

Resources for Collaborative Research¹

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OBJECTIVE

"The Conduct and Utilization of Research in Nursing" (CURN) was a five-year research development project with the major objective of improving nursing practice through: 1) the utilization of existing research findings in the daily practice of registered nurses, and 2) the design and conduct of research that was directly relevant and readily transferable to nursing practice activities. The first of these activities was implemented by the Research Utilization Program (Horsley et al., 1978) and the second by the Collaborative Research Program (CRP). The Collaborative Research Program indirectly addressed the problem of research utilization by supporting the development of research that was relevant and transferable to practice activities. (Loomis and Krone, 1980).

The research development model implemented by CRP staff provided support on a matching funds basis to five collaborative teams for their work developing a clinical nursing research proposal. The teams, comprised of at least one clinical nurse and one researcher, received funding according to a three stage, incentive system as they prepared to research a clinical nursing problem.

This article focuses on the people and organizations which actively participated in the collaborative research program. Specifically, it describes the clinicians and researchers who were members of the collaborative research teams and the nursing departments that were able to support this research development activity.

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BACKGROUND

In their comprehensive synthesis of literature on principles of research utilization Glaser and colleagues (1976), advocate "the identification and development of a research problem that reflects the interests and concerns of those affected by the research project . . . another basic principle is that practitioners should be involved in all phases of the research." The collaborative research development model designed and implemented by CURN staff insured direct involvement of clinicians as collaborative team members at every step of the research process. The intent was that clinician involvement in defining the research question and designing the study would facilitate the conduct of more practice-relevant clinical nursing research.

While there are several reports of collaborative efforts in the nursing research literature (Voda, et al., 1971; Hanson, 1973; Lindeman, 1973; Felton and McLaughlin, 1976; Lindeman and Krueger, 1977), collaborative research development as implemented by the CURN Project is not a naturally or frequently occurring phenomenon. Schlotfeldt (1971), Notter (1975), Lindeman (1975), Reinkemeyer (1978), Gortner (1975), and Aydelotte (1976) have addressed the need for a greater number of practice-relevant clinical nursing studies. Sufficient research is not available to direct the clinical practice of nurses. Despite the encouragement of Jacox (1974), Werley (1972), Aydelotte (1976), Malone (1962), Benoliel (1977), Schlotfeldt (1974), to name a few, a large gap still exists between research and practice.

Pelz's (1976) report of research in academic, government, and industrial settings suggests certain personal and organizational conditions that are research productive. Pelz's findings suggest that persons with qualities of competence, curiosity, and self-confidence need to be involved in the scientific task and need to be provided with resources for their work. These are necessary conditions for scientific achievement and creative problem-solving. The institutional environment must reinforce this achievement through reporting and recognition that exposes the individual to the challenge of new problems; thus the problem-solving process recycles. These are the conditions that CURN staff attempted to structure in the Collaborative Research Program.

METHOD OF PROCEDURE

In November, 1977, letters describing the Collaborative Research Program (CRP) were sent to nursing directors of the 103 Joint Commission for Accreditation of Hospitals (JCAH) accredited, general medical-surgical hospitals with over 100 beds in the state of Michigan. This information included a description of the collaborative research development grants available to clinician/researcher teams on a matching funds basis. It outlined the three-stage review process by which

collaborative teams would design their studies and receive funding, and the criteria to be used for each review.

Follow-up calls were made to all directors who had received the original mailing to answer any questions they might have about CRP and to encourage their participation. Active positive responses were received from 8.5 percent of the directors who either referred us to a specific contact person, set up a meeting to learn more about CRP, or had already contacted us prior to the follow-up call. We classified as neutral the 42 percent who did not remember receiving the materials, had passed them on to another person or committee, or promised to bring the information to the attention of a specific person or staff group. Aside from some requests for re-mailing, this group was not responsive to the suggestion of future contacts with CRP. Negative responses were received from 49.5 percent of the directors, many of whom gave thoughtful explanations of their inability to become actively involved in clinical research at that time. The lack of prepared nurses, other competing priorities, and shortages of staff, time, and money were all reasons for saying no.

