitals increased so too did the demand for nurses. This article builds on previous histories of health care and nursing in Alberta,¹ incorporating new information from primary archival sources to examine the relationship of nursing work and training from 1880 to 1905 in the about-to-be province of Alberta. This examination was conducted as part of the growing body of Canadian² and international nursing historiography³ addressing this era. Particular emphasis will be placed on the nature of salaried nursing work, how nurses were recruited by hospitals, the conditions of employment, how women were prepared for nursing work, and the relationship between hospital training programs and the employment of graduate nurses in Alberta during its Territorial years.

Early Hospitals

Before 1905, most graduate nurses in Alberta were employed in hospitals. The settlers of the North West Territory were widely dispersed over a large geographic area. In 1891 the population of Alberta was about 9,000 native peoples and 17,500 Métis and white settlers⁴; by 1901

it had increased to 73,000.⁵ Travel between the few small towns, and between ranches and homesteads, was difficult and time-consuming, and many settlers lacked the cash to pay for medical or nursing services. Hospitals offered graduate nurses the security of a known environment, guaranteed living arrangements, and an acceptable reason for an unmarried female to venture unaccompanied into the northwest frontier.

Most Alberta hospitals recruited graduate nurses because they valued skilled nursing. Reverend Lyon noted during ceremonies to mark the laying of the cornerstone for the Medicine Hat General Hospital in 1889 that he had "seen valuable lives lost simply through the want of proper care and skilled nursing. In some forms of disease skilled nursing is everything. People may be willing...but if they have neither skill nor experience, how helpless they really are."⁶ The term "graduate nurse" referred to women who had undergone training in a hospital and had demonstrated competence in caring for the ill. Graduates were often recruited through personal recommendation and according to the previous affiliation of the hospital's medical superintendent. For example, early recruits to the Medicine Hat General Hospital tended to be graduates of the Winnipeg General Hospital,⁷ whereas the Galt Hospital in Lethbridge favoured graduates of the Montreal General Hospital.⁸

By 1905 at least seven general hospitals in Alberta employed one or more graduate nurses. These were: the 25-bed Medicine Hat General, opened in 1890⁹; the 15-bed Lethbridge Galt, opened in 1891¹⁰; the 35-bed "new" Calgary Holy Cross, opened in 1892¹¹; the 35-bed "new" Calgary General, opened in 1895¹²; the 35-bed Edmonton General, opened in 1895¹³; the 25-bed Edmonton Public (later renamed Edmonton City and finally Royal Alexandra), opened in 1900¹⁴; and the smaller Edmonton Misericordia Mission Hospital, opened in 1900 as a maternity hospital but later revamped to general services.¹⁵ The Lethbridge Galt was privately owned and operated by the North West Coal and Navigation Company.¹⁶ The Medicine Hat General,¹⁷ Calgary General,¹⁸ and Edmonton Public¹⁹ were publicly incorporated institutions owned and operated by elected boards of local citizens. The Calgary Holy Cross,²⁰ Edmonton General,²¹ and Edmonton Misericordia²² were owned and operated by Catholic sisterhoods. Each of these hospitals was public in that it served individuals regardless of religion, race, and ability to pay, and each received some funding from the Territorial government.

Hospital Nursing Work

The role of nurses in early Alberta hospitals was to provide an environment in which ill persons could safely recover from surgery and treatable diseases. Male patients often outnumbered females three to one, which reflects not only the gender ratio of the population at large but also the reluctance of some hospitals to provide obstetrical services. Hospitalization in the non-Catholic institutions was confined to those who were considered as standing to benefit from the medical treatment available; therefore, the Medicine Hat General, Lethbridge Galt, Calgary General, and Edmonton Public excluded the mentally ill and persons with social problems. In these hospitals, physicians determined who was and who was not admitted.²³ Such professional hegemony was associated with the reorganization of North American hospitals as laboratories for the development and testing of scientific treatments,²⁴ and a concomitant shift away from hospitals as charitable social-service agencies. The three hospitals run by Catholic sisterhoods – Edmonton General, Edmonton Misericordia, and Calgary Holy Cross – admitted individuals with a wider range of health and social problems, regardless of whether they had an attending physician.²⁵ The Edmonton General Hospital functioned as a treatment centre for the ill,²⁶ but Calgary Holy Cross offered some social services as well as nursing services,²⁷ and Edmonton Misericordia Mission Hospital served as a hospital, boarding house, and orphanage.²⁸ Physicians wielded considerably less direct power and authority in Catholic hospitals, because administrative and organizational decision-making was vested in the Mother Superior – who reported to her Council and Motherhouse – rather than to a medical superintendent or lay board.²⁹

The individual mission of each early Alberta hospital, its administrative structure, and its clientele directly affected the roles and responsibilities of graduate nurses. In the non-Catholic hospitals, the work of graduate nurses included administrative duties, attending the patient, and assisting the physician.³⁰

Administrative Duties

A senior graduate nurse, designated Lady Superintendent or Matron, was appointed by the boards of non-Catholic hospitals to administer the hospital and oversee patient care. She had a broad mandate and considerable power and authority. At the Medicine Hat General Hospital, the Lady Superintendent engaged and discharged all nurses and other staff, and regarding patient care was second only to the medical superintendent and the secretary-treasurer of the board.³¹ She

was held accountable for order, neatness, and cleanliness in the hospital wards and in the nurses' home; she also approved all orders for supplies, including food, and ensured that proper economy was exercised in their use. The Lady Superintendent was also responsible for the preparation and distribution of food for the wards and the staff dining rooms. The rules specified that permission of the Lady Superintendent was required before patients could leave their ward, visit patients in other wards, use tobacco "in any form," or leave the hospital grounds.³² The Lady Superintendent submitted a written report to each board meeting, concerning the hospital, the patients, and the staff.³³

The Matron of the Calgary General Hospital played a similar role, and was given full authority by the hospital board over kitchen, laundry, maintenance, and nursing staff.³⁴ Unlike the situation in Medicine Hat, there was no medical superintendent in the early years of the Calgary General. The Matron was the only administrator on site. Alfred Cross, President of the Calgary General in 1905, attested to the complexity of the Matron's role:

There was...a very difficult position held by the Matron in charge. There was no doctor directly connected with the Hospital, no Purchasing Agent or Household Manager, nor anybody else to treat with the public except the Matron; and it was most difficult for her to maintain an efficient staff, keep Doctors in order and maintain their good-will and the general public, who were often most unjustly critical in spreading stories that had no foundation against the hospital.³⁵

The power and authority of Lady Superintendents and Matrons in Alberta was broader than that reported for other Canadian hospitals of the period. For example, at the Winnipeg General Hospital (WGH) prior to 1900, the medical superintendent controlled nursing services as well as medical services, including the school of nursing, which was established in 1887.³⁶ The Lady Superintendent reported directly to the medical superintendent, and, under ordinary circumstances, had no direct access to the board of directors – her recommendations were always presented through the medical superintendent.³⁷ WGH Lady Superintendent Adah Patterson was forced to resign in 1900 because she challenged the absolute authority of the medical superintendent by requesting that an advisory committee of physicians be established on matters related to nursing service.³⁸ At the General Hospital in St. John's, Newfoundland, two senior graduate nurses were appointed to administrative positions in 1903, at identical salaries – one as Superintendent of Nurses, with "full control over nurses and nursing matters," the other as Matron, "to be in charge of the cooking, cleaning, and general maintenance of the institution."³⁹ The reason for the differ-

ent roles of senior graduate nurses at the Medicine Hat and Calgary General hospitals, in comparison to the Winnipeg and St. John's General hospitals, was that Alberta hospitals of the Territorial era were created quickly, as new institutions; they did not usually develop from other institutions, and they had to consider only the "traditions" of their founding members, physicians, and nursing staff.⁴⁰

Staff graduate nurses fulfilled very broad functions. They not only nursed the patients on their wards, but also acted as ward managers. One nurse was responsible for the overall organization and management of a ward or combination of wards for a 24-hour period. She maintained a daily record of each patient in her ward, noting in writing the orders of the attending physician, and ensured that orders for the night nurse were written and that the night nurse understood them.⁴¹ In the morning, the graduate nurse received the night nurse's report on the patients' conditions and any new physician's orders. When patients were admitted, the graduate nurse was responsible for counting, recording, and safely storing their clothing and personal effects. She sent vermin-infested clothes to be fumigated and dirty clothes to the laundry.⁴² The graduate nurse's role as manager of a ward or combination of wards was comparable to the administrative role of the Lady Superintendent, although on a smaller scale. The performance of graduate nurses was subject to scrutiny by the hospital board, as is evident from comments about the "peculiar temper" of a nurse employed in 1891 at the Medicine Hat General Hospital, "whose occasional alleged displays are more human than angelic."⁴³ This nurse's "strongmindedness" prevented "softheaded swains making love during convalescence."⁴⁴ Since "no instance was cited when any of those displays of temper had disturbed the equilibrium of the nervous system of any patient," the board took no action.⁴⁵ The significance of this situation is the board's review and its apparent unwillingness to delegate handling of the complaint to the Lady Superintendent.

Attending the Patient

Graduate nurses provided personal care to patients. They gave bed baths and changed bed linen with patients in situ. They prevented bed-sores, positioned patients comfortably, and helped with meals. Nurses were expected to constantly attend patients and to observe and report to attending physicians their "state of secretions, expectorations, pulse, temperature, skin, appetite, intelligence (as to delirium or stupor), breathing, sleeping, conditions of wounds, eruptions, formation of matter, effect of diet, stimulants, or medicines."⁴⁶ They carried out a

broad range of sometimes complicated treatments prescribed by physicians to alleviate suffering and promote recovery – dressing blisters, burns, sores, and wounds; preparing and applying fomentations and poultices; applying leeches and subsequent treatment; administering enemata; catheterizing female patients; warming body parts by friction⁴⁷; washing out the bladder; gastric lavage; administering fluids by rectum; giving hypodermic injections of fluids and drugs; cupping; and preparing and giving nourishing drinks.⁴⁸ An almost identical list of duties was drawn up for nurses at the WGH in 1897.⁴⁹ In the case of an emergency, a graduate nurse was expected to assess the patient immediately and take whatever measures were within her realm of experience while awaiting arrival of the physician. Non-emergency patients were assessed more leisurely, usually after giving them an admission bath.⁵⁰ Since both the Medicine Hat General and the Calgary General included maternity units, housed in separate buildings, graduate nurses in these hospitals admitted and cared for patients awaiting delivery, monitored women in labour, assisted at (and sometimes conducted) deliveries, and cared for post-partum mothers and infants. Graduate nurses were expected to have a broad range of clinical skills and knowledge and to be able to cope with whatever illnesses, injuries, and conditions their patients presented.

