



NURSING PAPERS *PERSPECTIVES EN NURSING*

Nurses in Practice Collaborate in Teaching
Clinical Nursing Research

Comments on the Analysis of the
Burlington Randomized Trial

The B.N.Sc. Curriculum at Queen's University

Mise en parallèle de théories sur l'amplification
de la fonction du nursing

Winter/Hiver 1977-78

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NURSING PAPERS PERSPECTIVES EN NURSING

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NURSING PAPERS
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Volume 9, no 4

Winter/Hiver 1977-78

Contents — Table des Matières

- 128 Editorial
- 130 RUTH E. DENNISON and RUTH C. MacKAY
Nurses in Practice Collaborate in Teaching Clinical Nursing
Research
- 136 Sommaire — Des cliniciennes dans les services collaborent à
l'enseignement de la recherche en sciences infirmières
- 137 J. B. GARNER
Comments on the Analysis of the Burlington Randomized Trial
- 144 Sommaire: Commentaires sur l'analyse de l'essai aléatoire de
Burlington
- 145 MARY RAKOCZY
The B.N.Sc. Curriculum at Queen's University
- 148 Sommaire: Le programme de B.N.Sc. de l'université Queen's
- 149 MOYRA ALLEN
Mise en parallèle de théories sur l'amplification de la fonction
du nursing et leurs répercussions quant à la pratique de l'in-
firmière (Document du travail).
- 156 Summary: Comparative theories of the expanded role in
nursing and implications for nursing practice (Working paper).



Editorial

We are pleased to announce that a Review Board for *Nursing Papers* has been established. With the institution of the referee system, we can expect a much larger share of scholarly papers and research reports written by Canadian nurses to be published in *Nursing Papers*. In this way we shall augment the quantity of research content which should enable us eventually to approach funding agencies interested in the development of learned journals with greater confidence and success.

At the same time, the institution of a rigorous review process should increase the quality of *Nursing Papers* and provide appropriate assistance and guidance to our growing body of writers and researchers. Reviewers have been carefully selected to represent characteristics of scholarship, clinical expertise, and research skill from among the persons nominated by the university schools of nursing. The names of the review board members appear on the mast-head of the journal beginning with this issue.

Reviewers will assess the internal validity of each paper and its relevance within the field. They will recommend acceptance or rejection, changes to strengthen the paper, or a variety of options to increase the value of the paper to readers. The Committee on *Nursing Papers* will retain responsibility for overall decisions with respect to publication, considering length, timeliness, presentation and overall worth.

Each paper will be sent to two reviewers, who will read it without knowing the identity of the author.

Reviewers are asked to serve for a period of two years; to read papers submitted to them within a reasonable time; to submit at least one article for publication during the two-year period; and to contribute to the editorial section of the journal on occasion.

Anyone interested in the particular materials upon which the Review Board will develop its function may write for a copy to the Managing Editor. Please enclose a cheque for \$1.00 to cover expenses.

Editorial

Nous sommes heureux d'annoncer la création d'un comité de révision pour la revue *Nursing Papers/Perspectives en Nursing*. Grâce à ce nouveau système de comité de lecture, nous pourrions sans nul doute accroître considérablement la publication d'articles d'érudition et de rapports de recherche écrits par des infirmières et infirmiers canadiens. Cela nous permettra également de renforcer l'élément recherche de notre revue et d'augmenter nos chances de succès au moment où nous contacterons, avec une assurance accrue, les organismes de subvention concernés par la diffusion des revues scientifiques.

Parallèlement, l'instauration d'un système de révision rigoureux devrait améliorer la qualité de *Nursing Papers/Perspectives en Nursing* et servir de guide et de conseiller à nos collaborateurs et chercheurs dont le nombre ne cesse d'augmenter. Les réviseurs ont été sélectionnés avec soin parmi les personnes nommées par les écoles des sciences infirmières de niveau universitaire; ils répondent aux critères de compétence scientifique, d'expérience clinique et d'aptitude à la recherche. Les noms des membres du comité de révision sont mentionnés dans le pavé de rédaction de la revue à compter du présent numéro.

Les réviseurs jugeront de la validité interne de chaque article et de leur pertinence par rapport au domaine traité. Ils recommanderont l'acceptation ou le rejet de l'article, proposeront des changements pour lui donner plus de vigueur ou soumettront diverses solutions visant à améliorer la qualité de l'article aux yeux des lecteurs. Le comité de *Nursing Papers/Perspectives en Nursing* restera responsable des décisions générales concernant la publication, la longueur, la date de publication, la présentation et la valeur globale des articles.

Chaque article sera soumis à deux réviseurs, qui le liront sans connaître l'identité de l'auteur.

On escompte généralement que les réviseurs rempliront leurs fonctions pendant deux ans; qu'ils liront les articles qui leur sont soumis dans un laps de temps convenable; qu'ils collaboreront à la revue en y faisant publier un article au moins pendant cette période de deux ans; qu'ils contribueront de temps à autre à l'éditorial de la revue.

Toute personne désireuse de savoir sur quelles caractéristiques le comité de révision se base pour effectuer son travail peut se procurer une description de celles-ci auprès de l'adjointe administrative à la rédaction en joignant à sa demande un chèque de \$1.00 pour couvrir les frais.

Nurses in Practice Collaborate in Teaching Clinical Nursing Research

RUTH E. DENNISON AND RUTH C. MACKAY*

It is our belief that one cannot teach clinical nursing research without the student's clinical involvement. At Dalhousie University in Halifax, Nova Scotia, we faced the problem of how seventy-three senior nursing students could be involved clinically in some type of investigation of nursing practice, with safety for student and patient alike.

Nursing educators are convinced students need patient contact in a nursing role in order to learn to practice nursing. Many learning situations may be profitably simulated to meet specific learning objectives, but at some point the student must be faced with reality, the complex of variables in a life situation which cannot be duplicated by simulation, to apply principles learned previously. Desired student attitude changes accompany the solving of a patient problem through nursing. Through the response of the patient, through seeing predicted patient outcomes occur, and through communicating effectively with patients and colleagues, the student develops confidence. Positive reinforcement engendered in the situation rewards the student and increases her satisfaction in working with patients. We see this evidenced in a show of enthusiasm for the work at hand. We feel that one of the important objectives for students in an undergraduate course in nursing research is the development of enthusiasm for using the investigative process in looking at problems of nursing practice. The stated primary objectives for our course in nursing research are as follows.

The student

- 1) identifies problems of nursing practice for investigation
- 2) evaluates findings from the literature in clinical nursing research in relation to their implications for nursing practice
- 3) participates as a member of a team in carrying out a limited study of a problem of nursing practice.

There are two major objections to be considered before making the decision that student projects are to be carried out in the patient community. The class is large, and the studies need to be small to be manageable by students. This could result in a proliferation of small, inconsequential studies. The first objection is the possible pollution

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of the research arena, especially around a university health science centre. Studies of very small samples cannot be expected to give answers to research questions. As such they are unethical, exploiting patients or health care personnel and, because conclusions cannot be drawn from the studies, they tend to foster the development of negative attitudes in staff. These attitudes intrude on the opportunity for needed research to be carried out at subsequent times. The second objection is one of supervision of the studies. Adequate consultation must be available to ensure the rights of subjects, harmonious working relationships between health agencies and the university, and the meeting of learning objectives for students. The provision of such supervision is a major problem and many schools of nursing cannot release faculty for this purpose.