In the spring of 1978, the staff of the research utilization program identified a number of research problem areas that required further study before they could be utilized in clinical practice. A Request For Proposals (RFP) was developed that specified these areas as priorities when reviewing collaborative team funding applications. This outline was mailed to the original 103 directors and received wide written and verbal promotion throughout the state. The result of this more targeted activity was a doubling of contacts from interested directors, clinicians, and researchers. We received 15 contacts initially and 13 additional contacts following the RFP for a total of 28 contacts. Three of the five funded collaborative research teams have worked on RFP topics.

FINDINGS AND IMPLICATIONS

By June of 1979, five collaborative research teams with clinicians from six hospitals, and researchers from two universities were awarded CRP funding to develop clinical nursing research projects. "Practice-relevant research development," a paper presented at the ANA Convention, June 1980, describes the process by which these teams were formed and worked together (Loomis and Krone, 1980). This article focuses on the questionnaire and interview data that were collected to identify the characteristics of the clinicians, researchers, and nursing organizations in hospitals that actively participated in the Collaborative Research Program.

These data allow us to clarify our thinking about the resources required for collaborative research development. *Clinician resources*—practicing nurses with a clinical question and an interest in clinical research—were a valuable and essential part of the collaborative

teams. Since initial contact by the CRP staff was made with directors and clinicians in hospital settings, there was a definite weighting of the team's focus toward clinical questions that would produce practice-relevant research.

A total of 14 clinicians participated as members of the five collaborative research teams. Each team had from one to five clinician members with an average of 3.25 clinicians per team.

Only one person chose to work as the sole clinician member of a collaborative team. No *a priori* educational role or experience requirements were established for participation. Rather, the clinicians were expected to bring sufficient clinical expertise to facilitate the team's development of a clinical nursing research proposal. The clinicians reported an average of 11.9 years professional experience on their applications for CRP funding, with a range of five to 32 years.

All of the clinician members were nurses with some personal latitude in scheduling their time and determining role expectations. Only one clinician team member was a staff nurse, and this person worked on a contingent, part-time basis while enrolled in graduate study. Two clinician team members were nursing directors with specific expertise and interest in the content area of the proposed research; four had clinician or clinical specialist titles; two were clinical coordinators (supervisory level roles); two were head nurses; and three had special role titles (perinatal nurse educator, infection control nurse, and nurse enterostomal therapist).

The educational preparation of the clinician team members was also consistent. Six clinicians had master's degrees in nursing, five reported B.S.N. as their highest degree, and three were diploma graduates. All three of the diploma and three of the six B.S.N. clinicians were enrolled in degree programs during their participation on the collaborative teams.

Of the thousands of nurses available in the 100+ hospitals contacted by CRP, the similar characteristics of these 14 clinicians who entered and completed the collaborative research development process are striking. They had a high level of education, role flexibility, and responsibility, and were familiar with autonomous functioning, however, most of them preferred to work in teams. As a group they brought an unusually high level of professional experience. They reported being involved in the CRP for personal learning, to find an answer to a practice problem, and to improve the prestige and visibility of nursing in their hospitals.

RESEARCH RESOURCES

Research resources consisted of six researchers and the back-up support available from their two universities. One of the five teams worked with two different researchers during the project period.

Halfway through this team's work, the original researcher accepted a position out of the state and had to be replaced. Of the six researchers, four brought expertise related to the clinical content area under consideration and two brought research methods and data analysis expertise to the team. Three of the researchers were doctorally-prepared, non-nurses: two taught public health and one was a psychologist teaching nursing research. Of the three nurse researchers, one was doctorally prepared and the other two completed their doctoral work during their involvement with CRP. Their doctoral work was in addition to, not part of, CRP. The average professional experience of the research members was 20.8 years, and the average post-doctoral experience of those with doctoral preparation was 8.5 years.

One of the most significant pieces of information about our collaborative researchers was how difficult they were to find. A 1976 survey of ongoing nursing research projects in the midwest indicated a total of 31 projects reported for Michigan. These projects were being conducted by 25 researchers, 20 of whom were nurses, and 17 of the nurses were doctorally-prepared.

