

# STAFF NURSES' PERCEPTIONS OF FACTORS INFLUENCING THEIR ROLE IN RESEARCH

Denise Alcock, Gisèle Carroll and Maxime Goodman

The relationship between nursing research and nursing practice is clearly identified in the literature. Research-based knowledge assists clinicians to solve patient care problems, to evaluate clinical practice protocols and to implement new programs (Conway, 1978; Duffy, 1985; Seaman, 1987). The integration of nursing research and nursing practice promotes accountability for practice (Ventura & Wagligora-Serafin, 1981) and influences policy and decision-making (Leatt, 1986). Lancaster (1984) points out that, as health care funds diminish and demands for accountability predominate, research is essential to provide the data base for clinical practice decisions.

Many clinical practice questions are addressed most effectively by merging the talents of the health care team (Hinshaw, Chance & Atwood, 1981). Jacox (1980) stresses the need for collaboration between nurses in practice settings and those in academic settings. The staff nurses' observational and analytical skills prompt the identification of research questions as a result of audits, personal experience with treatment protocols, staff discussions and observed trends in illness or treatment responses (Wilson, 1984). Clinicians ensure that the research is relevant to nursing practice, and they are in an excellent position to determine whether methods for data collection from patients or unit staff are feasible. However, staff nurse involvement in research activities has been limited.

McClure (1981) makes the statement that too few practitioners are genuinely concerned about research, either in terms of the process or the outcomes. She adds that the vast majority of active nurses in the United States have little knowledge of, and even less interest in, nursing research. Most nurses are concerned about the professionalization of nursing but do not see the link between research and professionalization.

Denise Alcock, R.N., Ph.D. is Associate Dean of the Faculty of Health Sciences and Director of the School of Nursing at the University of Ottawa. Gisèle Carroll, R.N., M.P.H. is Assistant Professor in the School of Nursing, at the University of Ottawa. Maxime Goodman, R.N., M.H.A. is Senior Business Analyst at the Children's Hospital of Eastern Ontario, in Ottawa.

Hunt's (1987) review of the literature on translation of research findings into practice suggests that nurses do very little professional reading, and that they rely heavily on established routines in order to maintain stability in unpredictable work situations. Therefore, more effort is directed toward maintaining the status quo than toward effecting change.

Several models have been proposed to stimulate involvement of staff nurses in research (Davis, 1981; Egan, McElmurry & Jameson, 1981; Haller, 1986; Hoare & Earenfight, 1986; Hunt, 1981; James & Lantz, 1987; Stevenson, 1978; Zalar, Witches & Walker, 1985). Examples of criteria for the successful involvement of staff nurses in research activities include the support of nursing administration; a climate whereby peers are accepting of a nurse researcher's activities; and, the availability of research advisors. Unit-based research favours studies with immediate relevance for the practice of the participating nurses. A supportive environment includes such facilities and resources as library services, computers, research and ethics review committee, research discussion groups, research bulletin boards, statistical consultants and a receptivity to nursing research on the part of both management and the research establishment in the agency (Alcock, 1989).

Zalar, Welches and Walker (1985) describe a nursing consortium approach to increasing research in clinical settings that involved nine nursing service agencies in a localized geographic area. The aim of the consortium model was to provide more effective use of "expert" researchers' time, and to increase research productivity at a minimum cost.

The literature suggests that staff nurses are in an excellent position to identify research problems, collaborate with university nurse researchers and researchers from other disciplines and to implement clinical practice changes that will have a positive impact on the quality, efficiency and cost of health care. Thurston, Tenove, Church and Bach-Paterson (1989) conclude that clinically-based research is a reality for more than one-half of Canadian teaching hospitals. However, very little is known about the staff nurses' perceptions of nursing research or about their roles in nursing research.

### ***Objectives of the study***

The first objective of this study was to develop a survey tool that would address the following questions.

1. What is the staff nurse's perception of the value of nursing research?
2. What is the staff nurse's perception of her or his role in research?
3. What is the staff nurse's interest in nursing research?
4. What is the staff nurse's research experience?
5. What is the staff nurse's perception of the research climate (e.g. support systems, assistance available) in the agency?