Others have commented on the need to develop learning opportunities for students in a research course. Reed describes a course planned using what is called the 'Tell', 'Show', and 'Do' process (Reed 1976). Using this process, students in small groups learn to critique research and they prepare a proposal. Many teachers use the development of a proposal as the major outcome in an introductory research course, stopping short in the investigative process before implementation of the plan. We could not locate published material which discussed other means of sensitizing undergraduate students to the research process. Yet it appears desirable that sensitization be planned.

A number of writers stress the need for practicing nurses to be involved more in research activities. According to Jacox (1974: 382):

.... if we are to have knowledge that is useful for practice, then a majority of the persons who develop that knowledge must be so familiar with the clinical setting that they are able to identify truly significant problems for study. Nursing can never develop a scientific basis for its practice until the practitioners themselves — not just the "career" researchers — have a great deal more involvement in the research.

In a similar vein, Notter writes (1974:xii):

.... "research with a small r" will be done by many nurses with only elementary skills in research — practitioners and clinicians whose intellectual curiosity and spirit of inquiry lead them to observe problems at first hand, define them, and begin to study them.

Favourable attitudes which support research endeavours in general are a critical point to consider. Reed reports the development of positive attitudes towards research in his undergraduate course, saying

some students are motivated to implement their proposals. Johnson and Okunade (1975) discuss attitudes towards research:

An important concept to remember in terms of nurses' participation in research is that those who are more affected by research findings are likely to become more enthusiastic about the process of research itself.

There seems to be general concern both in nursing education and nursing service for the development of nurses' attitudes towards research which will be supportive to nursing investigations, but more specifically, which will lead to the identification of nursing problems for study, and also to the initiation of studies or the participation of nurses in research activities.

We are fortunate in Halifax to have health care agencies with nursing services who are receptive to the needs and ideas for improving both student learning and patient service. The chief unmet needs in mounting a clinical nursing research course were for access to expert clinical nursing consultation for students, for supervision of the nurse-patient contact in the collection of data for student investigations, and for facilitation of studies within the organizational frameworks of the agencies. If agencies are willing to provide for these needs, then the university has the obligation to supply the methodological input, both the teaching of course content and consultation to students for the development and planning of their studies.

The nursing instructor approached a number of hospitals and community nursing services in the immediate university neighbourhood to gauge their interest in collaborating in teaching a clinical course. Agencies were asked to provide one of their best nursing clinicians for three hours a week for the academic year. There was no budget allowance to support such a request.

Since we were looking for judgment in nursing, as distinct from methodological expertise, we were not really concerned about the research ability of the nurse who might be selected. In fact, a survey of the educational backgrounds of the majority of the nurses providing nursing services in our community shows that most nurses depend on the education gained through their basic program; for the majority this did not include a course in nursing research. In addition to her clinical nursing judgment, we felt it important that the nurse have a flexible approach in problem-solving, with the ability to allow students to make mistakes, in her role as a resource person, but also to step in, a supervisory capacity, if there were real need with respect to the students' contacts with patients. This was a tall order for nursing service directors.

Not one agency turned the request down. Six nursing services provided nine nurses; two other agencies provided facilities only, since for the first year, with only one month lead time in planning the course, they were unable to release nurses. Six nursing faculty members therefore volunteered to act as clinical resource persons, in excess of their usual work loads. This gave us fifteen resource persons to act as consultants to small groups of students. Nursing services supplied all the resource persons requested in our second year of collaboration. Studies were undertaken in the area of assignment of the clinical resource person, and for faculty who took on this role, in the area of the clinical agency where they had other clinical involvements. Students were free to join the clinical group of their choice within the limits of group size. Once groups, ranging in size from three to seven, were formed the students identified the nursing problem to be studied within the specified clinical area.

Nursing service personnel took on other roles in the course as well. All project proposals were reviewed by an ad hoc ethics committee. Nursing service directors of participating hospitals and community nursing services were asked to be members of this committee. Proposals for studies were reviewed in advance of the meeting by two reviewers, some of whom were nurses from participating hospitals. We also held a Research Day on which students presented their reports in a mini-convention which they organized. Registration for this event was open to anyone interested and agencies sponsored personnel to attend.

Each clinical resource person donated sixty structured hours of consultation to the course. They met with the students in their group for two hours most weeks for planning and implementing the study. They also attended a seminar session with the course instructor for one hour preceeding the planned meeting with their small groups. The purpose of the seminar for clinical resource persons was to give them sufficient input of the course content to make them familiar with methodological terms and the objectives for each class, so that they truly would feel members of the research team. The resource person needed this contact with the instructor to develop confidence in her new role as clinical consultant to a research team. Evaluation of these seminar sessions later indicated this had been necessary and was recognized as helpful.

The clinical resource persons perceived the seminar sessions as a stimulating continuing education program. One unexpected outcome was the breaking down of barriers between agencies, hospitals and community nursing services, as resource persons shared and worked together in the seminar sessions.

The commitment from the agencies required to carry out their consultation with students was a major contribution to the success of the course. It was emphasized to nursing service directors that resource persons were needed every week regardless of their other professional or personal obligations. The program could not succeed without the continuous and sustained efforts of the resource person. This was translated by the nursing service director to resource persons as an activity requiring first priority if time conflicts should arise. This worked; absenteeism in the seminar sessions, both for the resource persons and students, was almost negligible. Evaluation at the conclusion of the course showed that the instructor's initial negotiations for time, and more important, the nursing service director's acceptance of the planned collaboration, led to full participation.

The course has stimulated more awareness of the need for research in clinical settings. Nurses in participating agencies are demonstrating more enthusiasm for the investigative process and are beginning to identify areas in which studies can be carried out.

Students were enthusiastic in their response to this course and many voiced interest in having their findings published. An example of a student investigation is given to illustrate one type of nursing problem that was studied and the means students devised to study this problem. Following is the abstract of the study:

Dow, J; Lewis, A; Robb, S; Tingley, L; and Wright, K.
"Environment and Patient Mobility Post-operatively", April, 1976.

The purpose of this study is to see if, given a specific type of environment in a hospital, there is a difference in the rate of patient mobilization after surgery, i.e.: the distance a subject walks, in relation to the time elapsed since surgery, between subjects in four different patient environments.

Subjects, both male and female, ranged in age from 25 to 50 years, and all subjects were post-operative laminectomy and/or disoidectomy patients. By means of a questionnaire, data were collected from all subjects regarding age, sex, marital status, occupation, religion, number of children and pre-operative level of activity.

Data on mobility post-operatively were collected by means of 1) a pedometer which was worn for six days post-operatively, and 2) an Activity Measurement Chart, in which a subject recorded the amount of time spent walking, as a check on the reliability of the data collected via the pedometers. Complete data were collected on 15 patients. The

first day post-operative was used to test the acceptability to the subject of wearing the pedometer, and the data from that day were discarded. Data were collected from the pedometers each day at the same time and recorded. The values were converted to decimals and graphed against time in days. The slope of the line of best fit was used as a numerical value for the rate of mobilization as this is a function of distance over time.