Assisting the Physician

Graduate nurses also assisted physicians, which often involved helping with surgery and recording new orders for diets, treatments, and medications. They frequently administered the anesthesia during surgery. Nurses were responsible for preparing the operating room, which included preparing bandages, antiseptics, and disinfectants; sterilizing supplies and surgical instruments; and setting up the anesthetic table. Physicians often provided their own surgical instruments. In the earliest days, sterilization sometimes involved using ordinary kitchen utensils to boil instruments and steam dressings.⁵¹ During surgery, one nurse “scrubbed up,” donned a sterile gown and hood, and assisted the physician by handing him instruments, sponges, and suture material. Another nurse circulated about the operating room, positioning and securing the anesthetized patient on the operating table, providing supplies during surgery, and being “always on hand for any work which cannot be done by those who are surgically clean.”⁵² The graduate nurse in charge of the operating room was responsible for ensuring that it was “always ready at a moment’s notice for emergency work.”⁵³

Graduate nurses employed in hospitals in Alberta before 1905 performed multiple tasks and assumed enormous responsibility. They were often the first person the patient saw if he or she went directly to the local hospital without consulting a physician. In such instances the graduate nurse determined who required the attention of a doctor, and summoned one. In the meantime, she attended to any injuries or wounds and began the most appropriate treatment she could offer. In the day-to-day routine of the hospital, the graduate nurse ensured there were adequate supplies, food, and medicines, and attended to the physical needs of the patient. She was accountable to the hospital board for appropriate and economical use of all equipment and supplies. The graduate nurse demonstrated broad clinical knowledge and skill in assessing patients, providing nursing care, and following through on doctors' treatment regimens, which often involved assisting the physician with invasive treatments such as surgery. Although nurses were hired by the hospital board, they were required to satisfy not only board members, but also patients, physicians, and visitors. By and large, nurses employed in Alberta hospitals before 1905 were members of the first generation of trained Canadian nurses – they were graduates of the few nurse-training programs in Canada offered in large hospitals under the directorship of women trained outside Canada.⁵⁴ McPherson concludes that this first generation of Canadian nurses was distinguished by its small size, strong sense of vocation, "and the complex web of interpersonal relationships which developed among this pioneer generation and between nurses and feminists."⁵⁵

Securing a Nursing Workforce

Once established, early Alberta hospitals grew quickly, which led to an increased demand for nurses. Because of the distance from central Canadian hospitals, with their nurse training programs, and the primitive living conditions of the Alberta frontier, hospital boards had difficulty recruiting graduate nurses. They therefore began their own training programs. The Edmonton Public Hospital Board of Directors acknowledged, in their 1905 annual report, that "during the autumn and early winter the difficulty of securing trained nurses led to the establishment of a Training School For Nurses in connection with the hospital."⁵⁶ The first program in Alberta was established by the Medicine Hat General Hospital in 1894, four years after it opened. A second one was begun by the Calgary General Hospital in 1895 – the year it moved from its original frame house to a new, specially designed building. In Medicine Hat, the hospital medical superintendent,

Dr. Calder, supported the establishment of a nurse-training program because:

We are certainly receiving applications from young ladies who are anxious to acquire a nurses's training. This could be done with very little educational outlay. There are few ways in which the hospital can benefit the public more than by being able to supply a nurses's training to those who are anxious and willing to acquire one, and who are often willing to give their time and work gratuitously for the sake of the information they receive.⁵⁷

The situation at the Calgary General was more prosaic. When she moved, in September 1894, from the Medicine Hat General Hospital to Calgary, Matron Mary Ellen Birtles found that the cornerstone was just being laid for the hospital she had hoped to find completed.⁵⁸ Birtles moved into the existing cottage hospital – a two-storey frame, rented house.⁵⁹ Two days later, all the staff abandoned her, and Birtles found herself cook, housekeeper, and nurse. For two months she continued as the sole nurse for an average of eight patients.⁶⁰ Birtles desperately needed help, and she recruited Marion Moody in April 1895 as the Calgary General's first pupil nurse.⁶¹ Moody began her probationary period "by taking charge at night while the Matron and head nurse who had been having a very busy time got a chance to rest."⁶² She subsequently assisted with the move to the new hospital, where she continued her probationary period by "going back on night duty with only five hours sleep in sixty hours" and going "out in a shack at the back of the hospital [to] nurse three children through scarlet fever."⁶³ Of the remainder of her probationary period, Moody reported, "there is not much to record except that I was put on day work and the charge of this isolated ward while a nurse of eleven months' standing was put on at night until the children and their mother...were convalescent."⁶⁴ By fall 1895, Moody held the title of senior nurse, "having under me a junior and a probationer."⁶⁵

Once training programs began, hospital staffing quickly came to rely on the cadre of pupil nurses who were learning on the job. Numbers of graduate and pupil nurses and patient census reports clearly demonstrate this reliance. In 1897 at the Medicine Hat General Hospital, two graduate and six pupil nurses assisted at 114 operations and 29 births, and provided care for the 300 patients admitted during the year.⁶⁶ By 1907, four graduate nurses – including the Lady Superintendent, the Assistant Superintendent, an operating-room nurse, and a nurse in charge of the maternity hospital – supervised 13 pupil nurses who cared for 815 patients and assisted at 94 births.⁶⁷ Two years later, the hospital still employed only four graduate nurses; the

number of pupil nurses had increased to 16, and 789 patients had been admitted.⁶⁸

A comparable situation existed at the Calgary General. In January 1905, the nursing staff consisted of the Matron, one graduate nurse, and eight pupil nurses, who cared for an average daily census of 35 patients housed in two buildings.⁶⁹ Later that year, four more graduate nurses were hired, bringing the total to six, including the Matron.⁷⁰ One nurse was in charge of the maternity building, one was in charge of the isolation building, one was in charge of each of the two floors of the main building, and one was in charge of night duty in the three-building hospital complex.⁷¹ During 1905, 741 patients were admitted, of whom 67 were maternity cases and 42 were isolation cases; the number of operations was not reported. These ratios of pupil to graduate nurse staff are similar to those Johns reports for the Winnipeg General Hospital in 1898⁷² and to those Rosenberg reports as typical in American hospitals at the end of the 19th century.⁷³

The role of graduate nurses in hospitals with training programs quickly expanded to include teaching and supervising pupil nurses, in addition to administering wards, assisting physicians, and caring for patients. The graduate nurse in charge of each ward or grouping of wards continued to be responsible for nursing work on her unit throughout a 24-hour period. As the cadre of pupil nurses increased in number, they began to be assigned to night duty, freeing all but one graduate for day duty. The Night Supervisor worked from seven in the evening until seven in the morning. She supervised the pupil nurses assigned to each unit and acted as a resource to them, in addition to coping with emergency admissions and operations, "problem" visitors, occasionally boisterous patients, and physicians' late visits.

It is worth pointing out that the pupil nurses' contribution to a hospital's staff *during training* was considered more important, by the boards, than their potential contribution as trained nurses. Members of hospital boards during the Territorial era were local merchants, businessmen, and politicians, who brought to their boards an entrepreneurial philosophy and values. They considered the exchange of training for labour a business transaction, rather than in terms of the advancement of either nursing or women's independence. Thus hospitals were concerned with neither the number of nurses they trained nor where or how these trained nurses might be employed after graduation. What interested the continually under-financed boards was having a large, reliable labour pool to ensure continued operation of the hospital. Pupil nurses supplied this pool of labour.

Reliance on pupil nurses to staff general hospitals was common in Britain as well. In his study of the first generation of general-hospital-trained nurses in England from 1881 to 1914, Maggs concludes that the expanding hospital system needed more staff than what the existing nursing population could provide. Hospitals therefore set out to attract pupil nurses to staff their institutions. In fact English hospitals preferred trainees to graduate nurses, because the former were "the cheapest form of labour for hospitals which faced the constant problems of under-financing, whether they were voluntarily supported or publicly supported through rates [taxes]." ⁷⁴ Similarly, in her analysis of nursing in the United States from 1850 to 1945, Reverby concludes that American training programs around the turn of the century existed primarily to provide hospitals with a nursing labour pool. ⁷⁵ "The demands of the hospital for a work force often overcame the nursing school's abilities to educate its students," she notes, adding, "Nursing education was called training; in reality it was work." ⁷⁶ The situation was no different in Canada, where, according to Agnew, at the turn of the century it "became an almost universally accepted principle that a school of nursing was indispensable in operating a hospital...the apprenticeship system flourished and the educational needs of the students were frequently subordinated to the service needs of the hospital." ⁷⁷ Thus the model of hospital training begun before 1905 in Alberta was comparable in philosophy and format to programs operating in England, the United States, and other parts of Canada.

Conditions of Employment

Hospital nursing in Territorial Alberta constituted a distinct lifestyle for women, was demanding, and was variably rewarded. All nursing staff, graduate and pupil, lived in the hospital or in a residence on the grounds. They were on call at all times. Conditions were arduous, involving a seven-day week of 12-hour shifts, from seven to seven. ⁷⁸ Nurses on day shift were permitted to rest one to two hours in the afternoon, providing all their work had been done, but night nurses enjoyed no such break. Day nurses usually had a half day off on Sunday, and were expected to spend part of it in church. ⁷⁹ At the Medicine Hat General, night nurses were to be in bed by 10 a.m. and to sleep at least seven hours; they were not permitted to leave the hospital grounds before four o'clock without the permission of the Lady Superintendent. ⁸⁰

There is no evidence of written agreements between boards and graduate nursing staff concerning conditions of employment, such as

hours of work, salary, and room, board, and laundry services. Hospital boards that failed to honour verbal agreements concerning salary and living arrangements soon found themselves without sufficient graduate staff, while graduate nurses who failed to abide by their verbal commitments found themselves without the written testimonials of board members and physicians that were necessary to secure subsequent employment.

Initially, graduate nurses individually negotiated their salaries with the boards that employed them. Thus in 1893 the Medicine Hat General paid one of its graduate nurses \$25 per month and another \$15.⁸¹ These salaries were comparable to those paid almost a decade earlier at the Winnipeg General. Johns reports that the five nurses recruited by the WGH in 1884 received from \$15 to \$20 per month, as compared with \$8 to \$12 paid in Montreal.⁸² In 1892 the Medicine Hat General paid the Matron \$40,⁸³ the cook \$25,⁸⁴ and the medical superintendent \$50.⁸⁵ When a training program was begun in 1894, pupil nurses received a relatively generous monthly stipend of \$10 their first year and \$12 their second, plus a \$25 bonus for successfully completing the two-year program.⁸⁶ No stipend was paid probationers, although they were boarded and lodged at the hospital's expense.