The second objective was to survey four groups of staff nurses in Ontario.

## Method

### *Sample and sample size*

In June 1988, the College of Nurses of Ontario listed 19,864 staff nurses who worked in general teaching hospitals, 16,339 in non-teaching hospitals with more than 100 beds, 2,055 in public health and 2,602 in home care/visiting nursing. Sample size determination was based on Cochran's equation (1963; p. 75; formula 4.1) which incorporates the known size of a population, the population proportion  $P$ , and the desired width of the chosen confidence interval around the observed sample proportion  $P$ . Given the known population size of 40,860, a conservative value of  $P$  of 0.50, and a 95% confidence interval of width  $p \pm 0.05$ , the required sample size was determined to be 380. Calculated proportionate sample sizes were determined, in order to have staff nurse representation from teaching hospitals (184), non-teaching hospitals (152), public health (20) and home care/visiting nursing (24). In an attempt to avoid a small number of returns in the public health and home care/visiting nurse groups, a total of 30 and 32 questionnaires respectively were distributed for a total sample size of 398.

The randomized selection of subjects was undertaken by the College of Nurses of Ontario.

### *Questionnaire*

Questions were based on criteria identified in the literature as being important in promoting the involvement of staff nurses in nursing research. The questions were reviewed for face validity by experts in clinical settings and by nurse researchers.

The questionnaire has six sections that address: demographic data, perceived value of nursing research, perceived role in research, interest in research, experience in research and perception of research climate in the workplace. A scientific review committee, with experts in survey design, reviewed the questionnaire and suggested that the negative and positive statements of the questionnaire be more randomly placed. These revisions were made. The questionnaire was randomly distributed to 19 staff nurses in a pediatric hospital (not included in study sample). The staff nurses were asked to complete the questionnaire, and to indicate in the margin if the question was not clear or could not be answered by the choices provided. All 19 questionnaires were returned with comments to the effect that the questions were clearly stated, but that a "don't know" column was essential for items relating to the presence of support systems. The column was added for relevant items.

## Data Collection

The questionnaires were mailed with a covering letter which outlined the purpose of the study, the names and telephone numbers of the researchers, the sample selection method, and the manner in which data would be managed. Participants were asked to return the questionnaire in the stamped enclosed envelope within seven days.

### *Analysis of the data*

Data were analyzed on the University of Ottawa Amdahl computer using SPSS-X. Analyses were conducted on individual survey items as well as on composite scores that were calculated by summing responses to the sets of related items in each of the following five areas of the survey: perceived value of nursing research; perceived role in research; interest in research; research experience; and, perception of supportive research climate in the health care agency. In calculating composite scores, responses to negatively-posed items were reversed. Reliability analyses of the composite scores from all available respondents indicated high internal consistency among items in each of the five sections, with alphas of: 0.814, 0.714, 0.868, 0.789 and 0.781, respectively.

Frequency distributions were obtained for responses to each of the individual survey items. For simplicity, items requiring responses on a four-point Likert scale (strongly agree, agree, disagree and strongly disagree) were divided into agree or disagree. Percentages of respondents are expressed to the nearest whole number.

One-way analyses of variance (ANOVA) were calculated on the five composite scores, as a function of age group (30 or less; 31-40; 41-50; 51 or more) and as a function of type of agency (teaching hospital; non-teaching hospital; public health, home care/visiting nurse). T-tests were used to compare educational level groups (diploma versus baccalaureate) on the five composite scores. Within each set of analyses for the three independent variables, an alpha of 0.01 (0.05 divided by five tests) was used to correct for multiple testing.

## Results

Of the 398 questionnaires mailed, 178 were returned. The low return rate of 45% may indicate a low level of interest in research. The percentage of questionnaires returned by each group is as follows: Public health nurses, 63%; home care/visiting nurses, 53%; teaching hospital nurses, 39%; and non-teaching hospital nurses, 47%. The post office was unable to locate 17 addressees. As a point of reference, with 178 respondents, the 95% con-



fidence interval around an observed proportion of 0.50 is  $\pm 0.07$  and the 95% confidence interval around an observed proportion of 0.90 is  $\pm 0.04$ .