The data revealed no significant difference in the rates of mobilization between subjects in each of the different environments studied. Analysis of other variables also revealed no significant differences, except the sex of the subject. It was found that the males in the study mobilized more quickly than the females studied, following laminectomy and/or discectomy.

We asked the students to comment on some of the aspects of the investigation which presented special problems:

The measurement of mobilization presented some difficult problems. The pedometer was used to collect ratio level data to indicate the rate of mobilization, which was defined as distance (i.e.: walking motion) plotted against time. A pedometer measures distance by means of an internal pendulum which is activated each time a step is taken, recording the number of steps taken as a distance recorded in miles.

The pedometers, loaned by the Halifax Fire Department, were tested for reliability to ensure that all the pedometers used in the study recorded the same distance for number of steps taken.

Subjects were asked to wear the pedometers at waist level, for six days, beginning the first day post-operative.

Several ethical questions were raised by the use of pedometers. The pedometers were completely taped over to prevent the introduction of bias by means of the subject's knowledge of the exact purpose of the instrument. Subjects asked many questions about the pedometers, such as: What is it?, Will it hurt me?, What does it do?, Can I take it off when I go to bed? Answering these questions honestly without revealing the purpose of the pedometer was difficult. Subjects were told that it wouldn't hurt them, that the researchers would be sending a follow-up letter at the completion of the study explaining everything to them, and that they could remove the pedometers while they were in bed if they became uncomfortable, and the ethical review of the study endorsed these measures to inform patients.

The small group approach to carrying out a limited study of nursing practice with clinical consultation from the nursing service restricted the number of studies being carried out, provided needed

supervision to students, and allowed nursing service and nursing education to work together to improve care of patients and to supply a useful learning experience to students.

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Des cliniciennes* dans les services collaborent à l'enseignement de la recherche en sciences infirmières

Cet article décrit une méthode utilisée par l'Université Dalhousie pour permettre à soixante-treize étudiantes infirmières en dernière année de premier cycle de s'engager dans une certaine forme de recherche clinique en matière de pratique infirmière.

A la suite de contacts établis par le professeur auprès des services hospitaliers et communautaires, six agences de services infirmiers ont mis neuf infirmières cliniciennes à titre de personnes ressources à la disposition de l'université. De plus, six professeurs de la faculté se sont portés bénévoles. Ces quinze personnes-ressources ont travaillé chacune pendant soixante heures comme conseillers pour de petits groupes d'étudiantes. Elles ont également assisté à un séminaire d'une heure avec le professeur avant de rencontrer leur groupe.

Tous les projets d'étude ont été examinés par un comité d'éthique ad hoc, comportant notamment les directeurs des services infirmiers des hôpitaux et les responsables des services infirmiers communautaires participants. Le cours s'est terminé par une journée de recherche ou mini-congrès, durant laquelle les étudiants ont présenté leurs rapports.

Le cours a fortement sensibilisé les participants au besoin d'entreprendre des recherches en milieu clinique et les étudiants ont réagi de façon très positive à ce cours.

La formule des petits groupes utilisée pour réaliser cette étude restreinte dans la pratique infirmière en consultation avec les services infirmiers pour les aspects cliniques a permis aux secteurs professionnel et pédagogique de la profession de collaborer en vue d'améliorer les soins prodigués aux clients et d'enrichir l'expérience des étudiantes en matière de formation.

*Dans ce texte, les termes infirmière, clinicienne et étudiante se réfèrent également aux termes infirmier, clinicien et étudiant.

Comments on the Analysis of the Burlington Randomized Trial

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In view of the continuing importance of the large-scale study described as "The Burlington randomized trial of the nurse practitioner" (Sackett 1974, Spitzer 1974), it is worthwhile discussing some of the difficulties in interpreting the published account of the statistical analysis of this study. These comments are offered for the purpose of clarification and in no way are meant to minimize the considerable achievement of this study.

The purpose of a statistical significance test is to assess the numerical evidence for the inclusion of a new parameter. Following the principle of parsimony of Occam's Razor, which may be taken in the form "entities are not multiplied without necessity" (Jeffreys 1961), one commences with the situation in which all the variation is treated as random. Parameters are introduced one by one which appear to explain a sufficient amount of the variation to merit their inclusion and the remaining variation is treated as random. This latter part never completely disappears. At any stage in this process of successively introducing fresh parameters the present status quo may be described as the "null hypothesis". This is the "working rule" presently achieved. The "alternative hypothesis" next considered usually contains one additional, or new, parameter or, one additional degree of complexity. The evidence for the inclusion of this new parameter is sometimes simply assessed by considering the ratio of the estimate of this new parameter to the standard error of the estimate. However the assessment of the evidence is made, the "null hypothesis" always describes the present working rule and the alternative hypothesis describes a rule of greater complexity, the "thesis" or proposition which the experimenter has in mind whilst designing the experiment. Often the main purpose of the experiment is to compare the experimenters' thesis with the present working rule. If the sample size is very small the estimate of the standard error is often too vague to be able to reject the null hypothesis. When the same size is very large the evidence for the introduction of the new parameter may be

*In discussion with Professor Moyra Allen and M.Sc.(A) students Kiyoko Matsuno, Inez Blackwell and Rosaline Wosu in Nursing 615b, Health Care Education.

overwhelming even if the magnitude of the parameter is too small for any practical purpose in everyday use.

One of the problems in applying classical statistical methodology, as described above, to numerical, replicable observations made in practical nursing situations is that often the present working rule stipulates, or presumes, the existence of a parameter, and the experimenter would like to show that the magnitude of this parameter is less than that presently assumed or, alternatively, that for "practical purposes" its presence may be ignored. Consider a very simple hypothetical example. Suppose that for the purpose of dressing a certain type of surgical wound on patients, the rules of procedure require a nurse to scrub her hands for three minutes and that nurses with considerable experience with this procedure are not at all convinced that three minutes of scrubbing is necessary. It would probably be accepted that some scrubbing is necessary, but, given general state of hygiene prevailing nowadays and the fact that the nurse's hands touch neither the dressing nor the wound, it might be worthwhile to set up a carefully controlled experiment in which varying lengths of scrubbing times were related to the rate of infection of the wounds (taking into account the several concomitant variables). The outcome might be a recommendation that a careful ten-second scrubbing was as effective as an unsupervised three-minute scrubbing. In such a situation the working rule, or null hypothesis, is already assuming that scrubbing has a beneficial effect; the purpose of the experiment is to attempt to measure the magnitude of this effect more carefully. There is no question of any significance test — merely one of more precise estimation.

Consider the Burlington randomized trial on Nurse Practitioners. The problem was to assess the comparative effectiveness (on certain measures) of nurse practitioners (NP) and family physicians (FP) in providing primary health service in a certain situation. Suppose that at the time the trial commenced a Martian had arrived on Earth without prior knowledge of the effectiveness of either NP or FP. Then presumably the Martian would have followed the classical statistical procedure outlined earlier. As a working rule, or null hypothesis, the Martian would have assumed no difference between the two populations, NP or FP, in terms of the measures used. The alternative hypothesis would have been that some effect existed, that is, on a given measure the mean of the NP would have been greater (or less) than that of the FP. If the sample size taken by the Martian were very small, it is highly likely that the Martian would have continued to use the null hypothesis of no difference until further

evidence was available. This is satisfactory since the Martian commenced with the null hypothesis of no difference; the Martian should continue with this belief, or state of mind, until sufficient evidence accrues to the contrary. For a person in the Martian's situation, the classical statistical approach is satisfactory.