At the Calgary General, monthly stipends for pupil nurses from 1895 to 1897 were noticeably less: \$5 the first six months after probation, \$6 the next six months, \$7.50 the second year, and \$10 the third year.⁸⁷ In late 1897, stipends were increased to \$7.50 the first year, \$10 the second, and \$12.50 the third.⁸⁸ The salaries of graduate nurses at the Calgary General prior to 1905 are not recorded; however, in 1894 Matron Mary Ellen Birtles was hired at \$400 per year, or about \$33 per month,⁸⁹ which was 20% less than the salary of the Lady Superintendent at the Medicine Hat General. In 1905, in an attempt to recruit and retain staff, the monthly salary of graduate nurses at the Medicine Hat General was increased to \$30⁹⁰ and the Lady Superintendent's salary was raised to \$60.⁹¹ At that time, an orderly's pay was \$25 per month.⁹² Other salaried hospital staff included the Chinese cook, who was paid \$60,⁹³ and the Chinese laundryman, who received \$70⁹⁴; both were expected to hire and pay as many helpers as they needed from their wages.

Hospitals also provided accommodation, meals, and laundry services without charge to graduate and pupil nurses and other employees.⁹⁵ The type and quality of room and board varied greatly and was a significant factor in recruiting both graduate and pupil nurses. The Medicine Hat and Calgary General hospitals initially housed their grad-

uates and pupils in the hospital, which was common practice in other parts of Canada.⁹⁶ Overcrowding and lack of privacy were serious problems until nurses' residences were opened by the Calgary General in 1904 and by the Medicine Hat General in 1905.⁹⁷

Nurse Training Programs

Women who wished to train as nurses were admitted by the Medicine Hat and Calgary General hospitals at irregular intervals, depending upon when the hospital was prepared to accept a new pupil and when the prospective pupil could come. There were few admission criteria beyond a willingness to submit to the authority of the Lady Superintendent or Matron, freedom from family responsibilities, sound health, and sound character.⁹⁸ The latter was usually attested to by a clergyman and one other responsible person, while proof of sound health often required a statement from a physician or consent to a physical examination conducted by a physician of the hospital's choice. Although "women of superior education and cultivation...[were] preferred to those who do not possess these advantages,"⁹⁹ it is likely that prior to 1905 many pupil nurses came from working-class families and had only primary-school education, especially those who came from rural areas.¹⁰⁰ Recruits without high-school education were common in Canadian and American hospital programs. Reverby reports that even in 1910, in Massachusetts, nearly a quarter of all hospital training schools expected their students to have no more than the equivalent of grade-school education.¹⁰¹ As was the case in the United States, early Canadian, and especially prairie, hospital training programs of the late 19th and early 20th centuries offered unmarried rural women geographic mobility and a way to participate safely in the "excitement, independence, and opportunity of the urban working world."¹⁰²

Successful applicants were taken into the hospital on probation of one month or more. Probationers at the Medicine Hat General were prepared for an examination on "practical work" and in reading, penmanship, simple arithmetic, and English dictation.¹⁰³ At the end of the probationary period the applicant was tested for ability to read aloud well, write legibly and accurately, keep simple accounts, and take notes of lectures.¹⁰⁴ The decision whether to retain a probationer was made by the Matron at the Calgary General and by the Lady Superintendent, in consultation with the Medical Superintendent, at the Medicine Hat General. Those accepted as pupil nurses were required to sign an agreement that they would obey all hospital rules. A pupil nurse could be discharged at any time if she proved to be "inefficient," and could be

suspended or discharged for negligence or misconduct.¹⁰⁵ The criteria for admission, and the conditions of probation, at the Medicine Hat General Hospital bore a striking resemblance to those implemented at the Winnipeg General Hospital School of Nursing upon its opening in 1887.¹⁰⁶ Undoubtedly this similarity was directly related to the fact that the MHGH's first Lady Superintendent, Grace Reynolds, and its first graduate nurse employee, Mary Ellen Birtles, both came from the WGH. Reynolds, originally trained in England at the Leeds Infirmary,¹⁰⁷ moved to Medicine Hat from Winnipeg in February 1890, accompanied by her former pupil at the WGH, Birtles.¹⁰⁸ As previously noted, Birtles moved to Calgary in September 1894 to take up the position of Matron at the new Calgary General Hospital. As the initiator of the CGH nurse training program, in 1895, Birtles likely implemented a program very similar to those at the MHGH and her own training school, the Winnipeg General.

Program of Instruction

The resemblance of both the MHGH and the CGH training programs to the program offered from 1887 to 1895 in Winnipeg was obvious also in the irregular and ad hoc instruction pattern of the two Alberta programs. Periodic lectures given in the evenings after a full day's work, by the Lady Superintendent and selected physicians, constituted most of pupil nurses' formal learning. There were no curriculum, designated lecture content, or specified clinical learning exercises. Lecture content depended upon the interests, knowledge, and availability of the physicians, although anatomy, some physiology, materia medica, dietetics, and the care of medical, surgical, and obstetrical patients were usually addressed.¹⁰⁹ Three notebooks, dated 1905, 1906, and 1908 – which belonged to Annie Gibson, a 1908 graduate of the Calgary General Hospital training program – record doctors' lectures; directions for the preparation of treatment trays, disinfectants, antiseptics, and ointments; uses and doses of common medications; and recipes for nourishing beverages.¹¹⁰ The notebooks describe surgical and non-surgical treatment of common illnesses and diseases, including the nurse's role and responsibilities.

Pupils learned to nurse by doing nursing work. The labour needs of the hospital determined the assignment of pupil nurses; the illnesses with which patients were admitted, and the medical treatment they received, determined the clinical experience of pupil nurses. Thus the amount and quality of class work and theoretical instruction suffered if pupil nurses were needed on the wards.¹¹¹ Pupil nurses at the Calgary

General learned more about communicable diseases and isolation nursing than did their counterparts at the Medicine Hat General, because the former had a special isolation unit and the latter did not. Operating-room nursing was a significant focus for pupil nurses, as was pre- and post-operative patient care. Pediatrics was limited, since hospitals admitted few children, and psychiatric nursing was non-existent. Because the Medicine Hat and Calgary General hospitals had separate maternity units, pupil nurses learned about labour and delivery and care of the newborn. Examinations were held at the end of both the probationary period and the training period. They were set and marked by physicians selected by the hospital board and were medically focused.¹¹² Pupil nurses who completed the prescribed training program and passed their examinations were awarded a certificate by the sponsoring hospitals.

At the Winnipeg General Hospital, organized instruction of nurses was introduced by Lady Superintendent Elizabeth Holland in 1895¹¹³ and a minimal curriculum was initiated in 1897.¹¹⁴ However, the programs at neither the MHG nor the CGH progressed beyond irregular and unsystematic instruction until after the First World War.¹¹⁵ Until Nurses' Homes were constructed, at the CGH in 1904 and at the MHGH in 1905, neither hospital had classrooms nor a library. Lady superintendents of the CGH and the MHGH were conscientious in meeting the expectations of their boards, by ensuring the relatively smooth operation of their hospitals, but they paid limited attention to the quality of instruction offered pupil nurses. The Alberta hospitals lacked the spark of educational innovation provided by WGH Lady Superintendents Adah Patterson, Elizabeth Mackay, and Edith Martin.¹¹⁶

Discipline During Training

A remarkable degree of supervision and discipline was imposed on pupil nurses. As Reverby observes in her assessment of American nurse training prior to 1945, "Drill and discipline, as well as character, became the hallmarks of [hospital nurse] training."¹¹⁷ Although hospital boards stated that they sought to attract mature women with the best possible educational credentials, their rigid rules of behaviour suggest that boards possessed little confidence in the ability of their trainees to behave as "ladies." For example, "Rules for the Hospital" prepared by the Medicine Hat General Hospital Board detailed how nurses were to keep their rooms neat and orderly and how they were to handle soiled personal and bed linen.¹¹⁸ The detail and rigidity of these rules reflect

in part the appropriate role of women as perceived by the exclusively male members of the board, and the board's corresponding stated prerogative to mould character. The Medicine Hat board stated its rationale thus:

The nurses will always bear in mind that the paramount objective, during the two years of the hospital course, is to fit them for the avocation they may have chosen, not only by the practical teaching in hospital work and the knowledge acquired in the school, but by the cultivation and establishment of a character for steadiness, thoughtfulness, modesty and tact, which will justify confidence in those who employ them or recommend them for employment, and reflect credit on themselves and on the school.¹¹⁹

Thus strict discipline was for the board, as it had been for Florence Nightingale, the "essence" of moral training and nursing education.¹²⁰ The hospital board replaced the paternal head of the Victorian "family," while the Lady Superintendent was the "mother." This analogy between hospital and family was reinforced when pupil nurses were fed and cloistered in the hospital or in adjacent nurses' "homes," as the residences were called.¹²¹ Later, even their uniforms were provided. This Victorian conception of proper nurse training was most apparent in the Alberta non-Catholic hospitals, whose boards were comprised, almost totally, of members of the ruling Anglo elite.¹²²

Relationship of Hospital Training and Graduate Nurse Work

The majority of graduates of early Alberta nurse-training programs were expected to seek employment in private practice, and to be paid on a negotiated fee-for-service basis by their patients. Only a few graduates were required to supervise the pupil nurses who staffed hospitals. Pupil-nurse labour for routine hospital work was preferred by boards because it was less expensive and because pupil-nurse labour was more reliable than graduate-nurse labour. Their stipends were less than half the salaries demanded by graduate nurses, and they were formally contracted to obey hospital rules and to complete a prescribed period of training. Graduate nurses were not formally contracted, and might leave after only a few weeks' notice to take another job or to marry. In a frontier society with a surfeit of single men eager to find practical, sensible wives, graduate nurses were in high demand.¹²³ Histories of the early years of Alberta non-Catholic hospitals are replete with stories of Lady Superintendents and graduate nurses forming socially advantageous liaisons by marrying the bachelor and widowed business and professional elite of their communities.¹²⁴

A predominantly pupil-nurse staff had the added advantage of being useful for a number of domestic duties, such as cleaning wards, preparing and sterilizing supplies, and preparing meals. Thus hospital boards could keep housekeeping and dietary staff to a minimum. The costs associated with operating a nurse-training program were conveniently "buried" in the capital and operating costs of the hospital. Cost of food, accommodation, and laundry for pupil nurses never appeared separate from the operating costs of the hospital in annual fiscal reports.¹²⁵ In his history of Canadian hospitals from 1920 to 1970, Agnew admits that the cost of nursing education was assumed to be offset by the free labour of the student, despite the fact that there was little factual or research-based information on the true cost to the hospital of sponsoring a training program.¹²⁶

Making a living solely by private duty was difficult for unmarried graduate nurses in Alberta at the turn of the century, and few did so. Unlike older, more populated regions of Canada and the United States, the prairie frontier was unsuitable for private duty. Too few people were able to pay for their services. Obtaining employment was difficult, and reaching patients' homes posed a challenge. The patients of Marion Moody, the first graduate of the Calgary General Hospital, lived in "country towns" from Innisfail in the north to Lethbridge in the south, and, further west, from the Crow's Nest Pass to Banff.¹²⁷ She received calls from ranches 17, 20, and 30 miles from town and doctor, which often could be reached only by horse and buggy. Such travel required a strong constitution and not a little daring. Another challenge faced by early private-duty nurses was convincing clients of modest means of the benefits of engaging a trained rather than an untrained nurse. As Moody pointed out:

As there were only, with one exception, utterly untrained women engaged in nursing at the time, women who were prepared to do the washing and the housework and attend to their patient between times, and who charged ten dollars a week for their work, the public had to be gradually enlightened as to what it meant to be nursed by a trained nurse, and to the fact that a nurse could not give her patient proper attention and fill the position of washerwoman and general servant at the same time. Also that when a nurse spent over three years fitting herself for her work, her services were worth more than an untrained woman who could neither give the same care nor take the same responsibility.¹²⁸

During the five years of private duty following her graduation in 1898,¹²⁹ Marion Moody's weekly fee was \$12.50 for maternity cases and \$15 for medical cases.¹³⁰ She dealt with attempts by untrained nurses to discredit her work, an occupational hazard likely faced by other grad-

uate nurses in private practice. It is worth noting that after five years in private duty Moody spent the remainder of her nursing career in hospitals at Frank, in southwestern Alberta, at The Pas, Manitoba, and in Calgary.¹³¹ The steady employment and consistent working conditions no doubt appealed to the 36-year-old Moody¹³² more than the rigours and uncertainty of private practice in frontier Alberta.