Our difficulty in forming clinician/researcher collaborative teams was compounded by the fact that a number of the nurse researchers with established research programs reported being over-extended and unable to commit the time required to be a collaborative team member. We also experienced some difficulty in matching researcher interest and expertise with the clinical content area to be explored. In the end we contacted a total of 21 potential researchers, seven of whom were unable to participate because of time constraints and their own ongoing projects, five who agreed to serve as consultants, and 9 who were willing to work as collaborative team members.

Only one clinician was able to identify and contract with her own researcher, a nurse with whom she had collaborative clinical contact in the hospital. One of the teams had clinicians from two hospitals who agreed to work together because of their similar clinical research interests, their need for a larger number of subjects from diverse settings, and the availability of only one researcher to collaborate on this content area.

All six researchers who worked with CRP reported a high level of initial interest in collaboration that would produce a clinically-relevant study and provide them with new insights into health care and nursing. They desired exposure to practice problems and saw a funded project as the outcome of involvement with CRP.

Nursing department resources correlated with participation in the Collaborative Research Program were tabulated from two sources: (1) an organizational questionnaire filled out by all directors of nursing prior to their involvement with CRP, and (2) the CURN questionnaire administered to a sample of nursing staff in 37 hospitals including those participating in CRP.

Data from the director's questionnaire were analyzed using a Student's-t for comparing means of two independent samples and are presented in Table 1. Nursing departments were divided into two categories, those that had funded collaborative research teams ($n=6$) and those that did not ($n=15$). These 21 departments of nursing were unique in that all directors had committed their departments to some involvement in the CURN project, either in the research utilization program and/or the Collaborative Research Program. Two of the CRP hospitals were involved in the research utilization program prior to their contact with CRP. This willingness and ability to participate in a large research development project makes these departments different in certain respects.

Despite the uniqueness of all these departments, the trend was toward higher ratings of nursing department resources in the CRP hospitals. The number of formal affiliations with other health care agencies ($p \leq .05$) and the director's reported ability to procure additional funds for the department ($p \leq .05$) were statistically significant. Nursing department resources for CRP and non-CRP hospitals are illustrated by means on Table 1.

A chi-square test of significance was used to determine whether the presence of nursing students was different in CRP and non-CRP hospitals. A significantly greater number of CRP hospital directors

TABLE 1 Nursing Department Resources—CRP and Non-CRP Hospitals+

<i>Directors Questionnaire Variables</i>	<i>CRP Mean</i>	<i>Non-CRP Mean</i>	<i>t-stat</i>
	N=6	N=15	
1. Number of hospital beds	421.17	271.67	1.434
2. Number of facilities available within hospital	25.67	21.20	1.459
3. Number formal affiliations with health care agencies	2.33	.67	2.707*
4. Number formal educational institution affiliations	2.83	2.20	1.135
5. Director influence in determining budget	1.83	2.40	1.082
6. Director autonomy in allocating budget	1.83	2.47	0.973
7. Director ability to procure additional funds	1.50	2.20	2.020*

* $p \geq .05$

+Directors' Questionnaire source of data.

reported utilization of their facility by graduate nursing students ($X^2=4.295$; $p \leq .05$). There was no significant difference between CRP and non-CRP hospitals in reported utilization by undergraduate nursing students.

Data from the CURN questionnaire were used to determine the extent to which CRP hospital nursing staff differed from other CURN hospital staffs in their rating of research resources and access to ideas. Data were analyzed using a Student's-t and respondents were grouped according to CRP ($n=252$) and non-CRP ($n=695$) categories. Table 2 illustrates the items with a significant difference between respondents