However, the state of mind of the Martian at the beginning of the trial was not the state of mind of the man in the street, the medical profession, the government, or even, perhaps, of many nurses themselves. In support of this statement we need do no more than consider the governmental expenditure on the Burlington trial itself. If a null hypothesis of no difference was taken a priori then this expenditure could not have been justifiable since what is the purpose of running a long and costly experiment in order to come up with evidence supporting a (null) hypothesis which is generally accepted and unchallenged anyway. For whatever reasons, the FP had already won for themselves an acceptance that, in general, their primary health treatment was more effective than the treatment given by any other group of persons. It is clear therefore that the null hypothesis or working rule under which the Burlington trial commenced was that a definite effect exist and that the FP were at least as good as the NP on all of the measures suggested and superior on some.

The statistical formulation followed in the Burlington study may be summarized by the following quotation: "Since it was our thesis that the outcomes of RNP (nurse practitioner) care would be equivalent to those resulting from RC (family physician) care, the hypothesis that the RNP care was effective and safe would be supported if no statistically significant differences could be shown between the outcomes of the RNP and RC groups" (Sackett). The thesis, or alternative hypothesis, stated by the experimenters in the first phrase is one of no difference, or, that "no effect" existed. It will be seen at once that this formulation of the problem does not follow the classical procedure, since the null hypothesis, "an effect exists", is being compared with a less complex alternative hypothesis "no effect exists". The first part of the second phrase, "the hypothesis that the RNP care was effective and safe" is not unambiguous but appears to suggest that under the alternative hypothesis there is either no difference or the NP population has higher (more beneficial) outcome measures than the FP population. Let us call this "the extended alternative hypothesis". *The final part of the quotation suggests that the alternative hypothesis of "no difference" was supported if test statistics constructed on the basis of a null hypothesis of "no difference" were sufficiently small.* The importance of clearly stating the

null and alternative hypotheses before using such a phrase as “statistically significant differences” may be exemplified by considering that an observed (small but non-zero) sample difference which may support a hypothesis of no population difference may even more strongly support a hypothesis of a stated population difference (consider the hypothesis which states that the population difference is precisely that observed in the sample). Furthermore, using the criterion of “no statistically significant difference” between the two collections of outcomes could have led to the experimental thesis being confirmed merely because the sample size was too small relative to the magnitude of the real difference. Despite the careful statement of their thesis by the authors, all subsequent language in their paper appears to indicate that they are using “no difference” (or even the extended alternative hypothesis) as their null hypothesis and a difference favouring the FP as their alternative hypothesis. It would appear that, more correctly, the Burlington problem was one of estimating more precisely the magnitude of an effect which was accepted a priori as being present.

If the magnitude of the difference appears to be sufficiently small then it may be justifiable to consider all possible expenses and benefits to both the patients and to the government, converted to some common unit of “utility”, and question whether the government should continue to spend the extra amount necessary to train FP rather than NP for the purpose of providing primary health service.

There are other parts of the statistical analysis which appear open for discussion. The analysis presented in Sackett uses the notion of “the ‘beta’ level of the test of significance”. Beta is the probability of not rejecting the null hypothesis when it is false. In the context of the trial, beta may be interpreted as the probability that on a given measure the outcomes of the two groups differ by less than some multiple of the standard error of the difference given that the measures of the two groups truly differ. The experimenters state that in their evaluation of beta they stipulated “a true difference between the groups of 5% or more”. It is not apparent in general on which base the percentage has been taken. However, the statement appears unambiguous in the situation of the comparison of two proportions, which is discussed in Appendix 1. From the analysis given there it will be seen that any calculation of beta requires a statement of the a priori probability distribution of the underlying population parameters and of the number of standard deviations the estimated difference is allowed to vary away from zero. However, if the problem is reformulated as suggested at the close of the previous but one

paragraph, then the introduction of the notion of beta would be superfluous.

The measure of social function (Sackett: Fig. 2) appears to have a very curiously-shaped histogram; even though on such a large sample the approximate normality of the arithmetic mean may be justifiable, the use of this mean for the purpose of comparison of the two histograms is questionable. It is very curious that the histograms for both samples show zero readings in the intervals 0-1 — 0-2 and 0-5 — 0-7 and it would have been very instructive to have been able to examine a histogram resulting from a third collection of patients taken from outside the study group since the shape of the histogram may be a function of the instrument. In fact, what is striking about the results presented in Fig. 1, Fig. 2 and Table 5 of Sackett's paper is not the differences but the great similarities between the two collections of outcomes. Perhaps the careful selection of matched groups had led to less variation between the two groups than might be reasonably expected at random.

The final point that should be made is that of the variability in effectiveness and safety in primary health services provided by members of the FP population themselves. It is quite possible that if two FP randomly selected from the population of FP were compared in circumstances similar to that of the Burlington trial, apparent differences would occur. The same statement could be made about random selections taken from the population of NP. Once this point is recognized and accepted it becomes clear that if the results of the Burlington trial are to have applicability or relevance to the comparative effectiveness of the populations of NP and FP then an assessment is required of the variability of both these populations in circumstances similar to that of the study. Some analysis of this point is given in Appendix 2.

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Appendix 1

The Evaluation of 'Beta' When Comparing Two Proportions

Suppose the first population has a true proportion of satisfied clients p_1 , observed sample size n_1 and an observed number of satisfied clients x_1 , with a similar notation for the second population. Assuming binomial sampling the probability that a pair of values (x_1, x_2) will occur knowing n_1, n_2 and the true values p_1, p_2 is

$$f(x_1, x_2 | p_1, p_2) = \binom{n_1}{x_1} \binom{n_2}{x_2} p_1^{x_1} (1-p_1)^{n_1-x_1} p_2^{x_2} (1-p_2)^{n_2-x_2} \quad [A]$$

$$x_1 = 0, 1, 2, \dots, n_1 ;$$

$$x_2 = 0, 1, 2, \dots, n_2 .$$

Let N denote $n_1 + n_2$ and m denote $x_1 + x_2$ then for large samples the customary chi-square test suggests that the null hypothesis $p_1 = p_2$ is *not* rejected if

$$N \{x_1(n_2 - x_2) - x_2(n_1 - x_1)\}^2 < (N-m)m \frac{n_1 n_2}{N} K_\alpha \quad [B]$$

where K_α is a specified constant dependent upon the selected level of significance, alpha. [If alpha = 0.05 then $K_\alpha = 3.84$].