Although they were not designed to prepare the graduate nurse for private practice, early hospital training programs did achieve some degree of integration between hospital and home-based nursing, largely because the primitive conditions of Alberta hospitals matched those found on ranches, on homesteads, and even in some homes in town. The scope of hospital nursing, with its component of domestic work, was similar to home nursing. Carrying out a physician's orders in a patient's home was comparable to doing so in a hospital, the most obvious difference being the availability of an equipped operating room of sorts. In both environments, an experienced nurse often administered the anesthetic during surgery, and she was in charge of monitoring the patient's post-operative condition.

Pupil nurses of both the Medicine Hat General and the Calgary General inadvertently became oriented to private-duty working conditions when they were "hired out" by the hospital board to care for patients in their homes. According to hospital financial statements, this practice was begun in Medicine Hat in 1894 and continued until 1906.¹³³ The Medicine Hat board saw it as both beneficial to local inhabitants and good advertising for the hospital, and they made explicit their desire to "keep two or three competent nurses available for all kinds of outside nursing, and thus give trained service at the lowest possible cost."¹³⁴ It was also a policy of the Calgary General to send pupil nurses into private clients' homes.¹³⁵ Fees collected from this service were the exclusive property of the hospital, and the pupil nurse was permitted to accept neither personal payment nor gifts from grateful patients "without the sanction of the lady superintendent."¹³⁶

This practice was less extensive and of shorter duration in Alberta than in longer established and more populated regions of North America, for some of the same reasons that fewer Alberta nurses were able to support themselves through private practice – the widely scattered, sparse population, few members of which could afford to pay for nursing services. By sending pupil nurses to ranches, homesteads, and other homes, the hospital was faced with problems associated with wasteful travel time, supervision difficulties, limited extra revenues, and reduced numbers of pupil nurses available in the hospital.

Rosenberg quotes impressive figures on the revenues generated by American hospitals in sending pupil nurses on private assignments.¹³⁷ However, the income of the MHGH for private cases was negligible, and it declined substantially after 1904.¹³⁸ The practice was also dangerous for the pupil nurse. If she became ill while on a private-duty assignment, she was as difficult for a physician to reach as her patient. It may not be a coincidence that the Medicine Hat General Hospital stopped sending trainees to patients' homes soon after one of its pupils contracted typhoid fever while caring for a patient in Fort Macleod and died before help could be summoned. The pupil nurse, Margaret Drinnan, was a member of one of Medicine Hat's merchant families that had been intimately associated with the Medicine Hat General.

Conclusion

The number of hospital training programs increased dramatically in the decade after Alberta attained provincial status in 1905. Programs were begun by the Edmonton Public Hospital (later renamed the Royal Alexandra) in 1905, the Strathcona Municipal (later renamed the University of Alberta Hospital) in 1906, Calgary's Holy Cross Hospital and Edmonton's Misericordia Mission Hospital in 1907, the Edmonton General in 1908, Lethbridge's Galt Hospital in 1910, the Lamont Public Hospital in 1912, and the Vegreville General in 1915. The reasons for the rapid acceptance of the programs in Alberta are essentially consistent with those cited by Rosenberg for their acceptance by century's end by all large hospitals and many small ones in the United States. Training programs served the hospitals, the trainees, and society – in providing skilled workers for home and hospital in a way that was consistent with its predominant values and mores.¹³⁹

The training programs begun in 1894 at the Medicine Hat General and in 1895 by the Calgary General demonstrated to other Alberta hospital boards, and to the sisters in charge of the three Catholic hospitals, the practical and economic advantages of engaging pupil nurses. They provided hospitals a relatively stable, reliable, and disciplined staff at less cost than comparable graduate staff. Although the labour demand tended to be greater than the hospital's ability to offer adequate instruction or comfortable working conditions, the training programs were one of the few ways in which small-town and rural women could seek dignified and socially sanctioned employment. Women's other options were teaching, and, later, secretarial and retail work.¹⁴⁰ Nursing had the added advantage for women from cash-strapped families of first-generation prairie settlers and homesteaders of offering the exchange of

labour for professional training.¹⁴¹ It was also a route out of the endless, backbreaking toil of homestead and ranch life and into the growing cities of the emerging province of Alberta. Nursing was clearly "women's work" that did not de-sex its practitioners; in fact many considered nursing the ideal preparation for women's most meaningful work in life – marriage and motherhood. For those few nurses who rejected women's traditional functions of homemaking and childrearing, there was always the option of tending a surrogate family in the role of Lady Superintendent or graduate nurse, or of tending other families through private duty. Early Alberta hospitals functioned as extended families led by patriarchal boards and medical superintendents, managed by a matriarchal Lady Superintendent and her unmarried cadre of graduate-nurse supervisors. They offered safe and respectable working and living arrangements, and they were considered an acceptable environment for unmarried women in frontier society.

Endnotes

¹ Histories of Alberta hospitals and hospital schools of nursing include: Marcel Dirk, *A Healthy Outlook: The Centennial History of the Medicine Hat Regional Hospital* (Medicine Hat: Holmes Printing, 1989); John Gilpin, *The Misericordia Hospital: 85 Years of Service in Edmonton* (Edmonton: Misericordia Hospital, 1986); Evelyn Hardwick, Eileen Jameson, & Eleanor Tregillus, *The Science, the Art and the Spirit: Hospitals, Medicine and Nursing in Calgary* (Calgary: Century Calgary Publications, 1975); D. Scollard, *Hospital: A Portrait of Calgary General* (Calgary: Calgary General Hospital, 1981); J.R. Vant & T. Cashman, *More than a Hospital: University of Alberta Hospitals 1906-1986* (Edmonton: University Hospitals Board, 1986); Betty Wilson, *To Teach This Art: The History of the Schools of Nursing at the University of Alberta* (Edmonton: Alumnae Association of the University of Alberta Hospital School of Nursing, 1977); Christina Dorward & Olive Tookey, *Below the Flight Path* (Edmonton: Alumnae Association of the Royal Alexandra Hospital School of Nursing, 1968); Barbara Kwasny, *Nuns and Nightingales: A History of the Holy Cross School of Nursing, 1907-1979* (Calgary: Alumnae Association of the Holy Cross School of Nursing, 1982); Leah Poelman, *White Caps and Red Roses: History of the Galt School of Nursing, Lethbridge, Alberta, 1910-1979* (Lethbridge: Ronalds Western Printing, n.d.); and Pauline Paul, *A History of the Edmonton General Hospital 1895-1970: "Be Faithful to the Duties of Your Calling,"* Ph.D. dissertation, University of Alberta, 1994. Information about nursing work and education in Alberta is contained in John Murray Gibbon and Mary Mathewson, *Three Centuries of Canadian Nursing* (Toronto: Macmillan, 1947), and Tony Cashman, *Heritage of Service: The History of Nursing in Alberta* (Edmonton: Alberta Association of Registered Nurses, 1966). Histories of Alberta public-health and district nursing include: Alvine Cyr Gahagan, *Yes, Father: Pioneer Nursing in Alberta* (Manchester, NH: Hammer Publications, 1979); Irene Stewart, *These Were Our Yesterdays: A History of District*

Nursing in Alberta (Altona, MB: D.W. Friesen & Sons, 1979); Maureen Riddell, *Towards a Healthier City: A History of the Edmonton Local Board of Health and Health Department, 1871-1979* (Edmonton: Edmonton Local Board of Health, 1980); and Adelaide Schartner, *Health Units of Alberta* (Edmonton: Health Unit Association of Alberta, 1982).

² See Ina J. Bramadat & Marion I. Saydak, "Nursing on the Canadian Prairies, 1900-1930: Effects of Immigration," *Nursing History Review*, 1 (1993):105-17, for discussion of public-health nurses as agents of European colonization on the prairies; Kathryn McPherson, "Science and Technique: Nurses' Work in a Canadian Hospital, 1920-1939," D. Dodd & D. Gorham, eds., *Caring and Curing: Historical Perspectives on Women and Healing in Canada* (Ottawa: University of Ottawa Press, 1994), 71-101, for analysis of the "scientific" basis of hospital nursing; Kathryn McPherson, "Skilled Service and Women's Work: Canadian Nursing 1920-1939," Ph.D. dissertation, Simon Fraser University, 1990 (especially Chapter I), for classification of Canadian nurses' experiences in the health-care system by political and economic conditions; and Linda White, "Who's in Charge Here? The General Hospital School of Nursing, St. John's, Newfoundland, 1903-30," *Canadian Bulletin of Medical History*, 11, 1 (1994):91-118, for an examination of the political economy of a government-funded hospital upon development of its hospital training program.

³ For example, Celia Davies, "Professionalizing Strategies as Time- and Culture-Bound: American and British Nursing, circa 1893," in Ellen Condliffe Lagemann, ed., *Nursing History: New Perspectives, New Possibilities* (New York: Teachers College Press, Columbia University, 1983), 47-64; Christopher J. Maggs, *The Origins of General Nursing* (London: Croom Helm, 1983); Barbara Melosh, *"The Physician's Hand": Work, Culture and Conflict in American Nursing* (Philadelphia: Temple University Press, 1982); and Susan M. Reverby, *Ordered to Care: The Dilemma of American Nursing, 1850-1945* (New York: Cambridge University Press, 1987).

⁴ Howard Palmer, *Alberta: A New History* (Edmonton: Hurtig, 1990), 64.

⁵ *Ibid.*, 78.

⁶ "It Was Laid," *Medicine Hat Times*, 8 June 1889.

⁷ The first two medical superintendents of the Medicine Hat General Hospital, Drs. Olver and Calder, were graduates from Winnipeg. "Medicine Hat General Hospital School of Nursing," M86.28.28; Medicine Hat Regional Hospital Fonds (hereafter called MHRHF); Medicine Hat Museum and Art Gallery Archives (hereafter called MHM&AG Archives), Medicine Hat, Alberta.