### ***Demographic data***

All age groups are well represented, 74% of the respondents had not completed a baccalaureate in nursing degree and 79% had been registered nurses for more than five years. Forty-five percent had been in their current position for over five years and 73% for over two years. Eighty-seven percent of the nurses who responded were working full time; 9.6% were employed part-time. A comparison of the demographic characteristics of the subjects with 1989 Management Data Series Information (Health Division, Statistics Canada) on registered nurses employed in nursing in Canada and in the province of Ontario reveals very similar age distributions for the 30 to 39 and the 40-49 age groups. There were more respondents in the 30-year-old-and-less category (26%) than in Ontario (16%) and Canada (18%) and less respondents in the 51-or-more category (14%) than in Ontario (21%) and Canada (18%). It may be that the older nurses surveyed chose not to return their questionnaires.

A comparison of the level of education of respondents with nurses in Canada indicates no significant difference. However, there is a difference between level of education of respondents and nurses in Ontario ( $X^2=12.65$ ,  $df=3$ ,  $p<0.05$ ). There were more respondents with baccalaureate degrees and with post-basic diplomas or certificates; 2% of the respondents had a Master's degree, as compared to 1% of nurses in Ontario. Only 9.6% of the respondents were employed part-time, as compared to national estimates of 38%. Considering that the questionnaire return rate was 45%, it may be that part-time nurses did not return their questionnaires, and this may reflect on their level of interest in nursing research.

### ***Perceived value of nursing research***

Although 92% of respondents agreed that nursing research was useful in solving patient care problems, only 70% perceived that research promoted accountability for practice. Eighty-two percent of staff nurses agreed that research findings provide the facts needed to make clinical practice decisions and 89% agreed that research helps improve nursing practice. A lower percentage (73%) perceived research to be cost-effective.

The ANOVA on the composite score for the perceived value of research, as a function of age group, was not significant ( $p>0.01$ ). The ANOVA for the type of agency in which the nurse worked was statistically significant ( $F=4.27$ ,  $p<0.01$ ,  $df=3,168$ ). A post-hoc Duncan's Multiple Range test indicated that public health nurses had significantly higher perceived value of research than nurses in teaching and non-teaching hospitals.

### ***Perceived role in research***

The majority of nurses perceived that they had a role in identifying nursing care problems (99%), in solving the problems (96%), in suggesting ways to improve patient care (99%), in applying research findings to practice situations (93%) and they agreed that they should be aware of all the research being conducted in their workplace (85%). Ninety-three percent agreed that they should be involved in nursing research if it addresses ways to improve the quality of nursing care. Fifty-one percent indicated that the staff nurse should conduct the research studies. Eighty-two percent indicated that they would be involved in the collection of data for nursing studies, but only 45% agreed that they have a role in collecting data for non-nursing studies. Even if data collection were incorporated into the daily nursing routine, only 51% would agree to be involved.

The ANOVA on the composite scores for perceived role in research indicated no significant differences in mean composite scores among age groups or among types of agencies.

### ***Perceived interest in research***

Most staff nurses (94%) were interested in finding answers to specific nursing problems, in participating in workplace studies (84%), in knowing the results of workplace studies (96%) and in conducting research that is part of the work assignment (85%). Eighty-eight percent of the nurses in this study were interested in changing practice based on research findings. It is therefore noteworthy that only 71% were interested in reading about research studies. Only 45% were interested in conducting research if it is not part of the work assignment. This is congruent with the responses to a previous question which indicated that 50% of staff nurses perceive that they have a role in data collection only if it is part of their daily routine. There is also a low level of interest (62%) in being a member of a committee to promote and review nursing research.

The composite score for perceived interest in research was not significantly different across age groups or place of employment ( $p < 0.01$ ).