The *usual* definition of beta is the probability of occurrence of a pair of values (x_1, x_2) satisfying inequality B when $p_1 \neq p_2$. If p_1, p_2 are known the probability of any pair (x_1, x_2) occurring is given by expression A. Therefore the value of beta is found by calculating the expression A for each pair (x_1, x_2) satisfying B and then summing the values of these expressions. Thus, symbolically, if p_1 and p_2 are known and unequal

$$\text{beta} = \sum_B f(x_1, x_2 | p_1, p_2) \quad [C]$$

where the summation is over all pairs (x_1, x_2) satisfying B. Beta is the probability of coming to the conclusion that $p_1 = p_2$ is satisfactory when in truth $p_1 \neq p_2$. The closer beta is to zero the less likely we are to make this type of false inference. Unfortunately in general and for the case of the Burlington trial in particular, the true values of p_1 and p_2 are not known and so expression C *cannot be found*. Usually statisticians attempt to make informed guesses about the population of interest based on the information available a priori and in this manner calculate rough values for beta enabling them to suggest useful sample sizes for survey samples and experimental designs. For a precise value of beta we are able to calculate only the (weighted) average value for beta found by averaging the value of beta given by expression C over all the possible values of p_1 and p_2 as follows. Let

$\pi(p_1, p_2)$ denote the a priori probability (density function) of the values (p_1, p_2) when the hypothesis $p_1 \neq p_2$ holds, then

$$\text{beta} = \iint_B \left\{ \sum_{\mathbf{g}} f(x_1, x_2 | p_1, p_2) \right\} \pi(p_1, p_2) dp_1 dp_2 \quad [D]$$

It will be seen that the calculation of a precise numerical value for beta requires the value K_α and the form of the test, as given by expression B, and either the true values p_1 and p_2 or statement (and justification) of the a priori probability $\pi(p_1, p_2)$. Neither of the latter are given in Sackett (1974) and so a reproduction of the published beta values is not possible. It is further stated in Sackett (1974) that the evaluation of beta stipulated 'a true difference between the groups of 5% or more'. That would imply that the double integral and the a priori probability $\pi(p_1, p_2)$ in expression D were both taken over only the region $p_1 > p_2 + 0.05$ (since the test is one-sided). This would make the calculation of beta even more difficult and it is possible that this quotation is an editorial misprint for a statement to the effect that the level of significance of the test of the hypothesis $p_1 = p_2$ was taken as 5% (so that $K_\alpha = 3.84$).

Appendix 2

Let us consider one particular measure of client satisfaction, and let x_{ij} denote the value of this measure recorded for the j th client of the i th nurse. If we could find the value x_{ij} for all possible clients of the i th nurse and draw up a frequency table of the results then the mean, μ_i , of this frequency table is the true mean of the values of this measure of client satisfaction for the i th nurse and the standard deviation δ_i of this frequency table would be the standard deviation of the possible values of this measure of client satisfaction for the i th nurse. Now in reality all we have is a sample $x_{i1}, x_{i2}, \dots, x_{in}$ which may be considered as being drawn from this hypothetical frequency table of all possible values for the i th nurse. The *average* of the sample values, $\bar{x}_i$, is taken as an *estimate* of the *true mean* μ_i and the *standard deviation of the sample values*, s_i , is taken as an *estimate* of the *true standard deviation* δ_i of all possible values of this measure for the i th nurse.

If we consider another nurse (nurse k) then the (hypothetical) frequency table of the values x_{kj} of our measure of client satisfaction for the population of all possible clients of the k th nurse will have a true mean, labelled μ_k . For each member of the population of nurses

under consideration we have, in our imagination, a value μ (μ_i for the i th nurse, μ_k for the k th nurse and so on) which measures that particular nurse's mean value of our measure of client satisfaction. Now imagine each nurse having her/his particular μ value. This frequency table of the true mean values for each and every nurse has a mean value ξ and a standard deviation τ . The value ξ represents the mean value of all the true mean values μ (one μ from each nurse). Hence if the particular nurse who was measured in the Burlington trials (labelling her as nurse i once more) could be assumed to be typical of all nurses (theoretically, if she was chosen at random from all possible nurses in the population of nurses under consideration) then her true mean μ_i should be representative of the value ξ in the sense that μ_i is an estimate for ξ (albeit possibly a highly variable estimate). Of course the true value μ_i is not available but we have an estimate of μ_i , namely $\bar{x}_i$, so if the i th nurse is typical then her actual average value $\bar{x}_i$ estimates ξ , the true mean of all possible nurses if they were in her position. However, in order to be able to estimate how much this estimate varies around ξ and how much nurses may vary one to another with respect to their μ values we have to be able to estimate τ . But we have only *one* value (or, strictly, only an estimate of one value) taken from this frequency table of all possible μ values, namely μ_i estimated by $\bar{x}_i$. Therefore, there is no way we are able to estimate the *variability* of the μ values from nurse to nurse *based on the sample evidence alone*.

Commentaires sur l'analyse de l'essai aléatoire de Burlington

Bon nombre des traditions et coutumes bien établies de la profession infirmière sont petit à petit soumises à une évaluation quantitative à l'aide des méthodes d'inférence statistique. Il faut souvent dans ces évaluations trouver l'équivalence entre un traitement nouveau (ou une pratique nouvelle) et un traitement courant (ou une pratique courante). Il n'existe pas encore de technique statistique type pour entreprendre une telle évaluation. Cet article mentionne une fois de plus le cadre classique de l'hypothèse nulle par opposition à l'hypothèse de remplacement; on y montre que, dans un effort pour résoudre le problème déductif de vérification de l'équivalence, l'analyse statistique de l'étude de Burlington a pris comme hypothèse nulle les facteurs ce qu'elle voulait prouver comme hypothèse de remplacement. L'article traite également d'autres problèmes inhérents à l'analyse.

The B.N.Sc. Curriculum at Queen's University

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Like many schools of nursing, Queen's University has been involved in the development of a new conceptual framework for its undergraduate curriculum. Never has the need for a conceptual framework in nursing been so evident as it is today. Nursing needs to be able to identify its particular area of practice within the health field in order to gain an expanded and clearer definition of itself as a discipline.

It is from the theoretical conceptual framework of any discipline that the area of practice, its body of knowledge, and its scientific basis are developed. What is needed is a conceptual framework for nursing which could provide curriculum integration, point to relevant clinical settings, focus on the specific nursing functions, and guide the development of preparation for new roles in nursing.

Before any change in a curriculum is made, one must ask the question: what constitutes basic nursing preparation at the baccalaureate level?

The purpose of this article is to share a description of our development to this point in time. The overall objective of the school of nursing is to provide learning experiences and guidance through which the students may become self-directed learners, colleagues with members of the health care team, teachers of health, and professional nurses.

To achieve these goals the undergraduate program in nursing is offered in a climate which fosters the development of intellectual and social qualities of leadership. The focus of the teaching-learning process is on ways of thinking or inquiry basic to a scientific discipline and on the fundamental concepts in nursing and related disciplines and their interrelationships to individual and community health. Principles of professional nursing practice are developed and tested by giving care to people in hospitals, ambulatory clinics and in the homes of patients and their families. By sharing experiences in seminars and conferences, students learn to work collaboratively. They

* The author would like to acknowledge and thank the curriculum committee for their contributions.

also learn to plan and implement programs in order to provide individuals and families with care in health and illness.

We believe nursing is a personal, family and community service within the health field. The nursing process is both interpersonal and technical; through it practitioners facilitate movement toward physical, emotional and social health and well being.

Nursing is also an applied science, building upon and forwarding knowledge of biophysical, medical and behavioral sciences. As an intellectual discipline it is concerned with developing and testing theoretical concepts from practice and with application of concepts from related fields. As a practice discipline it is concerned with designing, implementing and evaluating health care of individuals, families and social groups.

All theoretical models in nursing begin with the patient who is the recipient of nursing care. Man, as a biopsychosocial being, is interacting constantly with his changing environment. To cope with his changing world he uses both innate and acquired mechanisms.