⁸ The Galt Hospital's first superintendent, Dr. Mewburn, was a graduate of McGill University and had interned at the Montreal General Hospital. According to Leah Poelman in *White Caps and Red Roses: History of the Galt School of Nursing, Lethbridge, Alberta, 1910-1979* (Lethbridge: Galt School of Nursing Alumnae Society of Alberta, n.d.), 4, "Dr. Mewburn, when recruiting nurses for his little hospital in the west, was partial to those who had trained at the Montreal General."

⁹ Dirk, *A Healthy Outlook*, 12, 14.

¹⁰ Poelman, *White Caps and Red Roses*, 3.

- ¹¹ Kwasny, *Nuns and Nightingales*, 15.
- ¹² Scollard, *Hospital: A Portrait of Calgary General*, 17.
- ¹³ Paul, *A History of the Edmonton General Hospital*, 59.
- ¹⁴ Dorward & Tookey, *Below the Flight Path*, 1.
- ¹⁵ Gilpin, *The Misericordia Hospital*, 32.
- ¹⁶ Poelman, *White Caps and Red Roses*, 3.
- ¹⁷ "General Hospital," *Medicine Hat Times*, 1 June 1889.
- ¹⁸ "Fourth Annual Report of the Calgary General Hospital for the Year of 1894 Ending Monday, December 31," G443073, reel #1, Calgary General Hospital Collection, Calgary Public Library.
- ¹⁹ "An Ordinance to Incorporate the Edmonton Public Hospital, Assented to May 4th, 1900," MS 12, Box 1, file 2, Edmonton Hospitals Board Minutes, 1899-1939 Collection (hereafter called EHBM); City of Edmonton Archives (hereafter called CEA).
- ²⁰ Kwasny, *Nuns and Nightingales*, 14.
- ²¹ Paul, *A History of the Edmonton General Hospital*, 56.
- ²² Gilpin, *The Misericordia Hospital*, 25.
- ²³ See, for example, By-Law Z-Medical Superintendent, "Medicine Hat General Hospital Charter, Constitution and By-laws," M86.28.28, MHRHF, MHM&AG.
- ²⁴ McPherson asserts that the "new" occupation of nursing was the result of both the need of physicians for a skilled, subservient workforce to provide scientific therapy in hospital "laboratories" and the important social force of the late 19th-century "first wave" feminists. She also comments that the relationship between the general hospital and the Canadian medical profession has only recently attracted scholarly attention but that there is no Canadian study to compare with Morris J. Vogel, *The Invention of the Modern Hospital: Boston 1870-1930* (Chicago: University of Chicago Press, 1980), or Charles Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (New York: Basic Books, 1987). Kathryn McPherson, *Skilled Service and Women's Work: Canadian Nursing 1920-1939*, Ph.D. dissertation, Simon Fraser University, Vancouver, BC, 1990, 2.
- ²⁵ The policy of the Edmonton General Hospital to admit individuals without physician referral led a group of Protestant doctors to establish the non-sectarian Edmonton Public Hospital in 1900. They objected to attending pauper patients admitted by the sisters, largely because they received no fees for this service. This despite the fact that these physicians had originally petitioned the Grey Nuns to establish a general hospital in Edmonton, had agreed to support it to the exclusion of any other hospital, and had agreed that it be managed by the sisters without a resident doctor (medical superintendent). "Statement of the Edmonton General Hospital Medical Board Physicians," Edmonton Public Hospital Minute Book, Feb. 2, 1899-Dec. 19, 1909, MS 12, Box 1, File 1, EHBM, CEA. See also Paul, 53-57, 62-70.
- ²⁶ Paul, 71-2.

²⁷ Kwasny, 16, reports that the Holy Cross Hospital continued to supply meals to the poor as late as 1924.

²⁸ Gilpin, 25.

²⁹ Paul, *op. cit.*, describes the administrative structure and function of the Catholic Edmonton General Hospital, emphasizing that the Grey Nuns maintained administrative control of their hospital.

³⁰ The roles and responsibilities of the few lay nurses employed by Catholic hospitals before 1905 warrant further investigation. It is possible that the Catholic hospitals did not hire any lay graduate nurses until several years after each was established. For example, Kwasny, 16, 19, reports that the first graduate nurse at the Calgary Holy Cross Hospital was Sister Duckett, who arrived in 1899 to establish a nurse-training school, and that the first lay graduate nurse was Nellie Whalley, a Holy Cross graduate who returned in 1911 from a course at the Edmonton General to teach the first classes in obstetrics at Holy Cross. Gilpin, 15, 16, 32, does not specify whether Mary Jane Kennedy, a lay nurse who accompanied the Misericordia Sisters to Edmonton in 1900 to found their hospital, was a graduate nurse, or whether the "one to three" lay nurses who assisted the Sisters between 1900 and 1906 were trained. Paul does not indicate if there were any lay graduate nurses at the Edmonton General before 1905. Since the Edmonton General was created in 1895 when the Grey Nuns moved their St. Albert mission hospital into Edmonton, the nursing staff likely comprised only of sisters.

³¹ "Minutes of the Regular Board of Directors of the Medicine Hat General Hospital, 2 February 1891," M86.28.1, MHRHF, MHM&AG Archives.

³² *Ibid.*, 16.

³³ *Ibid.*, 15.

³⁴ "Fourth Annual Report of the Calgary General Hospital for the Year of 1894 Ending Monday, December 31," G443073, reel #1, Calgary General Hospital Collection, Calgary Public Library; "Fifteenth Annual Report and Accounts, Calgary General Hospital for the Year 1905," and "Sixteenth Annual Report and Accounts, Calgary General Hospital for the Year 1906," M2457, Calgary Hospital Board Papers (hereafter called CHBP), Glenbow Archives (hereafter called GA), Calgary. See also Scollard, 23.

³⁵ Letter from A.E. Cross to J. Barnes, 29 Nov. 1924, M2457, CHBP, GA.

³⁶ Ethel Johns, *The Winnipeg General Hospital School of Nursing, 1887-1953* (Winnipeg: Alumnae Association of the Winnipeg General Hospital School of Nursing, n.d.), 15.

³⁷ *Ibid.*, 30.

³⁸ *Ibid.*

³⁹ White, *op. cit.*

⁴⁰ Johns, 7-8, 20, describes the supreme authority of the medical superintendent beginning in 1880 and lasting for at least two decades. This authority related in part to the fact that a non-nurse matron oversaw all female help, except the graduate nurse staff, from 1880 to 1889. White notes that the St. John's General was created in 1871 from a previously existing military hospital. In 1897, it was

placed under the new Department of Charities, a section of the Colonial Secretary's office; however, the Board of Works retained control over maintenance, effectively dividing the hospital's administration. The traditions of these two hospitals early in their existence resulted in roles and responsibilities for the senior graduate nurse that differed from those of Alberta's senior graduates.

⁴¹ "Minutes of the Regular Board of Directors of the Medicine Hat General Hospital, 2 February 1891," M86.28.1, MHGH Collection, MHM&AG.

⁴² Ibid.

⁴³ "Minutes of the Regular Board of Directors of the Medicine Hat General Hospital," 4 Sept. 1891, M86.28.1, MHGH Collection, MHM&AG.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

⁴⁷ Ibid.

⁴⁸ "Nursing Training Notebooks," M7664, Box 1, File 4, Annie (Gibson) Perry Papers, Thomas Lionel Perry Family Fonds (hereafter called TLPFF), GA.

⁴⁹ Johns, 22.

⁵⁰ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

⁵¹ Ibid.

⁵² "Nursing Training Notebooks," M7664, Box 1, File 4, Annie (Gibson) Perry Papers, TLPFF, GA.

⁵³ Ibid.

⁵⁴ McPherson, 5-7.

⁵⁵ Ibid., 7.

⁵⁶ "Edmonton Public Hospital Annual Report of the Board of Directors (1905)," MS 12, Box 1, Edmonton Public Hospital Minute Book, 2 Feb. 1899-19 Dec. 1909, Edmonton Hospital Board Minutes, 1899-1939 Collection, City of Edmonton Archives.

⁵⁷ "Third Annual Hospital Meeting," *Medicine Hat Times*, 2 Mar. 1893.

⁵⁸ "A Survey of Nursing at the Calgary General Hospital, 1890 to 1955," MS 2456, file 715, Calgary General Hospital School of Nursing Fonds (hereafter called CGHSONF), GA.

⁵⁹ Scollard, 14.

⁶⁰ Ibid.

⁶¹ "Pioneer Nursing In Alberta," M7967, Moody Family Fonds (hereafter called MFF), GA.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ibid.

⁶⁶ "Hospital Meeting – Report of the Medical Superintendent," *Medicine Hat Times*, 11 Feb. 1897.

⁶⁷ "Eighteenth Annual Report of the Medicine Hat General Hospital for the Year Ending 31st December 1907," M82.15.11, MHRHF, MHM&AG.

⁶⁸ "Twentieth Annual Report of the Medicine Hat General Hospital for the Year Ending 31st December 1909," M82.15.11, MHRHF, MHM&AG.

⁶⁹ "Fifteenth Annual Report and Accounts, Calgary General Hospital for the Year 1905," 9-10, M2457, Calgary Hospitals Board Papers 1905-1970 (hereafter called CHBP), GA.

⁷⁰ *Ibid.*, 20.

⁷¹ *Ibid.*

⁷² Johns, 24.

⁷³ Rosenberg, 221.

⁷⁴ Maggs, 14.

⁷⁵ Reverby, 60-63.

⁷⁶ *Ibid.*, 60.

⁷⁷ G. Harvey Agnew, *Canadian Hospitals 1920 to 1970: A Dramatic Half Century* (Toronto: University of Toronto Press, 1974), 116.

⁷⁸ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

⁷⁹ *Ibid.*

⁸⁰ *Ibid.*

⁸¹ "Minutes of the Regular Board of Directors of the Medicine Hat General Hospital, 9 January 1893," M86.28.1, MHRHF, MHM&AG.

⁸² Johns, 8.

⁸³ This calculation is derived from "Minutes of the Board of Directors of the Medicine Hat General Hospital," 26 May 1890 and 16 Mar. 1891, M86.28.1, MHRHF, MHM&AG.

⁸⁴ "Minutes of the Board of Directors of the Medicine Hat General Hospital, 12 September 1892," M86.28.1, MHRHF, MHM&AG.

⁸⁵ "Minutes of the Board of Directors of the Medicine Hat General Hospital, 14 December 1891," M86.28.1, MHRHF, MHM&AG.

⁸⁶ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

⁸⁷ "Pioneer Nursing in Alberta," M7967, MFF, GA.

⁸⁸ *Ibid.*

⁸⁹ Scollard, 16.

⁹⁰ "Minutes of Calgary General Hospital Board 1905-1912, 11 September 1905," M2455, Oversize Vol. 1, CHBP, GA.