### ***Research experience***

Only 36% of respondents have taken a course in research methods or statistics. This is not surprising in view of the fact that 74% of the respondents have not completed a baccalaureate degree in nursing. Twenty-four percent had identified a problem that led to a research study, 73% had completed questionnaires for research projects, 27% had conducted interviews and 39% had collected specimens for a research project. Only 10% had been

a principal investigator, 10% a co-investigator, 11% had assisted with the writing of a grant proposal, 3% had written a grant proposal, 2% had received funds to conduct research and 3% had published research results. About half (51%) stated that, based on research results, they had changed their practice. It is to be noted that 75% of the respondents have not attended a research conference. The composite score on total research experience did not differ among age groups or by type of agency.

### ***Perception of support from research climate***

Perceptions of support and encouragement from nursing administration are as follows: 41% indicated that they were encouraged to question their nursing practice; 48% agreed that they were encouraged to develop more effective and efficient methods of practice through research studies; and 44% identified nursing administration as supportive of nurses who conduct research. Less than 50% perceived that they received support and encouragement from nursing administration; only 38% perceived support from physicians; but 64% indicated that nurses were supportive of colleagues who are involved in nursing research. More than one-half (54%) of the respondents indicated that university nursing professors are not available to act as research advisors, and 59% did not feel that university nursing professors collaborate with agency nursing staff on research projects. Sixty-nine percent indicated that other disciplines (dietetics, social work, psychology) are interested in collaborating on research projects. Sixty-two per cent of the respondents stated that nurses who participate in the design or data collection of a study do not receive recognition for participation.

Neither of the ANOVAs on the composite scores for perception of supportive research climate indicated statistical significance across age groups or place of employment ( $p < 0.01$ ).

It was interesting to note that, on the items listing research resources, the "don't know" responses ranged between 30 and 45%. Many nurses do not know what research resources are available in their agency.

### ***Educational background and perceived value, role, interest, experience and support***

T-tests indicated that diploma graduates differed from baccalaureate nurses on each of the five composite scores. The baccalaureate nurses indicated a higher perceived value of nursing research, a greater perceived role in research, a greater interest in research, more research experience and a greater perception of a supportive research climate in the health care agency. Each t-test reached statistical significance ( $p < 0.01$ ), except for the comparison for support, which approached significance ( $p = 0.12$ ).

### *Pearson correlations of all composite scores*

Pearson correlations were calculated between each pair of composite scores (value, role, interest, experience, research climate). Eight of the ten correlations were statistically significant ( $p < 0.05$ , 2-tailed tests). Moderate associations were observed as follows: perceptions of the value of research and role ( $r = .45$ ); the value of research with interest in research ( $r = .54$ ); the value of research with research experience ( $r = .36$ ); the perceived role with interest in research ( $r = .54$ ); and, interest in research with research experience ( $r = .41$ ).

### *Comments by respondents*

Approximately one-third of the respondents (32%) added comments at the end of the questionnaire. The comments can be grouped into themes. Theme 1 dealt with nursing administration. Unfortunately, all of the comments were negative. Nursing management was perceived as inhibiting, rather than fostering, nursing research.

Theme 2 focused on the lack of time to do research. There was an emphasis on nursing shortages, heavy workloads and direct patient care activities that take priority over research activities.

Theme 3 presented personal opinions about research. The examples of the opinions are "research is not relevant to my practice" and "research applied to work fouls things up".

Theme 4 was the positive comments about research and the workplace. For example: "If we, as nurses, felt we were a valid profession, the majority would understand that it is research, not habit, routine or fourth sense that should guide our practice."

## **Discussion**

The majority of nurses in the study valued nursing research; most agreed that they would be involved in the collection of data for nursing research projects. This is in marked contrast to McClure's (1981) statement that few practitioners are genuinely concerned about research process or outcomes, and, that nurses do not perceive the link between research and professionalization. In this study, the value that nurses placed on nursing research was mainly influenced by professional preparation and the type of agency in which the nurse was employed. Baccalaureate-prepared nurses placed the most value on research. This may reflect an increase in the research content of most B.Sc.N. programs in the last decade. If the number of responses from nurses employed in various agencies is examined, it will be noted that community-based nurses had the higher response rates and that those in



teaching hospitals had the lowest response rate. In the "comments" section, it was frequently noted that staff nurses have little time to devote to research; this may well have influenced the participation of nurses in teaching hospitals. Although no significant difference in the perception of a supportive research climate was noted across type of employment agency, there may be other factors that influenced those nurses in public health agencies to place a higher value on nursing research than those in teaching and non-teaching hospitals.