The focus our faculty has chosen for our framework is MAN ADAPTING TO HEALTH AND ILLNESS. We feel that such a structure is broad enough and views man holistically, a characteristic which is highly valued by the faculty. Besides our belief about nursing, which forms the basis of our conceptual framework, we also wish to include our beliefs and/or definitions as follows:

Man: a self-determining, active agent in control of, reacting to and interacting with his external or internal environment.

Man in Society: the individual has a responsibility for maintaining high level wellness as it relates to his lifestyle. Society is responsible for high level wellness as required by the individual. Health professionals are responsible for health practices and encouragement of life styles which promote high level wellness of the individual. Health professionals are also responsible for identifying factors in the environment and life style practices which influence health, and for setting priorities in co-operation with society, and participating in programmes which lead to an optimum level of functioning of society, families and groups.

Health is a certain quality of life which results from an individual's success in reaching his highest level of physical, mental and social well-being. It involves a dynamic interaction and inter-dependence between the individual's well-being (his physical, mental and emotional reactions) and the social complex in which he exists.*

* source unknown

At the present time we have identified what we feel are the major concepts over the four years with some theoretical formulations. The following table illustrates what we have identified so far:

<i>Major concepts</i>	<i>Sub-concepts</i>	<i>Theoretical Formulations</i>
Man	Bio-psycho-social-sexual being Age continuum	Development theory Need theory Systems theory Crisis theory
Nursing	Nurse-patient relationship Health team Leadership	Communication theory Role theory Problem identification and solving
Society	Family Community	Health Care delivery system Epidemiological theory
Health	Health-illness continuum Health maintenance Health promotion	Adaptation theory Systems theory Stress theory
Teaching - Learning	Self-directed learning Self-evaluation Change Research	Change theory Group theory Learning theories

These components and their interrelationships are a major structuring element for the curriculum and are meant to form a tool for analyzing and assessing the client's situation. The nursing process is used as a methodology for thinking and decision-making in the intervention and evaluation of nursing situations.

In general the nursing courses focus on nursing needs of people in the community as well as in hospital settings. These experiences enable a student to intervene throughout the course of an illness rather than during one episode only and to learn the variety of ways in which people cope with their health problems. Opportunities are provided for considerable self-direction and independence.

With respect to the curriculum design and experiences provided during the four years of the program, we believe the graduate is a professional practitioner with knowledge, skills and values enabling her to effectively co-ordinate and provide those services which promote optimum health maintenance or restoration to health of individuals within the family and the community.

As a beginning graduate she has gained some proficiency in carrying out the usual nursing activities but the greater emphasis in her program is on the more complex elements of problem identification, problem solving and decision-making which may result in less proficiency in technical skills. She has learned to use knowledge to

think with, to transfer learning from a known to an unknown situation and to build on common elements, and to validate her reasoning process.

The graduate is able to design and initiate nursing actions (interventions) and has practiced using objective criteria to predict outcomes, justify action selected and evaluate the effect of these actions. She has had experience in critical thinking and has been oriented to the scientific approach of research but has had limited experience in its use. She is committed to continuing learning and to evaluating her own practice as one source for professional growth and competence as a practitioner.

In conclusion, the conceptual framework, in its present form, reflects the philosophy and objectives of our program and the behavioral expectations of our students. We believe that work such as this provides the impetus for innovation in nursing practice and in nursing as a discipline.

Le programme de B.N.Sc. de l'Université Queen's

A l'instar de nombreuses écoles d'infirmières, l'université Queen's travaille à l'élaboration d'un nouveau cadre conceptuel pour son programme de cours de premier cycle. En tant que professeurs, nous estimons qu'il est essentiel d'attribuer aux sciences infirmières un champ d'action bien déterminé au sein des sciences de la santé en général afin d'élargir et de clarifier la définition de notre discipline. Pour ce faire, il faut fournir aux sciences infirmières un cadre conceptuel susceptible de favoriser l'intégration du programme de cours, de trouver des situations cliniques pertinentes, de se concentrer sur les fonctions spécifiques de la profession et de fournir des lignes directrices permettant de préparer les étudiants en sciences infirmières à assumer des rôles nouveaux dans leur profession.

Toutefois, avant de pouvoir introduire le moindre changement dans un programme de cours, il faut s'interroger sur ce qui constitue la préparation de base en sciences infirmières au niveau du baccalauréat.

Cet article dresse le bilan de la situation à ce jour et montre qu'il reste beaucoup à faire avant que notre programme de cours ne devienne définitif.

Mise en parallèle de théories sur l'amplification de la fonction du nursing et leurs répercussions quant à la pratique de l'infirmière (Document de travail)

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Au cours des dernières années, dans le cadre de l'évolution des services de santé au Canada et aux Etats-Unis, on a donné beaucoup d'importance à l'amplification du rôle de l'infirmière. La nature de cette amplification semble présenter différentes caractéristiques selon la catégorie de professionnels de la santé qui provoque l'innovation dans la fonction et selon le point de vue qu'ils entretiennent sur le nursing.

L'unité de recherche en nursing et soins de santé de l'Université McGill étudie actuellement le nursing tel qu'il se pratique dans plusieurs milieux où l'on concrétise diverses interprétations de cette fonction amplifiée. L'idée maîtresse du présent article est que l'amplification peut être interprétée de deux façons: soit comme fonction de remplacement, soit comme fonction complémentaire, selon les connaissances et les compétences d'autres professionnels de la santé, p.ex. le médecin. En rapport avec chacune de ces perspectives, l'article décrit les notions caractéristiques en santé et pratique du nursing qui s'y rattachent. La recherche vise à démontrer que chaque conception du nursing donne lieu à des résultats différents pour les clients. Le présent document expose les notions théoriques qui sous-tendent le projet de recherche en cours.

Diverses conceptions de l'amplification de la fonction du nursing

Les médecins, axés sur le diagnostic et le traitement des maladies de même que leur prévention voient l'amplification du nursing comme la reprise à son compte d'une partie du domaine de la médecine, c'est-à-dire l'incorporation d'une partie des connaissances et compétences du médecin. Cette fonction se définit comme celle *d'auxiliaire du médecin*; dans les régions isolées cette fonction se rapproche du *remplacement* total. Prenant comme point de départ une formation de base, soit celle d'un diplôme ou d'un baccalauréat, le médecin assume, du moins au début, l'essentiel de l'enseignement nécessaire à la préparation des infirmières à cette fonction amplifiée. La pratique

de ces infirmières s'exerce dans les milieux de soins de première ligne et se rapproche le plus de cette version de la fonction amplifiée du nursing.