⁹¹ "Minutes of Calgary General Hospital Board 1905-1912, 13 November 1905," M2455, Oversize Vol.1, CHBP, GA.

⁹² "Minutes of the Calgary General Hospital Board Meetings 1905-1912, 11 September 1905," M2455, Oversize Vol. 1, CHBP, GA.

⁹³ Ibid.

⁹⁴ "Minutes of the Calgary General Hospital Board Meetings 1905-1912, 14 May 1906," M2455, Oversize Vol. 1, CHBP, GA.

⁹⁵ Graduate and pupil nurses were invariably provided room, board, and laundry service, according to available archival documents and published histories of individual Alberta hospitals and hospital training programs. Evidence of similar benefits for other hospital employees is found in "Edmonton Public Hospital Minute Book 2 Feb. 1899-19 Dec. 1909," MS 12, Box 1, ledger book, EHB, CEA.

⁹⁶ For example, see Johns, 10, 16, 18, and White, 101.

⁹⁷ For a description of nurses' dissatisfaction with accommodation in the Medicine Hat General Hospital, and the board's subsequent struggle to build a nurses' home, see "Annual General Hospital Meeting" reports, *Medicine Hat Times*, 23 Feb. 1899, 8 Feb. 1900, 14 Feb. 1901, 13 Feb. 1902, and *Medicine Hat News*, 12 Feb. 1903, 11 Feb. 1904, 16 Feb. 1905. See also Dirk, 26-32.

⁹⁸ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG; "A Survey of Nursing at the Calgary General Hospital 1890 to 1955," MS 2456, file 715, CGHSONF, GA.

⁹⁹ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

¹⁰⁰ For a synopsis of early Alberta public education, see Palmer, 112-114.

¹⁰¹ Reverby, 85.

¹⁰² Ibid., 77.

¹⁰³ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Johns, 12, 14-15.

¹⁰⁷ Ibid., 9.

¹⁰⁸ "Medicine Hat General Hospital School of Nursing," MHRHF, MHM&AG.

¹⁰⁹ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG; "Nursing Training Notebooks," M7664, Box 1, file 4, Annie (Gibson) Perry Papers, TLPFF, GA.

¹¹⁰ Nursing Training Notebooks, M7664, Box 1, File 4, Annie (Gibson) Perry Papers, TLPFF, GA.

¹¹¹ A similar situation existed at the WGH, where Johns, 24, quotes Lady Superintendent Elizabeth Holland in an 1898 report as saying that "owing to the pressure of work, in the wards, the class work and theoretical instruction [of pupil nurses] has not been kept up during the year as it should have been."

¹¹² "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

¹¹³ Johns, 21-22.

¹¹⁴ Ibid., 22.

¹¹⁵ See Scollard, 32, 34, 36-39, for a brief description of the CGH training program immediately after the First World War and the improvements made after 1923 when Jessie Connal became hospital "Instructress" and began scheduling expanded lectures by herself and selected members of the medical staff. Similarly, see Dirk, 62-63, for a brief highlighting of regularization of instruction at the MHGH between the wars.

¹¹⁶ See Johns, 28-31, for a discussion of Patterson's contributions to subsequent significant improvement in teaching at the WGH, and Johns, 32-37, for discussion of Mackay's and Martin's leadership in improving instruction of pupil nurses at the WGH from 1900 to 1905.

¹¹⁷ Reverby, 51.

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Ibid., 53.

¹²¹ Ibid., 52.

¹²² See Palmer & Palmer, 54-58, for discussion of the establishment of the southern Alberta British, who determined Alberta economic and political direction until after the First World War. See also Palmer & Palmer, 78-86, for discussion of British and American immigration, which reinforced the Anglo model of early Alberta settlement life.

¹²³ See Susan Jackel, Introduction, *A Flannel Shirt and Liberty: British Emigrant Gentlewomen in the Canadian West, 1880-1914* (Vancouver: University of British Columbia Press, 1982), xiii-xxvii, for discussion of the acute shortage of women in the West and immigration policies aimed at luring marriageable women to the prairies.

¹²⁴ See, for example, Poelman, 3-7, for a description of Galt Hospital graduate nurse Susan Gallinger's celebrated marriage to Dr. W.S. Galbraith, and the marriage of Galt Hospital Lady Superintendent Florence Miller to the hospital's secretary-treasurer, C.B. Bowman. Similarly, Dorward & Tookey episodically identify marriages of Edmonton Public graduate and pupil nurses to prominent Edmonton bachelors, especially physicians. Even hospital histories written by non-nurses reflect this predilection for "advertising" the enhanced marriage prospects of pupil and graduate nurses in hospitals. J. Vant & Cashman's *More than a Hospital* is characteristic of this genre.

¹²⁵ See "Annual Reports of the Medicine Hat General Hospital," *Medicine Hat Times*, 31 Jan. 1895, 4 Feb. 1897, 24 Feb. 1898, 23 Feb. 1899, 8 Feb. 1900, 14 Feb. 1901, 13 Feb. 1902 and *Medicine Hat News*, 12 Feb. 1903, 11 Feb. 1904, 16 Feb. 1905, 14 Feb. 1907; and "Fifteenth Annual Report and Accounts, Calgary General Hospital for the Year 1905," M2457, CHBP, GA.

¹²⁶ Agnew, 119.

¹²⁷ Ibid.

¹²⁸ "Pioneer Nursing in Alberta," M7967, MFF, GA.

¹²⁹ "Diary of M.E. Moody," M7967, MFF, GA.

¹³⁰ "Pioneer Nursing in Alberta," M7967, MFF, GA.

¹³¹ "Diary of M.E. Moody," M7967, MFF, GA.

¹³² According to a 1966 biographical sketch of Marion Moody by Mrs. Charles F. Parks, M 4107, MFF, GA, Moody was born in Quebec City on 30 Jan. 1867 and moved west with her family in 1891. "Diary of M. E. Moody," M7967, MFF, GA, indicates that she went to the Frank Hospital 31 July 1903 and engaged in no private-duty nursing after that date.

¹³³ See reports of Annual General Meetings of the Medicine Hat General Hospital as published in *Medicine Hat Times* and *Medicine Hat News* from 1885 to 1909.

¹³⁴ "Fifth Annual Meeting of the Medicine Hat General Hospital," *Medicine Hat Times*, 24 Jan. 1895.

¹³⁵ "Pioneer Nursing In Alberta," M7967, MFF, GA. See also "A Survey of Nursing at the Calgary General Hospital 1890 to 1955," MS 2456, file 715, CGHSNF, GA, and *Calgary General Hospital, 1890-1955: Sixty-five Years of Community Service* (Calgary: Calgary General Hospital, n.d.).

¹³⁶ "Medicine Hat General Hospital School of Nursing," M82.15.11, MHRHF, MHM&AG.

¹³⁷ Rosenberg, 222.

¹³⁸ See reports of Annual General Meetings of the Medicine Hat General Hospital as published in *Medicine Hat Times* and *Medicine Hat News* from 1885 to 1909.

¹³⁹ Rosenberg, 220.

¹⁴⁰ Eliane Leslau Silverman, "Working Out," *The Last Best West: Women on the Alberta Frontier, 1880-1930* (Montreal: Eden Press, 1984), 105-123.

¹⁴¹ Rosenberg, 223.

Acknowledgements

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Date accepted: October 1995

Book Reviews

Community Nursing: Promoting Canadians' Health

Miriam J. Stewart (ed.)

Toronto: W.B. Saunders, 1995. 813pp.

ISBN 0-9205-1313-1

Reviewed by Margaret Hooton

It is interesting to note that 10 years have passed since Stewart and her colleagues first published a book reflecting a "health" orientation for nursing in the community. That text underscored the truism that health and the accompanying behaviours are culturally and societally bound. In keeping with that assertion, it is important that Canada have a text examining the health of Canadians and the unique perspective of this society with respect to health promotion. Once again, the content of this edition reflects this country's values and beliefs concerning health.

The most striking feature of this edition is that the book has been completely re-written, with insightful contributions from experts in a variety of areas of nursing. Not only have the authors chosen to discuss the many different research and other innovative projects that have been implemented in the arena of health promotion, but they have linked those developments to the strong health values of the nursing profession. Beginning with the historical evolution of community nursing, the discussions lead to an exploration of primary health care as a social movement and examine that development within the context of Canada and from the perspective of its origins within the World Health Organization. The role of aggregates and communities, as part of health promotion, is presented, and here the authors focus on issues specific to the adolescent, older adult, and senior populations. These include multiculturalism, pregnancy, chronic illnesses, and accidents.

Throughout each of the papers there has been a concerted effort to focus on health-promotion behaviours, innovations in community development, and primary health-care principles of practice. There is a comprehensive survey of the developments undertaken by govern-

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ments, including changes in public policy, and discussions of how other groups have become involved in community-health initiatives. Moreover, there is a coherent presentation of how social support, coping, and socio-economic factors shape or act as determinants of health.

Given such an overview, the learner and practitioner of community nursing, whose focus is health promotion, will find this book of enormous benefit. Each of the contributors has used charts or graphs, where appropriate, to help the reader visualize relationships between the various ideas.

There are questions at the end of each section which, when answered, can add to the student's knowledge. The accompanying bibliography is extensive. With past influences highlighted and current orientations underscored, the learner is in a position to understand the context and determinants of health behaviours and health-promoting solutions.

Some of the authors in this book give considerable attention to the contributions of others, in which case the ideas of the current author take back stage. Thus there is more of an emphasis on the current state of affairs. A vision for the future, or an analysis of how the future may unfold, receives less attention. In general, this text will be most useful in undergraduate nursing programs and as a good reference for nurses linked to the current community health-care system.

Outcomes of Effective Management Practice

Kathleen Kelly (ed.) & Meridean Maas, Chair of Board

Thousand Oaks, CA: Sage, 1996. 265pp.

ISBN 0-8039-7175-3

Reviewed by Nancy E. Johnston

This is the eighth volume, in a series of nine, on the topic of nursing administration. Intended for nursing administrators and other providers responsible for clinical-care management and system management, this book is also a valuable resource for teachers and students in nursing administration programs.

The book is organized into three parts. Part I provides a conceptual framework for linking management interventions to health-care outcomes. The need for evaluation of management innovation is emphasized, although it is acknowledged that management evaluation is in its infancy and is fraught with complexities not encountered in rigorous clinical-outcome research. One chapter outlines the limitations of work to date and points out the need for standardized measurement. Also included in this section are nursing perspectives on one of the most publicized and utilized outcomes-research instruments – the MOS SF 36. Since nursing administrators will inevitably encounter this instrument in the course of carrying out their responsibilities, also provided is a valuable analysis of the usefulness of the instrument in determining outcomes of concern to nurses.

Part II deals with measuring and managing health-care outcomes. Examples of process and methods include case management, various tracking clinical practice guidelines, creative staff scheduling, clinical pathways, and outcome measurement.