TABLE 2 Access to Ideas & Research Resources
CRP and Non-CRP Hospitals+

Variables	CRP	Non-CRP	t-stat	significance
	Mean	Mean		
	N=252	N=695		
9a Value staff nurses	3.88	3.73	2.230	.026*
9b Value clinical specialists	3.86	3.66	2.390	.017*
9c Value head nurses, supervisors, nursing directors	4.10	3.92	2.870	.004*
9d Value staff development personnel	3.85	3.78	0.973	.331
9e Value physicians	3.39	3.28	1.400	.162
9f Value other non-nursing staff	2.70	2.63	0.938	.348
10a Use staff nurses	3.53	3.35	2.520	.012*
10b Use clinical specialists	3.47	3.28	2.070	.039*
10c Use head nurses, supervisors, nursing directors	3.89	3.64	3.750	.000*
10d Use staff development personnel	3.79	3.60	2.470	.014*
10e Use physicians	3.12	3.05	0.878	.380
10f Use other non-nursing staff	2.52	2.44	1.090	.277
16a-c Time permitted activities—internal	3.56	3.32	2.170	.030*
16d-h Time permitted activities—external	2.81	2.33	3.170	.002*
17a-c Time spent activities—internal	4.05	3.63	3.340	.001*
17d-h Time spent activities—external	3.01	2.90	0.744	.457
17a-h Time spent activities—total	3.59	3.33	2.310	.021*
18a-b Time spent per month	3.29	2.99	2.730	.006*
23 Familiarity with clinical nursing research studies	1.50	1.62	2.910	.004*
23-24 Number of studies familiar	1.51	0.94	4.480	.000*
22a Helped graduate nursing students	1.56	1.41	2.460	.014*
22b Helped physicians collect data	1.31	1.19	2.600	.009*
22c Participated in study	1.33	1.31	0.449	.654
22d Initiated and directed study	1.14	1.09	1.790	.074
19b-f Research utilization index	2.80	2.69	1.190	.233

* $p < .03$

+CURN Questionnaire—nursing staff respondents

from CRP and non-CRP hospitals. A .03 significance level was chosen because of the possibility of statistical artifacts when conducting a large number of t-tests on so large a sample. Of particular interest is the extent to which staff report valuing and using multiple personnel as sources of new ideas. (Items 9 A-C, 10 A-D). The CRP hospital staffs are also significantly higher in their reported familiarity with clinical nursing research studies (Items 23-24) and the amount of professional activity time permitted and spent on internal and external activities (Items 16, 17, 18). Nursing staff in the CRP hospitals reported a higher rate of helping graduate students and physicians with studies conducted in their hospital (Items 22 A and B). Finally, the presence of a professional library, reading facilities, and nursing selection of library publications were organizational variables (Table 3) that rated significantly higher in the CRP hospitals (Items 26 D and E).

SUMMARY

What emerged from the data was a composite of the conditions that are likely to support collaborative research development. The supportive nursing department has a variety of health care agencies and educational institution affiliations and is actively involved as a clinical facility for graduate and undergraduate nursing students. Graduate nursing student and physician research is conducted with the involvement of nursing staff. The director has considerable influence in determining and allocating the nursing budget, and staff can use time for internal and external professional activities. Nursing staff use the hospital library and they report familiarity with clinical nursing research studies. The staff also reports using a variety of health care professionals for new ideas. In short, the nursing practice environment has a

TABLE 3 Research Resources—Organizational Variables
CRP and Non-CRP Hospitals+

<i>Organizational Variables</i>		CRP <i>Mean</i>	Non-CRP <i>Mean</i>	<i>t-stat</i>	<i>significance</i>
		N=6	N=15		
25	Professional library available	1.01	1.06	1.41	.173
26a	Available for use by nursing staff	1.02	1.07	1.10	.282
26b	Nursing publications available	1.02	1.12	1.50	.150
26c	N. publication check-out available	1.12	1.23	1.04	.311
26d	Library reading facilities	1.02	1.18	2.34	.030*
26e	Nursing selection of publications	1.30	1.50	2.40	.027*

* $p \geq .03$

+CURN Questionnaire—hospital level data

range of stimulating research resources and the nursing staff use them.

Within this environment, experienced, degree-prepared nurses with flexible, more autonomous roles appear able to use the available resources and collaborate in the research development process. Their research collaborators will need to be nurse researchers who are developing an area of clinical research interest but do not have an established research program in place, or non-nurse researchers who are ready to expand their content or methodological expertise into nursing practice concerns.

Our teams have been able to take a clinical problem and collaborate on the design of a research proposal that is practice-relevant. Two teams have received federal funding; two are seeking foundation support, and one has submitted the summary of its process and findings for publication. The six nursing departments, 14 clinicians, and six researchers have demonstrated that the collaborative research development model is a viable alternative for generating proposals in practice-relevant nursing research.

NOTES

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