D'autre part, particulièrement dans les universités, où l'on élabore des théories du nursing, les infirmières voient plutôt cette amplification de la fonction sous l'un ou l'autre des deux angles suivants :

En premier lieu, l'amplification se situe dans le domaine des connaissances médicales ; ainsi des compétences qui y sont relatives deviennent nécessaires dans le traitement et le soin des maladies tant aiguës que chroniques. Cette fonction possède la plupart des caractères distinctifs de la fonction de *remplacement*, puisque l'amplification se fonde sur l'augmentation des connaissances et compétences médicales de l'infirmière, afin que sa compréhension des processus, du diagnostic et du traitement des maladies se rapproche autant que possible de celle du médecin. Même si les aspects médicaux se trouvent privilégiés dans l'amplification de sa fonction dans le sens du remplacement, le nursing a tenté également de répondre aux composantes d'ordre psychologique et social de chaque maladie particulière. Cette fonction est assurée par des personnes qui possèdent une formation de baccalauréat ou de maîtrise, où le programme était axé sur une spécialisation en nursing : médicale, psychiatrique, santé communautaire, gériatrique. La fonction s'exerce dans les milieux destinés aux soins de maladies aiguës aussi bien qu'à l'extérieur de l'hôpital, en pratique privée ou en groupe, avec des médecins.

En deuxième lieu, l'amplification de la fonction du nursing se retrouve dans des milieux de soins de première ligne où l'accent est placé sur le maintien et l'amélioration de la santé familiale. Dans ce cadre, le nursing s'intéresse de façon continue à l'entité familiale, aux pratiques courantes de l'individu et de la famille en matière de santé et aux façons saines de faire face aux situations et problèmes quotidiens. Au même titre, il s'intéresse également à la santé de la famille, compte tenu d'un problème de santé à long terme de l'un de ses membres, ainsi qu'à la relance si les membres de la famille ont affaire à d'autres professionnels de la santé. Cette amplification du rôle de l'infirmière est considérée comme *complémentaire* en ce sens qu'il ne remplace pas celui d'autres professionnels mais qu'il ajoute une autre dimension à la prestation des soins de santé. Cette amplification du nursing a lieu dans des domaines où les besoins étaient jusque-là insatisfaits et elle constitue également un développement de l'essence du nursing. Les connaissances pertinentes à l'accomplissement de la fonction complémentaire se retrouvent, en particulier, dans le domaine des sciences humaines et sociales. Les compétences nécessaires à l'exercice de cette fonction découlent de la capacité de

réagir positivement à l'entité individu/famille* tant du point de vue de la perception et de l'évaluation que de celui de la planification et de la pratique. Les programmes génériques de nursing, au niveau du baccalauréat, qui comportent une base de sciences biologiques et sociales, sont aptes à préparer le candidat pour ce type de fonction amplifiée. Si l'infirmière doit posséder une compétence encore plus grande, alors des études au niveau de la maîtrise s'imposent.

Le présent article décrit la base théorique de chaque type de fonction amplifiée, soit de remplacement, soit complémentaire, l'une constituant un dépassement vers la médecine, l'autre un développement de la substance du nursing. Ces variations dans la façon de concevoir le nursing avaient été notées dans des publications antérieures de l'auteur (Allen 1971, 1976).

Divers points de vue sur la santé et leur incidence sur la pratique du nursing

La santé et la fonction de remplacement

La santé est une condition exempte d'ingérences étrangères contraires à la nature. On peut la concevoir comme un état de grâce, dont l'existence est antérieure à l'apparition de désordres ou maladies, ou encore comme l'état nouveau qui résulte de l'élimination du désordre étranger à l'organisme. (Blum 1974:78, traduction libre).

Ce concept de santé a servi de base à l'élaboration de la science médicale; il est donc au centre des activités du type de nursing à fonction de remplacement. Il correspond à une formule de soins de santé dont l'objectif est de maintenir les gens à l'abri des maladies. Les divers procédés caractéristiques d'un programme centré sur cet objectif sont les suivants:

1. examens généraux et de dépistage destinés à s'assurer de l'absence de maladies;
2. mesures prophylactiques telles que l'immunisation afin de prévenir certaines maladies spécifiques;
3. un mode de vie "sain" afin d'augmenter la résistance aux maladies, par exemple: nutrition, élimination, hygiène personnelle, repos et exercice, travail et loisirs; et
4. diagnostic précoce, traitement et rééducation.

La personne qui adopte un régime de soins de santé correspondant à la définition que Blum donne de la santé se caractérise par les traits de comportement suivants. La personne a un mode de vie sain

* L'expression individu/famille signifie que le client de l'infirmière peut être soit un individu, soit une famille.

et prend des mesures fiables pour prévenir la maladie. Cette dernière préoccupe la personne et celle-ci cherche à s'assurer qu'elle n'est pas malade. Elle a de bonnes connaissances sur le sujet. Si la maladie se produit, cette personne se fait soigner et suit fidèlement le traitement. Elle utilise régulièrement les services de santé. Elle considère que les professionnels de la santé connaissent les moyens de la garder en bonne santé et elle les consulte. Elle a tendance à se conformer à des façons apprises — en termes de connaissances et d'habitudes en matière de santé — et elle éprouve donc de la difficulté à modifier son comportement vis-à-vis des concepts nouveaux relatifs à la santé aussi bien que de ses propres besoins.

Dans la fonction du nursing vue comme auxiliaire du médecin, ce dernier exerce une influence cruciale quant à la détermination des tâches qu'accompliront les infirmières dans les soins de prévention, de traitement et de rééducation. Jusqu'ici les infirmières jouant ce rôle ont procédé par examen des clients aux fins de dépistage et effectué le travail initial de l'examen physique et du relevé d'antécédents d'ordre médical standard pour le problème en question, de même que la relance ultérieure.

La fonction du nursing s'amplifie encore lorsqu'elle dépasse celle d'auxiliaire du médecin vers le remplacement de ce dernier dans une grande partie de ses tâches : évaluation, traitement, prévention, rééducation, relance. Pour cette raison, la fonction de remplacement tend à suivre le point de vue du médecin, face à des problèmes courants au sujet desquels il existe un ensemble de connaissances relativement vaste ainsi que des approches et des solutions reconnues. A cette fin, l'infirmière accumule des connaissances considérables : elle sait ce qu'elle cherche, ce qu'elle doit observer et quelles informations recueillir ; elle est habile à interpréter significativement les faits et elle parvient une fois les données réunies, à une évaluation convenablement correcte. Le plan de traitement en découle logiquement, et l'évaluation à long terme correspond aux résultats attendus conformément au diagnostic.

La santé et la fonction complémentaire

La santé est une qualité durable, pouvant se mesurer par la capacité de l'individu à se remettre des agressions, quelles soient d'ordre chimique, physique, infectieux, psychologique ou social. Le retour à la santé peut être évalué selon qu'il est plus ou moins complet et rapide. L'agression peut avoir une fonction positive de sorte qu'après la guérison, l'état de santé soit *meilleur* qu'auparavant. De ce fait, la personne ou son organisme apprend. (Audy 1971 ; traduction libre).

C'est une attitude positive et exploratoire qu'adoptent vis-à-vis des soins de santé ceux qui perçoivent la santé comme caractère d'un système vital en fonctionnement, notamment les infirmières dont la pratique est décrite par le terme de *complémentaire*. Dans ce cadre, les soins de santé se centrent sur l'assistance auprès du client vers le développement, face aux situations de la vie quotidienne, de moyens favorables à l'amélioration de la santé. Cette vue suppose que l'acquisition de telles capacités établit et augmente le potentiel d'un individu ou d'un groupe familial sur le plan santé. Les membres de la famille acquièrent une certaine maîtrise sur les événements mineurs et majeurs de leurs vies. L'individu ou la famille développent une approche flexible et positive en matière de santé qui lui permet de s'adapter à longue échéance aux diverses situations.