Part III addresses practice-based evaluation of outcomes management by describing a variety of research projects throughout North America. Included are an Ontario-based study to expand practice roles in neonatology, a case-management project using clinical pathways in rehabilitation, a study comparing institutional and non-institutional approaches for managing the frail elderly, and resource use and clinical status in a sample of women having elective Caesarean section. The

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chapter addresses a very topical concern, the evaluation of a patient-care redesign project. Here, perspectives on factors influencing outcomes at every stage of evaluation are candidly shared.

The volume is well written and thoughtfully organized. It provides a broad cross-section of approaches that represent cutting-edge responses to current issues and emerging trends. This book is a "must read" for nurse-executives who are faced with the daily demand for creative solutions in the context of pressing patient needs, health-care advances, and resource constraints.

Happenings

Ontario Health Care Evaluation Network: Building Partnerships and Promoting Evidence-Based Practice

Anna Gagliardi

In recent years nurses have been included on committees formed to plan changes in health-care delivery and hospital restructuring, taken up advanced-practice roles such as nurse clinician or nurse practitioner, and become involved in the trend toward community care (Ciliska et al., 1996; Kitson, Ahmed, Harvey, Seers, & Thompson, 1996; Landesman, 1996; Nicklin & Dunn, 1995; Sharratt & Hiscott, 1995; Shaw, 1995; Verderber & Urden, 1994).

Despite these gains, there is a clear need for nurses to further expand their roles and empower the profession by documenting changes in nursing practice. While health-care reform may be perceived as upheaval, it can also provide nursing professionals with unique situations in which to conduct research. Opportunities will exist to plan and implement new programs or procedures and to evaluate their effect on health-care delivery, to make further recommendations, and to disseminate findings to other health-care professionals, including health-care policy-makers.

Inherent in all of this activity is the need for information. Information, or knowledge, can be obtained from two sources: evidence-based resources and other health-care professionals. Evidence-based resources refers to the research literature that is collected, interpreted, and integrated in the decision-making process (McKibbin,

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Wilczynski, Hayward, Walker-Dilks, & Haynes, 1996). Collaboration with other health-care professionals allows for the sharing of knowledge, experience, and resources, thereby improving the quality of patient care.

The Ontario Health Care Evaluation Network (OHCEN) has developed a database for health-care professionals, which promotes collaborative research and facilitates retrieval of evidence-based resources. This database, the OHCEN Inventory, is available on the Internet and is therefore increasingly accessible in even geographically remote areas. Searchable by keyword or subject index, the OHCEN Inventory features a simple, point-and-click interface and presents information in the form of collapsible, hierarchical trees. Alternative means of access have been developed so that any Internet browser can extract information from the OHCEN Inventory.

The benefits of collaboration between the faculty of university schools of nursing and hospital or community nurses have been noted by several nursing research groups (Ciliska et al., 1996; Verderber & Urden, 1994). Doctorally prepared nursing faculty are able to provide consultation for design and implementation of research studies, access to research subjects, and guidance in the preparation of manuscripts and grant applications. The uptake of nursing research into practice is also promoted by partnerships between these groups (Kitson et al., 1996).

Hospital and community nurses in Ontario can use the OHCEN Inventory to communicate with potential collaborators. The OHCEN Inventory facilitates the partnering process by providing contact information for government departments, funding agencies, professional organizations such as Ontario and Canadian nursing associations, academic institutions such as faculties of nursing across Canada, hospitals, public-health units, district health councils, and research institutes. Whenever possible, descriptions of expertise and research are included, as well as hypertext links to e-mail and Internet sites.

Traditionally, evidence has been obtained through literature searches in bibliographic databases such as MEDLINE and CINAHL. It is often difficult to obtain good evidence because of inadequate indexing for relatively recent concepts such as restructuring, time restraints, discrepancy between published results, and the sheer volume of health-care literature (Haynes, Hayward, & Lomas, 1996). However, information tools have been developed to help health-care professionals find and interpret the evidence. The Internet is also becoming an important source of health-care information, including nursing resources, because

of its widespread availability and reduced publishing costs (Hersh, 1996; Rogers, 1995; Tomaiuolo, 1995).

In support of evidence-based decision-making the OHCEN Inventory offers access to citations, abstracts, and full-text documents. It also acts as a springboard to other databases containing evidence-based tools, many of which are Internet resources. These databases use the same Internet publishing system as the OHCEN Inventory and therefore have the same easy-to-use interface. The OHCEN Inventory and related inventories point to only those resources that are considered to be the best evidence-based tools, thereby saving health-care professionals sorting through the vast array of Internet information.

Related inventories include the Evidence Based Medicine Project (EBM), the Guidelines Appraisal Project (GAP), and the Public Health Effectiveness Project (PHEffect). The EBM Inventory links to electronic journals on the Internet, Internet search tools, and subject indexes to Internet health-care resources. It also provides access to a series of full-text documents entitled *Users' Guides to the Medical Literature*, which help health-care professionals find, interpret, and use research articles. The GAP Inventory points to clinical practice guidelines, which are organized by condition, by discipline, and by producing agency.

The PHEffect Inventory consists of full-text systematic overviews related to public-health nursing as well as a searchable database of public-health nursing intervention studies. At the time of writing, this inventory also contains 80 bibliographies for frequently searched topics including Evidence Based Practice, Health Care Utilization, Infant Health, Adolescent Health, Heart Health, Parenting, Cancer Prevention, Community Based, Tobacco Use, and Women's Health.

The Province Wide Nursing Project is another initiative that will result in an inventory of information published on the Internet. This is a joint effort of Registered Nurses and Registered Practical Nurses, their professional organizations and labour unions, the Ontario Ministry of Health, and academic and regulatory bodies, with the goal of creating centres of excellence to demonstrate cost-effective improvement in patient outcomes through use of the best knowledge, skills, and technologies in nursing (personal communication).

The OHCEN Inventory and related databases assist all health-care professionals with their research activities by pointing to quality evidence-based resources and by contributing to the body of evidence-based information on the Internet. The PHEffect Inventory and the upcoming Province Wide Nursing Project Inventory will prove to be

especially useful to nursing professionals. Furthermore, there is currently no single resource, in either print or electronic format, that provides contact information and descriptions for such a comprehensive list of health-related organizations in Ontario as the OHCEN Inventory. It is expected that health-care professionals, once they become familiar with the inventories, will return to them frequently.

Online Resources

OHCEN Homepage

<http://hiru.mcmaster.ca/ohcen/default.htm>

PHEffect Homepage

<http://hiru.mcmaster.ca/ohcen/groups/hthu/pheffect.htm>

EBM Homepage

<http://hiru.mcmaster.ca/ebm/default.htm>

GAP Homepage

<http://hiru.mcmaster.ca/cpg/default.htm>

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Erratum

In the Guest Editorial of Volume 28, No. 2, of the *Canadian Journal of Nursing Research* the reference for *Pain management: Nursing perspectives* was incorrectly cited. It should have read as follows:

Watt-Watson, J.H., & Donovan, M.I. (Eds.). (1992). *Pain management: Nursing perspectives* (1st Ed.). St. Louis, MO: Mosby Yearbook.

Call for Papers

Developing Family

Summer 1997 (vol. 29, no. 2)

This issue will focus on the knowledge needed to provide effective care to contemporary families during the reproductive experience. Preference will be given to completed research that provides new knowledge to guide practitioners caring for families during conception, pregnancy, birth, and postpartum. Both qualitative and quantitative work will be welcome, including research that replicates, refines, or expands previous studies.

Submission Deadline: February 15, 1997

Values and Decision Making

Fall 1997 (vol. 29, no. 3)

The aim of this issue is to make a contribution to the rapidly expanding body of knowledge on decision making in health care at the client, clinician, and policy levels. Topics with potential for enhancing the effectiveness of decision-supporting interventions are of particular interest. Qualitative and quantitative research reports, thought pieces on the state of the science, and reviews of decision-making studies are invited.

Guest Editor: Dr. Annette O'Connor

Submission Deadline: March 15, 1997

Please send manuscripts to:

The Editor
Canadian Journal of Nursing Research
McGill University School of Nursing
3506 University Street
Montreal, QC H3A 2A7

Articles à publier

La croissance de la famille

Été 1997 (vol.29, no. 2)

Ce numéro traitera des connaissances exigées pour procurer des soins efficaces aux familles d'aujourd'hui pendant le processus de procréation. La préférence sera donnée aux recherches approfondies procurant de nouvelles connaissances pour guider les praticiens qui dispensent les soins aux familles pendant la conception, la grossesse, la naissance et la post-natalité. Les travaux qualitative et quantitative seront les bienvenus, tout comme ceux qui reproduisent, affinent ou développent les études précédentes.

Date limite pour les soumissions : le 15 février 1997

Les valeurs et la prise de décision

Automne 1997 (vol.29, no. 3)

Le but de ce numéro thématique est de contribuer au développement en plein essor, d'un corps de connaissances relatives à la prise de décision du client, du clinicien et des politiques en matière de soins de santé. Les thèmes susceptibles de promouvoir l'efficacité de la décision et d'appuyer les interventions représentent un intérêt particulier. Les rapports de recherche qualitative ou quantitative, les articles de fond sur l'état des connaissances, et les analyses critiques de la littérature pertinente sont les bienvenues.

Rédactrice invitée: D^{re} Annette O'Connor

Date limite pour les soumissions: le 15 mars 1997

Prière d'envoyer les manuscrits à :

La rédactrice en chef

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Faculty of Nursing University of Toronto FACULTY POSITIONS

The Faculty of Nursing, University of Toronto, is seeking energetic and creative faculty members for some new initiatives. An adult or pediatric nurse practitioner with expertise in an acute care specialty is sought to develop a new acute care nurse practitioner program at the master's level. Applicants should have a master's in nursing and preferably a doctorate in nursing, an NP certificate, experience in teaching and a research track record. Tenure-stream appointments will be made at the assistant or associate professor level with a cross-appointment to one of the University of Toronto teaching hospitals for practice.

As well, applicants are sought for a tenure-stream position at the assistant professor level in the area of perinatal nursing. A master's and PhD preferably in nursing are required. Clinical expertise and research should focus on the care of women and their families during pregnancy or in the post-partum period. The successful candidate will be appointed to the Perinatal Nursing Research Unit at Mount Sinai Hospital.

We are seeking individuals to join our Faculty who get excited about teaching, are strongly committed to research and have the ability to work collaboratively with practising nurses, nurse researchers and researchers from other disciplines.

The Faculty of Nursing offers a second entry/upper division BScN program, a large master's program focusing on program development and advanced practice across a wide range of clinical specialties and administration and a PhD in nursing.

Please send your curriculum vitae and a letter of application with the names of three references to:

Dean Dorothy Pringle, RN, PhD
Faculty of Nursing
University of Toronto
50 St. George Street
Toronto, Ontario
M5S 3H6
Canada

Deadline: January 31, 1997

The University of Toronto encourages applications from qualified men and women, members of visible minorities, aboriginal peoples and persons with disabilities.