Staff nurses express interest in research and value research, but they are not informed about their own research milieu. They may not know how to seek out the information, or, they may not feel they have a right to have access to research support services. Staff nurses are an untapped resource, with potential to contribute to the advancement of nursing research activities. Information about research resources could be provided at orientation, through research discussion groups or other avenues. Most (93%) of the respondents perceived that they have a role in the application of research findings in their clinical practice. However, if they are not informed about the research milieu in their agency, and about one-third do not read the research literature, the implementation of research-based change will be limited.

The literature clearly defines the vital role of nursing administration in fostering clinical practice research (Davis, 1981; Egan et al, 1981; Stevenson, 1978). Yet, these findings appear to indicate that nursing administrators have not taken an active role in fostering the existing interest of their staff nurses in research. Although research resources may be present, nursing personnel have not been made adequately aware of their accessibility. There were comments reflecting frustration with the lack of demonstrated support from nursing administration; these may originate from lack of communication on the subject of nursing research. It would have been useful to have obtained the views of nurse administrators about the research role and available resources for staff nurses.

The role of the administrator is vital to the development of nursing research and to the implementation of practice change, based on research findings. However, staff nurses perceive that they do not have a supportive research climate in their agencies; as such, it would appear that administrators should address ways and means of facilitating staff nurse involvement in research. Undoubtedly, in times of cost constraints, released clinical time for research activities may be limited. However, the cost effectiveness of implementing changes, based on research findings that contribute to improved outcomes, must be taken into consideration. Recognition for the contributions of staff nurses to projects conducted by other professionals can also be facilitated by administration.

University nursing faculty must also examine their approach to clinical practice research. Staff nurses perceive more interest in collaboration on research projects from allied health disciplines than from university nursing colleagues. The "comments" section suggests that university nursing faculty preferentially relate to nursing management, rather than to staff nurses. There appears to be a lack of appreciation, on the part of university faculty, of the potential contribution of staff nurses to research projects.

Staff nurses are willing to collaborate with researchers on design and data collection, and to implement clinical practice changes based on findings. Nursing research interest groups, nurse administrators, clinical agency staff development and research departments and university nursing faculty must all take an active role in examining ways to foster and facilitate staff nurse involvement in research.

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Copies of the survey questionnaire may be obtained from the principal author.

## RÉSUMÉ

### **Facteurs susceptibles d'influer sur le rôle en recherche du personnel infirmier : le point de vue des intéressés**

On a réalisé un sondage auprès d'un échantillon aléatoire d'infirmiers/ères ontariens en vue de déterminer leur perception de la valeur de la recherche infirmière, leur rôle et leur expérience en matière de recherche ainsi que leur perception du climat de recherche dans leur établissement. Cent soixante-dix-huit infirmiers/ères ont renvoyé le questionnaire dûment rempli. La majorité des participants sont d'avis que la recherche infirmière qui se rapporte directement aux aspects cliniques de la profession est importante et se déclarent prêts à recueillir des données pour les projets de cet ordre. Cinquante pour cent seulement se disent disposé(e)s à recueillir des données pour des études relevant d'une autre spécialité, même si la collecte des données s'inscrit dans leurs tâches quotidiennes. Bien que 87 % des infirmiers/ères travaillent à plein temps, de 30 à 45 % ignorent pourtant les ressources dont leur établissement dispose pour épauler la recherche. Moins de 50 % reconnaissent que les cadres infirmiers apportent leur appui à la recherche et seulement 41 % affirment que leurs supérieurs les encouragent à s'interroger sur l'exercice de leur profession. Selon les infirmiers/ères de soins généraux qui travaillent à plein temps, les professionnels de la santé oeuvrant dans des domaines connexes semblent plus disposés à éventuellement collaborer à un projet de recherche que leurs collègues infirmiers diplômés d'université. Les résultats du sondage identifient les obstacles à la participation de fait des infirmiers/ères aux activités de recherche.