Ce concept de santé se manifeste chez les individus ou les familles par les divers comportements suivants. Ils partagent des renseignements sur des problèmes communs et en discutent, ils cherchent des sources pertinentes de connaissance et d'information et mettent au point des plans d'action. Chaque personne contribue à la situation si cette dernière la touche. La famille dans son ensemble planifie et pense à des approches à long terme face aux situations; elle connaît relativement peu de crises. Ces personnes utilisent judicieusement les services du professionnel de la santé et apprennent à faire confiance à leur propre jugement et à leurs ressources dans la plupart des situations. Ils rencontrent le professionnel déjà munis d'une information pertinente et structurée, d'une certaine idée de la situation et d'un plan qu'ils veulent discuter et préciser avec ce professionnel. Les résultats de leur plan leur servent de feedback qu'ils utilisent dans la suite de leur planification. Ces personnes veulent être en bonne santé et poursuivent ce but en adaptant leur attitude aux exigences de la situation; ils en apprennent ainsi davantage sur les moyens de maintenir cet état.

Dans ce contexte, le rôle amplifié découle d'une fonction *complémentaire*, fonction qui s'ajoute à celles des autres professionnels. Il s'agit d'un développement des attributs et tâches intrinsèques du nursing dans des domaines critiques où les services de santé sont encore à l'état embryonnaire. Il subsiste d'importantes lacunes à combler dans les services axés sur la santé familiale. Il s'agit de l'assistance à l'individu ou la famille vers l'acquisition d'habitudes nettement favorables à la santé de l'individu ou la famille, de l'orientation quant à la croissance et au développement des enfants de façon qu'ils adoptent des habitudes constructives en matière de santé, et de l'aide aux familles pour faire sagement face à des maladies chroniques et

à d'autres problèmes à long terme. A ces fins, la pratique du nursing adopte une approche exploratoire et qui se développe constamment. L'accent y porte sur la phase d'évaluation dans laquelle l'individu ou la famille agit comme source principale d'information. L'accent porte également sur le renforcement du potentiel de l'individu ou de la famille en tant que composante majeure d'un plan d'action, et sur la collecte de manifestations des réactions de l'individu ou de la famille comme base de la planification et du développement ultérieurs.

Deux approches caractéristiques à l'égard du nursing

Les conceptions de la pratique du nursing décrites ci-dessus sont sous-jacentes à une étude de la pratique d'infirmières dans les milieux de première ligne. La première recherche a permis d'identifier certains aspects de la pratique comme critiques par rapport à l'approche adoptée par l'infirmière. Les distinctions entre la fonction de *remplacement* et la fonction *complémentaire* étaient particulièrement marquées en regard de sept points :

Fonction de remplacement

1. *Problème*: Quel est le centre de l'action de l'infirmière dans une situation individu/famille donnée?

Le problème est perçu comme étant la *maladie*, c'est-à-dire, fondamentalement comme des conditions d'ordre médical affectant l'individu ou la famille. Il s'agit soit d'une maladie quelconque, y compris une maladie psychiatrique diagnostiquée, ainsi que de son étiologie, pathologie, symptomatologie, diagnostic, traitement, prévention, etc.

Fonction complémentaire

Le centre consiste en l'aspect *santé*, c'est-à-dire en situations liées à la façon dont l'individu ou la famille fait face à une maladie, à des situations relatives aux modalités d'adaptation de l'individu ou de la famille à la réalité de la vie quotidienne y compris des situations courantes et inhabituelles (crises).

2. *Envergure du problème*. Quelle est la taille du groupe (nombre de personnes en cause) où l'infirmière localise le problème?

Le problème est décrit comme étant un phénomène d'ordre *individuel*; il peut être évalué à ce niveau avec ou selon son incidence sur la famille et sur ses membres.

Le problème est décrit comme étant un phénomène d'ordre *familial*; il peut être évalué à ce niveau avec ou selon son incidence sur les individus ou les groupes d'individus qui forment la famille.

3. *Perspective.* Quelle est l'ampleur et la complexité du problème tel que le perçoit l'infirmière?

Le problème est considéré comme un système *fermé*, possédant un début et une fin, isolé d'autres événements et limité dans le temps, c'est-à-dire *épisodique*.

Le problème est considéré comme un système *ouvert*, qui se développe, change, influence et est influencé par d'autres phénomènes de la vie; on l'envisage sur le temps (*longue échéance*).

4. *Evaluation.* Quelles sont les sources d'information et de connaissance auxquelles l'infirmière fait appel pour cerner le problème de l'individu ou de la famille?

L'infirmière fait appel aux connaissances et à l'expérience existantes pour l'aider à définir la situation; elle se repose sur la structure logique du diagnostic comme guide de ses notions *a priori* sur l'information, l'évidence à obtenir et sur les facteurs à mettre en relation.

L'infirmière observe et recueille des données auprès de l'individu ou de la famille, cherche d'autres sources connexes d'information (bibliothèque, autres professionnels, etc.); elle apporte ses propres connaissances et son expérience dans la solution du problème. Ainsi elle raisonne d'une façon exploratoire et cherche à rationaliser les faits obtenus à partir de ces sources dans le cadre de l'explication la plus probable.

5. *Programme de soins.* A partir de quels caractères de l'individu ou de la famille l'infirmière établit-elle le programme de soins?

L'infirmière fonde son programme sur les lacunes et les échecs sous-jacents au problème de la personne.

Comme base de son action, l'infirmière reconnaît et utilise les points forts et les éléments positifs (le potentiel) dans la situation de l'individu ou de la famille.

6. *Cadre temporel.* Comment se situent, sur le plan temporel, les interventions à l'égard de l'individu ou de la famille?

L'infirmière intervient *aussitôt* et propose un programme concret d'une manière précise et ordonnée.

La concrétisation du programme se caractérise par une période d'"attente" destinée à s'assurer qu'il s'agit bien du mode d'action le plus approprié à la situation de l'individu ou de la famille.

7. *Evaluation*. Comment s'y prend l'infirmière pour capter les résultats du programme à titre de feedback en vue de l'évaluation et de la planification ultérieures?

L'infirmière évalue la mesure dans laquelle les *objectifs* du programme ont été atteints, en notant les divergences qui se sont manifestées entre le comportement de l'individu et les résultats attendus. La suite de la planification en vue de corriger ces écarts repose sur un programme et des méthodes renforcés.

L'infirmière note les *réponses* de l'individu ou de la famille au programme de soins et élabore la suite du programme à partir de ces résultats. Les objectifs et le but sont atteints au fur et à mesure que les résultats se manifestent.

En résumé, nous avons décrit certaines dimensions de la pratique du nursing. Un premier examen des données, recueillies à partir d'observations et de dossiers indique que les infirmières exerçant la fonction amplifiée du nursing de type complémentaire diffèrent, selon ces dimensions, de celles qui appliquent le type remplacement de cette fonction amplifiée. En outre, notre hypothèse suppose que ces deux attitudes à l'égard du nursing entraînent des résultats différents pour les clients et requièrent, pour être viables, des agencements différents dans les relations d'équipe. Cette hypothèse est en cours de vérification dans le cadre d'une étude comparative de quatre milieux de soins de première ligne, situés chacun dans un grand hôpital au sein d'un milieu urbain.

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