Nursing Postdoctoral Fellowships in Perinatal Research

The Perinatal Research Centre (PRC) and the Faculty of Nursing, University of Alberta, Edmonton, have two postdoctoral fellowships available for highly qualified candidates to develop further the base of perinatal investigation.

Applicants should hold a Registered Nurse qualification, and be prepared at the doctoral level or near completion. A clearly demonstrated potential for independent research is expected including definition of a nursing research question. The fellowships are for two years, include a competitive salary, CDN \$5000 annual research allowance, office infrastructure and biostatistical and data management expertise.

The PRC is a state-of-the-art multidisciplinary centre comprising investigators from the faculties of Medicine, Nursing and Rehabilitation Medicine. Clinical facilities are located at the Royal Alexandra Hospital which annually has 5000 deliveries and 1500 admissions to the NICU.

**For detailed information, consult WWW:
<http://www.ualberta.ca/~perinarc/prc.htm>**

Contact Diane Schimeck, RN, BScN, Managing Officer,
Perinatal Research Centre, 660 Heritage Medical Research Centre,
University of Alberta, Edmonton, AB, Canada T6G 2S2, telephone:
(403) 492-2765, or e-mail:
perinarc@gpu.srv.ualberta.ca

**Applications will be
reviewed immediately.**



**PERINATAL
RESEARCH CENTRE**
UNIVERSITY OF ALBERTA

The University of Western Ontario

FACULTY OF NURSING TEACHING POSITIONS

The University of Western Ontario Faculty of Nursing invites applications for full-time (12 months) tenured or tenure track positions with teaching duties and related research in family-centred nursing, care of elderly persons, and advanced nursing practice. Teaching will include supervision of masters student research and special projects. Applicants should be eligible for registration with the College of Nurses of Ontario. An earned doctorate in nursing or a related field and demonstrated skill in teaching are required. Rank is open and dependent upon qualifications and experience. Applications will be accepted until positions are filled for July, 1997. Positions are subject to budget approval.

The University has a total enrolment of more than 22,000 full-time students in graduate, undergraduate and professional programs. It is located in London, a city equidistant from Detroit and Toronto. Excellent opportunities exist for educational, administrative, and clinical research with an extensive network of cross-appointed faculty from regional health care agencies. Send curriculum vitae and names of three referees to:

Dr. Lillian Bramwell, Dean

Faculty of Nursing

The University of Western Ontario

London, Ontario

N6A 5C1

Telephone: (519) 661-3399

Fax: (519) 661-3928

e-mail: lbram@nursing.uwo.ca

The University of Victoria

Faculty of Human and Social Development

The Schools of Child and Youth Care, Nursing, and Social Work, and the Faculty of Human and Social Development offer a graduate, multidisciplinary program in policy and practice in the human services. The program focuses on the development of leadership skills by critically examining policy and practice. It provides an opportunity for experienced professionals to reflect on and explore current issues and dilemmas in the human services in Canada.

Applications are invited for a full-time tenure-track position at the Associate Professor level, effective July 1, 1997. The minimum requirements are a doctorate in one of the above or closely related discipline, an established research program, substantial experience as a practitioner in the human services, and teaching excellence at the graduate level.

Applications must be received by January 15, 1997, accompanied by a curriculum vitae and the names of three referees. An information package describing the program and expectations of the position is available by calling Barbara Egan at (604) 721-8204.

The University of Victoria is an employment equity employer and encourages applications from women, persons with disabilities, minorities and aboriginal persons.

Applications should be addressed to:

Dr. Anita Molzahn, Dean, Faculty of Human and Social Development
University of Victoria, P.O. Box 1700 Victoria, BC V8W 2Y2



University of Windsor

SCHOOL OF NURSING

The University of Windsor School of Nursing offers both generic four-year and post-R.N. B.Sc.N. programs to approximately 450 nursing students. Planning for a collaborative B.Sc.N. program with St. Clair and Lambton Colleges is underway. A new master of science (Nursing) program commenced in 1994; 22 graduate students presently study in one of two practice areas: (1) human responses and adaptations to alterations in health; and (2) health promotion and illness prevention. The School also offers a twelve-month Nurse Practitioner, Primary Health Care, certificate (program offered through the Council of Ontario University Programs in Nursing using distance education technologies). The School of Nursing is engaged in several active programs of research, including multidisciplinary research, and is committed to the development of undergraduate and graduate nursing education in Jordan (funded through CIDA).

Applications are invited for:

- (1) one regular tenure-track position at the rank of assistant professor
 - (2) one nine-month limited-term position at the rank of assistant professor
- Both positions are available July 1, 1997.

Qualifications:

Minimum academic preparation and qualifications include a master of science in nursing and an earned doctorate in nursing or a related discipline. Candidates must be eligible for registration with the College of Nurses of Ontario. In addition to being active in research, teaching experience is desirable. Preference will be given to applicants who can contribute to the graduate program and to one of the following clinical specializations: adult health and/or health promotion.

Candidates should send a letter of application and a recent curriculum vitae and should arrange for three letters of reference to be forwarded directly to: Dr. M.E. Horsburgh, Director, School of Nursing, University of Windsor, Windsor, Ontario N9B 3P4. Complete applications including letters of reference should be received by January 31, 1997.

The University of Windsor is committed to equity and diversity in the workplace and welcomes applications from Aboriginal peoples, persons with disabilities and members of visible minorities. Applications from women are particularly encouraged. In accordance with Canadian immigration standards, this advertisement is directed to Canadian citizens and permanent residents of Canada.

Information for Authors

The *Canadian Journal of Nursing Research* is a quarterly journal. Its primary mandate is to publish nursing research that develops basic knowledge for the discipline and examines the application of the knowledge in practice. It also accepts research related to education and history and welcomes methodological, theory, and review papers that advance nursing science. Letters or commentaries about published articles are encouraged.

Procedure: Three double-spaced typewritten copies of the manuscript on 8 1/2" x 11" paper are required. Articles may be written in French or English. Authors are requested not to put their name in the body of the text, which will be submitted for blind review. Only unpublished manuscripts are accepted. A written statement assigning copyright of the manuscript to the *Canadian Journal of Nursing Research* must accompany all submissions to the journal. Manuscripts are sent to: The Editor, The *Canadian Journal of Nursing Research*, School of Nursing, McGill University, 3506 University Street, Montreal, QC H3A 2A7.

Manuscripts

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

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

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

Text: The text should not exceed 15 double-spaced typed pages. References, tables, and figures should follow the text.

References: The references are listed in alphabetical order, double-spaced, and placed immediately following the text. Author names and journal citations must be spelled out in full.

Tables and figures: Tables and figures should appear only when absolutely necessary. They must be self-explanatory and summarize relevant information without duplicating the content of the text. Each table must include a short title, omit abbreviations, and be typed on a separate page. Figures must be in camera-ready form.

Review process and publication information: The *Canadian Journal of Nursing Research* is a peer-reviewed journal. Manuscripts are submitted to two reviewers for blind review. The first author will be notified following the review process, which takes approximately 12 weeks to complete.

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

Renseignements à l'intention des auteurs

La *Revue canadienne de recherche en sciences infirmières* paraît quatre fois par année. Son mandat est de publier la recherche en sciences infirmières qui a trait au développement des connaissances dans la discipline et l'analyse de la mise en pratique de ces connaissances. La revue accepte également des articles de recherche reliés à l'éducation, à l'histoire de même que des articles reliés à la méthodologie, la théorie et l'analyse critique qui permettent le développement des sciences infirmières. Des lettres et commentaires sur des articles publiés son également encouragés.

Modalités : Les textes doivent être soumis en trois exemplaires, être dactylographiés à double interligne sur des feuilles 216mm x 279 mm et être adressés à la rédactrice en chef, à la *Revue canadienne de recherche en sciences infirmières*, Université McGill, École des sciences infirmières, 3506 rue Université, Montréal, QC, H3A 2A7. Il est entendu que les articles soumis n'ont pas été simultanément présentés à d'autres revues. Veuillez également inclure lors de la soumission, une déclaration de propriété et de cession de droits d'auteurs. Finalement, afin de garder l'anonymat lors du processus de révision, veuillez ne pas inclure les noms des auteurs dans le texte.

Manuscripts

La présentations du manuscrit doit respecter les normes du *Publication Manual of the American Psychological Association*, 4^{ème} édition, 1994. Particulièrement, les figures, tableaux, illustrations et références doivent suivre ces normes de présentation. Il est suggéré de ne pas utiliser de notes au bas de la page.

Page titre : Pour assurer la lecture anonyme des textes soumis, seule la page titre du manuscrit comprendra le nom, l'adresse et l'affiliation de(s) auteur(s), les diplômes obtenus ainsi que l'aide financière reçue, les remerciements et une demande de copies.

Résumé : Un résumé en anglais et en français d'environ 100 à 150 mots chacun doit précéder le texte. Ce résumé devrait comprendre l'objectif, la méthode, les résultats et les retombées de la recherche. Les manuscrits qui concernent la théorie et les analyses critiques doivent inclure une identification des objectifs principaux, le cadre conceptuel utilisé pour l'analyse des données et un résumé de la discussion. La qualité du français est primordiale; le style doit être clair concis et doit éviter un langage sexiste ou discriminatoire.

Texte : La longueur totale d'un manuscrit incluant les tableaux, les figures et les références, ne doit pas dépasser 15 pages, dactylographiées à double interligne. Les articles peuvent être rédigées soit en anglais ou en français.

Références : Les références doivent paraître en ordre alphabétique, à double interligne et être suite au texte. Les noms des auteurs de même que les citations de revues doivent être écrites au long.

Tableaux et schémas : Les tableaux et schémas doivent paraître seulement si nécessaire. Ils doivent résumer des informations pertinentes sans redire le contenu du texte. Chaque tableau doit comprendre un titre, ne pas comprendre d'abréviations et être dactylographié sur une page à part. Vous devez remettre les originaux des schémas dessinés à l'encre de Chine et prêts à être photographiés.

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

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You also are invited to submit articles to the *Canadian Journal of Nursing Research*. *CJNR* publishes articles on clinical research, methodological issues, education research, and historical research, as well as theory and position papers that advance nursing knowledge. Information for authors and the criteria for evaluating articles can be obtained from the Circulation Manager.

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Canadian Journal of Nursing Research

Revue canadienne de recherche en sciences infirmières

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Nous vous invitons également à présenter des articles à la *Revue canadienne de recherche en sciences infirmières*. La revue publie des articles traitant de recherche clinique, de questions méthodologiques, de recherche en éducation, de recherche historique ainsi que des articles théoriques et des prises de position susceptibles de faire avancer les connaissances en matière de sciences infirmières. On peut également obtenir du directeur de la diffusion des renseignements sur les auteurs ainsi que les critères d'acceptation des articles.

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